Clean Harbors Kansas, LLC

Part B Renewal Application

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MAIL COMPLETED 700-12 FORM TO: HE-BWM 0 SW Jackson, ite 320 Topeka, KS 66612-1366	Kansas Department of Health and Environment **Notification of Regulated Waste Activity for Kansas Treatment, Storage and Disposal Facilities** Kansas Form 8700-23 (RCRA Subtitle C Site Identification Form)	
1. Reason for Submittal (See Instructions on page 4.) **MARK ALL BOX(ES) THAT APPLY**	**Reason for Submittal:** ☐ To provide Initial Notification of Regulated Waste Activity (to obtain an EPA ID Number for hazardous waste, universal waste, or used oil activities) ☐ To provide Subsequent Notification of Regulated Waste Activity (to update site identification information) ☐ As a component of a First Kansas RCRA Hazardous Waste Part A Permit Application ☑ As a component of a Revised Kansas RCRA Hazardous Waste Part A Permit Application (Amendment #__11__) ☐ As a component of the Hazardous Waste Report	
2. Site EPA ID Number (page 5)	**EPA ID Number** |_K|_S|_D||_0|_0|_7||_2|_4|_6||_8|_4|_6|	
3. Site Name (page 5)	**Name: Clean Harbors Kansas, LLC**	
4. Site Location Information (page 5)	**Street Address: 2549 North New York Avenue**	
	City, Town, or Village: Wichita	**State: KS**
	County Name: Sedgwick	**Zip Code: 67219**
5. Site Land Type (page 5)	**Site Land Type:** ☑ Private ☐ County ☐ District ☐ Federal ☐ Indian ☐ Municipal ☐ State ☐ Other	
6. North American Industry Classification System (NAICS) Code(s) for the Site (page 5)	**A.** |_5|_6|_2|_2|_1|_1|	**B.** |__|__|__|__|__|__|
	C. |__|__|__|__|__|__|	**D.** |__|__|__|__|__|__|
7. Site Mailing Address (page 6)	**Street or P. O. Box: 2549 North New York Avenue**	
	City, Town, or Village: Wichita	
	State: KS	
	Country: USA	**Zip Code: 67219**
8. Site Contact Person (page 6)	**First Name:** Brian	**MI:** **Last Name:** Key
	Phone Number: 316-269-7418 **Extension:**	**Email address:** key.charles@cleanharbors.com
9. Operator and Legal Owner of the Site (page 6)	**A. Name of Site's Legal Owner: : Clean Harbors Kansas, LLC**	**Date Became Owner (mm/dd/yyyy): 09/06/2002**
	Operator Type: ☑ Private ☐ County ☐ District ☐ Federal ☐ Indian ☐ Municipal ☐ State ☐ Other	
	B. Name of Site's Operator : Clean Harbors Kansas, LLC	**Date Became Operator (mm/dd/yyyy): 09/06/2002**
	Owner Type: ☑ Private ☐ County ☐ District ☐ Federal ☐ Indian ☐ Municipal ☐ State ☐ Other	

10. Type of Regulated Waste Activity
Mark "Yes" or "No" for all activities; complete any additional boxes as instructed. (See instructions on pages 7 to 11.)

A. Hazardous Waste Activities
Complete all parts for 1 through 6.

Y ☑ N ☐ **1. Generator of Hazardous Waste**
If "Yes", choose only one of the following - a, b, or c.

☑ a. LQG: Greater than 1,000 kg/mo (2,200 lbs./mo.) of non-acute hazardous waste; or

☐ b. KSG sub-class 1: 100 to 1,000 kg/mo (220 - 2,200 lbs./mo.) of non-acute hazardous waste; or

☐ b. KSG sub-class 2: 25 to 100 kg/mo (55 - 220 lbs./mo.) of non-acute hazardous waste; or

☐ c. SQG: Less than 25 kg/mo (55 lbs./mo.) of non-acute hazardous waste

In addition, indicate other generator activities.

Y ☐ N ☑ d. United States Importer of Hazardous Waste

Y ☐ N ☑ e. Mixed Waste (hazardous and radioactive) Generator

Y ☐ N ☑ **2. Transporter of Hazardous Waste**

Y ☑ N ☐ **3. Treater, Storer, or Disposer of Hazardous Waste (at your site)** Note: A hazardous waste permit is required for this activity.

Y ☐ N ☑ **4. Recycler of Hazardous Waste (at your site)**

Y ☐ N ☑ **5. Exempt Boiler and/or Industrial Furnace**
If "Yes", mark each that applies.
☐ a. Small Quantity On-site Burner Exemption
☐ b. Smelting, Melting, and Refining Furnace Exemption

Y ☐ N ☑ **6. Underground Injection Control**

B. Universal Waste Activities

Y ☐ N ☑ **1. Large Quantity Handler of Universal Waste (accumulate 5,000 kg or more) [refer to Kansas regulations to determine what is regulated]. Indicate types of universal waste generated and/or accumulated at your site. If "Yes", mark all boxes that apply:**

	Generate	Accumulate
a. Batteries	☐	☐
b. Pesticides	☐	☐
c. Thermostats	☐	☐
d. Lamps	☐	☐
e. Other (specify) _____	☐	☐
f. Other (specify) _____	☐	☐
g. Other (specify _____	☐	☐

Y ☑ N ☐ **2. Destination Facility for Universal Waste**
Note: A hazardous waste permit may be required for this activity.

C. Used Oil Activities
Mark all boxes that apply.

Y ☐ N ☑ **1. Used Oil Transporter**
If "Yes", mark each that applies.
☐ a. Transporter
☐ b. Transfer Facility

Y ☐ N ☑ **2. Used Oil Processor and/or Re-refiner**
If "Yes", mark each that applies.
☐ a. Processor
☐ b. Re-refiner

Y ☐ N ☑ **3. Off-Specification Used Oil Burner**

Y ☐ N ☑ **4. Used Oil Fuel Marketer**
If "Yes", mark each that applies.
☐ a. Marketer who directs shipment of off-specification used oil to off-specification used oil burner
☐ b. Marketer who first claims the used oil meets the specifications

11. Description of Hazardous Wastes (See page 11 of the instructions)

Waste Codes for Federally Regulated Hazardous Wastes. Please list the waste codes of the Federal hazardous wastes handled at your site. List them in the order they are presented in the regulations (e.g., D001, D003, F007, U112). Use an additional page if more spaces are needed.

12. Comments (See page 11 of the instructions)

13. Certification. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. **(See page 11 of the instructions)**

Signature of owner, operator, or an authorized representative	Name and Official Title (type or print)	Date Signed (mm/dd/yyyy)
Michael Crisenbery	Michael Crisenbery	5/17/12
	VP-Environmental Compliance	

MAIL TO:
KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT
BUREAU OF WASTE MANAGEMENT
1000 SW JACKSON, SUITE 320
TOPEKA, KS 66612-1366

United States Environmental Protection Agency

HAZARDOUS WASTE PERMIT INFORMATION FORM (8700-23)

1. Facility Permit Contact (See Instructions on Page 16)	First Name: Steve	MI:	Last Name: Bley
	Phone Number: 513-681-5738		Phone Number Extension: 2284
2. Facility Permit Contact Mailing Address (See Instructions on Page 16)	Street or P.O. Box: 2549 North New York Avenue		
	City, Town, or Village: Wichita		
	State: KS		
	Country: USA		Zip Code: 67219
3. Owner Mailing Address and Telephone Number (See instructions on page 17)	Street or P.O. Box: 2549 North New York Avenue		
	City, Town, or Village: Wichita		
	State: KS		
	Country: USA	Zip Code: 67219	Phone Number 316-269-7418
4. Operator Mailing Address and Telephone Number (See instructions on page 17)	Street or P.O. Box: 2549 North New York Avenue		
	City, Town, or Village: Wichita		
	State: KS		
	Country: USA	Zip Code: 67219	Phone Number 316-269-7418
5. Facility Existence Date (See instructions On page 17)	Facility Existence Date (mm/dd/yyyy): 06/01/1979		

6. Other Environmental Permits (See instructions on page 17)

A. Permit Type (Enter code)	B. Permit Number	C. Description
P	1 7 3 0 1 6 1	Air Operating Permit

7. Nature of Business (Provide a brief description; see instructions on page 24)

The Clean Harbors Kansas, LLC facility is located in Wichita, Kansas. The facility stores and, treats RCRA hazardous and nonhazardous wastes. Clean Harbors Kansas, LLC also stores, and otherwise manages RCRA hazardous and nonhazardous wastes sludges, solids, and liquids for subsequent shipment to other United States Environmental Protection Agency (USEPA) permitted (or interim status) facilities for distillation, beneficial reuse, or disposal. Hazardous waste management at the facility includes, but is not limited to, fuel blending for energy recovery, neutralization, accumulation of materials for reclamation, accumulation for hazardous waste landfill disposal, accumulation of low BTU liquids for deep well injection, repackaging for incineration, and storage of industrial waste waters for subsequent discharge. Storage occurs in both containers and tanks.

The facility operates under the requirements of the Resource Conservation and Recovery Act (RCRA) and the Kansas Hazardous Waste Management Act as set forth in Kansas Administrative Regulations (KAR), Title 28, Article 31.

8. Process Codes and Design Capacities (See instructions on page 24) - Enter information in the Sections on Form Page 3.

A. PROCESS CODE - *Enter the code from the list of process codes in the table below that best describes each process to be used at the facility. Fifteen lines are provided for entering codes. If more lines are needed, attach a separate sheet of paper with the additional information. For —other" processes (i.e., D99, S99, T04 and X99), enter the process information in Item 9 (including a description).*

B. PROCESS DESIGN CAPACITY- *For each code entered in Section A, enter the capacity of the process.*

1. **AMOUNT** - *Enter the amount. In a case where design capacity is not applicable (such as in a closure/post-closure or enforcement action) enter the total amount of waste for that process.*
2. **UNIT OF MEASURE** - *For each amount entered in Section B(1), enter the code in Section B(2) from the list of unit of measure codes below that describes the unit of measure used. Select only from the units of measure in this list.*

C. PROCESS TOTAL NUMBER OF UNITS - *Enter the total number of units for each corresponding process code.*

Process Code	Process	Appropriate Units of Measure For Process Design Capacity
	Disposal:	
D79	Underground Injection Well Disposal	Gallons; Liters; Gallons Per Day; or Liters Per Day
D80	Landfill	Acre-feet; Hectare-meter; Acres; Cubic Meters; Hectares; Cubic Yards
D81	Land Treatment	Acres or Hectares
D82	Ocean Disposal	Gallons Per Day or Liters Per Day
D83	Surface Impoundment Disposal	Gallons; Liters; Cubic Meters; or Cubic Yards
D99	Other Disposal	Any Unit of Measure in Code Table Below
	Storage:	
S01	Container	Gallons; Liters; Cubic Meters; or Cubic Yards
S02	Tank Storage	Gallons; Liters; Cubic Meters; or Cubic Yards
S03	Waste Pile	Cubic Yards or Cubic Meters
S04	Surface Impoundment Storage	Gallons; Liters; Cubic Meters; or Cubic Yards
S05	Drip Pad	Gallons; Liters; Acres; Cubic Meters; Hectares; or Cubic Yards
S06	Containment Building Storage	Cubic Yards or Cubic Meters
S99	Other Storage	Any Unit of Measure in Code Table Below
	Treatment:	
T01	Tank Treatment	Gallons Per Day; Liters Per Day
T02	Surface Impoundment Treatment	Gallons Per Day; Liters Per Day
T03	Incinerator	Short Tons Per Hour; Metric Tons Per Hour; Gallons Per Hour; Liters Per Hour; Btu Per Hour; Pounds Per Hour; Short Tons Per Day; Kilograms Per Hour; Gallons Per Day; Liters Per Day; Metric Tons Per Hour; or Million Btu Per Hour
T04	Other Treatment	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; Btu Per Hour; Gallons Per Day; Liters Per Hour; or Million Btu Per Hour
T80	Boiler	Gallons; Liters; Gallons Per Hour; Liters Per Hour; Btu Per Hour; or Million Btu Per Hour
	Treatment (continued):	
T81	Cement Kiln	For T81-T93:
T82	Lime Kiln	
T83	Aggregate Kiln	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; Btu Per Hour; Liters Per Hour; Kilograms Per Hour; or Million Btu Per Hour
T84	Phosphate Kiln	
T85	Coke Oven	
T86	Blast Furnace	
T87	Smelting, Melting, or Refining Furnace	
T88	Titanium Dioxide Chloride Oxidation Reactor	
T89	Methane Reforming Furnace	
T90	Pulping Liquor Recovery Furnace	
T91	Combustion Device Used In The Recovery Of Sulfur Values From Spent Sulfuric Acid	
T92	Halogen Acid Furnaces	
T93	Other Industrial Furnaces Listed In 40 CFR §260.10	
T 94	Containment Building - Treatment	Cubic Yards; Cubic Meters; Short Tons Per Hour; Gallons Per Hour; Liters Per Hour; Btu Per Hour; Pounds Per Hour; Short Tons Per Day; Kilograms Per Hour; Metric Tons Per Day; Gallons Per Day; Liters Per Day; Metric Tons Per Hour; or Million Btu Per Hour
	Miscellaneous (Subpart X):	
X01	Open Burning/Open Detonation	Any Unit of Measure in Code Table Below
X02	Mechanical Processing	Short Tons Per Hour; Metric Tons Per Hour; Short Tons Per Day; Metric Tons Per Day; Pounds Per Hour; Kilograms Per Hour; Gallons Per Hour; Liters Per Hour; or Gallons Per Day
X03	Thermal Unit	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; Btu Per Hour; or Million Btu Per Hour
X04	Geologic Repository	Cubic Yards; Cubic Meters; Acre-feet; Hectare-meter; Gallons; or Liters
X99	Other Subpart X	Any Unit of Measure Listed Below

UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE
Gallons	G	Short Tons Per Hour	D	Cubic Yards	Y
Gallons Per Hour	E	Metric Tons Per Hour	W	Cubic Meters	C
Gallons Per Day	U	Short Tons Per Day	N	Acres	B
Liters	L	Metric Tons Per Day	S	Acre-feet	A
Liters Per Hour	H	Pounds Per Hour	J	Hectares	Q
Liters Per Day	V	Kilograms Per Hour	R	Hectare-meter	F
		Million Btu Per Hour	X	Btu Per Hour	I

8. Process Codes and Design Capacities (Continued)

EXAMPLE FOR COMPLETING item 8 (showin in line number X-1 below): A facility has a storage tank, which can hold 533,788 gallons

Line Number		A. Process Code (from list above)			B. PROCESS DESIGN CAPACITY (1) Amount (specify)	(2) Unit of Measure (enter code)	C. Process Total Number of Units	For Official Use On
~~X~~	~~1~~	~~S~~	~~0~~	~~2~~	~~533,788~~	~~G~~	~~001~~	
	1	S	0	1	(Building D) 0	G	001	
	2	S	0	1	(Building B) 0	G	001	
	3	S	0	1	(Building I) 50600	G	001	
	4	S	0	1	(Building J) 0	G	001	
	5	S	0	1	(Processing Area) 9900	G	001	
	6	S	0	1	(Building C) 99110	G	001	
	7	S	0	1	(Drum Dock) 14960	G	001	
	8	S	0	2	(Tank V-1) 7363	G	001	
	8	T	0	1	(Tank V-1) 7363	G	001	
	9	S	0	2	(Tank V-2) 7084	G	001	
	9	T	0	1	(Tank V-2) 7084	G	001	
1	0	S	0	2	(Tank V-3) 7363	G	001	
1	0	T	0	1	(Tank V-3) 7363	G	001	
1	1	S	0	2	(Tank V-4) 7363	G	001	
1	1	T	0	1	(Tank V-4) 7363	G	001	
1	2	S	0	2	(Tank V-5) 20895	G	001	
1	2	T	0	1	(Tank V-5) 20895	G	001	
1	3	S	0	2	(Tank V-6) 20895	G	001	
1	3	T	0	1	(Tank V-6) 20895	G	001	
1	4	S	0	2	(Tank V-7) 7363	G	001	
1	4	T	0	1	(Tank V-7) 7363	G	001	
1	5	S	0	2	(Tank V-8) 7363	G	001	
1	5	T	0	1	(Tank V-8) 7363	G	001	
NOTE: *If you need to list more than 15 process codes, attach an additional*								

sheet(s) with the information in the same format as above. Number the lines sequentially, taking into account any lines that will be used for "other" processes (i.e., D99, S99, T04 and X99) in Item 9.								

9. Other Processes (See instructions on page 18 and follow instructions from Item 8 for D99, S99, T04 and X99 process codes)

Line Number (Enter #s in sequence with item 8)

Line Number (Enter #s in sequence with item 8) X	A. Process Code (From list above) 2	(1) Amount (specify)		(2) Unit of Measure (Enter Code) 4	D. Description of Proces
		T	0		1 0 0 0

10. Description of Hazardous Wastes (See instructions on page 18) - Enter information in the Sections on Form Page 5.

A. EPA HAZARDOUS WASTE NUMBER - *Enter the four-digit number from 40 CFR, Part 261 Subpart D of each listed hazardous waste you will handle. For hazardous wastes which are not listed in 40 CFR, Part 261 Subpart D, enter the four-digit number(s) from 40 CFR Part 261, Subpart C that describes the characteristics and/or the toxic contaminants of those hazardous wastes.*

B. ESTIMATED ANNUAL QUANTITY - *For each listed waste entered in Section A, estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in Section A, estimate the total annual quantity of all the non-listed waste(s) that will be handled which possess that characteristic or contaminant.*

C. UNIT OF MEASURE - *For each quantity entered in Section B, enter the unit of measure code. Units of measure which must be used and the appropriate codes are:*

ENGLISH UNIT OF MEASURE	CODE	METRIC UNIT OF MEASURE	CODE
POUNDS	P	KILOGRAMS	K
TONS	T	METRIC TONS	M

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure, taking into account the appropriate density or specific gravity of the waste.

D. PROCESSES

1. PROCESS CODES:

For listed hazardous waste: For each listed hazardous waste entered in Section A, select the code(s) from the list of process codes contained in Items 8A and 9A on page 3 to indicate all the processes that will be used to store, treat, and/or dispose of all the listed hazardous wastes. For non-listed hazardous waste: For each characteristic or toxic contaminant entered in Section A, select the code(s) from the list of process codes contained in Items 8A and 9A on page 3 to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed hazardous wastes that possess that characteristic or toxic contaminant.

NOTE: THREE SPACES ARE PROVIDED FOR ENTERING PROCESS CODES. IF MORE ARE NEEDED:

1. Enter the first two as described above.
2. Enter —000" in the extreme right box of Item 10.D(1).
3. Use additional sheet, enter line number from previous sheet, and enter additional code(s) in Item 10.E.

2. PROCESS DESCRIPTION: *If a code is not listed for a process that will be used, describe the process in Item 10.D(2) or in Item 10.E(2).*

NOTE: HAZARDOUS WASTES DESCRIBED BY MORE THAN ONE EPA HAZARDOUS WASTE NUMBER - Hazardous wastes that can be described by more than one EPA Hazardous Waste Number shall be described on the form as follows:

1. Select one of the EPA Hazardous Waste Numbers and enter it in Section A. On the same line complete Sections B, C and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.
2. In Section A of the next line enter the other EPA Hazardous Waste Number that can be used to describe the waste. In Section D(2) on that line enter —included with above" and make no other entries on that line.
3. Repeat step 2 for each EPA Hazardous Waste Number that can be used to describe the hazardous waste.

EXAMPLE FOR COMPLETING Item 10 (shown in line numbers X-1, X-2, X-3, and X-4 below) - A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operations. In addition, the facility will treat and dispose of three non-listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

Line Number		A. EPA Hazardous Waste No. (Enter code)				B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)									(2) PROCESS DESCRIPTION- (If a code is not entered in D(1))
X	1	K	0	5	4	900	P	T	0	3	D	8	0				
X	2	D	0	0	2	400	P	T	0	3	D	8	0				
X	3	D	0	0	1	100	P	T	0	3	D	8	0				
X	4	D	0	0	2												Included With Above

10. Description of Hazardous Waste (Continued; additional sheet)

Line Number		A. Hazardous Waste No. (Enter code)				B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)									(2) PROCESS DESCRIPTION (If a code is not entered in D(1))
	1	D	0	0	1	1,000	T	S	0	1	S	0	2				
	2	D	0	0	2	250	T	S	0	1	S	0	2				
	3	D	0	0	3	100	T	S	0	1	S	0	2				
	4	D	0	0	4	250	T	S	0	1	S	0	2				
	5	D	0	0	5	250	T	S	0	1	S	0	2				
	6	D	0	0	6	250	T	S	0	1	S	0	2				
	7	D	0	0	7	250	T	S	0	1	S	0	2				
	8	D	0	0	8	250	T	S	0	1	S	0	2				
	9	D	0	0	9	250	T	S	0	1	S	0	2				
1	0	D	0	1	0	250	T	S	0	1	S	0	2				
1	1	D	0	1	1	250	T	S	0	1	S	0	2				
1	2	D	0	1	2	250	T	S	0	1	S	0	2				
1	3	D	0	1	3	250	T	S	0	1	S	0	2				
1	4	D	0	1	4	250	T	S	0	1	S	0	2				
1	5	D	0	1	5	250	T	S	0	1	S	0	2				
1	6	D	0	1	6	250	T	S	0	1	S	0	2				
1	7	D	0	1	7	250	T	S	0	1	S	0	2				
1	8	D	0	1	8	250	T	S	0	1	S	0	2				
1	9	D	0	1	9	250	T	S	0	1	S	0	2				
2	0	D	0	2	0	250	T	S	0	1	S	0	2				
2	1	D	0	2	1	250	T	S	0	1	S	0	2				
2	2	D	0	2	2	250	T	S	0	1	S	0	2				
2	3	D	0	2	3	250	T	S	0	1	S	0	2				
2	4	D	0	2	4	250	T	S	0	1	S	0	2				
2	5	D	0	2	5	250	T	S	0	1	S	0	2				
2	6	D	0	2	6	250	T	S	0	1	S	0	2				
2	7	D	0	2	7	250	T	S	0	1	S	0	2				
2	8	D	0	2	8	250	T	S	0	1	S	0	2				
2	9	D	0	2	9	250	T	S	0	1	S	0	2				
3	0	D	0	3	0	250	T	S	0	1	S	0	2				
3	1	D	0	3	1	250	T	S	0	1	S	0	2				
3	2	D	0	3	2	250	T	S	0	1	S	0	2				
3	3	D	0	3	3	250	T	S	0	1	S	0	2				
3	4	D	0	3	4	250	T	S	0	1	S	0	2				
3	5	D	0	3	5	250	T	S	0	1	S	0	2				
3	6	D	0	3	6	250	T	S	0	1	S	0	2				
3	7	D	0	3	7	250	T	S	0	1	S	0	2				
3	8	D	0	3	8	250	T	S	0	1	S	0	2				
3	9	D	0	3	9	250	T	S	0	1	S	0	2				

10. Description of Hazardous Waste (Continued; additional sheet)

Line Number	A. Hazardous EPA Waste No. (Enter code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)	D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
1	D 0 4 0	250	T	S 0 1 S 0 2	
2	D 0 4 1	250	T	S 0 1 S 0 2	
3	D 0 4 2	250	T	S 0 1 S 0 2	
4	D 0 4 3	250	T	S 0 1 S 0 2	
5					
6					
7					
8					
9					
10					
11					
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10. Description of Hazardous Waste (Continued; additional sheet)

Line Number	A. Hazardous EPA Waste No. (Enter code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)	D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
1	F 0 0 1	500	T	S 0 1 S 0 2	
2	F 0 0 2	500	T	S 0 1 S 0 2	
3	F 0 0 3	500	T	S 0 1 S 0 2	
4	F 0 0 4	500	T	S 0 1 S 0 2	
5	F 0 0 5	500	T	S 0 1 S 0 2	
6	F 0 0 6	250	T	S 0 1 S 0 2	
7	F 0 0 7	250	T	S 0 1 S 0 2	
8	F 0 0 8	250	T	S 0 1 S 0 2	
9	F 0 0 9	250	T	S 0 1 S 0 2	
10	F 0 1 0	250	T	S 0 1 S 0 2	
11	F 0 1 1	250	T	S 0 1 S 0 2	
12	F 0 1 2	250	T	S 0 1 S 0 2	
13	F 0 1 9	250	T	S 0 1 S 0 2	
14	F 0 2 4	250	T	S 0 1 S 0 2	
15	F 0 2 5	250	T	S 0 1 S 0 2	
16	F 0 2 8	250	T	S 0 1 S 0 2	
17	F 0 3 2	250	T	S 0 1 S 0 2	
18	F 0 3 4	250	T	S 0 1 S 0 2	
19	F 0 3 5	250	T	S 0 1 S 0 2	
20	F 0 3 7	250	T	S 0 1 S 0 2	
21	F 0 3 8	250	T	S 0 1 S 0 2	
22	F 0 3 9	250	T	S 0 1 S 0 2	
23					
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10. Description of Hazardous Waste (Continued; additional sheet)

Line Number	A. Hazardous EPA Waste No. (Enter code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)									(2) PROCESS DESCRIPTION (If a code is not entered in D(1))
1	K 0 0 1	250	T	S 0 1	S 0 2								
2	K 0 0 2	250	T	S 0 1	S 0 2								
3	K 0 0 3	250	T	S 0 1	S 0 2								
4	K 0 0 4	250	T	S 0 1	S 0 2								
5	K 0 0 5	250	T	S 0 1	S 0 2								
6	K 0 0 6	250	T	S 0 1	S 0 2								
7	K 0 0 7	250	T	S 0 1	S 0 2								
8	K 0 0 8	250	T	S 0 1	S 0 2								
9	K 0 0 9	250	T	S 0 1	S 0 2								
10	K 0 1 0	250	T	S 0 1	S 0 2								
11	K 0 1 1	250	T	S 0 1	S 0 2								
12	K 0 1 3	250	T	S 0 1	S 0 2								
13	K 0 1 4	250	T	S 0 1	S 0 2								
14	K 0 1 5	250	T	S 0 1	S 0 2								
15	K 0 1 6	250	T	S 0 1	S 0 2								
16	K 0 1 7	250	T	S 0 1	S 0 2								
17	K 0 1 8	250	T	S 0 1	S 0 2								
18	K 0 1 9	250	T	S 0 1	S 0 2								
19	K 0 2 0	250	T	S 0 1	S 0 2								
20	K 0 2 1	250	T	S 0 1	S 0 2								
21	K 0 2 2	250	T	S 0 1	S 0 2								
22	K 0 2 3	250	T	S 0 1	S 0 2								
23	K 0 2 4	250	T	S 0 1	S 0 2								
24	K 0 2 5	250	T	S 0 1	S 0 2								
25	K 0 2 6	250	T	S 0 1	S 0 2								
26	K 0 2 7	250	T	S 0 1	S 0 2								
27	K 0 2 8	250	T	S 0 1	S 0 2								
28	K 0 2 9	250	T	S 0 1	S 0 2								
29	K 0 3 0	250	T	S 0 1	S 0 2								
30	K 0 3 1	250	T	S 0 1	S 0 2								
31	K 0 3 2	250	T	S 0 1	S 0 2								
32	K 0 3 3	250	T	S 0 1	S 0 2								
33	K 0 3 4	250	T	S 0 1	S 0 2								
34	K 0 3 5	250	T	S 0 1	S 0 2								
35	K 0 3 6	250	T	S 0 1	S 0 2								
36	K 0 3 7	250	T	S 0 1	S 0 2								
37	K 0 3 8	250	T	S 0 1	S 0 2								
38	K 0 3 9	250	T	S 0 1	S 0 2								
39	K 0 4 0	250	T	S 0 1	S 0 2								

10. Description of Hazardous Waste (Continued; additional sheet)

Line Number		A. Hazardous EPA Waste No. (Enter code)				B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)									(2) PROCESS DESCRIPTION (If a code is not entered in D(1))
	1	K	0	4	1	250	T	S	0	1	S	0	2				
	2	K	0	4	2	250	T	S	0	1	S	0	2				
	3	K	0	4	3	250	T	S	0	1	S	0	2				
	4	K	0	4	4	250	T	S	0	1	S	0	2				
	5	K	0	4	5	250	T	S	0	1	S	0	2				
	6	K	0	4	6	250	T	S	0	1	S	0	2				
	7	K	0	4	7	250	T	S	0	1	S	0	2				
	8	K	0	4	8	250	T	S	0	1	S	0	2				
	9	K	0	4	9	250	T	S	0	1	S	0	2				
1	0	K	0	5	0	250	T	S	0	1	S	0	2				
1	1	K	0	5	1	250	T	S	0	1	S	0	2				
1	2	K	0	5	2	250	T	S	0	1	S	0	2				
1	3	K	0	6	0	250	T	S	0	1	S	0	2				
1	4	K	0	6	1	250	T	S	0	1	S	0	2				
1	5	K	0	6	2	250	T	S	0	1	S	0	2				
1	6	K	0	6	4	250	T	S	0	1	S	0	2				
1	7	K	0	6	5	250	T	S	0	1	S	0	2				
1	8	K	0	6	6	250	T	S	0	1	S	0	2				
1	9	K	0	6	9	250	T	S	0	1	S	0	2				
2	0	K	0	7	1	250	T	S	0	1	S	0	2				
2	1	K	0	7	3	250	T	S	0	1	S	0	2				
2	2	K	0	8	3	250	T	S	0	1	S	0	2				
2	3	K	0	8	4	250	T	S	0	1	S	0	2				
2	4	K	0	8	5	250	T	S	0	1	S	0	2				
2	5	K	0	8	6	250	T	S	0	1	S	0	2				
2	6	K	0	8	7	250	T	S	0	1	S	0	2				
2	7	K	0	8	8	250	T	S	0	1	S	0	2				
2	8	K	0	9	0	250	T	S	0	1	S	0	2				
2	9	K	0	9	1	250	T	S	0	1	S	0	2				
3	0	K	0	9	3	250	T	S	0	1	S	0	2				
3	1	K	0	9	4	250	T	S	0	1	S	0	2				
3	2	K	0	9	5	250	T	S	0	1	S	0	2				
3	3	K	0	9	6	250	T	S	0	1	S	0	2				
3	4	K	0	9	7	250	T	S	0	1	S	0	2				
3	5	K	0	9	8	250	T	S	0	1	S	0	2				
3	6	K	0	9	9	250	T	S	0	1	S	0	2				
3	6	K	1	0	0	250	T	S	0	1	S	0	2				
3	8	K	1	0	1	250	T	S	0	1	S	0	2				
3	9	K	1	0	2	250	T	S	0	1	S	0	2				

10. Description of Hazardous Waste (Continued; additional sheet)

Line Number	A. EPA Hazardous Waste No. (Enter code)				B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)									(2) PROCESS DESCRIPTION (If a code is not entered in D(1))
1	K	1	0	3	250	T	S	0	1	S	0	2				
2	K	1	0	4	250	T	S	0	1	S	0	2				
3	K	1	0	5	250	T	S	0	1	S	0	2				
4	K	1	0	6	250	T	S	0	1	S	0	2				
5	K	1	0	7	250	T	S	0	1	S	0	2				
6	K	1	0	8	250	T	S	0	1	S	0	2				
7	K	1	0	9	250	T	S	0	1	S	0	2				
8	K	1	1	0	250	T	S	0	1	S	0	2				
9	K	1	1	1	250	T	S	0	1	S	0	2				
10	K	1	1	2	250	T	S	0	1	S	0	2				
11	K	1	1	3	250	T	S	0	1	S	0	2				
12	K	1	1	4	250	T	S	0	1	S	0	2				
13	K	1	1	5	250	T	S	0	1	S	0	2				
14	K	1	1	6	250	T	S	0	1	S	0	2				
15	K	1	1	7	250	T	S	0	1	S	0	2				
16	K	1	1	8	250	T	S	0	1	S	0	2				
17	K	1	2	3	250	T	S	0	1	S	0	2				
18	K	1	2	4	250	T	S	0	1	S	0	2				
19	K	1	2	5	250	T	S	0	1	S	0	2				
20	K	1	2	6	250	T	S	0	1	S	0	2				
21	K	1	3	1	250	T	S	0	1	S	0	2				
22	K	1	3	2	250	T	S	0	1	S	0	2				
23	K	1	3	6	250	T	S	0	1	S	0	2				
24	K	1	4	1	250	T	S	0	1	S	0	2				
25	K	1	4	2	250	T	S	0	1	S	0	2				
26	K	1	4	3	250	T	S	0	1	S	0	2				
27	K	1	4	4	250	T	S	0	1	S	0	2				
28	K	1	4	5	250	T	S	0	1	S	0	2				
29	K	1	4	7	250	T	S	0	1	S	0	2				
30	K	1	4	8	250	T	S	0	1	S	0	2				
31	K	1	4	9	250	T	S	0	1	S	0	2				
32	K	1	5	0	250	T	S	0	1	S	0	2				
33	K	1	5	1	250	T	S	0	1	S	0	2				
34	K	1	5	6	250	T	S	0	1	S	0	2				
35	K	1	5	7	250	T	S	0	1	S	0	2				
36	K	1	5	8	250	T	S	0	1	S	0	2				
37	K	1	5	9	250	T	S	0	1	S	0	2				
38	K	1	6	0	250	T	S	0	1	S	0	2				
39	K	1	6	1	250	T	S	0	1	S	0	2				

10. Description of Hazardous Waste (Continued; additional sheet)

Line Number	A. Hazardous EPA Waste No. (Enter code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)	D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
1	K 1 6 9	250	T	S 0 1 S 0 2	
2	K 1 7 0	250	T	S 0 1 S 0 2	
3	K 1 7 1	250	T	S 0 1 S 0 2	
4	K 1 7 2	250	T	S 0 1 S 0 2	
5	K 1 7 4	250	T	S 0 1 S 0 2	
6	K 1 7 5	250	T	S 0 1 S 0 2	
7	K 1 8 1	250	T	S 0 1 S 0 2	
8					
9					
10					
11					
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10. Description of Hazardous Waste (Continued; additional sheet)

Line Number	A. Hazardous Waste No. (Enter code)				B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)									(2) PROCESS DESCRIPTION (If a code is not entered in D(1))
1	P	0	0	1	250	T	S	0	1	S	0	2				
2	P	0	0	2	250	T	S	0	1	S	0	2				
3	P	0	0	3	250	T	S	0	1	S	0	2				
4	P	0	0	4	250	T	S	0	1	S	0	2				
5	P	0	0	5	250	T	S	0	1	S	0	2				
6	P	0	0	6	250	T	S	0	1	S	0	2				
7	P	0	0	7	250	T	S	0	1	S	0	2				
8	P	0	0	8	250	T	S	0	1	S	0	2				
9	P	0	0	9	250	T	S	0	1	S	0	2				
10	P	0	1	0	250	T	S	0	1	S	0	2				
11	P	0	1	1	250	T	S	0	1	S	0	2				
12	P	0	1	2	250	T	S	0	1	S	0	2				
13	P	0	1	3	250	T	S	0	1	S	0	2				
14	P	0	1	4	250	T	S	0	1	S	0	2				
15	P	0	1	5	250	T	S	0	1	S	0	2				
16	P	0	1	6	250	T	S	0	1	S	0	2				
17	P	0	1	7	250	T	S	0	1	S	0	2				
18	P	0	1	8	250	T	S	0	1	S	0	2				
19	P	0	2	0	250	T	S	0	1	S	0	2				
20	P	0	2	1	250	T	S	0	1	S	0	2				
21	P	0	2	2	250	T	S	0	1	S	0	2				
22	P	0	2	3	250	T	S	0	1	S	0	2				
23	P	0	2	4	250	T	S	0	1	S	0	2				
24	P	0	2	6	250	T	S	0	1	S	0	2				
25	P	0	2	7	250	T	S	0	1	S	0	2				
26	P	0	2	8	250	T	S	0	1	S	0	2				
27	P	0	2	9	250	T	S	0	1	S	0	2				
28	P	0	3	0	250	T	S	0	1	S	0	2				
29	P	0	3	1	250	T	S	0	1	S	0	2				
30	P	0	3	3	250	T	S	0	1	S	0	2				
31	P	0	3	4	250	T	S	0	1	S	0	2				
32	P	0	3	6	250	T	S	0	1	S	0	2				
33	P	0	3	7	250	T	S	0	1	S	0	2				
34	P	0	3	8	250	T	S	0	1	S	0	2				
35	P	0	3	9	250	T	S	0	1	S	0	2				
36	P	0	4	0	250	T	S	0	1	S	0	2				
37	P	0	4	1	250	T	S	0	1	S	0	2				
38	P	0	4	2	250	T	S	0	1	S	0	2				
39	P	0	4	3	250	T	S	0	1	S	0	2				

10. Description of Hazardous Waste (Continued; additional sheet)

Line Number	A. Hazardous EPA Waste No. (Enter code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)									D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
1	P 0 4 4	250	T	S	0	1	S	0	2				
2	P 0 4 5	250	T	S	0	1	S	0	2				
3	P 0 4 6	250	T	S	0	1	S	0	2				
4	P 0 4 7	250	T	S	0	1	S	0	2				
5	P 0 4 8	250	T	S	0	1	S	0	2				
6	P 0 4 9	250	T	S	0	1	S	0	2				
7	P 0 5 0	250	T	S	0	1	S	0	2				
8	P 0 5 1	250	T	S	0	1	S	0	2				
9	P 0 5 4	250	T	S	0	1	S	0	2				
10	P 0 5 6	250	T	S	0	1	S	0	2				
11	P 0 5 7	250	T	S	0	1	S	0	2				
12	P 0 5 8	250	T	S	0	1	S	0	2				
13	P 0 5 9	250	T	S	0	1	S	0	2				
14	P 0 6 0	250	T	S	0	1	S	0	2				
15	P 0 6 2	250	T	S	0	1	S	0	2				
16	P 0 6 3	250	T	S	0	1	S	0	2				
17	P 0 6 4	250	T	S	0	1	S	0	2				
18	P 0 6 5	250	T	S	0	1	S	0	2				
19	P 0 6 6	250	T	S	0	1	S	0	2				
20	P 0 6 7	250	T	S	0	1	S	0	2				
21	P 0 6 8	250	T	S	0	1	S	0	2				
22	P 0 6 9	250	T	S	0	1	S	0	2				
23	P 0 7 0	250	T	S	0	1	S	0	2				
24	P 0 7 1	250	T	S	0	1	S	0	2				
25	P 0 7 2	250	T	S	0	1	S	0	2				
26	P 0 7 3	250	T	S	0	1	S	0	2				
27	P 0 7 4	250	T	S	0	1	S	0	2				
28	P 0 7 5	250	T	S	0	1	S	0	2				
29	P 0 7 6	250	T	S	0	1	S	0	2				
30	P 0 7 7	250	T	S	0	1	S	0	2				
31	P 0 7 8	250	T	S	0	1	S	0	2				
32	P 0 8 1	250	T	S	0	1	S	0	2				
33	P 0 8 2	250	T	S	0	1	S	0	2				
34	P 0 8 4	250	T	S	0	1	S	0	2				
35	P 0 8 5	250	T	S	0	1	S	0	2				
36	P 0 8 7	250	T	S	0	1	S	0	2				
37	P 0 8 8	250	T	S	0	1	S	0	2				
38	P 0 8 9	250	T	S	0	1	S	0	2				
39	P 0 9 2	250	T	S	0	1	S	0	2				

10. Description of Hazardous Waste (Continued; additional sheet)

Line Number	A. Hazardous Waste No. (Enter code)				B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)									(2) PROCESS DESCRIPTION (If a code is not entered in D(1))
1	P	0	9	3	250	T	S	0	1	S	0	2				
2	P	0	9	4	250	T	S	0	1	S	0	2				
3	P	0	9	5	250	T	S	0	1	S	0	2				
4	P	0	9	6	250	T	S	0	1	S	0	2				
5	P	0	9	7	250	T	S	0	1	S	0	2				
6	P	0	9	8	250	T	S	0	1	S	0	2				
7	P	0	9	9	250	T	S	0	1	S	0	2				
8	P	1	0	1	250	T	S	0	1	S	0	2				
9	P	1	0	2	250	T	S	0	1	S	0	2				
10	P	1	0	3	250	T	S	0	1	S	0	2				
11	P	1	0	4	250	T	S	0	1	S	0	2				
12	P	1	0	5	250	T	S	0	1	S	0	2				
13	P	1	0	6	250	T	S	0	1	S	0	2				
14	P	1	0	7	250	T	S	0	1	S	0	2				
15	P	1	0	8	250	T	S	0	1	S	0	2				
16	P	1	0	9	250	T	S	0	1	S	0	2				
17	P	1	1	0	250	T	S	0	1	S	0	2				
18	P	1	1	1	250	T	S	0	1	S	0	2				
19	P	1	1	2	250	T	S	0	1	S	0	2				
20	P	1	1	3	250	T	S	0	1	S	0	2				
21	P	1	1	4	250	T	S	0	1	S	0	2				
22	P	1	1	5	250	T	S	0	1	S	0	2				
23	P	1	1	6	250	T	S	0	1	S	0	2				
24	P	1	1	8	250	T	S	0	1	S	0	2				
25	P	1	1	9	250	T	S	0	1	S	0	2				
26	P	1	2	0	250	T	S	0	1	S	0	2				
27	P	1	2	1	250	T	S	0	1	S	0	2				
28	P	1	2	2	250	T	S	0	1	S	0	2				
29	P	1	2	3	250	T	S	0	1	S	0	2				
30	P	1	2	7	250	T	S	0	1	S	0	2				
31	P	1	2	8	250	T	S	0	1	S	0	2				
32	P	1	8	5	250	T	S	0	1	S	0	2				
33	P	1	8	8	250	T	S	0	1	S	0	2				
34	P	1	8	9	250	T	S	0	1	S	0	2				
35	P	1	9	0	250	T	S	0	1	S	0	2				
36	P	1	9	1	250	T	S	0	1	S	0	2				
37	P	1	9	2	250	T	S	0	1	S	0	2				
38	P	1	9	4	250	T	S	0	1	S	0	2				
39	P	1	9	6	250	T	S	0	1	S	0	2				

10. Description of Hazardous Waste (Continued; additional sheet)

Line Number	A. Hazardous Waste No. (Enter code)				B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)									D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
1	P	1	9	7	250	T	S	0	1	S	0	2				
2	P	1	9	8	250	T	S	0	1	S	0	2				
3	P	1	9	9	250	T	S	0	1	S	0	2				
4	P	2	0	1	250	T	S	0	1	S	0	2				
5	P	2	0	2	250	T	S	0	1	S	0	2				
6	P	2	0	3	250	T	S	0	1	S	0	2				
7	P	2	0	4	250	T	S	0	1	S	0	2				
8	P	2	0	5	250	T	S	0	1	S	0	2				
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10. Description of Hazardous Waste (Continued; additional sheet)

Line Number	A. Hazardous Waste EPA No. (Enter code)				B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)									(2) PROCESS DESCRIPTION (If a code is not entered in D(1))
1	U	0	0	1	250	T	S	0	1	S	0	2				
2	U	0	0	2	250	T	S	0	1	S	0	2				
3	U	0	0	3	250	T	S	0	1	S	0	2				
4	U	0	0	4	250	T	S	0	1	S	0	2				
5	U	0	0	5	250	T	S	0	1	S	0	2				
6	U	0	0	6	250	T	S	0	1	S	0	2				
7	U	0	0	7	250	T	S	0	1	S	0	2				
8	U	0	0	8	250	T	S	0	1	S	0	2				
9	U	0	0	9	250	T	S	0	1	S	0	2				
10	U	0	1	0	250	T	S	0	1	S	0	2				
11	U	0	1	1	250	T	S	0	1	S	0	2				
12	U	0	1	2	250	T	S	0	1	S	0	2				
13	U	0	1	4	250	T	S	0	1	S	0	2				
14	U	0	1	5	250	T	S	0	1	S	0	2				
15	U	0	1	6	250	T	S	0	1	S	0	2				
16	U	0	1	7	250	T	S	0	1	S	0	2				
17	U	0	1	8	250	T	S	0	1	S	0	2				
18	U	0	1	9	250	T	S	0	1	S	0	2				
19	U	0	2	0	250	T	S	0	1	S	0	2				
20	U	0	2	1	250	T	S	0	1	S	0	2				
21	U	0	2	2	250	T	S	0	1	S	0	2				
22	U	0	2	3	250	T	S	0	1	S	0	2				
23	U	0	2	4	250	T	S	0	1	S	0	2				
24	U	0	2	5	250	T	S	0	1	S	0	2				
25	U	0	2	6	250	T	S	0	1	S	0	2				
26	U	0	2	7	250	T	S	0	1	S	0	2				
27	U	0	2	8	250	T	S	0	1	S	0	2				
28	U	0	2	9	250	T	S	0	1	S	0	2				
29	U	0	3	0	250	T	S	0	1	S	0	2				
30	U	0	3	1	250	T	S	0	1	S	0	2				
31	U	0	3	2	250	T	S	0	1	S	0	2				
32	U	0	3	3	250	T	S	0	1	S	0	2				
33	U	0	3	4	250	T	S	0	1	S	0	2				
34	U	0	3	5	250	T	S	0	1	S	0	2				
35	U	0	3	6	250	T	S	0	1	S	0	2				
36	U	0	3	7	250	T	S	0	1	S	0	2				
37	U	0	3	8	250	T	S	0	1	S	0	2				
38	U	0	3	9	250	T	S	0	1	S	0	2				
39	U	0	4	1	250	T	S	0	1	S	0	2				

10. Description of Hazardous Waste (Continued; additional sheet)

Line Number	A. Hazardous EPA Waste No. (Enter code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)	D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
1	U 0 4 2	250	T	S 0 1 S 0 2	
2	U 0 4 3	250	T	S 0 1 S 0 2	
3	U 0 4 4	250	T	S 0 1 S 0 2	
4	U 0 4 5	250	T	S 0 1 S 0 2	
5	U 0 4 6	250	T	S 0 1 S 0 2	
6	U 0 4 7	250	T	S 0 1 S 0 2	
7	U 0 4 8	250	T	S 0 1 S 0 2	
8	U 0 4 9	250	T	S 0 1 S 0 2	
9	U 0 5 0	250	T	S 0 1 S 0 2	
10	U 0 5 1	250	T	S 0 1 S 0 2	
11	U 0 5 2	250	T	S 0 1 S 0 2	
12	U 0 5 3	250	T	S 0 1 S 0 2	
13	U 0 5 5	250	T	S 0 1 S 0 2	
14	U 0 5 6	250	T	S 0 1 S 0 2	
15	U 0 5 7	250	T	S 0 1 S 0 2	
16	U 0 5 8	250	T	S 0 1 S 0 2	
17	U 0 5 9	250	T	S 0 1 S 0 2	
18	U 0 6 0	250	T	S 0 1 S 0 2	
19	U 0 6 1	250	T	S 0 1 S 0 2	
20	U 0 6 2	250	T	S 0 1 S 0 2	
21	U 0 6 3	250	T	S 0 1 S 0 2	
22	U 0 6 4	250	T	S 0 1 S 0 2	
23	U 0 6 6	250	T	S 0 1 S 0 2	
24	U 0 6 7	250	T	S 0 1 S 0 2	
25	U 0 6 8	250	T	S 0 1 S 0 2	
26	U 0 6 9	250	T	S 0 1 S 0 2	
27	U 0 7 0	250	T	S 0 1 S 0 2	
28	U 0 7 1	250	T	S 0 1 S 0 2	
29	U 0 7 2	250	T	S 0 1 S 0 2	
30	U 0 7 3	250	T	S 0 1 S 0 2	
31	U 0 7 4	250	T	S 0 1 S 0 2	
32	U 0 7 5	250	T	S 0 1 S 0 2	
33	U 0 7 6	250	T	S 0 1 S 0 2	
34	U 0 7 7	250	T	S 0 1 S 0 2	
35	U 0 7 8	250	T	S 0 1 S 0 2	
36	U 0 7 9	250	T	S 0 1 S 0 2	
37	U 0 8 0	250	T	S 0 1 S 0 2	
38	U 0 8 1	250	T	S 0 1 S 0 2	
39	U 0 8 2	250	T	S 0 1 S 0 2	

10. Description of Hazardous Waste (Continued; additional sheet)

Line Number	A. Hazardous Waste No. (Enter code) EPA				B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)									(2) PROCESS DESCRIPTION (If a code is not entered in D(1))
1	U	0	8	3	250	T	S	0	1	S	0	2				
2	U	0	8	4	250	T	S	0	1	S	0	2				
3	U	0	8	5	250	T	S	0	1	S	0	2				
4	U	0	8	6	250	T	S	0	1	S	0	2				
5	U	0	8	7	250	T	S	0	1	S	0	2				
6	U	0	8	8	250	T	S	0	1	S	0	2				
7	U	0	8	9	250	T	S	0	1	S	0	2				
8	U	0	9	0	250	T	S	0	1	S	0	2				
9	U	0	9	1	250	T	S	0	1	S	0	2				
10	U	0	9	2	250	T	S	0	1	S	0	2				
11	U	0	9	3	250	T	S	0	1	S	0	2				
12	U	0	9	4	250	T	S	0	1	S	0	2				
13	U	0	9	5	250	T	S	0	1	S	0	2				
14	U	0	9	6	250	T	S	0	1	S	0	2				
15	U	0	9	7	250	T	S	0	1	S	0	2				
16	U	0	9	8	250	T	S	0	1	S	0	2				
17	U	0	9	9	250	T	S	0	1	S	0	2				
18	U	1	0	1	250	T	S	0	1	S	0	2				
19	U	1	0	2	250	T	S	0	1	S	0	2				
20	U	1	0	3	250	T	S	0	1	S	0	2				
21	U	1	0	5	250	T	S	0	1	S	0	2				
22	U	1	0	6	250	T	S	0	1	S	0	2				
23	U	1	0	7	250	T	S	0	1	S	0	2				
24	U	1	0	8	250	T	S	0	1	S	0	2				
25	U	1	0	9	250	T	S	0	1	S	0	2				
26	U	1	1	0	250	T	S	0	1	S	0	2				
27	U	1	1	1	250	T	S	0	1	S	0	2				
28	U	1	1	2	250	T	S	0	1	S	0	2				
29	U	1	1	3	250	T	S	0	1	S	0	2				
30	U	1	1	4	250	T	S	0	1	S	0	2				
31	U	1	1	5	250	T	S	0	1	S	0	2				
32	U	1	1	6	250	T	S	0	1	S	0	2				
33	U	1	1	7	250	T	S	0	1	S	0	2				
34	U	1	1	8	250	T	S	0	1	S	0	2				
35	U	1	1	9	250	T	S	0	1	S	0	2				
36	U	1	2	0	250	T	S	0	1	S	0	2				
37	U	1	2	1	250	T	S	0	1	S	0	2				
38	U	1	2	2	250	T	S	0	1	S	0	2				
39	U	1	2	3	250	T	S	0	1	S	0	2				

10. Description of Hazardous Waste (Continued; additional sheet)

Line Number	A. EPA Hazardous Waste No. (Enter code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)									D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
1	U 1 2 4	250	T	S	0	1	S	0	2				
2	U 1 2 5	250	T	S	0	1	S	0	2				
3	U 1 2 6	250	T	S	0	1	S	0	2				
4	U 1 2 7	250	T	S	0	1	S	0	2				
5	U 1 2 8	250	T	S	0	1	S	0	2				
6	U 1 2 9	250	T	S	0	1	S	0	2				
7	U 1 3 0	250	T	S	0	1	S	0	2				
8	U 1 3 1	250	T	S	0	1	S	0	2				
9	U 1 3 2	250	T	S	0	1	S	0	2				
10	U 1 3 3	250	T	S	0	1	S	0	2				
11	U 1 3 4	250	T	S	0	1	S	0	2				
12	U 1 3 5	250	T	S	0	1	S	0	2				
13	U 1 3 6	250	T	S	0	1	S	0	2				
14	U 1 3 7	250	T	S	0	1	S	0	2				
15	U 1 3 8	250	T	S	0	1	S	0	2				
16	U 1 4 0	250	T	S	0	1	S	0	2				
17	U 1 4 1	250	T	S	0	1	S	0	2				
18	U 1 4 2	250	T	S	0	1	S	0	2				
19	U 1 4 3	250	T	S	0	1	S	0	2				
20	U 1 4 4	250	T	S	0	1	S	0	2				
21	U 1 4 5	250	T	S	0	1	S	0	2				
22	U 1 4 6	250	T	S	0	1	S	0	2				
23	U 1 4 7	250	T	S	0	1	S	0	2				
24	U 1 4 8	250	T	S	0	1	S	0	2				
25	U 1 4 9	250	T	S	0	1	S	0	2				
26	U 1 5 0	250	T	S	0	1	S	0	2				
27	U 1 5 1	250	T	S	0	1	S	0	2				
28	U 1 5 2	250	T	S	0	1	S	0	2				
29	U 1 5 3	250	T	S	0	1	S	0	2				
30	U 1 5 4	250	T	S	0	1	S	0	2				
31	U 1 5 5	250	T	S	0	1	S	0	2				
32	U 1 5 6	250	T	S	0	1	S	0	2				
33	U 1 5 7	250	T	S	0	1	S	0	2				
34	U 1 5 8	250	T	S	0	1	S	0	2				
35	U 1 5 9	250	T	S	0	1	S	0	2				
36	U 1 6 0	250	T	S	0	1	S	0	2				
37	U 1 6 1	250	T	S	0	1	S	0	2				
38	U 1 6 2	250	T	S	0	1	S	0	2				
39	U 1 6 3	250	T	S	0	1	S	0	2				

10. Description of Hazardous Waste (Continued; additional sheet)

Line Number	A. Hazardous Waste No. (Enter code) EPA	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)									(2) PROCESS DESCRIPTION (If a code is not entered in D(1))
1	U 1 6 4	250	T	S	0	1	S	0	2				
2	U 1 6 5	250	T	S	0	1	S	0	2				
3	U 1 6 6	250	T	S	0	1	S	0	2				
4	U 1 6 7	250	T	S	0	1	S	0	2				
5	U 1 6 8	250	T	S	0	1	S	0	2				
6	U 1 6 9	250	T	S	0	1	S	0	2				
7	U 1 7 0	250	T	S	0	1	S	0	2				
8	U 1 7 1	250	T	S	0	1	S	0	2				
9	U 1 7 2	250	T	S	0	1	S	0	2				
10	U 1 7 3	250	T	S	0	1	S	0	2				
11	U 1 7 4	250	T	S	0	1	S	0	2				
12	U 1 7 6	250	T	S	0	1	S	0	2				
13	U 1 7 7	250	T	S	0	1	S	0	2				
14	U 1 7 8	250	T	S	0	1	S	0	2				
15	U 1 7 9	250	T	S	0	1	S	0	2				
16	U 1 8 0	250	T	S	0	1	S	0	2				
17	U 1 8 1	250	T	S	0	1	S	0	2				
18	U 1 8 2	250	T	S	0	1	S	0	2				
29	U 1 8 3	250	T	S	0	1	S	0	2				
20	U 1 8 4	250	T	S	0	1	S	0	2				
21	U 1 8 5	250	T	S	0	1	S	0	2				
22	U 1 8 6	250	T	S	0	1	S	0	2				
23	U 1 8 7	250	T	S	0	1	S	0	2				
24	U 1 8 8	250	T	S	0	1	S	0	2				
25	U 1 8 9	250	T	S	0	1	S	0	2				
26	U 1 9 0	250	T	S	0	1	S	0	2				
27	U 1 9 1	250	T	S	0	1	S	0	2				
28	U 1 9 2	250	T	S	0	1	S	0	2				
39	U 1 9 3	250	T	S	0	1	S	0	2				
30	U 1 9 4	250	T	S	0	1	S	0	2				
31	U 1 9 6	250	T	S	0	1	S	0	2				
32	U 1 9 7	250	T	S	0	1	S	0	2				
33	U 2 0 0	250	T	S	0	1	S	0	2				
34	U 2 0 1	250	T	S	0	1	S	0	2				
35	U 2 0 2	250	T	S	0	1	S	0	2				
36	U 2 0 3	250	T	S	0	1	S	0	2				
37	U 2 0 4	250	T	S	0	1	S	0	2				
38	U 2 0 5	250	T	S	0	1	S	0	2				
39	U 2 0 6	250	T	S	0	1	S	0	2				

10. Description of Hazardous Waste (Continued; additional sheet)

Line Number	A. Hazardous Waste No. (Enter code) EPA				B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)									(2) PROCESS DESCRIPTION (If a code is not entered in D(1))
1	U	2	0	7	250	T	S	0	1	S	0	2				
2	U	2	0	8	250	T	S	0	1	S	0	2				
3	U	2	0	9	250	T	S	0	1	S	0	2				
4	U	2	1	0	250	T	S	0	1	S	0	2				
5	U	2	1	1	250	T	S	0	1	S	0	2				
6	U	2	1	3	250	T	S	0	1	S	0	2				
7	U	2	1	4	250	T	S	0	1	S	0	2				
8	U	2	1	5	250	T	S	0	1	S	0	2				
9	U	2	1	6	250	T	S	0	1	S	0	2				
10	U	2	1	7	250	T	S	0	1	S	0	2				
11	U	2	1	8	250	T	S	0	1	S	0	2				
12	U	2	1	9	250	T	S	0	1	S	0	2				
13	U	2	2	0	250	T	S	0	1	S	0	2				
14	U	2	2	1	250	T	S	0	1	S	0	2				
15	U	2	2	2	250	T	S	0	1	S	0	2				
16	U	2	2	3	250	T	S	0	1	S	0	2				
17	U	2	2	5	250	T	S	0	1	S	0	2				
18	U	2	2	6	250	T	S	0	1	S	0	2				
19	U	2	2	7	250	T	S	0	1	S	0	2				
20	U	2	2	8	250	T	S	0	1	S	0	2				
21	U	2	3	4	250	T	S	0	1	S	0	2				
22	U	2	3	5	250	T	S	0	1	S	0	2				
23	U	2	3	6	250	T	S	0	1	S	0	2				
24	U	2	3	7	250	T	S	0	1	S	0	2				
25	U	2	3	8	250	T	S	0	1	S	0	2				
26	U	2	3	9	250	T	S	0	1	S	0	2				
27	U	2	4	0	250	T	S	0	1	S	0	2				
28	U	2	4	3	250	T	S	0	1	S	0	2				
29	U	2	4	4	250	T	S	0	1	S	0	2				
30	U	2	4	6	250	T	S	0	1	S	0	2				
31	U	2	4	7	250	T	S	0	1	S	0	2				
32	U	2	4	8	250	T	S	0	1	S	0	2				
33	U	2	4	9	250	T	S	0	1	S	0	2				
34	U	2	7	1	250	T	S	0	1	S	0	2				
35	U	2	7	7	250	T	S	0	1	S	0	2				
36	U	2	7	8	250	T	S	0	1	S	0	2				
37	U	2	7	9	250	T	S	0	1	S	0	2				
38	U	2	8	0	250	T	S	0	1	S	0	2				
39	U	3	2	8	250	T	S	0	1	S	0	2				

10. Description of Hazardous Waste (Continued; additional sheet)

Line Number		A. EPA Hazardous Waste No. (Enter code)				B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)									D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
	1	U	3	5	3	250	T	S	0	1	S	0	2				
	2	U	3	5	9	250	T	S	0	1	S	0	2				
	3	U	3	6	4	250	T	S	0	1	S	0	2				
	4	U	3	6	5	250	T	S	0	1	S	0	2				
	5	U	3	6	6	250	T	S	0	1	S	0	2				
	6	U	3	6	7	250	T	S	0	1	S	0	2				
	7	U	3	7	2	250	T	S	0	1	S	0	2				
	8	U	3	7	3	250	T	S	0	1	S	0	2				
	9	U	3	7	5	250	T	S	0	1	S	0	2				
1	0	U	3	7	6	250	T	S	0	1	S	0	2				
1	1	U	3	7	7	250	T	S	0	1	S	0	2				
1	2	U	3	7	8	250	T	S	0	1	S	0	2				
1	3	U	3	7	9	250	T	S	0	1	S	0	2				
1	4	U	3	8	1	250	T	S	0	1	S	0	2				
1	5	U	3	8	2	250	T	S	0	1	S	0	2				
1	6	U	3	8	3	250	T	S	0	1	S	0	2				
1	7	U	3	8	4	250	T	S	0	1	S	0	2				
1	8	U	3	8	5	250	T	S	0	1	S	0	2				
1	9	U	3	8	6	250	T	S	0	1	S	0	2				
2	0	U	3	8	7	250	T	S	0	1	S	0	2				
2	1	U	3	8	9	250	T	S	0	1	S	0	2				
2	2	U	3	9	0	250	T	S	0	1	S	0	2				
2	3	U	3	9	1	250	T	S	0	1	S	0	2				
2	4	U	3	9	2	250	T	S	0	1	S	0	2				
2	5	U	3	9	3	250	T	S	0	1	S	0	2				
2	6	U	3	9	4	250	T	S	0	1	S	0	2				
2	7	U	3	9	5	250	T	S	0	1	S	0	2				
2	8	U	3	9	6	250	T	S	0	1	S	0	2				
2	9	U	4	0	0	250	T	S	0	1	S	0	2				
3	0	U	4	0	1	250	T	S	0	1	S	0	2				
3	1	U	4	0	2	250	T	S	0	1	S	0	2				
3	2	U	4	0	3	250	T	S	0	1	S	0	2				
3	3	U	4	0	4	250	T	S	0	1	S	0	2				
3	4	U	4	0	7	250	T	S	0	1	S	0	2				
3	5	U	4	0	9	250	T	S	0	1	S	0	2				
3	6	U	4	1	0	250	T	S	0	1	S	0	2				
3	7	U	4	1	1	250	T	S	0	1	S	0	2				
3	8																
3	9																

11. Map (See instructions on pages 19)
Attach to this application a topographic map, or other equivalent map, of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers and other surface water bodies in this map area. See instructions for precise requirements.
12. Facility Drawing (See instructions on page 20)
All existing facilities must include a scale drawing of the facility (see instructions for more detail).
13. Photographs (See instructions on page 20)
All existing facilities must include photographs (aerial or ground-level) that clearly delineate all existing structures; existing storage, treatment and disposal areas; and sites of future storage, treatment or disposal areas (see instructions for more detail).
14. Comments (See instructions on page 20)
There are no other permits or construction approvals received or applied for under any other federal program per 40 CFR 270.13(k).

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List of Referenced Drawings ii

Acronym Table ii

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Acronym Table

Clean Harbors Kansas, LLC (CHK)
United States Environmental Protection Agency (USEPA)
Resource Conservation and Recovery Act (RCRA)
Kansas Administrative Regulations (KAR)
Code of Federal Regulations (CFR)
Mean Sea Level (MSL)
National Oceanic and Atmospheric Administration (NOAA)
Average Daily Traffic (ADT)

B-1 Introduction:

The Clean Harbors Kansas, LLC facility is located in Wichita, Kansas. The facility stores and, treats RCRA hazardous and nonhazardous wastes. Clean Harbors Kansas, LLC also stores, and otherwise manages RCRA hazardous and nonhazardous wastes sludges, solids, and liquids for subsequent shipment to other United States Environmental Protection Agency (USEPA) permitted (or interim status) facilities for distillation, beneficial reuse, or disposal. Hazardous waste management at the facility includes, but is not limited to, fuel blending for energy recovery, accumulation of materials for reclamation, accumulation for hazardous waste landfill disposal, accumulation of low BTU liquids for deepwell injection, repackaging for incineration, and storage of industrial waste waters for subsequent discharge. Storage occurs in both containers and tanks. The facility operates under the requirements of the Resource Conservation and Recovery Act (RCRA) and the Kansas Hazardous Waste Management Act as set forth in Kansas Administrative Regulations (KAR), Title 28, Article 31. The KAR incorporate, with few additions, the RCRA regulations contained in 40 CFR 260 through 270. Therefore, this section will refer only to the federal regulations.

This section discusses facility location, location information, facility layout, traffic information, and general facility process unit description as required by the Code of Federal Regulations

(CFR); i.e., 40 CFR 270.14(b)(1), (10), (11) and (19). A map showing topographic detail as required by 40 CFR 270.14(b)(19) is also presented in this section.

A topographic map showing well locations required under 40 CFR 270.14(c)(3) is included in this section as map B-2. More specific information on the facility design and operation is presented in subsequent application sections C through N.

B-2 Facility Location:

Figure B.1, Site Location Map (Figure B-1, Updated April 2008) shows the location of the facility; the facility is located at 2549 North New York Avenue in Wichita, Kansas. This address is in the Northeast quarter of the Southeast quarter of Section 4, Township 27 South, Range 1 East. The facility is located in Sedgwick County (Sedgwick County population 403,662, 1990 census). The facility is located in an industrial area of Wichita; the population of Wichita was approximately 360,410 (estimated) as of 2006 (Greater Wichita Economic Development Coalition[1]).

The facility and the surrounding area are shown on Figure B.2, Topographic Map (Figure B-2, Updated April 2008); facility information is superimposed on a topographic base map with contour intervals of two (2) feet as required by 40 CFR 270.14(b)(19). The map/drawing is based on a topographic map generated in April of 2008 and includes areas within 1,000 feet of the facility. The facility is located approximately at north latitude 37°43’49" and west longitude 97°19’11”. The area that includes the process plant area and hazardous waste storage areas for tanks and containers make up the active portion of the facility. The facility boundary, a distance of 2,640 feet around the facility boundary and the active portion of the facility are shown on Figure B.2.

Privately owned land abuts the facility on three sides: Union Pacific Railroad and Overnite Transportation own property to the north; the remains of Derby Refinery are located south of the facility; and land owned by Derby refinery adjoins the site to the west. New York Avenue is located to the east of the facility.

The administration and hazardous waste management areas as well as general facility layout, access control, and sewer lines are shown on Figure B.3, Facility Layout (Figure B-3, Wichita Facility Site Plan, Updated April 2008). The hazardous waste storage buildings and associated loading areas are shown on Figure B.4, Hazardous Waste Management Areas (Figure B-4, Updated 2008 Hazardous Waste Management Areas). The drawings generally show access roads and internal roadways, administration and process plant buildings, and hazardous waste management locations. The storage of ignitable and reactive wastes on-site is in compliance with the equipment buffer zone requirements as set forth in 40 CFR 264.176, and 264.198(b). Specifics regarding container management and tank systems are presented in Sections D, E, and M (Use and Management of Containers, Tank Systems and Other Regulated Units).

Figure B.1. Site Location Map

Figure B.2. Facility Map

Figure B.3. Facility Layout

Figure B.3A Stormwater flow

Figure B.4. Hazardous Waste Management Areas

B-3 Location Information:

B-3a Physiography, Geology and Land Use:

Sedgwick County is situated in the Arkansas River Lowlands section of the Central Lowlands physiographic province[2]. The facility is located in an area of very low topographic relief; elevation on site is about 1315 feet above MSL. The extreme flatness of the broad Arkansas River valley and gently rolling slopes provide the low relief of the vicinity.

In summary, the soil is developed on recent and old alluvial sediments of the Elandco and Tabler formations[3]. These sandy and clayey alluvial deposits are underlain by Wellington shale. Approximately 10 feet of alluvial clay with fine sand overlies approximately 30 feet of alluvial sand. Ground water source in the area is from permeable sands in the alluvial deposits; this ground water aquifer has transmissivities up to 250,000 gallons per day per foot. The water table in the vicinity, as reported in the RCRA Facility Investigation (RFI) Report, Clean Harbors Kansas, LLC (January 20, 2003), is approximately 1300 feet above Mean Sea Level MSL)[4].

The surrounding land is generally used for industrial purposes: land use to the south and west is by Derby Refinery, to the north by Union Pacific Railroad and Overnite Transportation, with

highway I-135 to the east.

Past land use of the facility property has included light to medium industrial activities since approximately 1940. The majority of precipitation occurs during the period between April and September. The average precipitation is thirty (30.38) inches per year; the average seasonal snowfall is fifteen (16.5) inches. The heaviest one day rainfall recorded for Wichita was 7.99 inches on September 6-7, 1911 (National Weather Service, Weather forecast Office, Wichita, KS: www.crh.noaa.gov)[6]. The 25-year, 24-hour precipitation event is 6.2 inches as determined from "Technical Paper No. 40, Rainfall Frequency Atlas of the United States" (US Dept. of Commerce)[5].

B-3b **Climate:**

Wichita, Kansas is located in the Central Great Plains where a wide variety of weather conditions may occur year round. Mixing of warm, moist, Gulf coast air masses with cold, dry Arctic air masses can result in severe storms and rapid changes in weather conditions. Climatological information is based on National Oceanic and Atmospheric Administration (NOAA) data. Temperature extremes from minus 22 degrees to 114 degrees Fahrenheit have been recorded in Wichita; however, temperatures below zero occur much less frequently than temperatures above

90 degrees Fahrenheit. The average relative humidity ranges from 55 percent in the afternoon to 80 percent at dawn. The average daily maximum temperature in summer is ninety-one degrees (91°F). The highest recorded temperature was 114°F (July 1954). The average daily minimum temperature in winter is twenty-three degrees (23°F). The lowest temperature on record was minus twenty-one degrees (-21°F) in February of 1982[6].

Prevailing winds are from the south; the most severe thunderstorms occur mainly during the spring and early summer. The highest, one-minute observed wind speed recorded was forty-eight (48) mph[5]. Figure B.5 consists of twelve (120 monthly wind roses for the Wichita area (Monthly Surface Wind Rose, Wichita Mid-Continent Airport) shows the prevailing wind direction and speed measured in Wichita, Kansas.

B-3c <u>Surface Water Drainage:</u>

Surface water drainage is in two directions; most surface water on the site drains to the east branch of Chisholm Creek located east of the facility, although some surface water drains to the southwest into Chisholm Creek. The east branch of Chisholm Creek is the closest surface water body to the site and is located about 150 feet east of the property. The west fork of Chisholm Creek is located about 2000 feet west of the site. These streams discharge into the Arkansas River about three miles south of the site. Surface water flow is shown on Figure B-3A, (Figure-3A, Facility Site Plan, Stormwater Flow Directions).

B-3d **Floodplain: 40 CFR 270.14(b)(11)(iii)**

A Flood Hazard Boundary Map prepared by the US Department of Housing and Urban Development, Federal Insurance Administration, for Sedgwick County, Kansas was reviewed pursuant to 40 CFR 270.14(b)(11)(iii). The facility boundary is not within the 100 year floodplain. Therefore, the requirements of 40 CFR 264.18(b) are not applicable. Please refer to Figure B-3A FEMA Floodplain regions.

B-3e **Seismicity: 40 CFR 270.14(b)(11)(i)and(ii)**

The CHK facility is located in Sedgwick County, Kansas. No areas in Kansas are listed in Appendix VI of 40 CFR, Part 264, as needing seismic consideration. The facility is not located in a seismic hazard zone, therefore, the requirements of 40 CFR 264.18(a) are not applicable.

Figure B.5. Annual Surface Wind Rose

B-4 Traffic Information: 40 CFR 270.14(b)(10)

B-4a Off-site Traffic:

Shipments of materials will be by truck or rail. It is expected that most truck shipments will access the facility from interstate highway I-135 using 21st Street North and New York Avenue. To handle rail shipments, a Union Pacific railroad siding is located along the north side of the facility. Figure B.1, Site Location Map (Figure B-1, Updated April 2008), shows these access routes. Local intersections are controlled by stop signs, and a traffic signal at I-135 and 21st Street.

Highway I-135 is a divided, six-lane, two-way, concrete interstate highway. The Average Daily Traffic (ADT) recorded by the Transportation Planning Division of the Kansas State Highway Department (KSHD) for this stretch of I-135 in 2007 was 86,200 vehicles south of the 21st Street interchange. Twenty-first (21st) Street is generally a four-lane, two-way thoroughfare; however, the roadway is split into a two-lane, one-way pair at the intersection with New York Avenue. The City of Wichita Traffic Engineers Office recorded in 2006, an ADT of 22,247 vehicles on 21st Street to the east of the I-135 interchange. New York Avenue is a low volume, industrial roadway consisting of two-lane, two-way traffic; no ADT is recorded.

Truck traffic into the facility may average up to approximately twenty (20) shipments of

hazardous waste per week. Typical trucks accessing the facility will be tractor trailer rigs and straight trucks. The overall level of service on local streets and highways is not anticipated to be affected by facility traffic.

The facility is located in an industrial area of Wichita. The existing local streets and highways currently accommodate heavy vehicles carrying the maximum legal load.

B-4b **On-site Traffic and Load-Bearing Capacity:**

Enclosed tractor trailers, tanker trucks, dump trucks, dump trailers, or intermodal transport container trailers, etc., may be used to transport materials to, from, and within the facility. The roadway foundation is adequate to accommodate traffic consisting of truck and trailer combination vehicles. No bridges exist on-site.

The most active areas on-site are surfaced to minimize the generation of dust and reduce maintenance requirements. Where surfaced, roadways are composed of six inch, reinforced concrete construction with stabilized sub-soil. All other traffic areas are provided with surface gravel and are maintained as needed.

Vehicular traffic into the plant is controlled through gate entrances. The active portion of the

facility is divided by a public right-of-way. On-site traffic, between the main portion of the facility and Buildings I and J, includes crossing the public right-of-way at a ninety degree angle. On-site traffic routing, alignment of facility roadways, and internal traffic patterns are shown on (Figure B-3, Wichita Facility Site Plan, Updated April 2008). Loading and unloading areas are shown on Figure B.4, Hazardous Waste Management Areas (Figure B-4, Hazardous Waste Management Areas).

B-5 Facility Security: 264.14 and 122.25(a)(4)

The facility security system is discussed in detail in Section G, Procedures to Prevent Hazards. Where required for security, the CHK facility is surrounded by a six foot chain link fence with gates (Figure B-3, Wichita Facility Site Plan, Updated April 2008). Personnel and vehicle access is controlled by an electronic system which is designed to prevent the unknowing entry, and minimize the unauthorized entry, of persons or livestock onto active portions of the facility. This system may be shut down for maintenance operations at which time security will be provided by facility personnel or locked gates. Note that fencing is not provided where buildings and building entrances provide a barrier to unauthorized entry. To meet the security requirements of 40 CFR 264.14 in areas without fencing or building walls/doors, 24 hour surveillance will be provided when required. In addition, employees are instructed to question and direct unauthorized visitors to the office should they try to enter the active portion of the facility.

Warning signs as required by 40 CFR 264.14 have been placed at each entrance and along the barrier to unauthorized entry surrounding the facility.

Inspection of the fence line and signs are included in the facility inspection plan (See Section F, Inspection Plan for additional details).

B-6 Facility Process Unit Description:

As required in 40 CFR 270.14(b)(1), the following is a general overview of the facility; additional details are provided in Section D (Use and Management of Containers), Section E (Tank Systems), and Section L (Solid Waste Management Units and Corrective Action). The hazardous waste management units at the facility include storage and treatment tanks, container management units, waste loading and unloading facilities and waste processing facilities. Typical sources of waste include automotive manufacturers, tire manufacturers, plating facilities, aircraft manufacturers, as well as the food processing, pharmaceutical, oil industries automotive repair shops, industrial maintenance operations, and other industrial sources

Prior to acceptance of a waste stream, the facility requires the generator to supply specific information about the waste. After a review of information supplied by the generator has been deemed completed and prior to waste receipt at the facility, CHK personnel determine the proposed management practices for the waste at the facility. Generators are then advised that their waste stream may be accepted or that management of the waste stream at CHK has been denied. The properties of incoming waste streams (i.e., shipments) from the generator are compared against the information supplied prior to shipment. For further details regarding waste receipt and analysis, refer to Section C (Waste Characterization).

Final and partial closure plans for the CHK facility are provided in Section J (Closure Plan).

CHK maintains financial assurance for facility closure and insurance; details are described in Section K (Financial Requirements). Equipment (in hazardous waste service) removed for replacement during maintenance operations will be decontaminated and managed according to procedures similar to closure procedures as delineated in Section J.

B-6a Process Area Description:

A variety of hazardous waste management units are utilized for storage, treatment or to otherwise manage wastes at the CHK facility; e.g., container management units and tank systems. Section A (Part A Permit Application) lists storage buildings, and tanks utilized by Clean Harbors Kansas, LLC. Additional buildings, such as an administration building, personnel change rooms, laboratory, and etc., are also provided to support the various unit operations. Refer to Figure B.3, Facility Site Plan (Figure B-3, Wichita Facility Site Plan, Updated April 2008) for the general locations of these buildings.

The general locations of waste management areas are depicted on Figure B.4, Hazardous Waste Management Areas (Figure B-4, Hazardous Waste management Areas); flow of wastes between units is addressed in Section N (Air Emissions). A general description of tank, and container processing systems follows. Detailed discussions of these systems are provided in Sections D (Use and Management of Containers), and E (Tank Systems).

Hazardous waste storage, treatment, and processing occur in three storage areas at the CHK facility. Hazardous waste is managed in tanks, and containers in the Processing Area, the Drum Dock and Building C. An overview regarding these activities is presented in the following paragraphs.

B-6b Container Management Systems:

Three (3) buildings at the facility are designated primarily for container management. Permitted storage capacities for each building are designated in Addendum B to the Part A Permit Application (Section A). Container management areas will be operated such that the stored volume will not exceed the permitted capacity. The volume of waste stored in any of the container storage buildings is dictated by containment volumes and operational requirements. Specifics regarding container management at the facility are discussed in Section D, Container Management.

B-6c **Tank Systems:**

A variety of tank systems are used at the CHK facility. Tanks are used to store and/or treat liquids, solids, and sludge. The tank systems presently in use or planned are located in the Process Building, and are identified and discussed in detail in Section E, Tank Systems.

B-6d **Other Regulated Units:**

It is Clean Harbors Kansas, LLC's intention to remove the miscellaneous process units formerly described in this section from the RCRA Permit.

B-6e **Non-regulated Units and Activities:**

In addition to hazardous wastes regulated under 40 CFR 264, other industrial wastes as well as selected household wastes are managed at the CHK facility. These wastes include, but are not limited to, used oil destined for burning for energy recovery (regulated under 40 CFR 266 Subpart E), synthetic oil reprocessing, industrial coolants and waste waters.

Processing equipment on-site as described in the Part A application may be utilized for management of non-hazardous waste. The procedures used for decontaminating equipment between hazardous waste service and subsequent non-hazardous waste service are provided in Attachment C-A to Section C (Waste Characterization) and Section E (Tank Systems).

B-7 Anticipated Change of Operations/Units:

Additional waste management and operations planned for the CHK facility after permit issuance are of two types: 1) changes as a result of new regulations and permitting requirements, and 2) reduction of operations to meet the challenges of future local and regional waste management requirements. Anticipated waste management needs include:

- The addition of newly identified wastes (as they become regulated) to the Part A permit;
- Modification of the facility and permit application to accommodate evolving local, state, and federal regulations.

Endnote References

1. Greater Wichita Economic Development Coalition (2008): www.gwedc.org/living_working-climate.php

2. Lane, Charles W. and Don E. Miller, December, 1965. Geohydrology of Sedgwick County, Kansas. State Geological Survey of Kansas, Bulletin 176, 100 pp.

3. United States Department of Agriculture, Soil Conservation Service, April, 1979. Soil Survey of Sedgwick County, Kansas. 126 p.

4. Groundwater Technology, Inc., August 1991. Draft Remedial Investigation Report of the 29th and Mead RI/FS. Volume 1, prepared for Wichita North Industrial District, 60 pp.

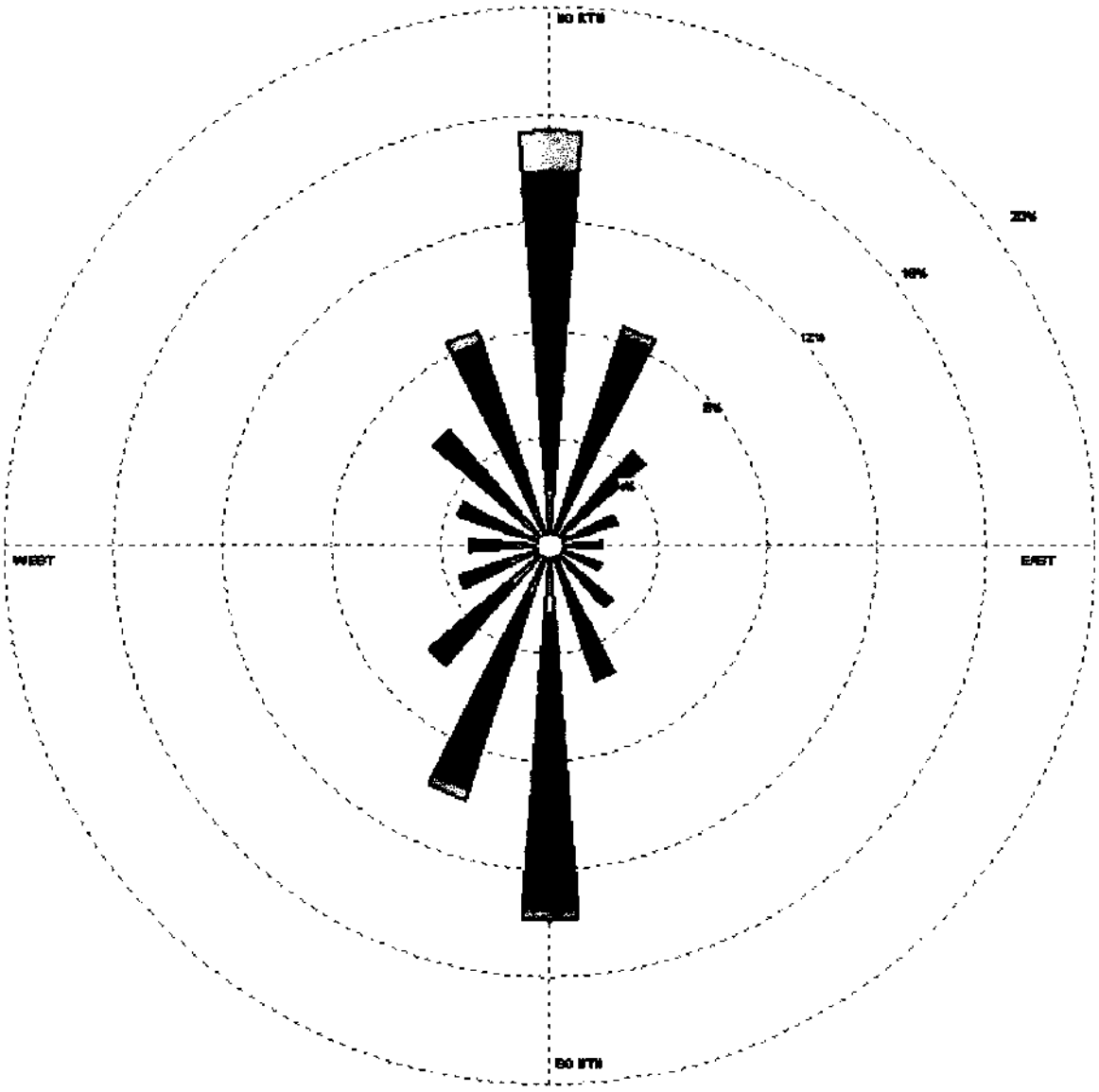
5. Hershfield, David M., US Dept. of Commerce, Soil Conservation Service, Rainfall Frequency Atlas of the United States - Weather Bureau Technical Paper No. 40, 115 pp.

6. National Weather Service, Weather Forecast Office, Wichita, KS (2008): www.crh.noaa.gov

Figure B.5. Annual Surface Wind Rose

WIND ROSE PLOT

Station #03928 - WICHITA/MID-CONTINENT ARPT, KS

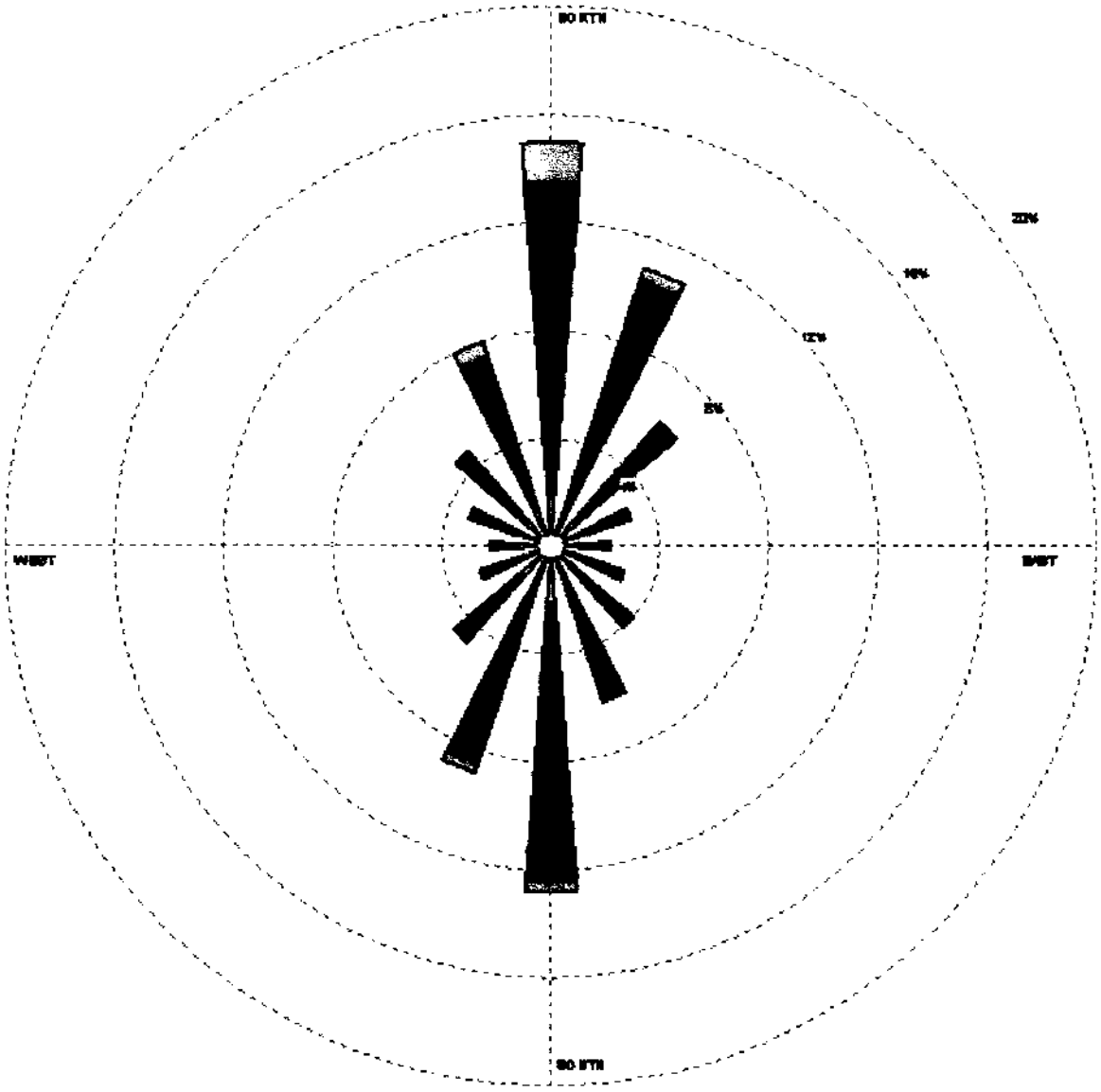


Wind Speed (m/s)	MODELER	DATE	COMPANY NAME
> 11.05 8.69 - 11.05 5.60 - 8.69 3.34 - 5.60 1.80 - 3.34 0.51 - 1.80	Sara West	8/28/2002	USDA-ARS
	DISPLAY Wind Speed	UNIT m/s	COMMENTS
	AVG. WIND SPEED 5.61 m/s	CALM WINDS 2.66%	
	ORIENTATION Direction (blowing from)	PLOT YEAR-DATE-TIME 1961 Jan 1 - Jan 31 Midnight - 11 PM	

WRPLOT View 3.3 by Lakes Environmental Software - www.lakes-environmental.com

WIND ROSE PLOT

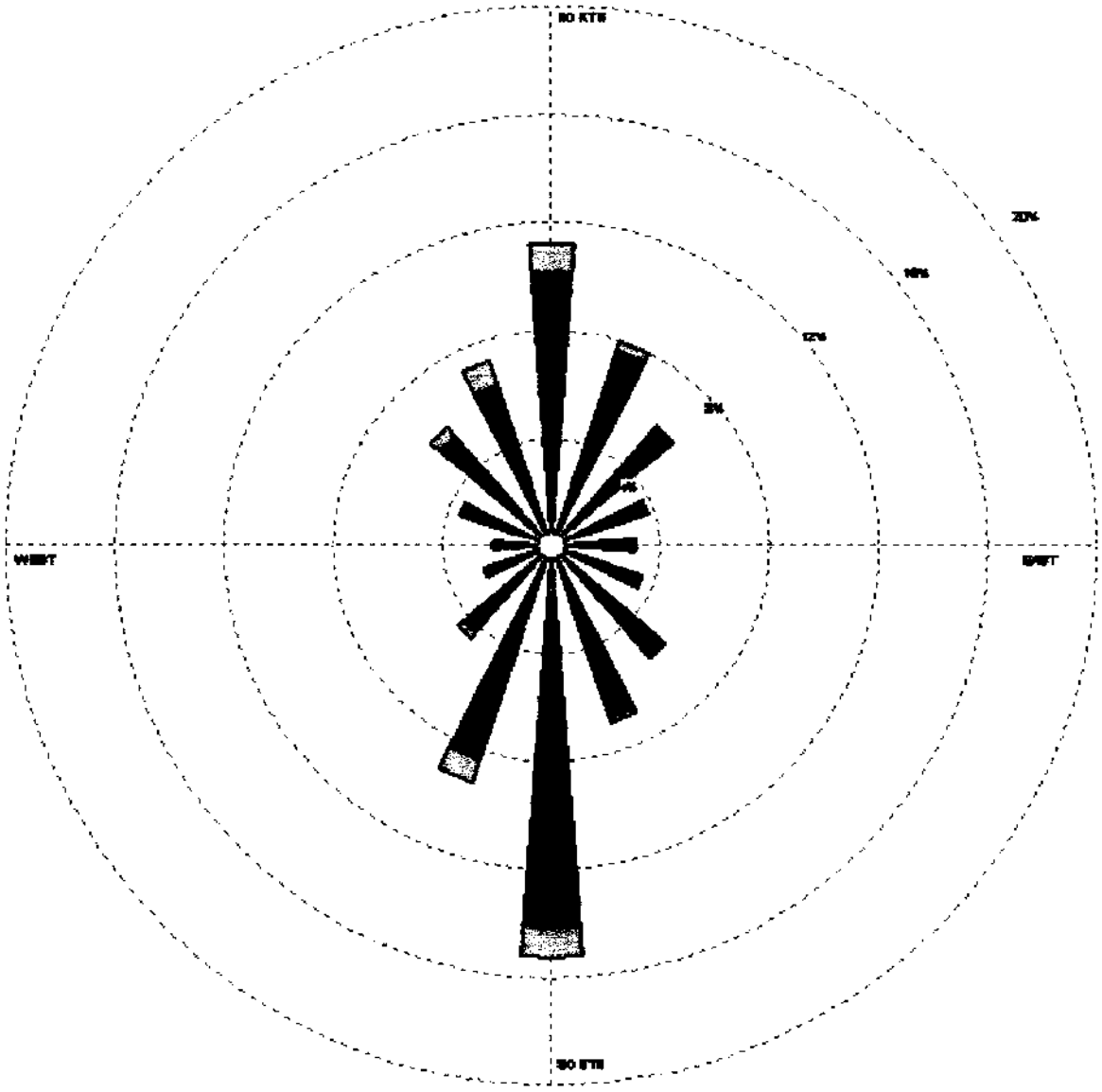
Station #03928 - WICHITA/MID-CONTINENT ARPT, KS



Wind Speed (m/s)	MODELER	DATE	COMPANY NAME
> 11.06 8.49 - 11.06 5.40 - 8.49 3.34 - 5.40 1.80 - 3.34 0.91 - 1.80	Sara West	8/28/2002	USDA-ARS
	DISPLAY Wind Speed	UNIT m/s	COMMENTS
	AVG. WIND SPEED 5.69 m/s	CALM WINDS 2.42%	
	ORIENTATION Direction (blowing from)	PLOT YEAR-DATE-TIME 1991 Feb 1 - Feb 29 Midnight - 11 PM	

WIND ROSE PLOT

Station #03928 - WICHITA/MID-CONTINENT ARPT, KS

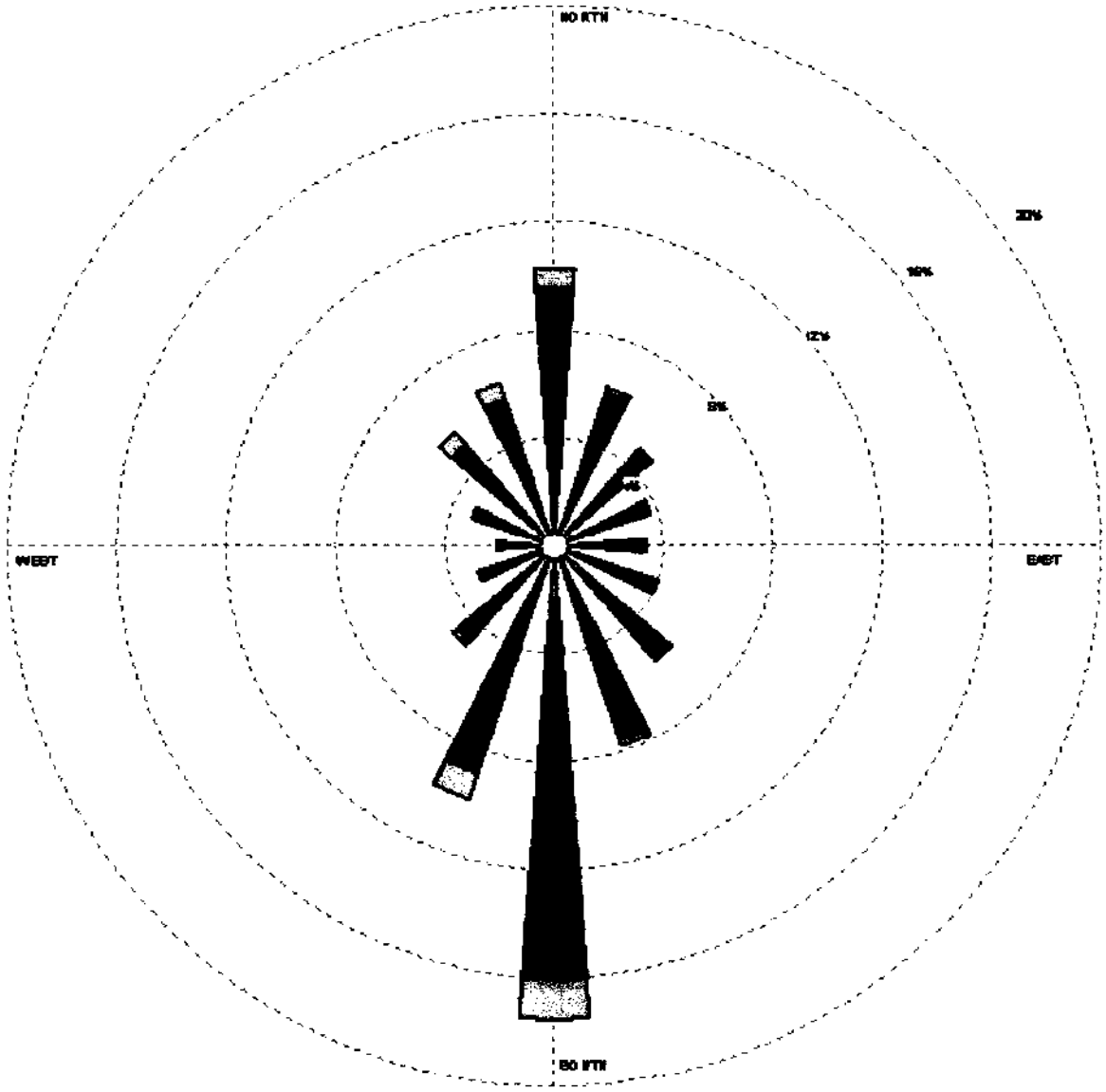


Wind Speed (m/s)	MODELER	DATE	COMPANY NAME
> 11.05 8.49 - 11.05 5.40 - 8.49 3.34 - 5.40 1.80 - 3.34 0.51 - 1.80	Sara West	8/26/2002	USDA-ARS
	DISPLAY Wind Speed	UNIT m/s	COMMENTS
	AVG. WIND SPEED 6.27 m/s	CALM WINDS 1.59%	
	ORIENTATION Direction (blowing from)	PLOT YEAR-DATE-TIME 1961 Mar 1 - Mar 31 Midnight - 11 PM	

WRPLOT View 3.3 by Lakes Environmental Software - www.lakes-environmental.com

WIND ROSE PLOT

Station #03928 - WICHITA/MID-CONTINENT AR PT, KS

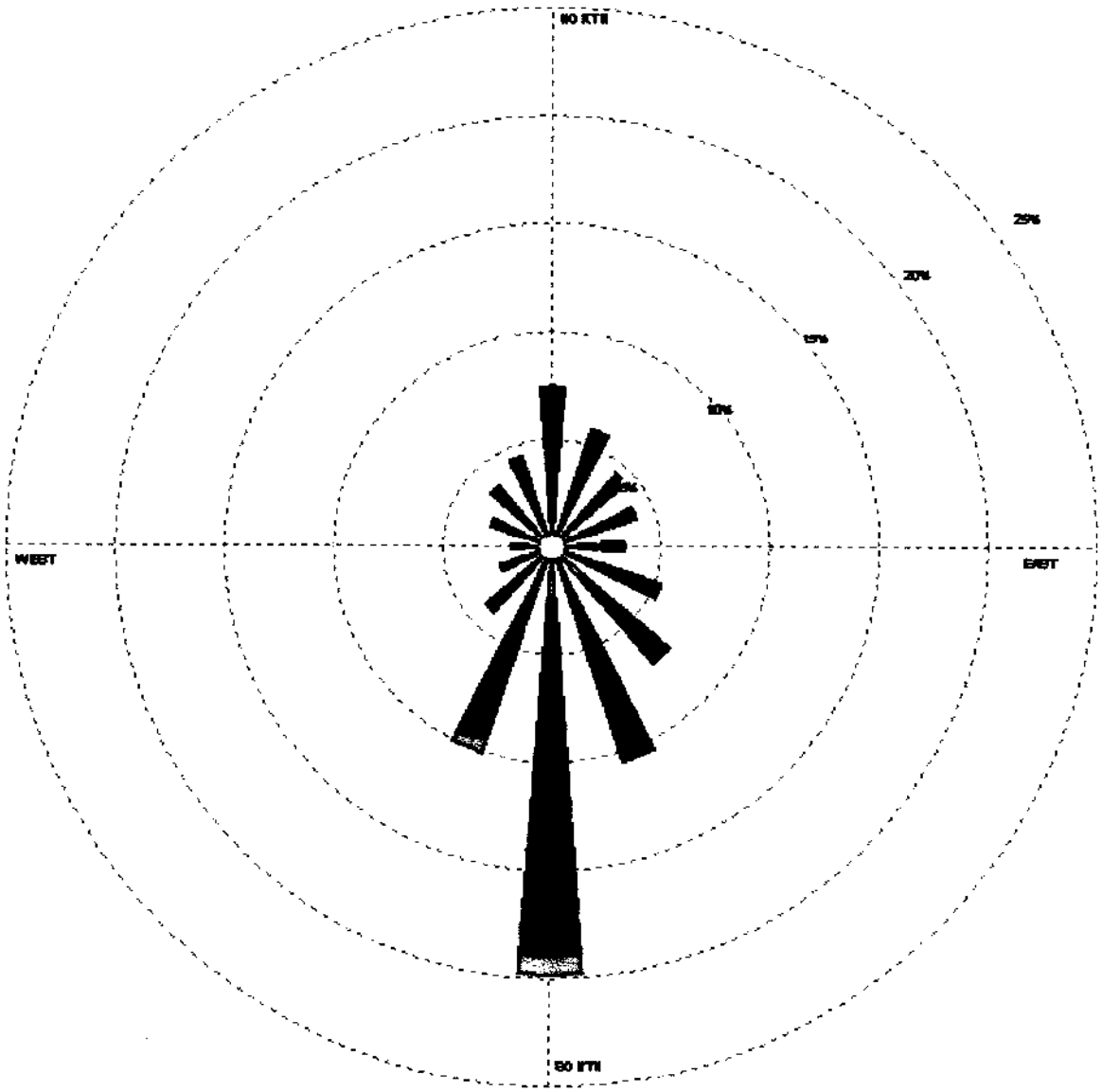


Wind Speed (m/s)	MODELER Sara West	DATE 8/28/2002	COMPANY NAME USDA-ARS
> 11.06 8.49 - 11.06 5.40 - 8.49 3.34 - 5.40 1.80 - 3.34 0.51 - 1.80	DISPLAY Wind Speed	UNIT m/s	COMMENTS
	AVG. WIND SPEED 6.23 m/s	CALM WINDS 1.55%	
	ORIENTATION Direction (blowing from)	PLOT YEAR-DATE-TIME 1961 Apr 1 - Apr 30 Midnight - 11 PM	

WRPLOT View 2.3 by Lakes Environmental Software - www.lakes-environment.com

WIND ROSE PLOT

Station #03928 - WICHITA/MID-CONTINENT AR PT, KS

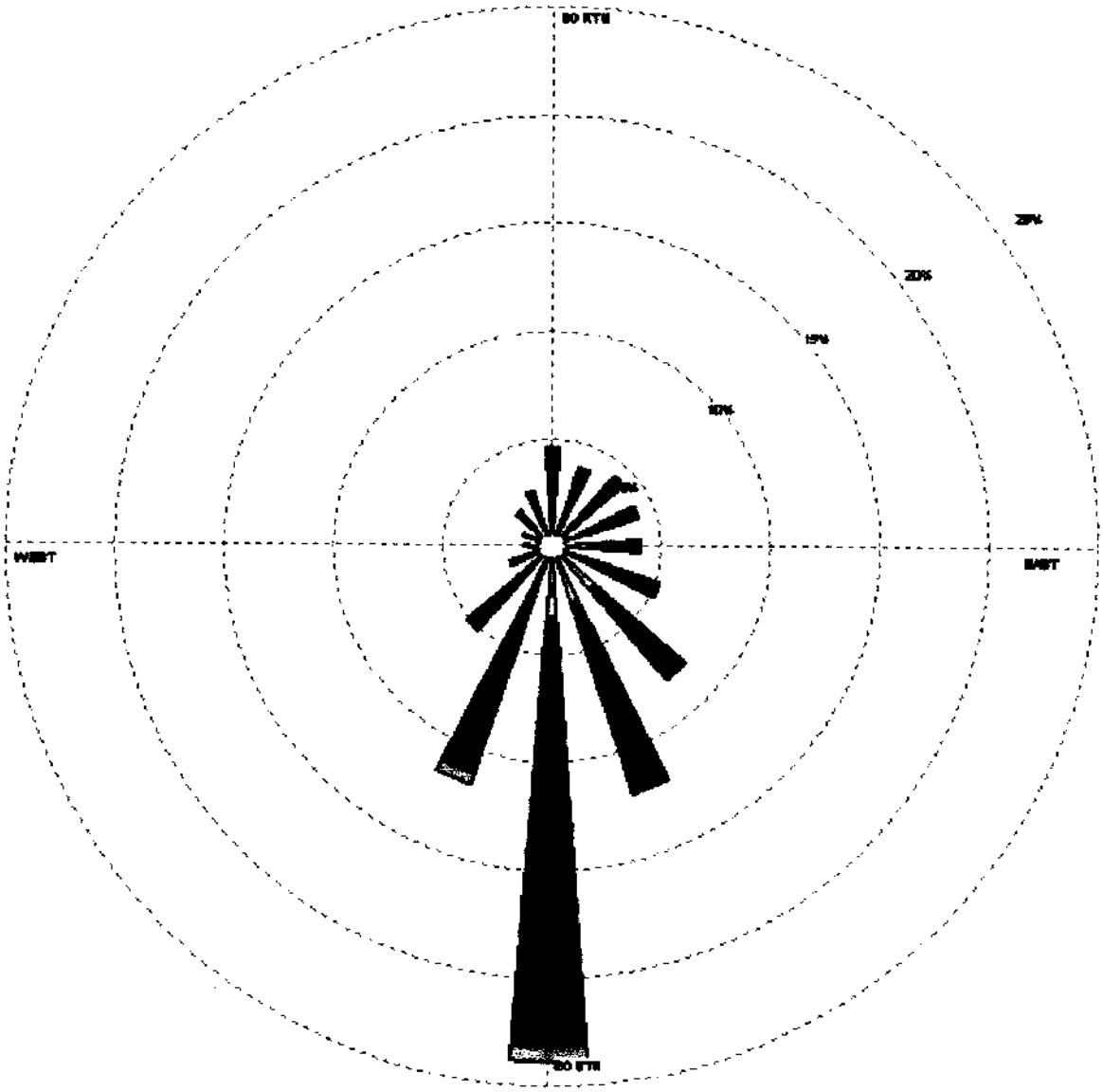


Wind Speed (m/s)	MODELER Sara West	DATE 8/28/2002	COMPANY NAME USDA-ARS
> 11.06 8.49 - 11.06 5.40 - 8.49 3.34 - 5.40 1.80 - 3.34 0.51 - 1.80	DISPLAY Wind Speed	UNIT m/s	COMMENTS
	AVG. WIND SPEED 6.53 m/s	CALM WINDS 2.21%	
	ORIENTATION Direction (blowing from)	PLOT YEAR-DATE-TIME 1951 May 1 - May 31 Midnight - 11 PM	

WRPLOT View 2.3 by Lakes Environmental Software - www.lakes-environmental.com

WIND ROSE PLOT

Station #03928 - WICHITA/MID- CONTINENT ARPT, KS

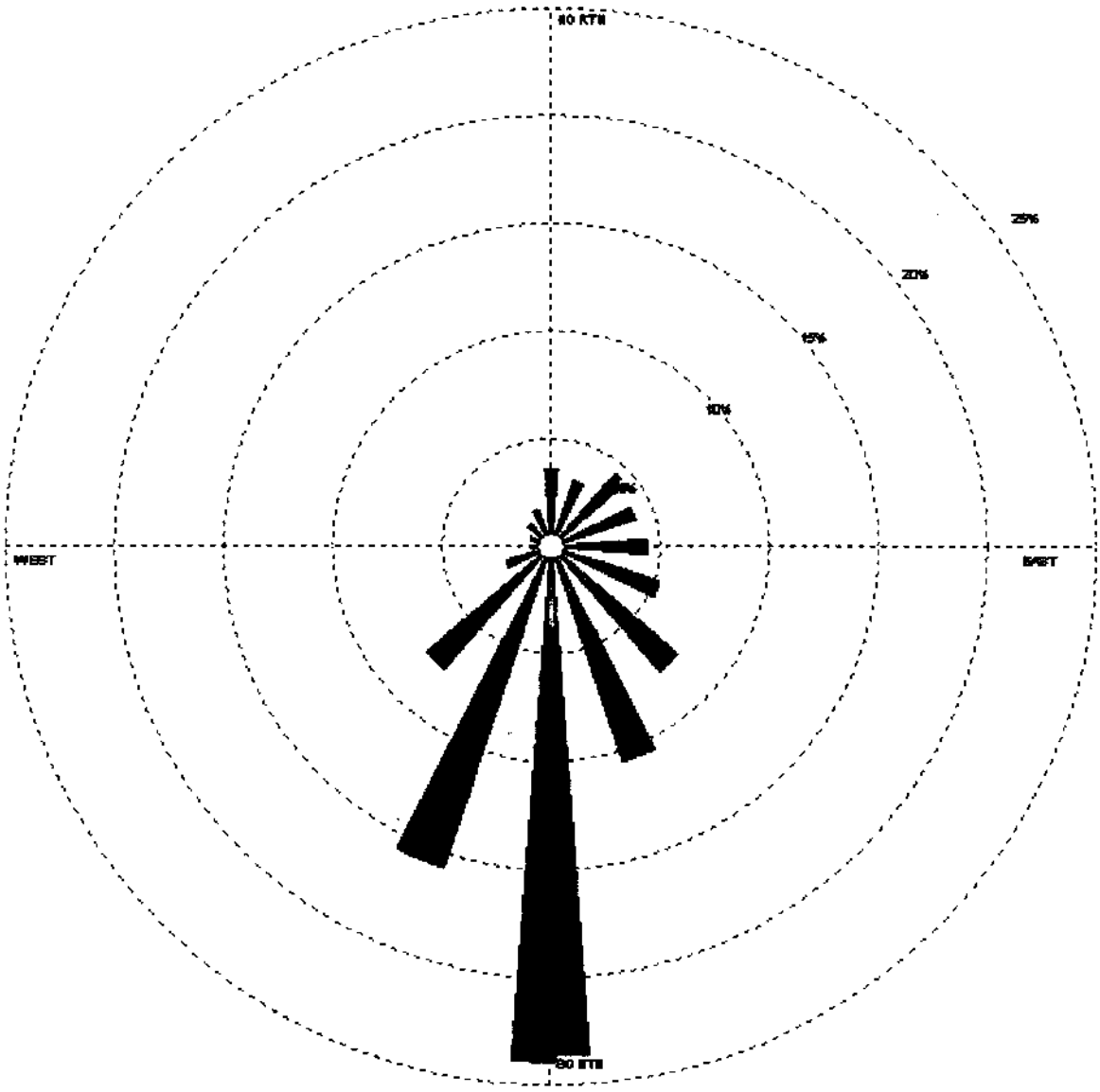


Wind Speed (m/s)	MODELER	DATE	COMPANY NAME
> 11.06 8.49 - 11.06 5.40 - 8.49 3.34 - 5.40 1.80 - 3.34 0.51 - 1.80	Sara West	8/28/2002	USDA-ARS
	DISPLAY Wind Speed	UNIT m/s	COMMENTS
	AVG. WIND SPEED 5.37 m/s	CALM WINDS 3.10%	
	ORIENTATION Direction (blowing from)	FILTER YEAR-DATE-TIME 1961 Jun 1 - Jun 30 Midnight - 11 PM	

WRPLOT View 3.3 by Lakes Environmental Software - www.lakes-environmental.com

WIND ROSE PLOT

Station #03928 - WICHITA/MID-CONTINENT AR PT, KS

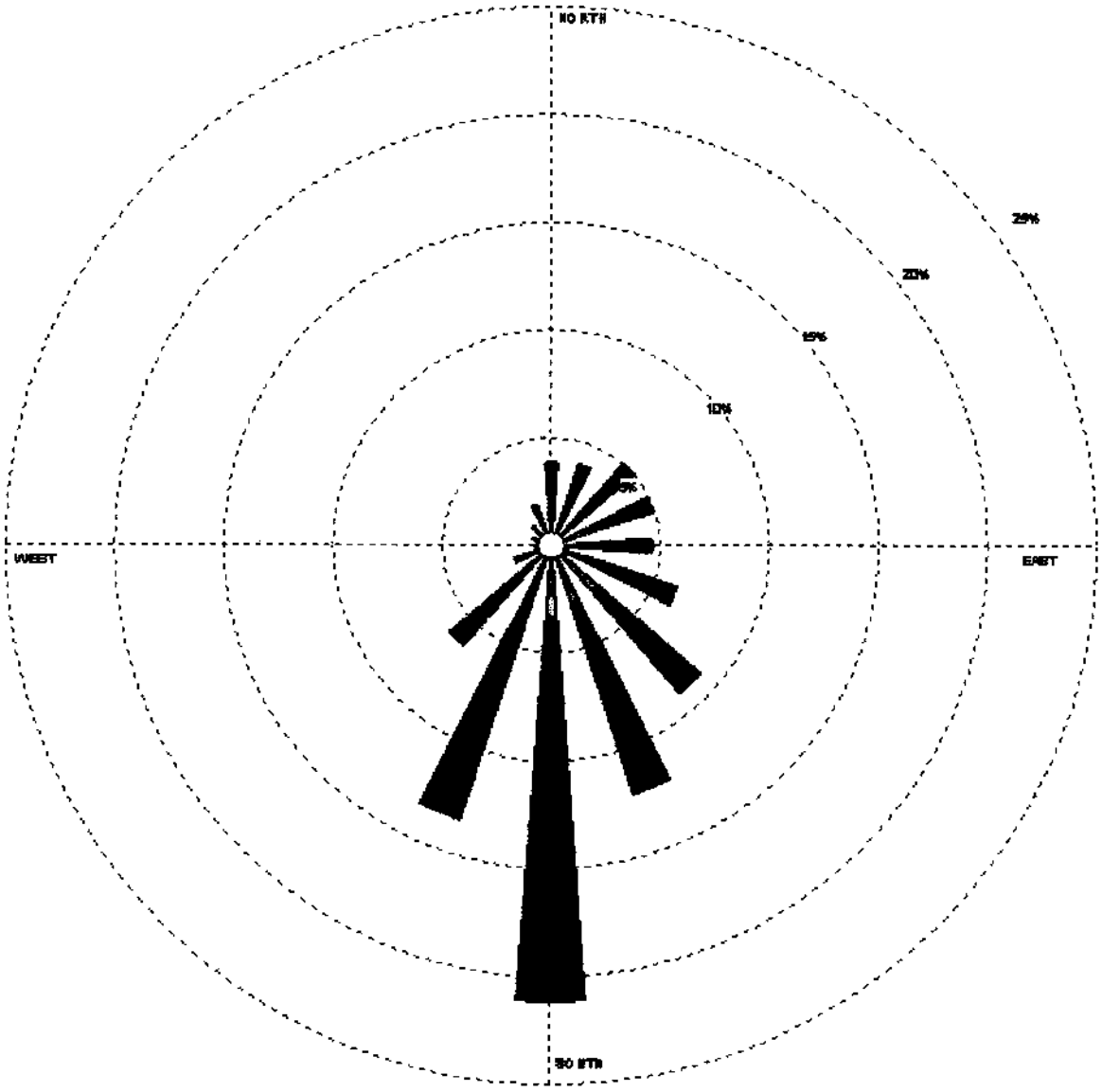


Wind Speed (m/s) > 11.06 8.49 - 11.06 5.40 - 8.49 3.34 - 5.40 1.80 - 3.34 0.51 - 1.80	MODELER Sara West	DATE 8/28/2002	COMPANY NAME USDA-ARS
	DISPLAY Wind Speed	UNIT m/s	COMMENTS
	AVG. WIND SPEED 5.16 m/s	CALM WINDS 2.26%	
	ORIENTATION Direction (blowing from)	PLOT YEAR-DATE-TIME 1961 Jul 1 - Jul 31 Midnight - 11 PM	

WRPLOT View 2.3 by Lakes Environmental Software - www.lakesenvironmental.com

WIND ROSE PLOT

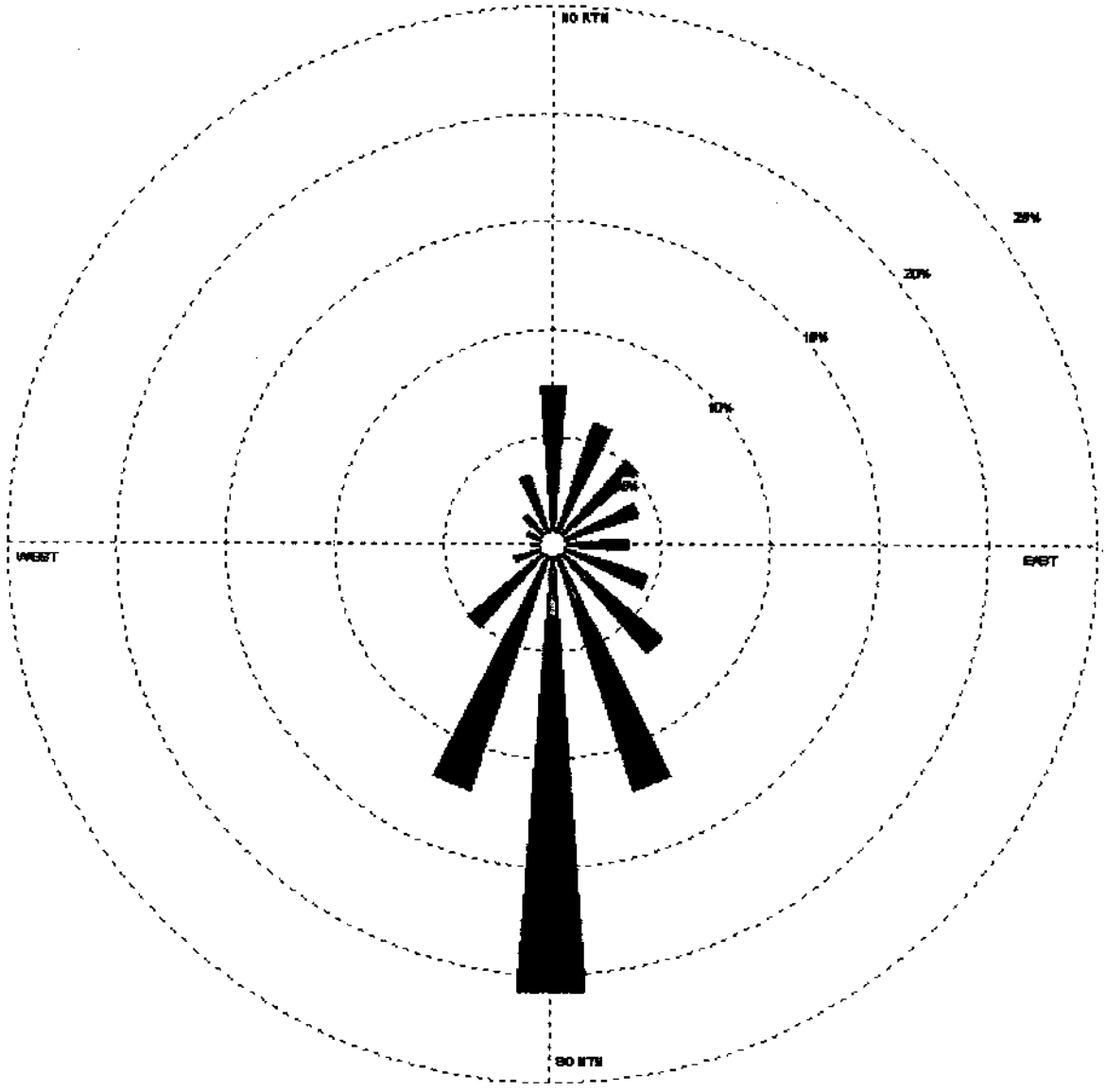
Station #03928 - WICHITA/MID-CONTINENT AR PT, KS



Wind Speed (m/s)	MODELER Sara West	DATE 8/28/2002	COMPANY NAME USDA-ARS
> 11.06 8.49 - 11.06 6.40 - 8.49 3.34 - 6.40 1.80 - 3.34 0.51 - 1.80	DISPLAY Wind Speed	UNIT m/s	COMMENTS
	AVG. WIND SPEED 5.00 m/s	CALM WINDS 2.97%	
	ORIENTATION Direction (blowing from)	PLOT YEAR-DATE-TIME 1961 Aug 1 - Aug 31 Midnight - 11 PM	

WIND ROSE PLOT

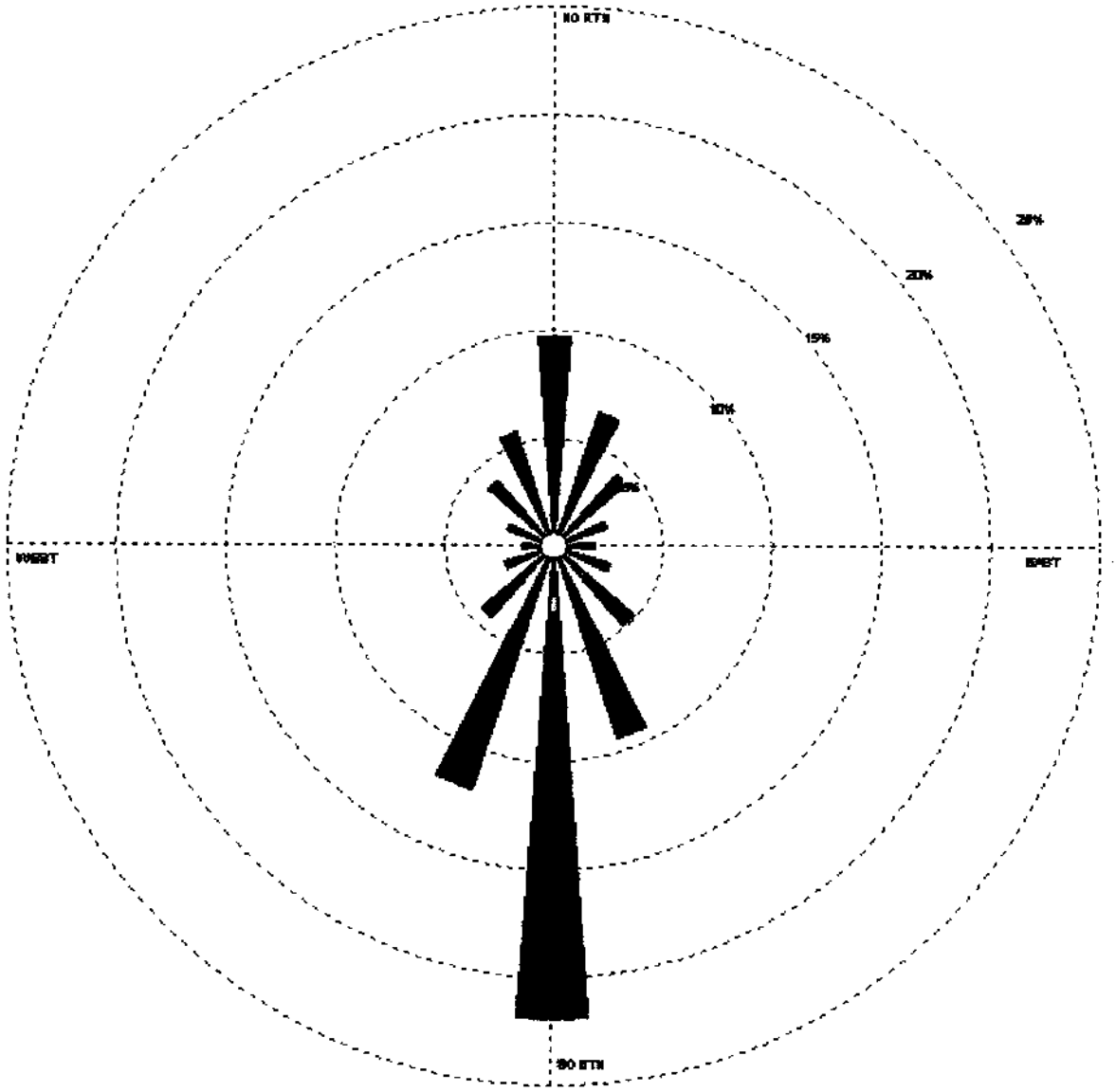
Station #03928 - WICHITA/MID-CONTINENT ARPT, KS



Wind Speed (m/s)	MODELER	DATE	COMPANY NAME
> 11.06 8.49 - 11.06 5.40 - 8.49 3.34 - 5.40 1.80 - 3.34 0.51 - 1.80	Sara West	8/28/2002	USDA-ARS
	DISPLAY Wind Speed	UNIT m/s	COMMENTS
	AVG. WIND SPEED 5.22 m/s	CALM WINDS 3.54%	
	ORIENTATION Direction (blowing from)	PLOT YEAR-DATE-TIME 1981 Sep 1 - Sep 30 Midnight - 11 PM	

WIND ROSE PLOT

Station #03928 - WICHITA/MID-CONTINENT AR PT, KS

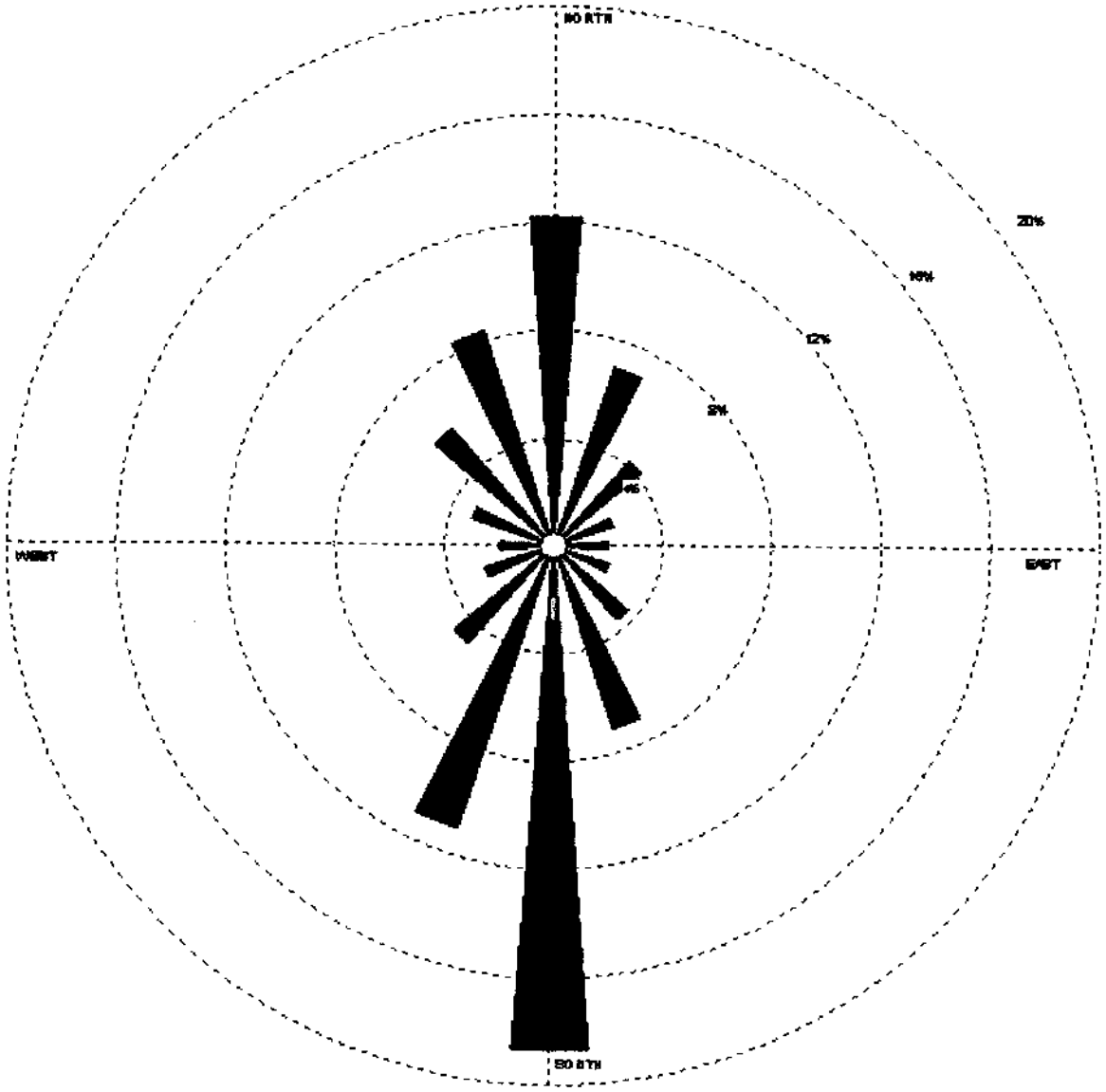


Wind Speed (m/s)	MODELER	DATE	COMPANY NAME
> 11.06 8.49 - 11.06 5.40 - 8.49 3.34 - 5.40 1.80 - 3.34 0.51 - 1.80	Sara West	8/28/2002	USDA-ARS
	DISPLAY Wind Speed	UNIT m/s	COMMENTS
	AVG. WIND SPEED 5.41 m/s	CALM WINDS 4.07%	
	ORIENTATION Direction (blowing from)	PLOT YEAR-DATE-TIME 1961 Oct 1 - Oct 31 Midnight - 11 PM	

WRPLOT View 3.3 by Lakes Environmental Software - www.lakes-sw.com/contact.htm

WIND ROSE PLOT

Station #03928 - WICHITA/MID-CONTINENT AR PT, KS



Wind Speed (m/s)

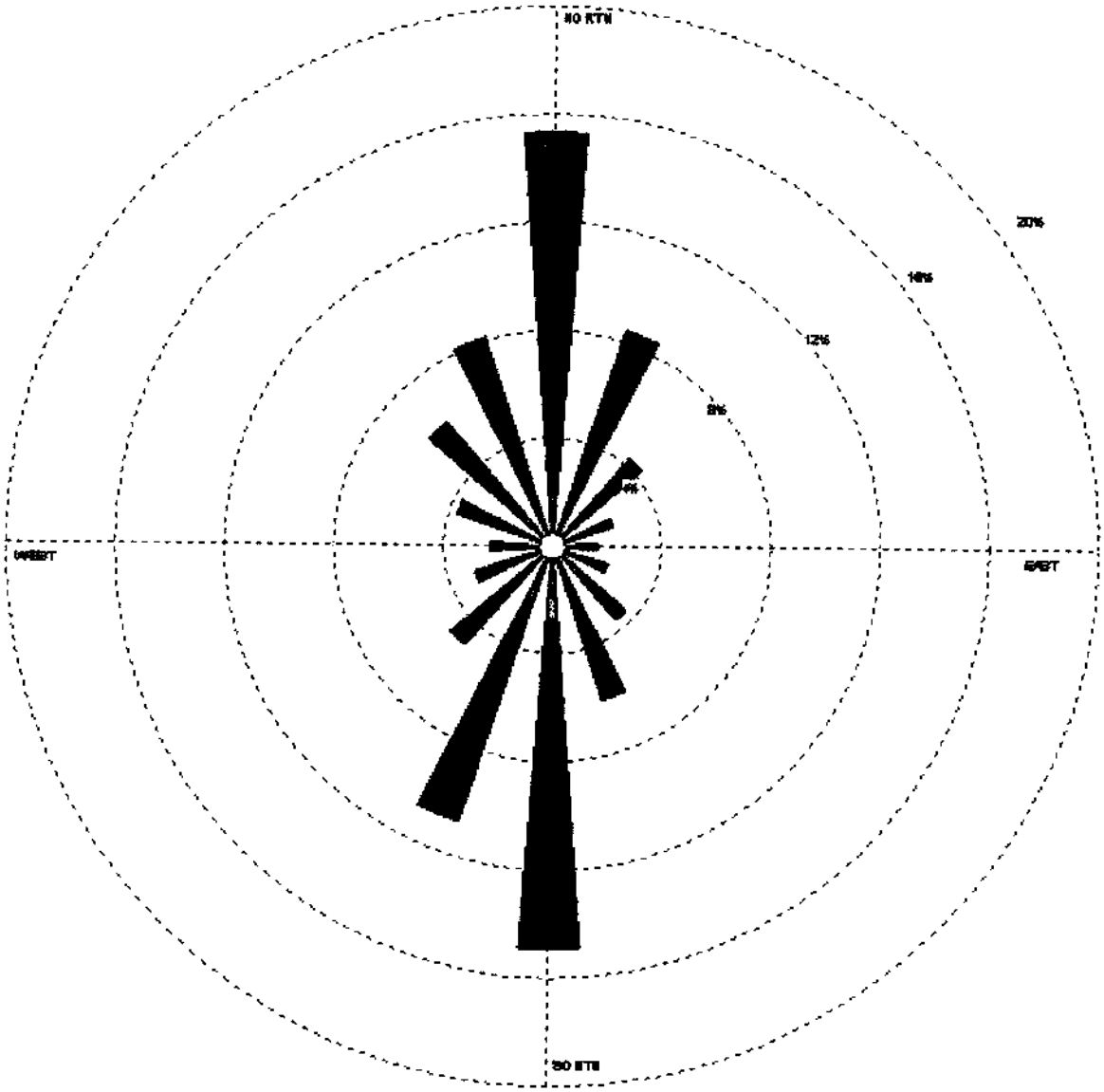
- > 11.06
- 8.69 - 11.06
- 5.40 - 8.69
- 3.34 - 5.40
- 1.80 - 3.34
- 0.51 - 1.80

MODELER Sara West	DATE 8/28/2002	COMPANY NAME USDA-ARS
DISPLAY Wind Speed	UNIT m/s	COMMENTS
AVG. WIND SPEED 5.55 m/s	CALM WINDS 3.07%	
ORIENTATION Direction (blowing from)	PLOT YEAR-DATE-TIME 1981 Nov 1 - Nov 30 Midnight - 11 PM	

WRPLOT View 3.3 by Lakes Environmental Software - www.lakes-environmental.com

WIND ROSE PLOT

Station #03928 - WICHITA/MID-CONTINENT ARPT, KS



Wind Speed (m/s)	MODELER Sara West	DATE 8/28/2002	COMPANY NAME USDA-ARS
> 11.06 8.49 - 11.06 5.40 - 8.49 3.34 - 5.40 1.80 - 3.34 0.51 - 1.80	DISPLAY Wind Speed	UNIT m/s	COMMENTS
	AVG. WIND SPEED 5.50 m/s	CALM WINDS 2.63%	
	ORIENTATION Direction (blowing from)	PLOT YEAR-DATE-TIME 1961 Dec 1 - Dec 31 Midnight - 11 PM	

WRPLOT View 2.3 by Lakes Environmental Software - www.lakes-environ.com

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Appendix C-A

Acronym Table

Clean Harbors Kansas, LLC (CHK)

Kansas Administrative Regulations (KAR)

Resource Conservation and Recovery Act (RCRA)

Title 40 of the Code of Federal Regulations (40 CFR)

Waste Analysis Plan (WAP)

Environmental Protection Agency (EPA)

Toxic Substances Control Act (TSCA)

Polychlorinated Biphenyl (PCB)

C. Waste Characterization: 40 CFR Parts 261, 262, 264, 268 and 270

The Purpose of this section, waste characterization, is to provide a general description of the waste types anticipated for management, and the sampling and analytical procedures to be implemented, at Clean Harbors Kansas, LLC. This section is provided to fulfill the requirements of the Kansas Administrative Regulations (KAR), and 40 CFR Parts 261, 262, 264, 268, and 270. The KAR incorporate, with few additions, the RCRA regulations contained in 40 CFR Parts 260 through 270. Therefore, this section will refer only to the federal regulations.

This section contains a description of the provisions for waste sampling and analysis related to the management of wastes at CHK. These provisions have also been incorporated into a document referred to as the Waste Analysis Plan (WAP), which has been provided as Appendix C-A. The terms used in Section C will have the same meaning as those defined in the WAP.

C-1 Chemical and Physical Analysis: 40CFR 264.13(a) and 270.14 (b) (2)

CHK has identified wastes which are acceptable for management at CHK, and wastes which will not be accepted for management at CHK. Wastes in these categories are identified below.

Wastes Acceptable for Management: Materials acceptable for management at CHK will include solid wastes and hazardous wastes. There are two (2) general categories of hazardous wastes according to 40 CFR 261.3. These categories are:

Characteristic wastes: Characteristic wastes exhibit any hazardous characteristic identified in 40 CFR Part 261, Subpart C. The characteristics are ignitability, corrosivity, reactivity, or toxicity.

Listed Wastes: Listed wastes include those wastes listed in 40CFR Part 261, Subpart D.

These two (2) categories include “mixture rule” and “derived from rule” wastes which are described below.

> Mixture Rule Wastes: Mixture rule wastes are a mixture of a solid wastes and a characteristic waste unless the mixture no longer exhibits any hazardous characteristic or a mixture of a solid waste and one or more listed hazardous wastes.
>
> Derived From Rule Wastes: Wastes subject to the derived from rule include any waste generated from the treatment, storage, or disposal of a hazardous waste, including any sludge, spill residue, or leachate.

Attachment C-B to the WAP contains a list of hazardous wastes which may be received at CHK. The wastes listed in Attachment C-B are referred to by the EPA Hazardous Waste Number. The hazard code is used by EPA to indicate if the waste is reactive (R), toxic (T), corrosive (C), ignitable (I), an acute hazardous waste (H), or whether the waste exhibits the Toxicity Characteristic (E) and can be found in 40 CFR Part 261. The basis for designating these wastes as hazardous is provided in 40 CFR Part 261, Appendix VII.

The Hazardous Waste Numbers further classify the wastes. Hazardous Waste Numbers D001 through D043 refer to the “characteristic wastes.” D001 represents wastes that are ignitable in character; D002, those that are corrosive;

and D003, those that are reactive. Wastes whose extracts contain concentrations are specific inorganic or organic constituents above specific inorganic constituents above a specified level are assigned one of the numbers D004 through D043.

“Lists wastes” include four (4) groups of hazardous wastes numbers. Hazardous wastes generated from non-specific industry sources such as degreasing and electroplating operations are listed with numbers beginning with the letter :F” (e.g., F001). Hazardous wastes from specific generating sources such as petroleum refining are assigned numbers beginning with the letter “K” (e.g., K048). Hazardous waste numbers beginning with “P” or “U” represent waste commercial chemical products and manufacturing chemical intermediates (whether on- or off-specification).

The wastes accepted at CHK will vary considerably in both composition and form. Various organic and inorganic constituents may be present in the wastes. Wastes will be liquid, solid, or multi-phasic. General waste descriptions include hazardous wastes of the following types: contaminated wastewaters, spent catalysts, electroplating wastes, metal-contaminated sludges, spent-solvent residual, off-specification chemicals, and a variety of other waste types.

Each waste stream will be characterized prior to acceptance for management at the facility following the procedures described in Section 5.0 of the WAP. The pre-acceptance characterization will be used to determine the acceptability of waste streams for management at CHK. Profiles and other analytical data (as required) are maintained in the operating record for three years or longer.

Waste Prohibited from Management: Materials which will not be accepted for management at CHK include, but are not limited to, the following.

- Dioxin containing hazardous wastes identified by EPA Hazardous Waste Numbers F020, F021, F022, F023, F026, F027 and F028.
- NRC regulated radioactive wastes and materials.
- Infectious medical wastes.
- TSCA regulated PCBs.

C-1a Receiving and Acceptance Criteria: 40CFR 264.13 (a), 264.172, 264.177, 264.191 (a), 270.15 (b) (1) and (d)

Prior to accepting a waste stream for management at CHK, the waste will be subject to the pre-acceptance procedures. The pre-acceptance procedures are described in Section 5.0 of the WAP. As part of these procedures, each waste stream will be evaluated for acceptability for management at CHK. The evaluation will be based on a review of information about the waste as provided by the generator, of the value of, or a range of values for, a set of material parameters. A rationale for the selection of these parameters is provided in Section 2.0 of the WAP.

Waste shipments arriving at the facility for management will be subject to the incoming load procedures. The incoming load procedures are described in Section 6.0 of the WAP. As part of these procedures, each waste stream will be evaluated for conformity with the description of the waste determined during the pre-acceptance procedures.

There are several sampling and analysis considerations with respect to the management of wastes at CHK. These are described in Sections 6.0 and 7.0 in the WAP. These considerations include identification of waste with the characteristics of ignitability, corrosivity, or reactivity; waste which may be

incompatible with other wastes; and wastes which may be incompatible with the container or tank in which it is stored.

C-2 Waste Analysis Plan: 40 CFR 264.13 (b) and (c), 268.7, and 270.14 (b) (3)

A copy of the WAP is provided as Appendix C-A. The WAP describes the procedures used to obtain chemical and physical information and date on the wastes to insure proper management and conformance with applicable land disposal restrictions. These procedures include:

- Pre-acceptance procedures (Section 5.0 of the WAP);
- Incoming load procedures (Section 6.0 of the WAP); and
- Treatment, storage, and other management consideration (Section 7.0 of the WAP).

C-2a Parameters and Rationale: 40 CFR 264.13 (b) (1)

General waste characterizations or profiles will first be developed by determining the value of, or the range of values for, a given set of parameters. These parameters are referred to as “mandatory” parameters. The list of mandatory parameters for the pre-acceptance and incoming load procedures is provided in Section 2.0 of the WAP.

In addition to performing analysis for the mandatory parameters, the values of other parameters may be determined at any time prior to, or during, management of the waste at CHK to more fully define waste characteristics. Since these parameters are discretionary, they are referred to as “supplemental” parameters. Examples of supplemental parameters are provided in Section 2.0 of the WAP.

The rationale for selection waste characterization parameters used during pre-acceptance and incoming load procedures is also provided in Section 2.0 of the WAP.

C-2b Test Methods: 40 CFR 264.13 (b) (2)

The typical analytical methods used to obtain the values of the mandatory parameters are described in Section 3.0 of the WAP. As new analytical procedures are developed, these procedures may be adopted and the WAP updated accordingly, as provided in 40 CFR 270.42.

C-2c Sampling Methods: 40 CFR Part 261, Appendix I, and 264.13 (b) (3)

Section 4.0 of the WAP presents methods to be utilized by CHK to obtain a representative sample of wastes. These methods will apply to waste generated off-site as well as facility generated waste. Discussions of the circumstances under which the sampling will be performed are presented in Sections 5.0 through 7.0 of the WAP. The specific sampling methods selected are dependent on both the nature of the waste and the type of container or tank that the waste is in.

Other considerations with respect to sampling are also described in Section 4.0 of the WAP. There other considerations include:

- Sampling Safety Precautions;
- Sampling Method References;
- Sampling Locations;
- Sampling Equipment;
- Frozen Shipments or Samples;

- Cleaning of Sampling Apparatus;
- Management of Samples After Analysis;
- Remote Project Sampling and/or Analysis;
- Lab Packs;
- Nonhazardous Wastes; and
- Vitrified, Cemented, and Other Materials Exhibiting High Structural Integrity.

C-2d Frequency of Analysis: 40 CFR 264.13 (b) (4)

An analysis of the wastes may be conducted at selected management stages including the following.

- Before a waste stream is accepted (pre-acceptance);
- When a waste arrives (incoming load);
- At selected management stages (in-process); and
- A minimum of every two years (re characterization).

The decision to accept a waste for management at CHK will be in part based on a characterization or profile of the waste. At a minimum, this characterization is accomplished through knowledge of the waste or laboratory analysis of the waste during the pre-acceptance procedure. CHK will re characterize incoming waste streams at least every two years to verify that the original characterization of the waste is still accurate. Any incoming load accepted at CHK must have been characterized (or re characterized) within the last twenty-four (24) months. A sample of an incoming load may be used for the re characterization. CHK may also repeat the pre-acceptance characterization if:

- a generator notifies that the process generating the waste has changed;
- the incoming load is outside of the acceptance tolerance ranges provided in the WAP, or
- it is suspected that a particular waste shipment differs from the pre-acceptance characterization.

Any waste characterization or re characterization that assigns or removes a hazardous waste characteristic code for a Kansas generated waste shall be performed by a Kansas certified laboratory in accordance with KAR 28-31-4 (b) (3).

C-2e Additional Requirements for Wastes Generated off-site: 40 CFR 264.13 (b) (5), 264.13 (c), and 264.73 (a) and (b)

Using the information available from the generator, CHK will develop a characterization or profile of the waste stream during the pre-acceptance procedures. The activities involved with characterizing a waste for pre-acceptance purposes are provided below; additional description is provided in the WAP.

Requirements of the Generator: The generator of a waste stream is required to provide information on the properties of the waste or the process generating the waste described in Section 5.0 of the WAP.

Analysis for parameters (Mandatory and Supplemental): CHK may confirm certain waste characterization data supplied by the generator by analyzing the representative sample(s) of the waste from one or more of the mandatory or supplemental pre-acceptance parameters.

Evaluation: After completing the pre-acceptance waste characterization, the acceptability of the waste for management at CHK will be determined. This determination will be based on permit conditions, availability of proper treatment techniques, and storage and off-site disposal capacities.

C-2f Additional Requirements fro Handling Ignitable, Reactive, or Incompatible Wastes: 40 CFR 264.13 (b) (6), and 264.17

Ignitable, reactive, and incompatible wastes will be received at CHK. Provisions for the identification of wastes with these characteristics have been included in the WAP. These provisions are described in Sections 5.0, 6.0, and 7.0 of the WAP.

C-3 Additional Waste Characterization Requirements Pertaining to the Land Disposal Restrictions: 40 CFR 264.13 (a) (1), 264.13 (b) (6), 268.7, 270.14 (b) (3)

Information submitted by the generator (or a representative of the generator) for the waste streams managed at CHK may include notifications required by 40 CFR 268.7, laboratory analytical data, or information based on knowledge of the waste or of the process generating the waste. This information will be used to determine if the waste is subject to the restrictions on the placement of hazardous waste in a land-based disposal unit (i.e., restricted under 40 CFR Part 268). Provisions for the identification and analysis of wastes which are subject to these restrictions are described in Sections 5.0, 6.0, and 7.0 of the WAP.

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Acronym Table

Waste Analysis Plan (WAP)
Clean Harbors Kansas, LLC (CHK)
Kansas Administrative Regulations (KAR)
Resource Conservation and Recovery Act (RCRA)
Title 40 of the Code of Federal Regulations (40 CFR)

Polychlorinated Biphenyl (PCB)

Toxic Substance Control Act (TSCA)

American Society for Testing and Materials (ASTM)

Personal Protective Equipment (PPE)

American Public Health Association (APHA)

Environmental Protection Agency (EPA)

Waste Profile Sheet (WPS)

Quality Assurance/Quality Control (QA/QC)

National Institute of Standards and Technology (NIST)

Relative Percent Difference (RPD)

WASTE ANALYSIS PLAN

1.0 **Introduction**: 40 CFR 270.14 (b) (3), 40 CFR 264.13 (b) and (c)

1.1 **Purpose**:

The purpose of this Waste Analysis Plan (WAP) is to establish sampling and analytical requirements for waste characterization, acceptance, storage, treatment or other management at Clean Harbors Kansas, LLC (CHK). This WAP fulfills the requirements of the Kansas Administrative Regulations (KAR), and 40 CFR Parts 260 through 270. Therefore, this section will refer only to the federal regulations.

The WAP is intended to be the primary reference document for waste analysis performed in conjunction with operation (and closure) of Clean Harbors Kansas, LLC. The WAP addresses the following topics.

- Analytical parameters and rationale (Section 2.0).
- Analytical methods (Section 3.0).
- Sampling methods (Section 4.0).
- Pre-Acceptance procedures (Section 5.0).
- Incoming load procedures (Section 6.0).
- Storage, treatment or other waste management activities (Section 7.0).
- Quality assurance and quality control (Section 8.0).

Any modification to the Waste Analysis Plan will be made in accordance with 40 CFR 270.42.

1.2 **Definitions**:

The terms provided below, applied within the WAP, will have the following meaning.

Analysis: The term “analysis” means any method by which the value of, or a range of values for, a particular parameter is determined. These methods may include laboratory procedures specified in Attachment C-C. If these procedures cannot be performed, the circumstances will be documented in the operating record and the value of, or range of values for, a particular parameter will be determined based on knowledge of the waste or of the process generating the waste.

Batch: The term “batch” will refer to some quantity of waste consisting of an individual waste stream or a mixture of waste streams which have been combined for the purpose of management at Clean Harbors Kansas, LLC.

Bulk Container: The term “bulk container” will mean any container as defined in 40 CFR 260.10 which has a capacity of greater than 450 gallons (e.g., and intermodal container, end-dump truck, gondola, tanker truck, etc.).

Container: The term “container” without the qualifier “bulk,” will have the same meaning as defined in 40 CFR 260.10.

Hazardous waste: The definition of “hazardous waste” shall be as defined in 40 CFR 261.3.

Incoming Load: The term “incoming load” refers to a waste shipment manifested to CHK. Upon arrival, the shipment will be staged or placed in a CMU and will remain an incoming load until it is either rejected, trans-shipped to another location, or finally accepted for management at CHK.

Nonhazardous Waste: “Nonhazardous Waste” refers to “solid waste” as defined in 40 CFR 261.2 which is not “hazardous waste” as defined in 40 CFR 261.3. This may include solid waste such as “empty containers” as defined by 40 CFR 261.7, exempt solid and/or hazardous waste as defined by 40 CFR 261.4, sludge from Publicly Owned Treatment Works, household hazardous waste, garbage, refuse, etc.

Parameter: The term parameter” is a specific material property, such as pH, specific gravity, viscosity, etc., or a concentration of a particular constituent of the waste or material.

PCB (s): The term “PCB (s)” refers to PCB (s) or PCB Item (s) as defined in 40 CFR Part 761.

Pre-acceptance: The period in which a waste stream’s acceptability for management at CHK is evaluated is referred to as “pre-acceptance”.

Radioactive: A “radioactive” material, or “regulated radioactive material”, will mean any material as defined by 10 CFR 20.3 or by KAR 28-35-135.

Solid Waste: The definition of “solid waste’ shall be as provided in 40 CFR 261.2.

Staging: The term “staging” refers to the temporary placement of containers during movement into or out of storage or processing areas.

Staging generally occurs for a few hours, and will not exceed 72 hours (three days). Typical staging areas are loading and receiving areas situated adjacent to processing units.

Suitable Laboratory: A “suitable laboratory” is an analytical laboratory which meets the minimum quality assurance requirements as specified in this WAP, operates under a Quality Assurance/Quality Control Plan, and uses appropriate SW-846 methods or methods listed in Attachment C-C. Analytical results submitted from off-site laboratories must certify what standard analytical methods were used to obtain the data. If non-standard methods (e.g., methods modified and approved for use at that laboratory) were used, documentation must be provided to support the validity of the data.

Technical Manager: The “technical manager” refers to the individual, or a designee, responsible for implementation of the WAP.

Transfer Facility: A transfer facility means any transfer related facility including loading docks, parking areas, storage areas and other similar areas where shipments of hazardous waste are held during the normal course of transportation for a period not to exceed 10 days, between the point of generation and the shipment destination. The transfer facility does not serve as the treatment, storage, or disposal location for that manifest, and is not identified on the manifest. A 10 day transfer facility has the same meaning in this document.

Trans-shipment: Trans-shipment is the temporary storage of wastes at the facility for the purpose of shipping the wastes to another facility without on-site processing. Trans-shipped wastes will be subject to the minimum

incoming load procedures, and will be managed on-site in the same manner as all other wastes in storage.

Typical Form: The "typical forms' provided in Attachment C-A are examples of forms currently in use at CHK. These forms may be revised as needed to respond to changes in regulations and record keeping procedures at CHK.

Value of a Parameter: The "value of a parameter" will refer to the value or a range of values of a parameter as determined by analysis.

Waste Stream: A "waste stream" will refer to wastes from a single generator with similar characteristics or originating form similar processes. Each waste stream will typically be identified for record keeping purposes by a unique number.

1.3 Identification of Wastes: 40 CFR 270.14 (b) (2), 40 CFR 264.13 (a)

1.3.1 Wastes Acceptable for Management:

Materials acceptable for management at CHK will include solid wastes and hazardous wastes. Attachment C-B contains a list of hazardous wastes which may be received at CHK. The hazardous wastes listed in Attachment C-B are referred to by the EPA to indicate if the waste is reactive (R), toxic (T), corrosive (C), ignitable (I), an acute hazardous waste (H), or whether the waste exhibits the Toxicity Characteristic (E). The basis for designating these wastes as hazardous is provided in 40 CFR Part 261, Appendix VII.

The wastes accepted at CHK will vary considerably in both composition and form. Various organic and inorganic constituents may be present in the wastes. Wastes will be liquid, solid or multiphastic. General waste descriptions include hazardous wastes of the following types: contaminated wastewaters, spent catalysts, electroplating wastes, metal-contaminated sludges, spent-solvent residuals, off-specification chemicals, and a variety of other waste types.

Each waste stream will be characterized prior to acceptance for management at the facility following the procedures described in Section 5.0. This pre-acceptance characterization will be used to determine the acceptability of waste streams for management at CHK. Profiles and other analytical data (as required) are maintained in the operating record for three years or longer.

1.3.2 Waste Prohibited from Management:

Materials which will not be accepted for management at CHK include the following:

- Dixon-containing hazardous wastes identified by EPA Hazardous Waste Numbers F020, F021, F022, F023, F026, F027, and F028.
- Regulated radioactive wastes and materials.
- Infectious medical wastes.
- TSCA regulated PCBs.

2.0 Analytical Parameters and Rationale: 40 CFR 264.13 (b) (1) and (2)

2.1 Introduction:

A list of parameters has been developed for which each batch of waste will be analyzed. These parameters are referred to as “mandatory” parameters. Mandatory analyses will be performed on each incoming load of waste, except as discussed in Section 6.0. In addition to performing analysis for the mandatory parameters, the values or a range of values of other parameters may be determined at any time prior to, or during, management of the waste at CHK to more fully define the waste characteristics. These additional parameters will be determined at the discretion of the Technical Manager. Since these parameters are discretionary, they are referred to as “supplemental” parameters.

2.2 Mandatory Parameters:

2.2.1 Mandatory Pre-acceptance Parameters:

Prior to acceptance at Clean Harbors Kansas, LLC, a hazardous waste must first be screened to determine if it is acceptable for management at the facility. This screening, described in Section 5.0, is performed during the pre-acceptance procedures. The pre-acceptance procedures are intended to provide information to allow CHK to decide whether or not to accept a waste stream at the facility. The pre-acceptance phase generally occurs prior to wastes being shipped to the CHK facility.

The pre-acceptance procedures require the collection of information about a waste stream; the information is used to determine if a waste stream is acceptable for management at CHK. The information collected for this purpose includes the values or a range of values of a set of material parameters. Table C.1 contains a list of the mandatory pre-acceptance parameters.

Table C.1
Mandatory Parameters for Waste Analysis

Mandatory Parameter	Pre-Acceptance	Incoming Load
Physical Appearance	X	X
Water Reactivity Screen	X	X
Oxidizer Screen	X	X
pH Screen	X	X
Radioactivity Screen	X	X
Ignitability Screen	X	X
Specific Gravity	X	X
HOC Screen	X	X
Compatibility Evaluation		X

Note: A check (X) indicates that the parameter is mandatory.

Specific gravity will be done on the liquid portion only of otherwise solid waste streams, where liquids are >20%.

2.2.2 Mandatory Incoming Load Parameters:

Upon the arrival of a waste shipment at the facility, procedures will be implemented to confirm that the incoming waste exhibits the same properties as the waste characterized during the pre-acceptance procedures. This confirmation is obtained by analyzing a sample of the incoming load for the same set of mandatory parameters as analyzed during the pre-acceptance procedures. If the results of these analyses are within the allowable tolerance range for each parameter, then the Technical Manager may conclude that the waste shipment essentially has the same properties as the waste characterized during the pre-acceptance procedures. The waste shipment is, therefore, considered to be suitable for management at CHK.

In addition to the mandatory parameters confirming the pre-acceptance evaluation, a compatibility evaluation will be performed on the waste before it is transferred to another tank or container or mixed with other wastes.

The incoming load procedures and the acceptable tolerance ranges for the incoming load parameters are provided in Section 6.0.

Table C-1 provides a list of the incoming load parameters for which the values or a range of values will be determined during the incoming load procedures.

2.3 Supplemental Parameters:

Analyses for supplemental parameters may be performed at any step of the waste management process if the Technical Manager decides that further information on the waste is necessary. Some supplemental parameters are always required for wastes going to specific waste processing units, as defines in Section 2.4.2.

Some examples of supplemental parameters include:

- Reactive cyanides screen,
- Reactive sulfides screen,
- Flash point,
- Bulk density,
- Total organic halogens,
- Heating value,
- Chlorides,
- Percent ash,
- Solvent screen,

- PCB screen,
- Normality,
- Toxicity characteristic leaching procedure,
- Metals analysis, and presence of free liquids.

It may be necessary to use additional analyses performed by a suitable outside laboratory to further characterize a waste stream on a case-by-case basis, at the discretion of the Technical Manager.

A summary of some of the supplemental parameters and the rationales for determining their values or range of values are provided in Section 2.4. Parameters previously listed as mandatory (e.g., for pre-acceptance and incoming loads) may also function as supplemental parameters during various stages of waste management.

2.4 Rationale for Parameter Selection:

2.4.1 Rationale for Mandatory Parameters:

The rationale for selecting each mandatory parameter for waste characterization during pre-acceptance and incoming load procedures is provided below.

Physical Appearance is used to determine the characteristics of a waste which are apparent by visual inspection. This facilitates comparison of the waste with prior waste descriptions. It is also used to detect multiple phases (e.g., liquids and solids or “multiphastic”). A change in physical appearance might be indicative of a change in waste character.

Water Reactivity Screen is used to determine whether the waste has a potential to react violently with water, form potentially explosive mixtures with water, or generate toxic gases, vapors or fumes in a quantity sufficient to present a danger to human health or the environment when mixed with water. Knowledge of whether a waste is water reactive is necessary for safe management of the waste.

Oxidizer Screen is used to identify the potential of the waste to react adversely with organic materials. Identification of a waste as an oxidizer allows for informed decisions regarding safe management of the waste.

pH Screen is used to indicate potential corrosivity and compatibility with other wastes. pH may not apply to certain wastes (e.g., non-aqueous wastes). A knowledge of pH is necessary in order to arrive at informed decisions regarding waste management.

Radioactivity Screen is used to identify regulated radioactive waste streams and to prevent their acceptance at CHK.

Ignitable Screen is used to identify potentially ignitable wastes as a safety precaution and to determine the appropriate management method. During the pre-acceptance procedures, the screen will be supplemented with a flash point test (e.g., ASTM methods D92 or D93) for those liquid materials where the ignitability screen results in a reading exceeding 500ppm. During the incoming load procedures, the results of the Ignitability Screen will be used to indicate if the process generating the waste has changed and if the incoming load matches the description on the waste profile sheet.

Specific Gravity (for liquids) can be used as an aid to determine if the process generating the waste has changed or to prevent the possibility of overloading a tank.

HOC Screen (Bielstein Test) is used to indicate the presence of halogens and can be used as an aid to determine if the process generating the waste has changed.

Compatibility Evaluation is performed to determine whether a waste may be safely stored or processed in a tank or container or mixed with other wastes.

2.4.2 Rationale for Supplemental Parameters:

A partial listing of supplemental parameters, and the rationale which the Technical Manager may consider in their selection, is show below.

Reactive Cyanides Screen is used to determine whether gaseous cyanides may be produced from the waste. Since the mixing of acids with cyanides must only occur under controlled conditions, a determination of the presence or absence of reactive cyanides will be made to allow the appropriate waste management decisions to be implemented.

Reactive Sulfides Screen is used to determine whether gaseous sulfides may be produced from the waste. Since the mixing of acids with sulfides must only occur under controlled conditions, a determination of the presence or absence of reactive sulfides will be made to allow the appropriate waste management decisions to be implemented.

Flash point is a measure of flammability and may be used to determine proper waste management with regard to safe handling methods or land disposal

restrictions. A change in flash point may be indicative of a change in waste character.

Bulk Density (for liquids) can be used as an aid to determine if the process generating the waste has changed or to prevent the possibility of overloading a tank.

Total Organic Halogens (TOX) determines the concentration of halogenated organic constituents in a material and may be useful as an aid in waste characterization or as an indicator of a change in waste character.

Heating Value is measured as an aid in waste characterization or to determine if a waste is eligible for fuels blending. The parameter “heating value” is typically measured in units of Btu/lb. Heating value must be performed during pre-acceptance procedures on all hazardous wastes intended for processing through kiln fuels blending.

Percent Ash is used to assist in formulating waste blends.

Solvent Screen is used to screen for the presence of and, when possible, the concentration of solvents in a waste stream. This information is necessary to make waste management decisions such as whether land disposal restrictions are applicable. Solvent screen must be performed during pre-acceptance procedures for all hazardous wastes intended for solvent reclamation.

PCB Screen is used to screen for TSCA regulated PCB material which is not acceptable for management at CHK. PCB concentration will be determined at any time that the Technical Manager suspects or the generator notifies CHK that PCBs may be present in concentrations greater than or equal to 50 ppm. Once

PCBs have been identified in a given waste stream, the PCB screen may become a mandatory parameter for that waste stream.

Normality is used to determine the neutralization requirements for a strongly acidic or basic material. This test is normally performed on aqueous wastes with a pH of less that two (2) or greater than 12.5.

Toxicity Characteristic Leaching Procedure (TCLP) enables determination of the concentration of certain constituents in waste extracts and may be used to identify materials which are subject to land disposal restrictions.

Metals analysis may be performed to determine whether land disposal restrictions are applicable and whether the waste meets the requirements of the facility which will receive the waste from CHK.

Presence of Free Liquids is used to determine if a waste contains free liquids. The absence of free liquids would indicate that a container may be stored in an area without secondary containment; or that the waste, if otherwise meeting all treatment requirements under the land disposal restrictions, may be placed in a landfill for disposal without further treatment.

3.0 Analytical Procedures: 40 CFR 264.13 (b) (1) and (2)

The typical analytical methods used to obtain the values of the parameters of concern are described in this section. As new analytical procedures are developed, these procedures may be adopted and the WAP updated accordingly, as provided in 40 CFR 270.42.

In some situations, analyses by the CHK laboratory may not be necessary or appropriate. Such situations would include:

- When the laboratory analyses are performed by another Laboratory,
- When the analyses and/or information are provided by the generator and provide an understanding of the waste to allow proper storage and handling,
- When a representative sample cannot be obtained (e.g., contaminated debris and equipment, personal protective equipment (PPE), etc.),
- When sampling may not be appropriate (e.g., nonhazardous waste, lab packs, thermometers, 10-day transfer loads),
- When a representative sample cannot be prepared as specified in the analytical procedure.

In these situations, alternative methods of characterizing the waste will be used. Alternative methods may include information sources such as the Technical Manager's or the generator's knowledge of the waste or of the processes generating the waste.

When the generator provides the results of analytical testing performed by an KDHE Certified Laboratory, the report must include certification of what standard analytical method was used to obtain the results. If a non-standard method was used, documentation must be provided to support the validity of the results. All methods of record will follow approved procedures specified in this Waste Analysis Plan.

3.1 Analytical Methods for Mandatory Parameters:

Analytical methods for the mandatory parameters are listed in Table C.2. The methods include standard test methods from EPA and ASTM. In addition to the standard test methods, unique procedures and protocols formulated for the

management of hazardous waste by Clean Harbors Kansas, LLC may be utilized. These unique methods, provided in Attachment C-C, have proven to be useful for waste characterization.

Under circumstances where the defined methods may not yield valid data, the Technical Manager may elect to substitute an alternate method for one of those listed in Table C.2 or to modify a method for a particular waste stream. A decision of this sort by the Technical Manager will be documented in the operating record.

Table C.2
Analytical Methods for the Mandatory Parameters

Mandatory Parameter	Methods	Reference/Comments
Physical Appearance	(Refer to Reference/Comments)	The waste or representative sample is inspected and the physical appearance of the waste is recorded, including: color, physical state (solid, semi-solid, liquids, or multiphastic), and layering (single phased, bi-layered, multi-layered).
Water Reactivity Screen	USPCI-2 No applicable reference method for screen	CHK Analytical Procedure 2; Screen for water Reactivity
Oxidizer Screen	USPCI-6 No applicable reference method for screen	CHK Analytical Procedure 6; Screen for oxidizers
pH Screen	SW-846 9040	SW-846 Method; pH of aqueous liquids using probe where the aqueous phase constitutes at least twenty (20) percent of the total volume
	SW-846 9041	SW-846 Method; pH of materials using pH indicator paper when method 9040 is not appropriate
Radioactivity Screen	USPCI-1 No applicable reference method for screen	CHK Analytical Procedure 7; Screen for Radioactivity
Ignitability Screen	ASTM D92	Ignitability open cup screen
	ASTM D93	Ignitiability close cup method
Specific Gravity	ASTM Method D1298	ASTM Method; Specific Gravity of Liquids
HOC screen	SW-846 8270 HRIW-2	CHK Analytical Procedure 2; HOC Screen,reference method is SW-846 8270
Compatibility Evaluation	USPCI-25 ASTM D5058Method A	CHK Analytical Procedure 25; Evaluation of compatibility

1. Clean Harbors and CHK Analytical Procedures and a list of the reference documents are provided in Attachment C-C.

3.2 Analytical Methods for Supplemental Parameters:

Supplemental analyses will be conducted using recognized protocols where available, such as those contained in “Test Methods for Evaluating Solid Waste” (SW-846, in effect as of 2007 or current), or “Standard Methods for the Examination of Water and Wastewater” (APHA), or 40 CFR Part 136 (current edition). Attachment C-C contains a list of the most likely of these various standard analytical methods for some of the supplemental parameters.

CHK may also utilize unique procedures and protocols formulated for the management of hazardous waste, which have proven to be useful for waste characterization. Some of the unique Clean Harbors and CHK procedures are presented in Attachment C-C.

If the CHK laboratory is asked to perform other tests by either generators sending wastes to CHK, or waste management facilities receiving wastes from CHK, these tests may follow a protocol established by the EPA or another standards-setting body, or may be custom-designed specifically for that particular client. In such cases, any supplemental tests which directly impact decisions regarding waste management will be documented in the operating records.

When the Technical Manager decides that supplemental testing is required, the selection of an analytical method will be based upon the property or parameter to be determined and the matrix of the material to be tested. In the selection of an analytical method, it should be noted that the actual analytical procedure used is identical in many cases, regardless of the matrix of the material, only the extraction and preparation steps are different. Consequently, although there are different method numbers for the analysis of water and solid waste or soils, the

analytical procedures are the same. Before the Technical Manager relies on the results of an analytical method for waste management decision, the proper quality control and quality assurance provisions must be in place for the analytical method.

4.0 Sampling Methods: 40 CFR 264.13 (b) (3), 40 CFR Part 261, Appendix I

This section presents methods to be utilized by CHK to obtain a representative sample of wastes. These methods will apply to waste generated off-site (when sampled by CHK) as well as facility-generated waste. Samples received for pre-acceptance analysis are typically sampled by the generator or his agent at the point of origin of the manifest, although CHK or Clean Harbors may, on occasion, serve as the generator's agent to perform the sampling. Incoming load samples are typically taken by CHK personnel at the CHK facility, except when a shipment from Clean Harbors or CHK is sampled at the point of origin (see Section 4.5.4). Discussions of the circumstances under which the sampling will be performed are presented in Sections 5.0 through 7.0. The specific sampling methods selected are dependent on both the nature of the waste and the type of container or tank that the waste is in, and will be decided upon prior to sampling.

4.1 Sampling Safety Precautions:

Because of the potential for exposure to hazards, personnel will wear, at a minimum, safety glasses, gloves, hard hat, and protective clothing while sampling. Personnel may check the waste profile sheet and other pre-acceptance characterization data, manifest, or other documents to be familiar with the wastes and ensure that necessary precautions are taken prior to beginning sampling. Additional protective equipment such as face shields, respirators, etc., will be used as needed.

4.2 Sampling Method Reference:

Generally, sampling will be performed using methods described in: "Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods" (SW-846, in effect as of February 2007); Handbook for Sampling and Sample Preservation of Water and Waste water" (EPA-600/4-82-029); Samplers and Sampling Procedures for Hazardous Waste Streams" (EPA-600/2-80-018); or 40 CFR Part 261, Appendix I. Excerpts from "Samplers and Sampling Procedures for Hazardous Waste Streams" are included for reference in Attachment C-D. Due to the variability of waste, personnel performing the sampling may be required to alter a particular method for some situations. In all cases, the goal of the sampling effort will be to obtain a sample that is representative of the whole.

4.3 Sampling Locations:

Samples will be taken from a variety of locations and therefore will require a variety of sampling techniques and devices. Waste may be sampled from storage vessels, such as a tank, drum roll-off box, lugger box, tanker or dump-type truck. Waste may also be sampled from other locations; such as a sump.

Accessibility to the waste will influence the number of and the location from which samples can be taken. Where practical, samples will be taken from locations displaced both vertically and horizontally. The number of samples required depends on the distribution of the waste components in the storage vessel. A number of samples may be taken to address variations in the waste. If examination indicates stratification in the waste, then each layer may be composited in proportion to its estimated volume.

4.4 Sampling Equipment:

Sampling equipment will be used to obtain a representative sample. This equipment may include a Coliwasa, glass rods, Bacon bomb, etc. Because each sampling situation is unique, the equipment and application may have to be modified to ensure that a representative sample is collected and its physical and chemical integrity are maintained. The personnel performing the sampling will be responsible for determining the appropriate sampling apparatus.

4.5 Other Sampling Considerations:

4.5.1 Frozen Shipments or Samples:

Loads may arrive at CHK at temperatures which prevent a representative sample from being obtained. Under such circumstances, the wastes will be allowed to warm until such time as sampling can be performed. Sampling can occur at any temperature provided a representative sample can be obtained.

4.5.2 Cleaning of Sampling Apparatus:

Sampling tools are visually checked to make sure that they are clean before the sample is taken. When necessary, cleaning of sampling equipment is performed as follows.

Solids are removed to the maximum extent possible with a brush, cloth, or other means; the sampling tool is washed with clean water or appropriate cleaning solution; and solids and rinsate are collected and managed as facility generated waste.

4.5.3 Management of Samples after Analysis:

Samples from waste streams will be either returned to the generator or managed appropriately. For example, the sample from a waste stream approved for a given treatment may be similarly treated. Wastes and/or samples from the CHK laboratory may be consolidated either in a container or a lab pack as appropriate. CHK laboratory wastes will be managed on site or shipped off-site for alternate treatment as appropriate.

For accepted waste streams the representative sample, if one was obtained, will normally be retained by CHK for at least 30 days. Generator supplied samples of waste streams which are unacceptable for management at CHK are returned to the generator (or a representative of the generator), managed on site, or shipped to an alternative waste management facility.

To facilitate this process of accumulating samples and laboratory waste, samples which are approved for the same management process may also be consolidated, if compatible, and managed under the provisions of 40 CFR 262.34.

4.5.4 Remote Project Sampling and/or Analysis:

In cases where off-site sampling or analysis is used for the purpose of satisfying the incoming load procedures, a Clean Harbors representative will be at the site to ensure that the provisions of this WAP are observed. For example, this may occur at remediation projects managed by Clean Harbors.

4.5.5 Lab Packs

Since lab packs contain small quantities of multiple wastes, they are not sampled. Instead, the generator or a representative of the generator will provide an inventory of the contents of the lab pack. The inventory will be reviewed for

incompatibility of contained wastes and the land disposal restrictions. CHK may sample bulked-up lab pack wastes according to container sampling procedures.

4.5.6 Nonhazardous Wastes:

Nonhazardous wastes will be accepted at CHK. In order for a load of nonhazardous waste to be accepted, a waste profile form must be completed by the generator. Typical examples of these forms are provided in Attachment C-A. The profile form utilized has the generator attest that the material is nonhazardous. These wastes will be inspected for physical appearance, at a minimum. Other information, including analytical data, will be obtained as necessary to ensure proper waste management.

4.5.7 Vitrified, Cemented, and Other Materials Exhibiting High Structural Integrity:

There are several wastes which do not allow representative sampling. For example, structural steel, tanks, pipe, cement, glass, filter cartridges, and several other materials will be managed which do not allow the implementation of normal sampling protocols. Of necessity, these materials must be managed on a case-by-case basis.

4.5.8 Regulatory Cleanups:

When a regulatory agency, or their contractor, undertaking a clean-up of a site (e.g., EPA or Kansas Department of Health and Environment) has established the waste characterization information, CHK may utilize this characterization in lieu of pre-acceptance analytical and incoming load analytical information.

5.0 Pre-Acceptance Procedures: 40 CFR 270.14 (b) (2), 40 CFR 264.13 (a), and 40 CFR 264.12 (a)

The purpose of the pre-acceptance procedure is to determine if a waste is acceptable for management at CHK. If it is determined that the waste can be managed at CHK, the generator is notified and may schedule shipment of the waste.

All hazardous wastes generated off-site and proposed for management at CHK will be subject to these procedures. For situations where sampling and analysis cannot be performed due to the nature of the waste or container (e.g., PPE, debris, lab packs, etc.), the circumstances will be documented in the operating record and proper management of the waste will be determined by knowledge of the waste or of the process generating the waste.

5.1 Typical Pre-Acceptance Procedures:

5.1.1 Waste Characterization:

The decision to accept a waste for management at CHK will be in part based on a characterization or profile of the waste. At a minimum, this characterization is accomplished through knowledge of the waste of laboratory analysis of the waste for the mandatory pre-acceptance parameters. The Technical Manager may rely on a characterization performed at another facility owned or operated by Clean Harbors in lieu of duplicating the characterization a CHK.

The activities involved with characterizing a waste at CHK for pre-acceptance purposes are provided below.

Requirements of the Generator: The generator of a waste stream will be required to provide some information on the properties of the waste. The information may include:

- The chemical and physical data requested on the Waste Profile Sheet (WPS) (A typical WPS is shown in Attachment C-A. An equivalent form approved by CHK may be used in lieu of a WPS.),
- Results from the analysis of a representative sample by a laboratory with an appropriate QA/QC plan. If the generator supplies the results of analysis for the mandatory parameters, a representative sample from the generator may not be required, and/or any other supporting documentation as appropriate (e.g., Material Safety Data Sheets, notification and/or certification as required by 40 CFR Part 268).

CHK will review the information provided by the generator for acceptability. If necessary or appropriate, CHK will request additional information from the generator including process information, a representative sample, or the results from other analyses. When the information is considered acceptable, the waste will be evaluated for management at the facility (Refer to Section 5.1.2). The information will be considered acceptable when a reasoned evaluation of the waste can be performed in accordance with Section 5.1.2.

Analysis for Parameters (Mandatory and Supplemental):
CHK may confirm certain waste characterization data supplied by the generator by analyzing the representative sample (s) of the waste for one or more of the mandatory pre-acceptance parameters.

The Technical Manager may also require that analyses be performed for certain supplemental parameters. Analyses for these supplemental parameters may be performed at CHK or a suitable KDHE Certified Laboratory.

The need for analyses for the supplemental parameters will be based on:

- The completeness of the chemical and physical characterization of the waste,
- the completeness of the description of the process generating the waste,
- The results of pre-acceptance analyses performed at CHK or by anotherKDHE Certified Laboratory, and
- The Technical Manager's experience and judgment.

5.1.2 Evaluation:

After completing the pre-acceptance waste characterization, the Technical Manager will determine the acceptability of the waste for management at CHK. This determination will be based on permit conditions, availability of proper treatment techniques, and storage and off-site disposal capacities.

The Technical Manager is responsible for making the decision to accept or reject a waste based on an evaluation of the information and data gathered during re-acceptance procedures. After this decision is made, the generator will be notified of the decision to approve the waste for management, to approve the waste under certain conditions (e.g., packaging, etc.), or to reject the waste for management.

If the waste is to be received from a foreign source, the Kansas Department of Health and Environment will be notified in writing at least four weeks in advance

of the first scheduled shipment, in accordance with 40 CFR 264.12 (a). This notification will include generator's name, address, quantity of hazardous waste, and EPA hazardous waste code(s).

5.2 Recharacterization Frequency:

CHK will re characterize incoming waste streams at least every two (2) years. Any incoming load accepted at CHK must have been characterized (or re characterized) within the last twenty-four (24) months. A sample of an incoming load may be used for the re characterization. CHK will also repeat the pre-acceptance characterization if:

- A generator notifies CHK that the process generating the waste has changed
- The incoming load is outside of the acceptable tolerance range provided in Table C.3 (unless the discrepancy can be resolved as described in Section 6.1.5, Incoming Load Evaluation), or
- The Technical Manager suspects that a waste shipment differs from the pre-acceptance characterization (the generator may be contacted prior to re characterizing the waste).

In the event that a Kansas-generated waste changes such that the re characterization involves assigning or removing a waste code, the related analyses will be performed at a Kansas certified laboratory.

6.0 Incoming Load Procedures: 40 CFR 270.14 (b) (2), 40 CFR 264.13 (a), (b) (4), and (c)

The purpose of these incoming load procedures is to determine if a waste shipment (incoming load) arriving at CHK matches the characterization of waste

on which the pre-acceptance evaluation was based. Wastes which correspond to the waste characterization documented during the pre-acceptance procedures may be accepted for management at CHK. This section provides the procedures for determining if a significant difference exists between the pre-acceptance characterization and the waste shipment.

On occasion, a generator will ship a load before pre-acceptance procedures are completed. Incoming loads that have not been qualified through pre-acceptance procedures prior to arrival at CHK will not be accepted until the pre-acceptance procedures described in Section 5.0 have been performed. In the case of loads of containers, the containers may, before or after they are unloaded from the transport vehicle, be sampled for analysis of the mandatory pre-acceptance parameters. The containers will remain staged in one or more container management unit (s) until the pre-acceptance procedures are completed. Under these circumstances, the same analytical results may be considered both as re-acceptance and incoming load analyses.

The procedures described in this section apply to hazardous waste generated off-site which will ultimately be managed at CHK. Facility generated wastes are not subject to the incoming load procedures described in this Section. Wastes received at CHK only for the purpose of transfer to another facility in accordance with 40 CFE 263.12 and 264.1 (g) (9) are also not subject to the incoming load procedures. These 10-day transfer wastes may remain at the site for a period not to exceed ten (10) days prior to continuing the journey to the designated treatment, storage, or disposal site. 10-day transfer loads remain “in transit” during the entire stay at the site. These wastes may be off-loaded and transferred to another vehicle. Because these 10-day transfer loads are never accepted into the CHK waste management system, no analyses are performed on the loads. However, 10-day transfer wastes are tracked using the waste tracking system. 10-day transfer loads generally remain on the truck or in the

loading dock areas, although the wastes may occasionally be placed in a CMU temporarily prior to reshipment off-site. At no time will the total waste volume in any CMU exceed the permitted storage capacity.

For situations where sampling and analysis of an incoming load cannot be performed due to the nature of the waste or the containment vessel (e.g., debris, PPE, lab packs, etc.,) the circumstances will be documented in the operating record and proper management will be determined by knowledge of the waste or of the process generating the waste.

6.1 Typical Incoming Load Procedures:

The events which typically occur during the incoming load procedures are described below. The events discussed are not necessarily performed in the sequence presented.

6.1.1 Incoming Load Arrival:

Incoming load evaluation will be performed after arrival of the waste shipment at CHK. An incoming load will remain in the receiving area, except for containers to be managed in the container management units, until any significant discrepancies have been resolved. Shipments of containers may be sampled before they are unloaded, or they may be unloaded at the container management units for staging and sampling.

Wastes may remain on the transport vehicle or in a staging area for up to 72 hours while awaiting completion of acceptance procedures. If incoming load procedures are not completed within that time, the containers will be placed in a container management unit, segregated according to the information available from the manifest, Waste Profile Sheet, and other documentation. In the event

that subsequent information (e.g., analytical results) indicates that the material is incompatible with the other wastes stored in that CMU, the container will be moved to an appropriate CMU. The Waste Tracking System will record the location and date of acceptance for each container received at the site.

6.1.2 Manifest Review:

Incoming waste shipment manifests are subjected to a review for completeness. A typical manifest is shown in Attachment C-A. Information about the generator, the waste, and the piece count, volume or weight will be checked. A significant discrepancy between the manifest and the actual shipment is defined as:

- For bulk waste, variation greater than ten (10) percent weight or volume,
- For batch wastes, any variation in piece count, such as a discrepancy of one drum in a truckload, or
- Any significant variation in waste type.

Discrepancies may be resolved by a review of the records maintained at CHK or through discussion with the generator, transporter, or sales representative. Corrections of significant discrepancies in the manifest are made with the concurrence of the generator and are initialed and dated by the individual making the corrections.

If a significant discrepancy in waste type cannot be resolved the affected wastes will be rejected. Causes for rejection can include, but are not limited to, variance from expected constituent concentrations and variance from expected physical characteristics. If a significant discrepancy in piece count of volume cannot be resolved, the load may be accepted or rejected. If the load is accepted, CHK will notify the Kansas Department of Health and Environment in accordance with 40

CFR 264.72 (b), and will submit an exception report. The decision to reject a waste load is made by the Facility Manager or his designee. If a waste is rejected, it will be returned to the generator or sent to an alternative facility agreed to by CHK and the generator.

6.1.3 Inspection, Sampling and Analysis:

Analysis will be performed as outlined in the WAP on the incoming load for parameters listed on Table C.1. The methods of sampling and sample preparation will vary depending on the physical state of the waste and the type of container in which the waste shipment arrives. Samples for incoming load analysis, when sampling is appropriate, will normally be retained at the CHK laboratory for at least seven (7) days after analysis.

Bulk Loads of Liquid, Solid, or Multiphastic Wastes:
Bulk liquid, solid, or multiphastic wastes shipped to CHK will be inspected and, where appropriate, sampled for laboratory analysis. The values of the incoming load parameters will be determined by the analysis of a sample of the shipment.

An exception to this will be where multiple bulk loads of a single waste stream are received from a single source (e.g., a major site clean-up of contaminated material or a large volume generator). These shipments may arrive by rail in rail cars, or by road in bulk containers (e.g., end-dump trucks or intermodal containers). In either case, samples from twenty (20) percent of the bulk containers will be analyzed for the incoming load parameters. These samples may be obtained either when the wastes are transferred into the bulk containers or at the CHK facility prior to unloading. The contents of bulk containers will, at a minimum, be inspected for physical appearance.

Containers: Each shipment of containers is checked against the manifest to confirm piece count and type of container. Containers will be checked for proper labeling and markings and to see that they are in acceptable condition (i.e., not deteriorated, damaged, corroded, leaking, or bulging). Containers may be sampled before or after off-loading.

During the incoming load procedures, the contents of a minimum of ten (10) percent of the containers from a waste stream will be sampled. The samples may be composited and the values of the incoming load parameters will be determined by analysis of the composite.

One exception to this will be where multiple waste streams from one generator have been pre-accepted into the same management category. A composite of a minimum of ten percent of all such drums or other containers on the same incoming load may be made for the incoming load analysis.

Another exception will be multiple generators who produce similar waste streams by a similar process. When such waste streams are received on the same incoming load, the contents of a minimum of ten percent of all containers form such waste streams will be sampled and composited. The values of the incoming load parameters will be determined by analysis of the composite as if the composite were from a single generator‘s waste stream.

Containers will remain closed except during sampling procedures and when adding or removing wastes. Additional container storage and treatment considerations, including provisions for visual inspection, are provided in Section 7.1.1.

6.1.4 Customer File Review:

The hazardous waste manifest or nonhazardous waste form will be compared to information contained in the customer file for items such as:

- Approved management method (s),
- Required analysis,
- Recommended supplemental analyses (if any),
- Pre-acceptance analysis data,
- Available test results from previous incoming loads, and
- Any other pertinent information

6.1.5 Incoming Load Evaluation:

Analytical results for the incoming load parameters are recorded on the CHK Receiving Report (typical form shown in Attachment C-A) and compared to the corresponding pre-acceptance analysis. Table C.3 lists the parameters whose values are determined during incoming load procedures, and the acceptable range of variation, between the value of a parameter determined at pre-acceptance and at incoming load, within which a waste may be accepted. For each parameter, if the difference between the values of a parameter determined during pre-acceptance and incoming load procedures is within the acceptable range, the waste shipment will be deemed the same (conformance) as the waste accepted for management at CHK during the pre-acceptance procedures. If the difference between the values of a parameter determined during the pre-acceptance and incoming load procedures is outside of the acceptable range, the waste shipment will not be deemed the same (nonconformance).

Table C.3
Acceptable Tolerance Ranges
For Incoming Load Analyses

Parameter	Tolerance Range
Physical Appearance	Similar waste character
pH Screen	+/- 1.5 ph units
Specific Gravity	+/- 15% (liquids and sludges)
Water Reactivity Screen	Positive to negative, only
Ignitability Screen	Positive to negative, only
Radioactivity Screen	Negative is the only acceptable result
Oxidizer Screen	Positive to negative, only
HOC Screen	Positive to negative, only

Notes:

1. The inherent variability of the physical appearance of wastes does not allow quantification of the tolerance range. The inspection for physical appearance is performed during the incoming load procedures to indicate a significant change in the nature of the waste (e.g., a liquid rather than a solid) which may indicate a change in the composition or the process generating the waste.
2. The pH is determined for aqueous liquids or free liquids associated with solids or multiphasics.
3. If the results of the screen are positive during the pre-acceptance procedures, the results during the incoming load procedures can be either positive or negative. If the results of the screen are negative during the pre-acceptance procedures, the results during the incoming load procedures can only be negative (i.e., a positive result is outside of the acceptable tolerance range)

An apparent nonconformance may be resolved before the waste is rejected or re characterized. One or more of the following sources of information may be used to resolve an apparent nonconformance:

- The generator's knowledge of the waste or of the process generating the waste,
- The Technical Manager's knowledge of the waste or of the process generating the waste in light of the pre-acceptance characterization and any additional information in the customer file or accompanying the waste shipment (e.g., manifest, Material Safety Data Sheet, etc.), or
- Additional laboratory analysis.

Resolution of any nonconformance will be documented in the operating record. Nonconformance of waste shipments which cannot be resolved will be documented in the operating record. Wastes found to be nonconforming will be rejected or re evaluated prior to acceptance. If the generator concurs with the re evaluation, the waste can be approved for acceptance. If the generator rejects the evaluation, the waste will be returned to the generator or sent to an alternate facility of the generator's choosing.

Incoming load evaluation is aided by the use of Figure C.1. This figure is intended to serve only as a guide in the decision-making process.

For lab packs, the Incoming Load Procedures including a piece count, inspection of drum numbers and identification, and a review of the inventory list provided in the accompanying paperwork to verify that the manifest and pre-acceptance information match.

6.2 Waste Material Transfer and Tracking:

Waste tracking numbers will be assigned by CHK upon arrival at CHK. Waste tracking information is maintained as part of the operating record. Internal tracking and recording of waste movement includes:

- Waste identification,
- Arrival date,
- Weight and/or quantity of wastes received,
- Current and previous storage locations on-site; and
- Recording of waste management after receipt.

The Waste Tracking report will be generated for each day that waste is moved and as necessary will be printed and made available to site personnel and inspectors. Historical waste tracking information will be maintained on-site as part of the operating record.

7.0 Storage, Treatment or Other Waste Management Activities:

Management of a given waste within the facility which results in a change of its character may make the waste subject to additional inspection, sampling, and analysis. Many of the analyses needed for storage, treatment or off-site disposal are performed during either the pre-acceptance or incoming load procedures specified in Sections 5.0 and 6.0 of the WAP. Additional analyses may be conducted, before off-site management of the waste, if there is reason to document that the waste may have significantly changed during storage or treatment or to confirm compliance with the restrictions on land disposal contained in 40 CFR Part 268.

The waste management process for which periodic sampling and analysis may be applicable includes:

- Storage, consisting of containers and tanks;
- Treatment, including blending and treatment in containers and container management activities; and
- Off-site disposal, consisting of shipment of wastes to a landfill, injection well, etc.

The analytical procedures for each of these waste management processes is described separately blow. For situations where sampling and analysis cannot be performed due to the nature of the waste or container (e.g., PPE, debris, lab packs, etc.), the circumstances will be documented in the operating record. In this case, the Technical Manager will determine proper waste management based on knowledge of the waste (e.g., an inventory of the contents of a lab pack) or of the process generating the waste.

7.1 Storage

7.1.1 Storage in Containers:

In addition to the incoming load procedures for containers, the following considerations for storage in containers will be observed.

Visual inspection: For containers placed in the container management units for storage or treatment at CHK, ten (10) percent of the shipping containers from a waste stream are sampled during the incoming load procedures (this does not apply to wastes which cannot be sampled such as lab packs, debris, etc., or transshipped wastes destined to another waste management facility). The

exterior of all containers is visually inspected during unloading, and subsequently will be inspected in accordance with the Inspection Plan (Section F). The contents of all containers that are empties, mixed, or otherwise processed are subject to visual inspection at least once prior to processing.

Storage Areas: Following unloading, hazardous wastes in containers are stored in areas equipped with secondary containment.

Compatibility: Once they have been unloaded, analyzed, and accepted, wastes are segregated to ensure that incompatible wastes are not stored together. Even if Incoming Load Procedures are not completed within 72 hours, containers will be placed into CMU's, segregated according to information from the manifest, Waste Profile Sheet, and other documentation. If subsequent analytical results or other information indicate that the waste may be incompatible with other waste in that CMU, the waste will be moved into an appropriate CMU.

Waste with Ignitable and Reactive Characteristics: Ignitable and reactive wastes are identified through the pre-acceptance and incoming load procedures described in the WAP and by information submitted by the generator, Wastes identified as reactive will be managed so as to ensure that these wastes do not contact potentially incompatible wastes. Even if Incoming Load procedures are not completed within 72 hours, containers will be placed into CMU's, segregated according to information from the manifest, Waste Profile Sheet, and other documentation. If subsequent analytical results or other information indicate that the waste may be incompatible with other wastes in that CMU, the waste will be moved into an appropriate CMU.

7.1.2 Storage in Tanks:

In addition to the incoming load procedures for waste in storage tanks, the following considerations will be observed.

Compatibility: Wastes added to the tanks must be compatible with the contents of the tank and the material of construction of the tank. A compatibility evaluation as detailed in Attachment C-C (USPCI-25) will be performed prior to transferring a waste into a tank.

Waste with Ignitable, Corrosive and Reactive Characteristics: Bulk ignitable, corrosive and reactive wastes are identified through the pre-acceptance and incoming load procedures and by information submitted by the generator (e.g., manifest, notification, etc.). Liquid wastes which exhibit the characteristic of ignitability will be placed in appropriate tanks for storage and/or treatment at the facility. Reactive wastes will not be placed in the tanks or tanks systems for treatment, but may be stored in the tanks if the waste is protected from any material or conditions that may cause the waste to react, or if such storage in the tanks is used solely for emergency purposes.

7.2 Treatment:

Analyses which support the treatment processes available at CHK may be divided into three categories, each with a specific purpose:

- Pre-treatment analyses confirm that the waste falls within the selected process design parameters and may allow improvement of the process conditions;
- In-process analyses are performed as needed to control the process and to monitor progress; and

- Post-treatment analyses may be performed as needed to confirm that treatment is successful and that the characteristics of the process effluent are such that it can be sent to the next step (e.g., disposal, further treatment, discharge, reuse, etc.).

7.2.1 Blending:

The process of blending waste is performed to produce a mixture which can be used as a supplemental fuel for boiler, industrial furnaces, lime and cement kilns, or similar operations. The blended wastes may also be incinerated. In this process, wastes containing sufficient heating values will be blended with other suitable wastes. Pre-acceptance analyses are used to determine the acceptability of each waste stream for the blending process. Additional analysis for heating value will be performed during pre-acceptance procedures for all hazardous wastes destined for supplemental fuels. The heating value of supplemental fuels sent to BIF's that have not obtained certification of compliance with the BIF requirements will comply with the requirements of the 40 CFR 268 or applicable state law, whichever is more stringent.

In process analyses may be performed to monitor and characterize the intermediate mixture. Post-treatment analyses may consist of those tests necessary to ensure that the blended waste mixture is within the final product parameters. The final product parameters are based on the permits and needs of the facility which will receive the product from CHK. For example, if the facility which will receive the product has specifications for a minimum heating value and maximum chlorine content, then the blend requirements will be a function of these specifications. Analytical data provided for waste determination and burning will be performed by a Kansas certified Laboratory .

7.2.2 Container Management Activities:

Container management activities will include the following. Due to the nature of these treatments, supporting analyses are not typically required except as discussed below.

- Lab Pack Container Repackaging: Compatible Lab packed wastes may be consolidated from several smaller containers into larger container as a source reduction. These larger containers are then shipped offsite for treatment, recycling, incineration, kiln fuel use, or other off-site management.

7.3 Off-site Management:

Many of the analyses needed for off-site management are performed during either the pre-acceptance or incoming load procedures. Additional analyses may be conducted if there is reason to document that the waste may have significantly changed during storage or treatment or to confirm compliance with the land disposal restrictions when applicable.

7.4 Other Considerations:

7.4.1 Lab Packs:

Lab Pack inventories will be reviewed during the incoming load procedures for consistency with shipping papers and the manifest, incompatibility of contained materials, and land disposal restrictions. Since lab packs contain may small quantities of individual materials, they will not be sampled. All lab packs will be visually inspected, and at least ten (10) percent of the lab packs received will be opened and visually inspected. The contents of lab packs that are decanted and bulked into larger containers will then be subject to container sampling procedures as facility generated wastes. A record of all on-site movement of lab pack wastes will be part of the waste tracking system.

7.4.2 Management of Facility Generated Wastes:

Examples of facility generated wastes include:

- Sump residues;
- Clean-up from spills and decontamination of waste management units;

- Floor sweepings from hazardous waste management units;
- Wash waster;
- Residue from in-line basket strainers or other process related ancillary equipment;
- Personal protective equipment;
- Laboratory wastes;
- Tank bottoms;
- Used oil;
- Other solid waste generated from the management of a hazardous waste; and
- Other miscellaneous materials originating from a waste generating process (e.g., solvents or degreasers from the maintenance area, etc.).

Any hazardous wastes generated at the facility will be managed in accordance with the provisions of the WAP (with the exception of the incoming load procedures) and with CHK acting as the generator. Any hazardous wastes generated at the facility that are stored on-site in containers for less than ninety (90) days will be managed in accordance with 40 CFR 265.34.

Where the facility generated waste is traceable to a known waste generating process or segregated storage area (such as a container management unit or an individual tank), traceable codes are carried on CHK wastes. Where the facility generated waste is not traceable, a sample of the waste will be characterized through the pre-acceptance procedures, provided in Section 5.0 of this WAP, to determine proper management. When laboratory analyses are necessary to assign or remove a waste code to site-generated wastes, those analyses will be performed at a Kansas certified laboratory.

Facility generated waste will be collected and placed in tanks or containers. A compatibility evaluation will be performed if the facility generated waste is added to a tank or container already containing waste.

7.4.3 Change of Tank or Container Service:

A change in service of a container, tanks system, or other equipment (i.e., placing a waste which is incompatible with the previous contents) will only occur if the cleaning procedures described below are followed. The container or tank will be rinsed with a neutral or mutually compatible material. This material can be other wastes. The rinse can also be accomplished by filling the container or tanks with other wastes. Upon removal of the “rinse”, the container or tank will be considered ready for the change in service. Tank entry and inspection will be performed as necessary. Material in the tank will maintain all listed codes between tank cleanings.

A change in service from hazardous waste to non-hazardous waste treatment or storage will involve slightly different cleaning procedures. The unit will be emptied of waste and cleaned using whatever means necessary (e.g., brush, sweep, scrape, wash, rinse, etc.) to remove residuals. When the unit shows no visible evidence of contamination, the unit will be determined to be cleaned sufficiently to enable non-hazardous waste use. As an extra precaution, the first three volumes of non-hazardous waste run through the unit following cleaning will be managed as hazardous waste carrying the codes that had been contained in the tank previously. Subsequent batches of non-hazardous waste will be managed as non-hazardous.

For units that are not amenable to the cleaning described above, the facility will run three volumes of waste or a cleaning agent through the unit prior to managing subsequent wastes as non-hazardous. For equipment, the facility will

either triple rinse the equipment with a cleaning agent of non-hazardous waste, or will run three volumes of waste or cleaning agent through the equipment prior to managing the subsequent wastes as non-hazardous.

The facility may, on occasion, opt to manage non-hazardous wastes through a hazardous waste unit that has not been cleaned. Under these circumstances, CHK will manage those non-hazardous wastes as hazardous, in accordance with 40 CFR 261.3.

7.4.4 Other Management Activities:

Other waste management activities which will take place at CHK will include:

- Transferring drummed solids into gondolas for safer and more economical transport to landfill facilities where this material will be disposed;
- Transferring drummed liquid into tanker trucks for off-site shipment and disposal;
- Transferring material from drums that show signs of deterioration to new drums, or transferring incinerables from steel drums to approved poly drums to allow easier incineration; and
- When shipping requirements allow, repackaging friable solids to be disposed in bulk processes into fiber boxes or bags that better accommodate the disposal handling technology.

8.0 Quality Assurance Plan: 40 CFR 264.13

8.1 Introduction:

The QA/QC measures described herein will help to ensure that the data provided by the laboratory analysis performed at or for CHK are technically sound and statistically valid.

The data generated by the laboratory in conjunction with the waste analyses will be used to determine certain parameters of the wastes to be managed at CHK. The handling and treatment procedures and determination of treatment efficiency will be based on these data.

The processing of waste and corresponding analytical requirements during the management of wastes at the facility (i.e., from pre-acceptance characterization through shipment off-site) are described elsewhere in this WAP (refer to Sections 5.0 through 7.0). The terms used in this section will have the same meaning as provided in SW-846 ("Test Methods for Evaluating Solid Waste," EPA, in effect as of 2007).

8.2 Laboratory Organization:

The lab will generally be organized as illustrated in Figure C.2. This organization may be altered as workloads, equipment, and methodologies change.

8.3 Quality Assurance Objectives:

The quality assurance objectives of the WAP are to provide data that are of known and documented quality. The mandatory parameters for which analyses will be performed during the pre-acceptance and incoming load procedures are listed in Table C.1. Table C.4 lists the precision and accuracy goals for the mandatory parameters.

Other supplemental analyses may be performed, as dictated by operational requirements. If supplemental analyses are performed, the quality assurance objectives will be as defined in the analytical method used or as developed by CHK/Clean Harbors Kansas LLC.

Table C.4
Precision and Accuracy objectives for the Mandatory Pre-acceptance and Incoming Load Parameters (for waste samples)

Measurement Parameter	Precision	Accuracy
Water Reactivity Screen	pos./neg.	N/A
Oxidizer Screen	po./neg.	N/A
pH Screen	+/-2 pH units	+/- .5 pH units
Radioactivity Screen	po./neg.	NA
Ignitability Screen	po./neg.	NA
Specific Gravity	+/- 20%	100 +/- 20%
HOC Screen	po./neg.	N/A

Note:

1. If supplemental analyses are performed the QA/QC defined in the method will be used.
2. CHK cannot evaluate the accuracy data on this test due to lack of calibration materials. The meter will be calibrated at least annually.

8.4 Sampling and Analytical Procedures:

8.4.1 Pre-Acceptance:

Information about pre-acceptance sample will be entered into a sample record. The sample record will be tracked by Profile or barcode Number or such other numbers as may be deemed appropriate. This number will be used to track the sample information through the record keeping system. The sample container and any analytical results are to have this number to help track the information about the sample. The parameters for which the values will be determined during the pre-acceptance procedures are provided in Section 2.0. The analytical methods used to determine the values of these parameters are provided in Section 3.0.

8.4.2 Incoming Load:

The procedure for obtaining a representative sample of a waste during the incoming load period is provided in Section 4.0 of the WAP. Section 4.0 includes descriptions of the types of sampling equipment and other considerations regarding sampling.

When a suitable KDHE Certified Laboratory performs the incoming load analysis, CHK will review the report for certification of what standard analytical method was used to obtain the results. If a non-standard method was used, documentation must be provided to support the validity of the data.

8.5 Calibration Procedures and Frequencies:

Any analytical instrument used to generate data must be calibrated to ensure that accuracy is within acceptable limits. The laboratory analyst is responsible for ensuring that the proper standard is used in performing the calibration.

The frequency of calibration is determined by several factors (e.g., instrument stability, accuracy of data required, methodology employed). Calibration schedules are determined around a nominal period and increased/decreased to fit the requirements of a given test. The calibration schedule is always biased toward an increased frequency.

Unless otherwise stated in the QA/QC Plan, the method and frequency of calibration will be performed as defined in the analytical methods used.

8.5.1 pH/Selective Ion Meters:

The pH meter will be standardized at two points with reference buffer solutions (generally pH4, pH7 or pH 10). The calibration will be checked with another buffer from a source different from the calibration buffers; this buffer will be called the Continuing Verification (CCV) buffer. The CCV buffer will be read after initial or any subsequent calibration reading with an acceptable tolerance of +/- 0.5 pH units from the true value. If the CCV reading is not within the tolerance limit the instrument will be recalibrated. The CCV will be reanalyzed after each sample analysis and recalibration will be required if the reading fails outside of the +/- 0.5 pH units tolerance limit. The pH meter will be calibrated daily prior to the start of any pH measurements.

8.5.2 Balances:

Balances will be of a type appropriate for the accuracy of the weighing to be performed. Balances available may include single pan analytical and single pan

top-loading. The analytical balances will be placed on a stable surface and the level checked and adjusted as necessary.

Balance calibrations will be checked with standard weights as appropriate for the routine use of that balance. The results of these checks will be recorded. Performance of any service will be recorded in the instrument log book.

8.5.3 Other Instrumentation:

CHK will include a laboratory equipped to perform, at a minimum, the standard test methods and unique test methods listed in Table C.2. Calibration procedures and frequencies for instrumentation not listed in the WAP will be performed according to the manufacture's instructions or the applicable reference methodology.

8.6 Analytical Procedures:

Standard analytical methods or methods developed by CHK and Clean Harbors will be used for determining the value of selected parameters. The Technical Manager may make minor modifications to the method, as necessary, while keeping within the intent of the method. The Clean Harbors and CHK analytical methods are provided in Attachment C-C. The standard methods will be obtained form such sources as the following.

- "Test Methods for Evaluating Solid Waste", SW-846, in effect as 2007 or most current,
- EPOA Office of Water and Waste Management, Washington, D.C 20460.
- "Annual Book of ASTM Standards", American Society for Testing and Materials, 1916 Race Street, Philadelphia, Pennsylvania 19103

- "Standard Methods for the Examination of Water and Waste Water", American Public Health Association.
- "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, EPA, Environmental Monitoring and Support Lab, Cincinnati, Ohio 45268.
- Title 40 of the Code of Federal Regulations, Parts 260-268 (current edition).

8.7 Data Reduction, Validation, and Reporting:

In the process of relating a measurement to the concentration of an analyte in the sample, certain guidelines must be followed to avoid distortion of the analytical value through the calculation process. Calculations will follow generally accepted rounding and significant figure rules. Raw data and calculations are recorded by the analyst on a data sheet. The data sheet will include:

- The test performed;
- Sample information such as volume, weight, and dilutions;
- The analyst's identity;
- The date samples were prepared and/or analyzed; and
- Sample results.

8.8 Internal Quality Control Checks:

8.8.1 Methods:

The laboratory uses only quality control methods which are based on those recognized by sources such as National Institute of Standards and Technology (NIST) or American Society for Testing Materials (ASTM).

8.8.2 Spike Samples:

The sample resulting from the addition of a known amount of analyte into a portion of a previously analyzed sample is called a spike sample. The data resulting from the analysis of the spike sample can be evaluated to determine the accuracy of the analytical method as well as the impact of interferences in the sample. Accuracy is determined by percent recovery comparing the result of the analysis of the spike sample with the results of the original sample. Poor recoveries may indicate interferences in the sample or an inappropriate application of a test for that sample type.

When appropriate, a method should be evaluated using a spike control (method spike). A spike control is a blank matrix (deionized water or similar analyte-free matrix) spiked with a known amount of the analyte (s) of interest. The recovery of the analyte will be maximized under these conditions and will indicate the performance of the method based upon recovery under ideal conditions.

After a method has been proven effective using a spike control, the ongoing process is monitored with spike samples. Spike samples should be analyzed at a minimum frequency of five (5) percent (e.g., one (1) of every twenty (20) samples). For tests that are run infrequently, spikes should be analyzed with every batch. To eliminate systematic errors, the source of the spike material should be independent of the analytical method's routines material.

After a sufficient number of recoveries for a given parameter have been accumulated, control limits will be established. The precision and accuracy objectives provided in Table C.4 will be updated periodically to reflect the new

control limits. Recoveries which exceed the control limits indicate the need to reanalyze the associate sample batch. Exceptions may be documented by respiking/reanalyzing and written comment.

8.8.3 Replicate Samples:

Replicate samples help evaluate the precision of a method and quantify the uncertainty of an analytical value. Replicates can exist in two forms, replicate sample analysis or replicate spiked sample analysis. If no analytes are expected to be found in an analysis it is better to choose to do replicate spiked samples.

Replicate samples, usually a duplicate, are to be analyzed at a minimum frequency of 5% (1 of every 20 samples). For tests which are run infrequently (e/g/, once a month), duplicates will be analyzed with each batch.

After a sufficient number of replicates for a given parameter have been accumulated, control limits will be established. The precision and accuracy objectives provided in Table C.4 will be updated periodically to reflect the new control limits. Replicates which exceed the control limits indicate the need to reanalyze the associated sample batch. Exceptions may be documented by respiking/reanalyzing and written comment on the laboratory bench sheet.

8.8.4 Blanks:

Blanks demonstrates that the method is free from interferences of allow the analyst to monitor background and keep it form reaching levels at which would interfere with the detection and quantification of the target analytes. However, not all methods are amenable to blanks (e.g., specific gravity).

Blanks are to be run once in every twenty (20) samples or with each sample batch, whichever is more frequent. Analyte concentration in the blank should not exceed five (5) times the method detection limit.

If the level of blank contamination is constant and can be controlled, appropriate control limits can be established. Blank valued must be recorded on an ongoing basis in this case.

8.8.5 Calibration Materials:

Quantifying the amount of an analyte in a sample is dependant on the reference used. A value can only be as good as the standard to which it is compared. Calibration materials must be of known purity and composition.

When a laboratory standard is created, it must be compared to an existing standard to insure it is within acceptable tolerances. This may involve the use of a Standard Reference Material (SRM) from the National Institute of Standards and Technology (NIST), EPA, or another source which can be tracked back to NIST or EPA.

Quality control samples from the EPA or similar agency/organization (e.g., NIST) can be used to evaluate the accuracy of a standard and/or instrument calibration.

8.9 Performance and System Audits:

8.9.1 Performance Audits:

These audits involve the use of blind samples given to an analyst to evaluate the accuracy and precision of an analysis the term blind (sometimes called single blind) means the analyst is aware that these samples are spikes, but is not aware of the concentration. These audits will be coordinated by the Technical Manager on an annual basis.

Major defects (e.g., a finding of a chemist not analyzing quality control samples, improper calibration procedures being used) which are discovered by these studies are investigated and appropriate corrective action applied.

8.9.2 System Audits:

System audits evaluate the laboratory staff's capability to produce good data. These audits allow the Technical Manager to judge whether or not the quality control practices are being followed and are effective. The system audits are conducted by the Technical Manager at least annually. The results of these audits require a response form the laboratory staff listing any corrective actions taken to remove defects.

8.10 Preventative Maintenance:

The manufacture's manual for a particular instrument will be consulted for operating instructions. Maintenance schedules recommended by the manufacturer will be followed as applicable. Maintenance will be properly recorded in the instrument maintenance record.

8.11 Procedures Used to Assess Data, Accuracy, and Completeness:

Method spike recoveries will be used when testing new procedures and training new analysts. The spikes will usually be made at levels appropriate for the analysis (approximately ten (10) times the estimated detection limit).

Matrix spike samples will be analyzed along with sample batches to estimate the accuracy of the analysis. The recovery will be within the 95% confidence interval (i.e., plus or minus two (2) standard deviations) for historical data.

8.11.2 Replicates (Includes Matrix Spike Duplicates):

Replicates will be analyzed along with sample batches to estimate the precision of the analysis. In lieu of historical data, the Relative Percent Difference (RPF) shall be less than or equal to twenty (2) percent (providing the results are at least ten (10) times greater than analytical detection limit) unless the QA/QC is dictated in the method.

8.11.3 Instrument Calibrations:

Instruments will be calibrated with at least three (3) standards (where applicable). Linear regression is the preferred technique to analyze calibration data. In this case the correlation coefficient must meet or exceed the critical value for a 95% confidence interval.

In cases where it might be deemed more suitable to use another method for determining calibration precision (such as computing %RSD of Relative Response Factor values), appropriate confidence limits will be set per method specifications.

8.11.4 General Laboratory Parameters:

Within the laboratory there are numerous other parameters to be evaluated. The objective for any control limits based on historical data will be the 95% confidence interval (mean plus or minus two (2) standard deviations). Other values may have set limits based on method specifications as applicable.

8.12 Corrective Action:

When a control limit is exceeded, the analyst will stop the analysis and investigate the problem. When appropriate, the analyst must demonstrate by analysis that the problem has been corrected. When the cause for the exceedence has been identified and corrected, all data generated by that analysis since the last “in-control” analysis is suspect; all samples analyzed for the failing method should be reanalyzed. If the error can be attributed to a specific event, all data generated since the last “in-control” event must be reevaluated. If the QA failure can be attributed to sample rather than method failure (e.g., matrix effects), the data from that sample, and like samples are suspect and the data from those samples should be flagged or an alternate method used. In this case, other sample data generated concurrently can be reported. All QA failures and the resulting corrective action must be documented in the operating record.

8.12.1 Instrument Calibration Checks:

An instrument calibration check is the repetitive analysis of a given standard to ensure consistent instrument operation form day to day. Some methods utilize specific procedures to evaluate this check. If the value exceeds control limits, the analysis must be stopped and corrective action implemented.

8.12.2 Spike Recoveries:

Percent recoveries for matrix spikes and/or surrogate spikes are monitored by the analysts and must be within the control limits established by multiple analyses under similar conditions.

Outlier values must be documented with an explanation. Some problems may be deemed an unavoidable part of normal operation. Other problems are indicative of the need for re extraction or reanalysis. Corrective actions will be documented. In lieu of historical data, when sufficient data have been collected, CHK may utilize new control limit criteria.

If matrix effects are suspected as the cause of low spike recovery, the same sample is to be re-spiked once. If the recovery is still low, matrix interference can be assumed. Matrix effects can be overcome by changing the point of spike addition in the case of metals (spiking at the instrument rather than at the processing step), by diluting the sample to overcome the interference, or by the use of an alternate analytical method or technique. If the interference cannot be overcome, the data must be flagged and the low recovery must be taken into account in any decision regarding that sample.

8.12.3 Duplicate:

Relative Percent Difference (RPD) criteria are used to evaluate duplicate analyses. The analyst must monitor this value and document the cause of an outlier. The spiking levels for Matrix Spike/Matrix Spike Duplicate should be at least two (2) times the native levels and at least ten (10) times the Method

Detection Limit. Poor precision at low concentrations can contribute significantly to the inaccurate determination of RPD.

8.12.4 Performance Audits:

Performance audits involve the use of blind samples given to an analyst to evaluate the accuracy of an analysis. Major defects which are brought to light by these studies are investigate and appropriate corrective action is taken (e.g., retraining analysts or reanalysis of spike samples). Corrective actions are reported to the Technical Manager.

8.12.6 Method Blanks:

Reagents, process chemicals and laboratory glassware must be monitored for each sample batch to determine their contribution or impact on the analyte concentration. If the Method Blank exceeds the control limit, the analysis must be stopped and the source of the blank contribution identified and corrected. If the blank problem is identified to be universal, once the problem has been rectified, all samples using those chemicals or glassware must be reanalyzed.

8.13 Quality Assurance Reports to Management:

Oral and/or written reports of the results of inspection and other major problems will be provided to the Technical Manager. Other reports will be provided at his/her request.

Attachment C-A

Typical Forms

Attachment C-A

Table of Contents:

1. Waste Profile Sheet (3 pages)
2. Uniform Manifest (1 page)
3. CHK Land Disposal Restriction Forms (8 pages)
4. CHK Receiving Report (1 page)

Attachment C-B

Waste List for Clean Harbors Kansas

Attachment C-C

Analytical Methods

Attachment C-D

Excerpts from "Samplers and Sampling Procedures for Hazardous Waste Streams"

Figure C-1
Incoming Load Evaluation

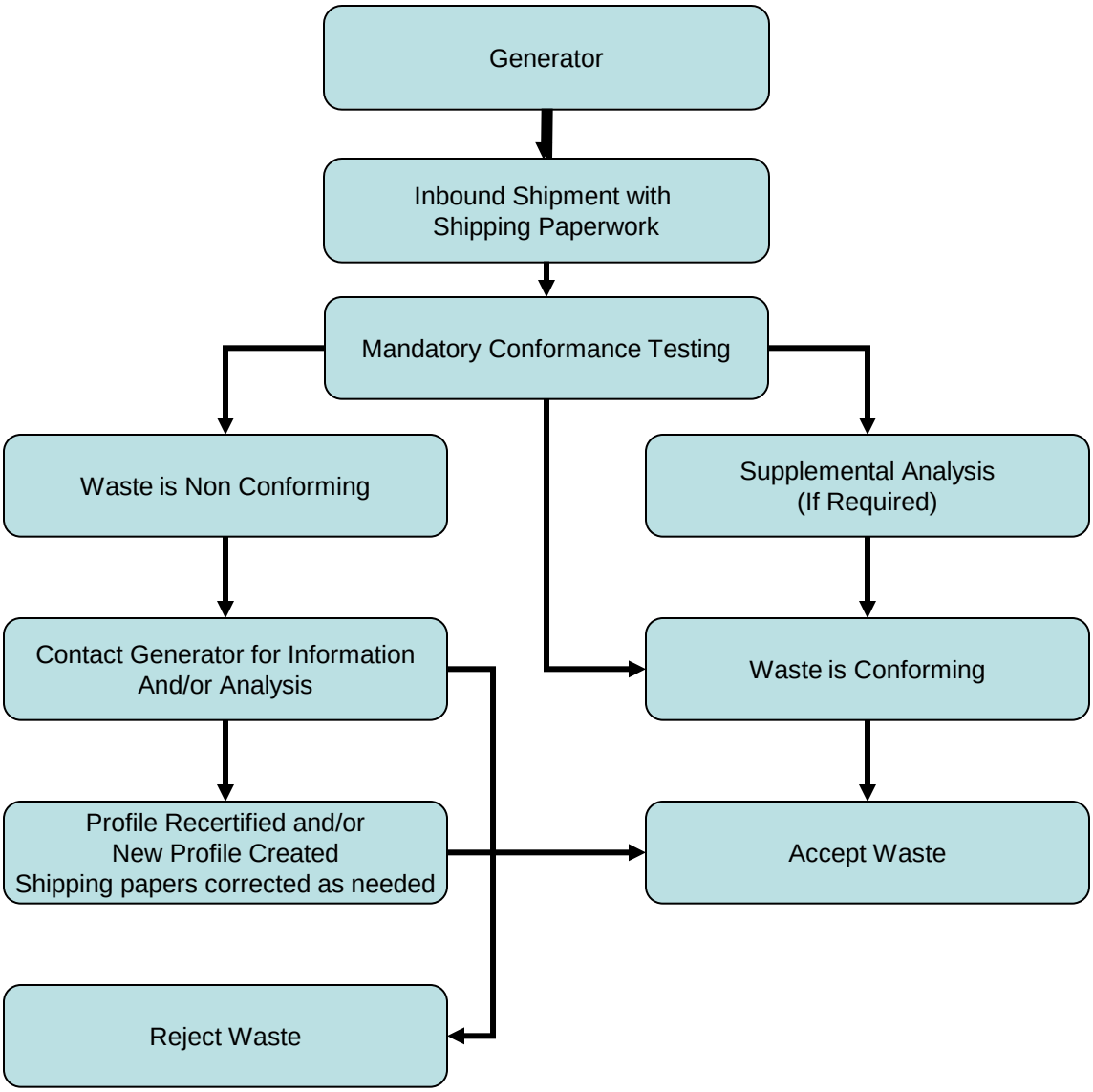
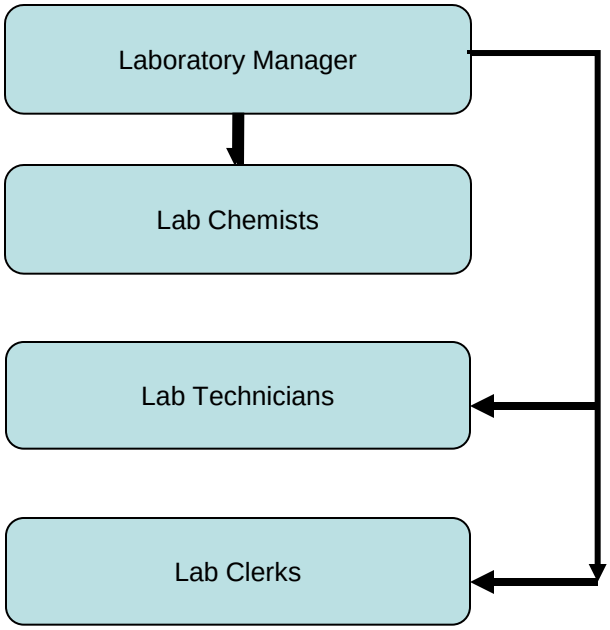


Figure C-2
Laboratory Organization Chart



Clean Harbors Kansas, LLC
RCRA Permit Application
Section D
Use and Management of Containers

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Acronym Table

Clean Harbors Kansas, LLC (CHK)
Intermodal Container (IMC)
Container Management Unit (CMU)
Personal Protection Equipment (PPE)
Waste Analysis Plan (WAP)
National Fire Protection Association (NFPA)
United States Department of Transportation (USDOT)

D Introduction:

It is Clean Harbors Kansas, LLC's intention to remove Buildings B, D, and J from the RCRA Permit, and to effect partial closure of these areas. Additionally, the miscellaneous drum processing equipment located in the Process Building will also be closed.

The purpose of this section is to provide information regarding the design and operation of the various container management units at the Clean Harbors Kansas, LLC (CHK). This information is provided to fulfill the requirements of Kansas Administrative Regulations (KAR), Title 28, Article 31 as well as federal regulations as set forth in 40 CFR Part 264 Subpart I, and 40 CFR 270.15. The KAR incorporate, with few additions, the RCRA regulations contained in 40 CFR Parts 260 through 270. Therefore, this section will refer only to the federal regulations.

As used in this permit application, the term "drum" is intended to describe a specific type of container, namely a fifty-five (55) gallon drum, approximately twenty-three (23) inches in diameter and thirty-four (34) inches high. The term "bulk container" is used to describe any container with a capacity greater than 450 gallons. Roll-on/roll-off boxes, gondolas, sludge boxes and Intermodal Container (IMC)s are examples of types of bulk containers that may be managed at Clean Harbors Kansas, LLC. Otherwise, the term container, as used in this application, shall have the same meaning as that listed in 40 CFR 260.10.

D-1 Summary Description:

Referenced Drawings

Figure D.1, Hazardous Waste Management Areas
Figure D.2, Wichita Facility Site Plan – Material Containment Areas

Under the last RCRA Permit there were seven (7) storage buildings subdivided into individual Container Management Unit (CMU)s at the CHK facility utilized for container storage and processing of hazardous waste. Location of these storage buildings is shown on Figure D.1, Hazardous Waste Management Areas. Clean Harbors Kansas intends to effect partial closure of five of these areas. The Four individual CMUs CHK indents to keep in RCRA service are shown on Figure D.2, Wichita Facility Site Plan - Material Containment Areas. Building C, Building I, the Drum Dock associated with Building C, and the Process Building are intended to remain in RCRA service. Figures showing individual storage buildings are presented in Appendix D-A, Referenced Drawings. Specific information regarding areal extent, capacity and drum equivalents is discussed in Section A (Part A Permit Application; Addendum B). Capacities of container storage buildings are summarized in Table D.1, Container Storage Building Capacities. Table D.2, CMU Containment Summary, presents containment capacities for each CMU. Building C, Building I, the Drum Dock associated with Building C, and the Process building will have a combined storage capacity of 174570 gallons. Formerly, the total permitted capacity for storage of containers at the CHK facility was 325,490 gallons.

Figure D 1 Hazardous Waste Management Areas

Figure D-2 Material Containment Areas

CHK has made the assumption, for design purposes, that all containers of hazardous wastes managed at CHK contain free liquid; thus, containment as prescribed in 40 CFR 264.175 is provided for all CMUs. The design does not preclude storage of wastes that do not contain free liquids.

40 CFR 264.175(b)(3) requires that the secondary containment system contain the volume of the largest container, or ten (10) percent of the volume of the containers in the unit, whichever is greater. Containment areas have been designed to meet this requirement. Secondary containment calculations are shown in Appendix D-B, Secondary Containment Calculations. All containment areas are sloped to blind sumps for the accumulation liquids. The liquid is then pumped out of the sumps and properly handled.

A wide variety of containers other than drums may be stored within the waste storage buildings. Wastes with free liquids may be stored in containers such as tote boxes, overpack containers, etc. The total volume of waste in containers is limited by the secondary containment volumes provided for each CMU and by the capacity of each storage building. The total volume of waste stored at the facility will not exceed the permitted amount (i.e., 174570 gallons).

Containerized hazardous wastes are delivered to the facility by truck. These containers may be managed in unloading areas prior to waste storage.

Containers may be located within other waste management units and are used to accumulate and store site generated residues such as, incidental spills, discarded Personal Protective Equipment (PPE), etc. CHK will manage these wastes according to the standards set forth in 40 CFR Part 262. Containers of on-site generated wastes will not be accumulated for more than ninety (90) days within these areas, and will be accumulated in containers complying with 40 CFR 264 Subpart I.

Storage building CMUs have been designed to receive many categories of waste streams in drums, overpacks, gondolas, tote boxes, etc. The number of segregated containment units provides the capability to store various waste types within certain units, and meet the requirements for managing reactive, ignitable and incompatible wastes. Any of the CMUs may be used to store any container type and volume as dictated by operational needs and compatibility requirements. Specifications regarding layout of these buildings are presented later in this section; brief descriptions of each storage building are provided below.

D-1a The Process Area:

The Process Area is designed to accommodate storage of wastes in containers and tanks (tank management is addressed in Section E, Tank Systems). This building is managed as two operational areas; the tanker unloading bay, and the bulk tank farm which share common secondary containment.

D-1b Building C:

Building C is utilized for container storage and management. Waste managed in this area may be processed or treated at the facility. Diking divides this building into seven (7) contained areas.

D-1c Drum Dock:

The Drum Dock is utilized for container storage, treatment, and management. Waste managed in this area may be processed or treated in containers. Diking provides one (1) contained area in this building.

D-1d Building I:

The Building I is utilized for container storage, and management. Waste managed in this area may be processed or treated in containers. Rooms Diking provides one (1) contained

area in this building.

Table D.1

Container Storage Building Capacities

Container Storage Building	Materials Managed	Permitted Storage Capacity (Gallons)	Storage Capacity (55 Gallon Drum Equivalents)
Processing Area	Liquid and solid hazardous and/or non-hazardous materials	9,900	180
Building C	Ignitable and non-ignitable hazardous and non-hazardous materials	99,110	1,802
Drum Dock	Containerized materials	14,960	272
Building I	Containerized materials	50600	920
Total Capacity		174570	3174

Note: Total capacity (gallons) is the additive container storage capacity for all storage buildings. Note that additional storage of waste in tanks occurs in some of these areas; permitted waste tank storage capacity is not reflected in this summary.

Table D.2

CMU Containment Summary

Container Management Unit (CMU)	Maximum Number of Drums Stored (55 gallon drum equivalents)		Gallons - Containment Capacity Required for Containers (10 % Container Capacity)	Gallons - Containment Provided
	Drums	Gallons		
P100/P200	180	9,900	990	32,583
C100	16	880	88	244
C200	16	880	88	192
C300	240	13,200	1,320	3,842
C400	184	10,120	1,012	3,195
C500	192	10,560	1,056	3,233
C600	192	10,560	1,056	3,233
C700	962	52,910	5,291	16,690
I100	416	22880	2288	4503
I200	64	3520	352	635
I300	440	24,200	2420	6088
L100	272	14,960	1,496	1,835

Note 1: These containment volume requirements do not include requirements for tank systems. The letter shown in the CMU identification number indicates the location by building (P - Processing Area, C - Building C, I-Building I, and L - Drum Dock).

Note 2: The largest container in Area P100 would be a 5,000 gallon tanker. The containment provided (9,900 gallons) is sufficient to hold the volume of this container.

D-2 Storage in Containers with Free Liquids:

D-2a General Area Design Features:

Waste storage buildings were constructed for industrial use and are generally of metal or cinder block fabrication. Buildings perform a variety of functions including control of access, ambient temperature, precipitation ingress, and wind effects such as dust generation.

The storage buildings are covered to minimize ingress of precipitation. The individual CMUs are constructed on concrete pads with perimeter curbs (diking) to contain potential spills, to prevent run-off, and to prevent run-on. Containment capacity is adequate to contain incidental precipitation (i.e., precipitation blown in).

Secondary containment consists of concrete diking/walls or block construction on concrete pads. Concrete pads and diking/walls that make up the secondary containment are maintained to prevent or repair cracks and gaps. All joints contain a continuous water stop or are otherwise sealed to prevent migration of liquids.

Diking separates containment areas of individual CMUs. Waste containers are palletized or equipped with skids during storage, or are otherwise managed to protect the outside walls of the containers from contact with accumulated liquids. Concrete surfaces of the secondary containment systems are sufficiently impervious to contain leaks, spills, and accumulated

precipitation until the collected material is detected and removed.

Rooms have open areas which provide maneuvering room for mobile equipment such as forklifts, and, if needed, for staging and/or stacking of drums during pre-acceptance and processing.

D-2b <u>Unloading Areas:</u>

Containerized hazardous wastes are unloaded onto the Drum Dock, or the Tanker Unloading Bay, which are provided with secondary containment. Containers are placed into CMUs upon completion of unloading procedures or within 72 hours, whichever comes first. Pages D-23 to D-26 provides a more detailed discussion of the unloading procedures and Appendix C-A details the sampling procedures.

Prior to placement in permitted storage, waste in containers will be managed in unloading areas and/or staged in an appropriate CMU. Containers arriving on-site by truck may be unloaded at any of the three (3) storage areas as need. See Figure D.1, Hazardous Waste Management Areas, for location of unloading areas.

D-2c <u>Processing Area:</u>

Referenced Drawings

Figure D.3, Process Building

The Processing Area is designed to manage hazardous wastes in tanks and containers in two operational areas with shared secondary containment (storage in tanks is addressed in Section E, Tank Systems). Containerized wastes managed in this area include liquids that will be pumped to bulk storage, and individual waste containers that will be stored inside of the containment area. These materials are destined for, recycling as waste fuel, neutralization, or transport off-site for additional management. The operation of the tank systems are described in detail in Section E, Tank Systems.

D-2c(1) **Secondary Containment:**

The Processing Area is divided into two (2) operational areas, P100 and P200. These two areas are managed as a shared secondary containment system. These areas are shown on Figure D.3, Process Building. The CMUs are designed to meet the storage requirements for RCRA regulated wastes, to promote sound container management practices, and to minimize the potential for a release of hazardous waste into the environment. The CMUs are constructed of concrete floors and diking which are free of cracks and gaps. Additionally, the entire area has been lined with a chemically resistant coating to comply with the requirements of 40 CFR 264.193.

40 CFR 264.175(b)(3) requires that the secondary containment system contain the volume of the largest container, or ten (10) percent of the volume of the containers in the unit, whichever is greater. Any size container may be managed in a CMU provided that the maximum sized container does not exceed the CMU's containment volume. Detailed calculations supporting the secondary containment and storage volumes in the Processing Area may be found Tables D.1 and D.2.

D-2c(2) **Building Design:**

The Processing Area consists of one CMU shared by two operational areas, and its overall size is approximately eight-three (83) feet long by seventy-one (71) feet wide. Some management of containers may occur directly on the concrete floor (e.g., during sampling). Concrete curbs or walls around the unit or portable containment units provide secondary containment. Adequate secondary containment volume is provided for this building, as described in D-2d(1).

D-2d Building C:

Referenced Drawings

Figure D.4, Building C

Building C is designed to manage containerized wastes in seven (7) CMUs. Containerized wastes managed in Building C include ignitable and non-ignitable hazardous and non-hazardous wastes. These materials are destined for on-site management, recycling as waste fuel, neutralization, or transport off-site for additional management. Processing of containerized wastes in Building C may involve treatment in containers or management in any of the several on-site processing units.

The principal processes which occur in Building C are storage, treatment in containers, repackaging, bulking, consolidation of solid residues, and loading and unloading of hazardous waste in containers.

D-2d(1) Secondary Containment:

Building C is divided into seven (7) areas (CMUs) of secondary containment by diking. These areas are shown on Figure D.4, Building C, (Figure D.4, Building C). The CMUs are designed to meet the storage requirements for RCRA regulated wastes, to promote sound container

management practices, and to minimize the potential for a release of hazardous waste into the environment. The CMUs are constructed of concrete floors and diking which are free of cracks and gaps.

40 CFR 264.175(b)(3) requires that the secondary containment system contain the volume of the largest container, or ten (10) percent of the volume of the containers in the unit, whichever is greater. Any size container may be managed in a CMU provided that the maximum sized container does not exceed the CMU's containment volume. Detailed calculations supporting the secondary containment and storage volumes in Building C may be found in Tables D.1, and D.2.

D-2d(2 **Building Design:**

Building C consists of seven (7) CMUs, and its overall size is approximately three-hundred-thirty-eight (338) feet long by forty (40) feet wide. Waste containers managed in Building C are palletized or equipped with skids during storage, or are otherwise managed to protect the outside walls of the containers from contact with accumulated liquids. Some management of containers may occur directly on the concrete floor (e.g., during processing). Concrete curbs or walls around the unit or portable containment units provide secondary containment. Adequate secondary containment volume is provided for this building, as described in Tables D.1, and D.2.

D-2e **Drum Dock:**

Referenced Drawings

Figure D.5, Drum Dock

The Drum Dock is designed to manage containerized wastes in one (1) contained area (CMU). Containerized wastes managed in this area include hazardous and non-hazardous materials. These materials are destined for recycling as waste fuel, neutralization or transport off-site for additional management.

The principal processes that occur in the Drum Dock are storage, sampling, and loading and unloading of hazardous waste in containers.

D-2e(1) **Secondary Containment:**

The Drum Dock is made up of one area (CMU); this area is diked to provide secondary containment. The area is shown on Figure D.5, Drum Dock, (see Figure D.5, Drum Dock). This CMU is designed to meet the storage requirements for RCRA regulated wastes, to promote sound container management practices, and to minimize the potential for a release of hazardous waste into the environment. The CMU is constructed of a concrete floor and diking which are free of cracks and gaps. Additionally, the CMU has been lined with a chemically resistant coating for added protection.

40 CFR 264.175(b)(3) requires that the secondary containment system contain the volume of the largest container, or ten (10) percent of the volume of the containers in the unit, whichever is greater. Any size container may be managed in a CMU provided that the maximum sized container does not exceed the CMU's containment volume. Secondary containment calculations for the Drum Dock are presented in Tables D.1, and D.2.

D-2e(2) <u>Building Design:</u>

The Drum Dock consists of one (1) area (CMU), and its overall size is approximately ninety-four (94) feet long by twenty-seven (27) feet wide. Waste containers managed in the Drum Dock are palletized or equipped with skids during storage, or are otherwise managed to protect the outside walls of the containers from contact with accumulated liquids. Some management of containers may occur directly on the concrete floor (e.g., during sampling or loading/un-loading). Concrete curbs or walls around the unit or portable containment units provide secondary containment. Adequate secondary containment volume is provided for this building, as described Tables D.1, and D.2.

D-2f <u>Building I:</u>

Referenced Drawings

Figure D.6, Building I

The Building I is designed to manage containerized wastes in three (3) contained areas (CMU). Containerized wastes managed in this area include hazardous and non-hazardous materials. These materials are destined for recycling as waste fuel, neutralization, or transport off-site for additional management.

The principal processes which occur in Building I are storage, treatment in containers, repackaging, bulking, consolidation of solid residues, and loading and unloading of hazardous waste in containers

D-2e(1) **Secondary Containment:**

The Building I is made up of three(3) area (CMU); these areas are diked to provide secondary containment. These areas are shown on Figure D.6, Building I, (see Figure D.6, Building I). These CMU are designed to meet the storage requirements for RCRA regulated wastes, to promote sound container management practices, and to minimize the potential for a release of hazardous waste into the environment. These CMU are constructed of a concrete floor and diking which are free of cracks and gaps. Additionally, these CMU have been lined with a chemically resistant coating for added protection.

40 CFR 264.175(b)(3) requires that the secondary containment system contain the volume of the largest container, or ten (10) percent of the volume of the containers in the unit, whichever is greater. Any size container may be managed in a CMU provided that the maximum sized container does not exceed the CMU's containment volume. Secondary containment calculations for the Bulding are presented in Tables D.1, and D.2.

D-2e(2) **Building Design:**

The Building I consists of three (3) areas (CMU), and its overall size is approximately one-hundred-six(106) feet Long by forty-eight (48) feet wide. Waste containers managed in the Building I are palletized or equipped with skids during storage, or are otherwise managed to protect the outside walls of the containers from contact with accumulated liquids. Some management of containers may occur directly on the concrete floor (e.g., during sampling or loading/un-loading). Concrete curbs or walls around the unit or portable containment units provide secondary containment. Adequate secondary containment volume is provided for this building, as described Tables D.1, and D.2.

D-3 General Container Management Practices:

D-3a Description of Containers:

The CMUs are capable of receiving and processing containers, both new and used, of various materials of construction, sizes, and capacities. The volume of individual containers managed in the CMUs is typically 450 gallons or less, except in the truck bay area, in the Process Building where bulk liquid tankers and roll-off boxes containing solids may be stored. A wide variety of other containers, such as paint cans, Marino bags, wooden cases, plastic tote tanks, and glass bottles may also be received.

Bulk containers managed on-site include, but are not limited to, IMCs, sludge boxes, gondolas, tankers, and end dumps. The tanker unloading bay in the Process Building has secondary containment and design capabilities for bulk containers. Bulk containers may be used for virtually any of the waste types handled at the facility. CHL will not place wastes into an unwashed container that has previously held incompatible wastes.

D-3b Handling of Containers: 40 CFR 264.173.

The majority of containers managed at the CHK facility are expected to be drums or similar containers delivered in van trailers. An industrial truck equipped with drum handling forks or a single container hand trolley will generally be employed to unload non-palletized shipments.

Palletized containers will generally be unloaded with an industrial truck equipped with forks. Other container movement equipment may be used as available and appropriate. Ramps will be used as necessary during transfer operations to facilitate movement of materials in and out of CMUs.

Containers may be moved within the facility by hand, by industrial truck, truck, or by other safe and appropriate means. The specific method employed will be dependent on the distance, and the quantities and sizes of containers to be moved.

When moving containers between storage areas, loading areas, and/or process areas, the facility may need to temporarily stage containers prior to transfer to the next unit. This staging will generally occur in the unloading areas or in the area between Building C and the Processing Area. All staging will occur in paved areas. This staging of containers will not exceed one shift or eight hours.

Equipment is available to facilitate such operations as the transfer of wastes from a damaged container to a container in good condition, the manual repackaging of containers, the transfer of leaking containers into overpacks, and the removal of individual containers from CMUs.

During the unloading procedure, the containers will be visually checked. Those containers selected for sampling and analysis will be opened and sampled as described in Section C, Waste Characterization, Appendix C-A, Waste Analysis Plan (WAP). Sampling may occur on the unloading platform, in the working area, in a CMU or, prior to unloading, on the transport vehicle. Once samples have been obtained, the containers will be re-closed and will remain staged or be placed in a CMU until incoming load procedures are completed in accordance with the WAP. Containers that are not already in a containment unit will be moved into a CMU after the incoming load procedures are completed and the waste stream is accepted. If incoming load procedures cannot be completed in 72 hours, containers will be placed in an appropriate CMU, based on manifest, pre-acceptance, and other information available about the waste. If subsequent analytical or other information identifies a compatibility problem, the container will be moved to an appropriate CMU, rejected and returned to the generator, or transferred to another facility capable of handling the material.

Containers will be opened by one of a variety of methods. Liquid storage containers equipped with screw-in bungs in the lids will generally be sampled by removing the bung, withdrawing a sample and replacing the bung. Containers with fully removable tops (i.e., with retaining rings) will generally be opened by removing the lid and ring, sampling and replacing the lid and ring.

Containers are normally kept closed during storage. However, they may be opened for:

- inspection,
- sampling,
- removal/addition of material.

Regularly scheduled inspections of the CMUs, loading/unloading areas, and processing areas are conducted to facilitate detection of open or deteriorating containers, improper storage in the CMUs, liquids on the floors or in sumps, or other improper conditions as outlined in Section F, Inspection Plan. The frequencies of these inspections are defined in the Inspection Plan.

Hazardous and non-hazardous wastes may be stored within the same CMU, but they will not be stored on the same pallet, except insofar as they have been received on the same pallet (e.g., lab packs, wrapped pallets, etc.). The Waste Tracking System will provide a record of the location of all wastes at the facility. This report will be available for facility personnel and inspectors to identify the location of both hazardous and non-hazardous wastes at the facility.

During the incoming load and off-loading procedures containers are clearly marked to identify the contents and the date each period of accumulation begins. This is for purposes of meeting the requirements of 40 CFR 268.50,

CHK will address and implement air emission control devices for the affected container management activities as applicable.

D-3b(1) **Containers - 55 Gallon or Larger:**

At times, 55 gallon or larger containers may be stacked two (2) high (double-stacked), providing that the wastes are compatible and that such stacking is consistent with the National Fire Protection Association (NFPA) code for flammable storage.

Inspection aisles of two (2) feet or more in width will be maintained between adjacent double rows of 55-gallon or larger containers in CMUs.

The bottom layer of containers in storage are placed on pallets or skids, or are otherwise managed to prevent contact of containers with any accumulated liquids. Rows will be no more than two (2) 55-gallon or larger containers wide. Dividers such as wooden pallets or plywood sheeting may be placed on top of the bottom row(s) of drums. A second layer of containers may be placed on top of the bottom row.

D-3b(2) **Containers - Smaller Than 55 Gallon:**

Smaller containers, particularly those small volume containers such as pint, quart, gallon, and five (5) gallon sizes, may be stored in stacks more than two (2) high, and will frequently be received that way. Any stacking of containers not specifically regulated by the NFPA code will

be performed with safety of personnel uppermost in mind. Stacking of containers of less than fifty-five (55) gallon capacity will be restricted to a height not to exceed six (6) feet to facilitate inspection. This does not preclude, as an accepted management practice, the placing of large numbers of small containers within drums or larger overpack containers, and the double stacking of these larger containers, nor the storage of individual containers which may exceed a height of six (6) feet, nor the stacking of palletized small containers. The total volume of containers of wastes with free liquids will not be allowed to exceed that allowed by the secondary containment capacity.

Where applicable, inspection aisles of two (2) feet or more in width will be maintained in CMUs between adjacent rows of pallets of containers that hold less than 55 gallons.

The Waste Tracking System will provide a record of the location of each container of waste received at the facility, including those containers that are arranged or stacked in such a way that not all labels may be visible from the aisle. The Waste Tracking System will be updated at least once each day that containers of waste are moved.

D-3c <u>Waste and Container Compatibility:</u> 40 CFR 264.172

Wastes accepted for storage, treatment, or other management are required to be compatible with the containers used to store them. Acceptable containers for acidic wastes may include those made of plastic, steel lined with plastic, or fiberglass. Acceptable containers for other wastes include, but are not limited to, steel, fiberglass, plastic, steel lined with plastic, and fiber drums and boxes, wooden cases, and fiber sacks. Solvent wastes are frequently stored in steel drums. Alkaline wastes may be stored in plastic containers or containers manufactured from carbon steel. Fiber sacks may be used to store, among other materials, contaminated debris or soils. New types of containers are routinely being developed and approved by the United States Department of Transportation (USDOT); USDOT and Performance Oriented Packaging Standards will dictate the shipment in, and use of, alternate containers meeting regulated performance requirements. CHK may receive waste in any appropriate USDOT approved or performance specified container for management at the facility. Site-generated waste may be accumulated in specially designed containers specific to the plant process equipment.

D-3d <u>Condition of Containers:</u> 40 CFR 264.171

Facility personnel will inspect all containers for evidence of leakage, deterioration, or severe corrosion as part of the incoming load and unloading procedures at Clean Harbors Kansas, LLC. Containers are also routinely inspected while in storage. Inspection schedules are discussed in

Section F, Inspection Plan. Containers exhibiting evidence of leakage, deterioration which would affect the structural integrity of the container, or severe corrosion will be transferred into overpacks, or containers in good condition, or the wastes may be transferred directly into tanks or treatment units. Open containers, improper storage in CMUs, and evidence of spills and leaks are among the focal points of inspections. Transporters of Hazardous Waste are required to meet the specifications in the USDOT regulations in 49 CFR Part 178 Subparts A through J, 49 CFR 173 Subparts J through O, and the requirements of 49 CFR 172.101 with respect to design and use of containers. Changes in these and other regulations brought about by USDOT's Performance Oriented Packaging Standards will be observed, by CHK or generators sending shipments of waste to CHK, as they are made effective.

Any containers found to be inadequately or improperly identified or deficient in the required information may be staged in a holding area until the deficiency can be resolved.

D-3e <u>Response to Leaks:</u> 40 CFR 264.171

Because the secondary containment system is designed to prevent storm water run-on, liquids found on the floor of a CMU will be either blown precipitation or leaks of stored materials. When an inspection reveals liquid within a contained area, the source will be identified if possible. If liquids are discovered, they will be removed within twenty-four (24) hours of detection, or as soon as practical. The identification of the origin of the liquid may be

accomplished in a number of ways, using a variety of inspection techniques. Visual inspection of the condition of containers for localized staining or leakage adjacent to a particular container is the technique most likely to be employed to trace the source of a leak. If this measure fails, a sample of the liquid in the containment area will be analyzed for a range of parameters based upon the possible contents of the containers in the affected CMU. This process should indicate the waste stream type from which the leaking waste may have originated. All containers holding that waste stream type within the CMU will then be checked for leaks until the leak is found.

Wastes from the leaking container will be managed as described in D-3d. Liquid in the containment area may be transferred to an appropriate container, or to one or more storage tank(s), using a portable pump. Other suitable methods using absorbents, vacuum systems, etc., may also be used to manage spills. Any container into which wastes are transferred will be appropriately identified as to the type of waste stored in it. Minor quantities of liquids may be absorbed, collected, and placed in an appropriately identified container.

D-3f <u>Special Requirements for Ignitable and Reactive Wastes:</u> 40 CFR 264.176.

Ignitable and reactive wastes will be segregated from incompatible materials within CMUs. Segregation may involve placement in separate CMUs, or use of portable secondary containment units. Containers of ignitable or reactive wastes are stored at least fifty (50) feet from the facility property boundary. CMUs that may contain ignitable or reactive wastes include C100, C200,

C400, C500, C600, C700, L100, P100, and P200, Because of the requirements of 40 CFR 264.176, ignitable or reactive wastes will not be stored in CMU C300. Measures to prevent accidental ignition of ignitable wastes include the prohibition of smoking, use of non-sparking tools, and enforcement of procedures to control burning and welding in areas where these wastes are stored. Section F, Inspection Plan, addresses these procedures in detail.

D-3g <u>Special Requirements for Incompatible Wastes:</u> 40 CFR 264.177.

During unloading procedures, the containers will be visually checked. Those containers selected for sampling and analysis will be opened and sampled as described in the WAP (see Section C, Waste Characterization). Sampling may occur on the unloading platform, in the working area, in a CMU, or prior to unloading, on the transport vehicle. Once samples have been obtained, the containers will be re-closed and will remain staged in accordance with the WAP until the incoming load procedures are completed. If incoming load procedures are not completed within 72 hours, the containers will be transferred into an appropriate CMU, as determined using available information (e.g., manifest, Waste Profile Sheet, etc.).

Containers that are not already in a CMU will be moved into a CMU after the incoming load procedures are completed or within 72 hours. Should a container of waste be determined to be incompatible with the other wastes stored in a CMU as a result of analysis, it will be segregated from incompatible wastes. Portable containment units may be used to facilitate segregation.

Each RCRA CMU is equipped with secondary containment. These containment systems have sufficient capacity to contain a minimum of ten (10) percent of the volume of the maximum container capacity of wastes with free liquids permitted for storage in that unit. Wastes that are incompatible may be stored in adjacent CMUs separated by either diking, building walls, or other device.

The three (3) container storage buildings are subdivided into individually contained CMUs. Adjacent CMUs may be used to manage incompatible wastes. The CMUs are used interchangeably. The criteria for CMU selection for storage of a specific waste type is based upon considerations of chemical compatibility, storage unit capacity, and operational demands.

To ensure that residues from wastes previously stored in a CMU do not contact potentially incompatible wastes about to be placed in the CMU, the following procedure will be observed. The CMU will be visually inspected when containers are removed for compatibility service change, and will be cleaned if evidence of a spill is found prior to placement of the next waste into the CMU for storage.

CHK may transfer wastes from one container to another. In accordance with 40 CFR 264.177(b), hazardous waste will not be placed in an unwashed container that previously held an incompatible waste or material.

D-3h Transshipment of Containers of Waste:

The majority of wastes received at the CHK facility will be stored, and shipped off-site. However, some wastes, which are intended for treatment or direct disposal at off-site facilities, may be temporarily stored at CHK.

The facility may occasionally serve as a 10-day transfer station for wastes destined for incineration, disposal, or other management at another facility. This 10-day transfer will comply with the requirements of 40 CFR 263.12 and 264.1(g)(9). 10-day transfer stations are not subject to the permit requirements of 40 CFR 270 (see 40 CFR 270.1(c)(2)(vi)).

10-day transfer wastes may remain at the site for a period not to exceed ten (10) days prior to continuing the journey to the designated treatment, storage, or disposal site. 10-day transfer loads remain "in transit" during the entire stay at the site. These wastes may be off-loaded and transferred to another vehicle or to a railcar. Because these 10-day transfer loads are never accepted into the CHK waste management system, no analyses are performed on the loads. They will, however, be identified in the Waste Tracking System.

D-4 **Storage in Containers without Free Liquid:** 40 CFR 264.175(c), 270.15(b).

CHK has made the assumption, for design purposes, that all containers of wastes managed at the CHK facility contain free liquid. Waste without free liquid is managed as appropriate for the waste code(s) carried. Management of containerized wastes without free liquids does not require containment (40 CFR 264.175(b)(3); however, containers containing no free liquids may be managed in any container storage area on-site. Future operations may include storage areas without containment for exclusive storage of containers (including bulk containers) without free liquids.

Appendix D-A

Container Storage Buildings

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Appendix D-A

Container Storage Buildings

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List of Acronyms

Clean Harbors Kansas, LLC (CHK)

E-1 Introduction:

Clean Harbors Kansas, LLC intends to effect partial closure on Building D, and all of the storage tanks located within Building D. Additionally, Clean Harbors Kansas, LLC intends to effect partial closure on all of the miscellaneous process equipment currently located in Area P 200 in the Process Building. Once partial closure is complete, CHK will have eight (8) tanks in service. The purpose of this section is to provide information regarding the design, installation, and operation of the various tank systems at the Clean Harbors Kansas, LLC facility which will remain in RCRA service. This information is provided to fulfill the requirements of Kansas Administrative Regulations (KAR), Title 28, Article 31 as well as federal regulations as set forth in 40 CFR Part 264 Subpart J, and 40 CFR 270.16. The KAR incorporate, with few additions, the RCRA regulations contained in 40 CFR 260 through 270. Therefore, this section will refer only to the federal regulations.

A variety of tank systems are used at the Clean Harbors Kansas, LLC facility. Tanks are used to store and/or treat liquids, solids, and sludges. There are eight (8) waste storage tanks with a total permitted capacity of 83,179 gallons at the facility. Individual tank capacities, dimensions, and tank system locations are summarized on Table E.1, Hazardous Waste Storage Tanks. Each of these tank systems is addressed in detail in the following pages.

Table E.1
Hazardous Waste Storage Tanks

VESSEL	CAPACITY - WORK (gal)	CAPACITY - MAX (gal)	DIMENSIONS*	LOCATION
V-1	7,181	7,363	8'0"x 26'7"V	Process Area
V-2	7,084	7,084	8'0"x 18'10"V	Process Area
V-3	7,181	7,363	8'0"x 26'7"V	Process Area
V-4	7,181	7,363	8'0"x 26'7"V	Process Area
V-5	20,095	20,895	12'0"x 25'7"V	Process Area
V-6	20,095	20,895	12'0"x 25'7"V	Process Area
V-7	7,181	7,363	8'0"x 26'7"V	Process Area
V-8	7,181	7,363	8'0"x 26'7"V	Process Area
TOTAL	**83,179**	**85,689**	**N/A**	**N/A**

*Dimensions are given in feet and inches. The first dimension is the tank diameter and the second dimension is the length, followed by a 'V' for vertical tanks or an 'H' for horizontal tanks.

E-2 Description of Tank Systems: 40 CFR 270.16(a),(b),and(e), 264.192 (a)

The purpose of the following discussion is to describe the design and operation of the various tank systems at Clean Harbors Kansas, LLC. Certified tank assessments by an independent, qualified, registered, professional engineer as required by 40 CFR 264.192(a) are presented in Appendix E-A, Tank System Assessments and Certifications. Appendix E-A includes tank certification statements, tank containment certification statements, compatibility of wastes with tank materials, tank system field notes, and examples of containment coatings. Individual tank drawings are provided in Appendix E-B, Tank Drawings.

Figure E.1, Hazardous Waste Management Areas (Figure E.1, Hazardous Waste management Areas in Section Y), indicates the general location of the tank management areas in relation to the other portions of the facility. Figure E.2, Process Building, shows the location of the individual tanks within the tank management areas. Piping and instrumentation diagrams, and process flow diagrams are presented in Section N, Air Emissions.

RCRA hazardous waste, as well as a variety of non-hazardous wastes, may be managed in the different tank systems. A list of RCRA waste codes acceptable for storage or treatment in the tank systems are provided in Section A, Part A Permit Application. Any waste code listed in the Part A may be handled in any tank at the facility. In general, tanks V-1 through V-8 are located

within the Processing Area and have a total working capacity of 83,179 gallons. Materials stored or treated in these vessels are ignitable and non-ignitable, hazardous and nonhazardous liquids and sludges.

The secondary containment systems for Clean Harbors Kansas, LLC's tank systems are designed such that no external shell of any tank, nor any external metal component of a tank will be in contact with soil or standing water (i.e., sloped containment, elevated systems, etc.). As a result of design criteria and operational procedures, the requirements of 40 CFR 264.192 (a)(3) (corrosion expert assessment) are not applicable. As required by 40 CFR 264.193 (c)(4), any accumulated precipitation in a secondary containment system will be removed within twenty-four (24) hours of detection, or in as timely a manner as possible.

Figure E.1. Hazardous Waste Management Areas

Figure E.2. Tank Locations

E-3 Operational Practices: 40 CFR 270.16(c),(i),(j), 264.194, 264.198, 264.199, 264.195

The following information is supplied to meet the specific requirements of RCRA regarding tank operating practices.

E-3a General Operating Requirements: 40 CFR 270.16(i), 264.194

Any material that could cause the tank, ancillary equipment, or secondary containment systems to fail (i.e., rupture, leak, etc.) will not come into contact with the tank systems. Assessments for compatibilities of wastes with tank system materials are presented in Appendix E-A of this section.

Clean Harbors Kansas, LLC will use the appropriate controls and practices to prevent spills and overflows from tanks and containment systems. Spill prevention controls may include check valves, dry disconnect couplings, vacuum or gas purge, permanently fixed or mobile catch pans, and secondary containment around the activity. Overfill prevention controls include level sensing devices, high level alarms, an automatic pump activated by a float sensor, overfill bypass to another tank, and/or visual inspections during transfer. The control systems for the various tank systems are shown in the Piping and Instrument Diagram (P&ID)s provided in Section N, Air Emissions. Tank systems in hazardous waste service have, at a minimum, the following

overflow protection systems:

- Secondary containment with chemical resistant coating,
- Automatic high level alarms on each individual tank, and
- Manual gauging ports.

Automatic level gauges are provided on some tanks and may be used in addition to the protection systems listed above. Adequate freeboard will be maintained in open top tanks to prevent liquids from blowing out of the top of the tank.

E-3b Description of Feed Systems, Safety Cutoff, Bypass Systems, and Pressure Controls: 40 CFR 270.16(c)

Descriptions of the feed systems, safety cutoffs, bypass systems, and pressure controls are provided below for the tank systems, additional information (including P&ID drawings) can be found in Section N, Air Emissions.

E-3b(1) Feed Systems, Safety Cutoff, and Bypass Systems:

Automatic and manual level detection systems on all tanks are monitored each operating day material transfer to or from tanks takes place. Valves and pipe manifold stations are used to

control flow to and from tank systems. Some tank system piping also incorporates check valves for added flow control safety. Tank systems can be isolated (by valves) from waste flow. Refer to Section N, Air Emissions for detailed P&ID drawings showing piping and valves.

E-3b(2) <u>Pressure Controls:</u>

The tank systems at Clean Harbors Kansas, LLC have pressure and vacuum relief valves, or are vented to the atmosphere directly. Tanks V-1, V-3, V-4, V-7, and V-8 are low pressure tanks installed with pressure and vacuum relief valves set at approximately 14.5 pounds per square inch gauge (psig) pressure and approximately 0.5 ounce per square inch vacuum. In the event of a relief, these tanks are vented directly to the atmosphere. Tanks V-2, V-5 and V-6, are closed top atmospheric tanks equipped with thief hatches with pressure relief set at approximately 2 ounces per square inch and vacuum relief set at 0.4 ounce per square inch. In the unlikely event of a relief, these tanks vent directly to the atmosphere.

E-3c <u>Special Requirements for Handling Incompatible,Ignitable, or Reactive Waste:</u> 40 CFR 270.16(j), 264.198, 264.199, 264.17(b)

Proper precautions are and will be taken (when managing ignitable or reactive wastes, or mixing incompatible wastes or incompatible wastes and other materials) to prevent reactions which: 1) generate extreme heat or pressure, fire or explosion, or violent reactions; or 2) produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health

or the environment. Wastes exhibiting the characteristics of reactivity will not be placed in any of the tank systems located at the CHK facility unless the waste is treated, otherwise managed, or mixed before or immediately after placement into a tank system so that:

- the resulting waste, mixture, or dissolved material no longer meets the definition of reactivity; or
- the waste is stored or treated such that it is protected from any material or conditions that may cause the waste to ignite or react; or
- the tank system is used solely for emergencies.

Tanks designated to accommodate storage of wastes exhibiting the characteristics of ignitability and reactivity will comply with the requirements for the maintenance of protective distances between the waste management area and any adjoining property lines as outlined in the National Fire Protection Association (NFPA) "Flammable and Combustible Liquids Code" (1977 or 1981). Water and/or foam fire suppression systems are also located where required by NFPA regulations. Smoking or open flames will not be permitted in the vicinity of these tank systems. "No Smoking" signs are conspicuously placed wherever there is a hazard from ignitable or reactive waste.

Incompatible wastes or incompatible waste and material will not be placed in the same tank

system for storage. A compatibility analysis will determine whether a waste meets the compatibility criteria for storage in a tank system. The procedures for this analysis are outlined in Appendix C-A, Waste Analysis Plan (WAP) located in Section C, Waste Characteristics, and will be performed when necessary to ensure that incompatible wastes or incompatible waste and material are only placed in the same tank system under controlled circumstances. There may be instances where an incompatible waste is used as a reagent to treat another waste in a tank, under controlled circumstances. Additionally, hazardous waste will not be placed in a tank system that previously held an incompatible waste or material unless compliance with 40 CFR 264.17(b) is demonstrated. Certifications for Compatibilities of Wastes with Tank Materials are located in Appendix E-A.

E-3d <u>Inspections:</u> 40 CFR 264.195

A list of inspections performed for the various tank systems is provided in Section F, Inspection Plan. Clean Harbors Kansas, LLC will document the results of these inspections in the operating record to be kept at the facility for a minimum of three years. CHK is currently in the process of having the eight (8) storage tanks which will remain in service in the Process Building inspected by a professional Engineer to certify that the tanks are in good condition.

E-3e <u>Contingency Measures:</u> 40 CFR 264.196

A tank system or secondary containment system from which there has been a leak or spill, or which is unfit for use, will immediately be removed from service and Clean Harbors Kansas, LLC will comply with the applicable requirements listed in 40 CFR 264.196. The Contingency/Emergency Plan (Section H), contains procedures for responding to a situation where there is a leaking or an unfit-for-use tank system.

E-3f Tank Cleaning for Non-Hazardous Waste Service

Tanks that have been in hazardous waste service are cleaned prior to non-hazardous waste service. This cleaning procedure will consist of the following steps:

- remove wastes from tank systems by draining and/or pumping;
- flush hoses and piping by pumping an appropriate detergent or solvent in a volume roughly equivalent to the total volume of the pipe or hose; and
- remove residuals by pumping, scraping, brushing, and/or washing, as necessary.

The final rinse will be tested for RCRA metal & organic characteristics. If analysis is below RCRA threshold, the tank will be considered clean.. The above procedures, while not intended to close a tank, will make it available for non-hazardous waste management.

In some circumstances, Clean Harbors Kansas, LLC may opt to store non-hazardous wastes in a tank that previously held hazardous wastes, without first cleaning that tank. Under these circumstances, Clean Harbors Kansas, LLC will manage the non-hazardous wastes as if they are hazardous, in accordance with the mixture rule (40 CFR 261.3(b)).

E-4 Containment and Detection of Releases: 40 CFR 264.193, 270.16(g)

Secondary containment systems for tank systems are designed, installed, and operated to prevent migration of wastes or accumulated liquid to the soil or groundwater. The containment systems enable the detection of, and collection of, releases and accumulated liquids. Liquids accumulated in a CMU will be removed from containment systems within 24 hours or as soon as practicable.

Secondary containment systems for tank systems consist of concrete slabs surrounded with concrete walls or dikes of appropriate height. The containment systems are sloped or tanks are constructed above the floor to facilitate detection of any released material or other liquid. Accumulated liquids will be removed and managed appropriately. Each area has been designed to surround the base of the tanks and cover the surrounding earth most likely to come into contact with a release of waste. These design and operating factors are, in combination, capable of preventing potential lateral and vertical migration of hazardous waste constituents. The secondary containment systems have been designed to have sufficient structural strength and thickness to minimize the potential of failure owing to pressure gradients, physical contact with waste, climatic conditions, and the stress of daily operations. Additionally, the foundations will provide resistance to pressure gradients above and below the system, and will minimize the potential for failure due to settlement, compression, or uplift.

Prior to placing a tank in hazardous waste service, the associated secondary containment system

(slab, walls, dikes) will be coated with a sealant to protect the containment surface against chemical attack. The secondary containment systems consist of a liner (sealed concrete) that is free of cracks or gaps. Types of containment coatings previously used at Clean Harbors Kansas, LLC include Siloxirane, Sentry Polymers Semstone 245 or other Clean Harbors Kansas, LLC approved coatings that are effective against chemical attack and/or mechanical abuse. Appendix E-A contains secondary containment certifications for tank systems that are in service and coating specifications of the aforementioned coatings.

Tank system containment areas are inspected each operating day for the presence of liquids. Inspections will enable facility personnel to determine if failure of a tank or containment structure has occurred. Tank systems are either designed and constructed up and off the containment floor, provided with leak detection systems, or the containment area is sloped for ease of visually detecting leaks or spills. The design of tank system containment areas, in conjunction with facility inspections, facilitates the detection of accumulated liquids. Accumulated liquids collected in the secondary containment system will be removed within 24 hours or soon as practical, and managed according to the procedures described in the WAP as outlined in Section C, Waste Characteristics.

Ancillary equipment (e.g., pumps) associated with the various tank systems are located within the tank systems' secondary containment areas, within secondary containment areas for pumps, or

within the containment area of an associated loading/unloading area. Therefore, sufficient secondary containment is provided for the ancillary equipment. All piping utilized for transfer of hazardous waste to and from the various units is above-ground and is inspected each operating day for leaks or damage.

Tank system secondary containment areas have been designed to provide sufficient capacity to contain 100 percent of the capacity of the largest tank within their boundaries or 10 percent of the total capacity of tanks and containers, whichever is greater. Also, each containment area has been designed (e.g., with berms, building walls, storm sewer, etc.) and is operated in a manner to prevent run-on. Tank systems are provided with roofing to minimize infiltration of precipitation. Adequate containment is provided to manage the volume of incidental blown precipitation. Tank system secondary containment capacity calculations and certifications are provided in Appendix E-A. Containment capacities for areas containing tanks or tanks and containers, are summarized in Table E.2, Tank System Containment Details. As shown in the table, the containment capacity provided by each containment area is greater than the capacity required.

Table E.2
Tank System Containment Details

LOCATION	NUMBER OF TANKS & CONTAINERS & GALLONS EACH	CAPACITY REQUIRED (gallons) *	CAPACITY AVAILABLE (gallons) *	SECONDARY CONT. DESCRIPTION	GENERAL UTILIZATION
Processing Area P100/P200	5 @ 7,181 1 @ 7,084 2 @ 20,895 1 @ 522 1 @ 1,129 180 @ 55	20,095	32,583	Coated concrete walls/slab under a roof	Storage of non-ignitable and ignitable hazardous and nonhazardous liquids

* Capacity calculations are provided in Appendix E-A

E-5 Installation of Tank Systems: 40 CFR 270.16(f), 264.192(b)-(g)

Prior to placing any tank system in service, an independent registered professional engineer or qualified inspector will inspect for the presence of:

- Weld breaks,
- Punctures,
- Scrapes of protective coatings,
- Cracks,
- Corrosion, or
- Any other structural damage or inadequate construction/installation.

All such discrepancies will be remedied, and tank assessments in compliance with 40 CFR 264.192 will be performed, certified, and documented, prior to use. Appendix E-A provides Certified Tank Assessments, including secondary containment design and capacity calculations, compatibility assessments, and field notes. Appendix E-B provides drawings and construction specifications for the individual tanks.

Minor repairs (e.g., piping or valve replacement) will be performed at the facility and tightness tested before the tanks are returned to service. Tank systems will be removed from service when major repairs are required. The method of repair will depend upon the nature and extent of the

defect. Major repairs may require that the tank be removed for repair and/or sent to the manufacturer for modifications. Tank systems requiring major repairs will be recertified by an independent professional engineer prior to being placed back into service.

E-6 Closure: 40 CFR 264.197

Final facility closure (i.e., closure of all waste tanks on site) or partial closure of a selected tank system will be performed as outlined in Section J, Closure Plan.

E-7 Labeling and Record keeping requirements for Restricted Waste Stored in Tanks: 40CFR 268.50

Each tank is clearly marked with a description of its contents. The Clean Harbors database (Win Web tracking system) tracks the quantity of each hazardous waste received, and the date each period of accumulation begins.

E-8 Requirements for Fuels Blending in Tanks

Clean Harbors of Kansas LLC receives and processes hazardous waste, which may be burned for energy recovery at an offsite location as a hazardous waste fuel. The types of wastes processed by the facility through this operation included: non-halogenated organics; high BTU lean waters;

non-halogenated oils; organic liquids with halogens; and halogenated multilayered organics. The fuels process involves the receipt and mixing/blending of liquids in tanks. The blended fuel may be shipped in containers or pumped directly onto to bulk transport vehicles pending transfer to a properly licensed waste management facility (e.g. cement kilns).The Fuels blending in tanks would take place in the Process Area.

Material destine for Fuels blending may go through Supplemental parameter as describe in the WAP section 2.4.2 in order to ensure blend quality and to comply with requirement from the final disposal site. These parameters may include Heating value, Chloride concentration, Percent Ash.

As part of the pre-acceptance Procedures material destine for fuel blending will be screen prior to acceptance for relevant parameters (Heating value, Chlorine, etc.). This is done as part of the cleanharbors profile system. Upon acceptance, on site conformance testing as described in the WAP will conducted prior to blending any fuel material. A compatibility test consisting of a representative sample from each waste stream will also be conducted prior to blending. The compatibly “bucket test” material will be visually inspected during sampling process, if a reaction occurs (i.e. rise in temperature, polymerization, off-gassing). That material will be deemed unsuitable for blending. The bucket test will be conduct in the processing area in conjunction with the pumping process.

Once the material is deemed ok for blending, it will then be consolidated into an onsite tank. Prior to shipment or sampling, the tank will be recirculated (i.e. pumped back into itself) this will

create a homogeneous mixture of blended waste in the tank.

E-9 Neutralization in Tanks

Clean Harbors of Kansas LLC receives and processes hazardous waste, which may be neutralized in an Elementary neutralization unit for D002 only. This unit would exempt under 264.1(g) (6). No other form of Neutralization will be performed the Elementary Neutralization units (tanks V-1 to V-8) located in the Process Area.

E-10 Pumping SOP

Receiving

- Materials properly profiled into the facility will be received and sampled in accordance with the waste analysis plan
- The chemist will evaluate samples with wet chemistry analysis and verify to inbound profile.
- The chemists will identify all drums on a receiving report sheet designating them for Fuels processing.
- Restricted materials include PCB material, oxidizer, fuel reactive material, and monolithic material.
- Corrosives are case by case evaluated and reactive metals are prohibited.

Operation Set-up

Inspections:

- Inspect Pump, hoses and drum-straw for integrity, cracks, or damage.
- Verify bonding and grounding cables and clamps with use of continuity meter. No frayed cables or damaged clips should be used in this process. If damaged equipment is found, do not use equipment and report the damage to your supervisor, replacement equipment should be provided for all damaged equipment.
- Inspect hand-tools to ensure they are spark-proof and free from damage. Damaged tools should be discarded and not used.
- All personal communication equipment (cell phones and radios) should not be used within 25 feet of an open drum, tank, or tanker.

Start-up procedures

1. Choose and print the appropriate WIN Pick-sheet for the chosen process.
2. Identify and mark the corresponding drums for processing.
3. Place drums in designated processing area.
4. Set-up pump system: pump, strainer, hoses, and drum straw. Duct taping hose ears is recommended.
5. Connect tanker to grounding system.
6. Trace lines from drum straw, back through the hoses, strainer and the pump to ensure they are properly bonded.
7. Connect pump to grounding system.
8. Pull a sample from each container and place into sample bucket. Sample bucket should include a thermometer to measure the temperature of the bucket sample. Follow the Container Sampling SOP, including PPE Hazard Assessment. If pumping into a tank, or tanker that contains a heel, or already contains material, a sample from the tank or tanker should be added to the sample bucket.
9. Visually inspect the sample bucket during sampling process, if a reaction occurs (i.e. rise in temperature, polymerization, off-gassing) DO NOT PUMP THAT DRUM. The drum should be marked across the top of the drum as a 'no pump' container, and the final code should be changed to the more appropriate code.
10. The bucket sample should be poured into a sample bottle and sent to the on site for lab work that must be performed as part of the facility WAP.
11. The lab will release the load into production by notifying the Operations Manager.
12. The load should be pumped in the exact order it was sampled.

Material Processing Operation

Pre-Operational

- Don the appropriate PPE as designated for each task in the PPE assessments, Appendix 2 to this document.
- Review the Job Hazard Analysis for each task, Appendix 1 to this document.
- Turn on pump and other powered equipment necessary to perform this process.
- Verify that all valves are in the correct position.
- Verify all hose connections are fastened and secure.
- Mark the processing area with appropriate signage (i.e. respiratory protection, hearing protection, etc).

Procedure

1. Contact bonding cable to first drum to be pumped.
2. Using spark-proof hand tools, open the first drum to be pumped. Open the drum slowly to safely release pressure.
3. Insert drum straw into container.
4. Pump the contents of the drum using the drum straw. Once the fluid level in the drums nears empty, carefully tilt the drum at an angle allowing the drum straw to remove a majority of the contents.
5. Once the drum has been pumped, replace the drum bung, and or close the drum.
6. Obliterate the EPA waste label on the container, with the exception of the Shipping name.
7. The DOT diamonds should remain visible on the container.
8. Dispose of the drum according to current plant protocols.
9. Remove bonding cable, and place on the next drum to be pumped.
10. Insert drum straw into next drum AFTER bonding cable has been attached.
11. Drums are to remain closed, except when being pumped, a maximum of ten drums should be open at any time during the pumping process.
12. Use absorbent pads and oil dry to keep the process area clean and free from spills during the pumping process.

Post-Operational

- Remove all empty drums from processing area.
- Turn off all equipment used in the process.
- Verify that all valves are in the correct position.
- Disconnect all hoses from the pump and the tan, or tanker.
- Cap each hose end and store properly.
- Properly doff PPE and package for disposal, as per each facility site generated waste guidelines and Waste Minimization Plan.

Clean-up Process

- Use oil-dry to absorb any liquid that may have spilled during the process.
- Sweep the process area.
- Wipe down pump, drum straw, strainer, and hoses as needed to remove any visible residue.
- Properly dispose of clean-up materials into PPE Satellite Accumulation Containers as per each facility's site generated waste guidelines and Waste Minimization Plan.

Process Interruptions

Interruption	Actions	Reporting
Exothermic reactions	Shutdown the operation and exit the process area.	Operations Manager
Fire (incipient stage)	Use fire extinguisher in area to extinguish the fire. Shutdown the operation and exit the process area.	Operations Manager
Fire (beyond incipient stage)	Shutdown the operation and exit the process area.	Activate Facility Fire Alarm
Excessive odor	Shutdown the operation and exit the process area.	Operations Manager
Physical boiling	Shutdown the operation and exit the process area.	Operations Manager
Popping, Fuming / off-gassing of material	Shutdown the operation and exit the process area.	Operations Manager
Hose, pump, strainer, or tank (tanker) failure	Shutdown the operation and exit the process area.	Operations Manager
Personnel contamination	Shutdown the operation and exit the process area, properly doff PPE and proceed immediately to the nearest emergency shower.	Operations Manager

Appendix E-A

Tank System Assessments and Certifications

Attachment 1, Tank Certification Statements

Attachment 2, Tank Containment Certification Statements

Attachment 3, Compatibilities of Wastes with Tank Materials

Attachment 4, Tank System Field Notes

Attachment 5, Examples of Containment Coatings

Attachment 1, Tank Certification Statements

Attachment 2, Tank Containment Certification Statements

Throughout this Attachment, the facility referred

to as "Clean Harbors Kansas, LLC" is the same facility

identified in the permit application as "Clean Harbors Kansas, LLC."

Attachment 3, Compatibilities of Wastes with Tank Materials

Attachment 4, Tank System Field Notes

Attachment 5, Examples of Containment Coatings

Appendix E-B

Tank Drawings

Appendix E-C

Documentation of Tank Ages

APPENDIX E-C

YEAR OF INSTALLATION OF HAZARDOUS WASTE TANKS

VESSEL	YEAR INSTALLED
V-1	1988
V-2	1982
V-3	1988
V-4	1988
V-5	1988
V-6	1988
V-7	1988
V-8	1988

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Acronym Table

Clean Harbors Kansas, LLC (CHK)
Remedial Work Order (RWO)
Inspection Work Ticket (IWT)
Emergency Response Coordinator (ERC)
Container Management Unit (CMU)

F-1 Introduction:

Clean Harbors Kansas, LLC (CHK) has developed this Inspection Plan in compliance with 40 CFR 264.15 and 270.14; changes to the inspection plan will be made in accordance with permit modification procedures found in 40 CFR 270.42. It is intended to provide a systematic method of identifying potential problems, malfunctions, or deterioration that may cause or lead to a release of hazardous constituents to the environment or a threat to human health. Inspections will be used to identify potential operational problems, and to identify required maintenance of in-service equipment and structures while the facility is operational or equipment is in service. The corrective action program will include a Corrective Action Management System (CMS), which could include either paper Remedial Work Orders (RWO) or electronic Inspection Work Tickets (IWT), to document and track the resolution of problems identified during inspections.

One or more inspectors will be designated to perform the inspections as scheduled. A record of the inspections and the schedule will be maintained at the facility. The results of the inspections will be recorded on an Inspection Log that will be maintained in the operating record. As an alternative to maintaining a paper log system as has been historically used by the facility, the inspection results may be maintained in an Electronic Inspection Management System developed by Clean Harbors. The Inspection Log, either in the paper or electronic format, will include the

date, the time of the inspection, the name of the inspector, his/her initials, items examined, problems noted, and the identifying number of each RWO/IWT issued to address any problem noted. The nature and date of any repairs are recorded on the RWO/IWT when the repairs are completed. The RWO/IWT is then filed by identifying number in the operating record as a paper form or as a data record in the Electronic Inspection Management System.

Potential problems identified on the inspection log will be corrected or addressed as soon as possible or practicable. If repairs are required, they will be made as soon as they can be safely and practically performed. If the problem identified is a threat to human health or the environment, then actions to mitigate the situation will be undertaken immediately. All steps necessary to allow the repairs (e.g., minimizing the exposure of the workers to hazardous materials, hazardous waste, or hazardous situations) will be taken prior to beginning the repair work. The inspection logs and RWOs/IWTs will be maintained as part of the operating record for at least three years from the date of inspection. Examples of the inspection log in both paper and electronic format are provided in Appendix F-A, Example of Inspection Log. The electronic form has a different appearance than the paper form due to the manner in which the data is captured by the Inspection Management System database. Inspectors will conduct their inspections using the electronic system in the same manner as they would using the paper form and will review each area for the elements that are described in Attachments F-C and F-D. The items being inspected are in line with permit requirements. The appearance of the Inspections forms however maybe modified with a permit Modification.

Examples of the paper RWO and the electronic IWT are provided in Appendix F-B, Example of Corrective Action Records.

The facility inspector will communicate the occurrence of problems to the Operations Manager (or designee) through the RWOs/IWTs. The timing of this notification will depend on the nature of the potential problem. A problem threatening human health or the environment would be reported immediately. If necessary, the inspector will notify the Emergency Response Coordinator (ERC) as required by Section H, Contingency/Emergency Plan.

F-2 Inspection Requirements:

F-2a General Inspection Requirements: 40 CFR 264.15(a) and (b), 264.33, 270.14(b)(5)

Appendix F-C, General Inspection Schedule, will include inspection of the facility perimeter, safety and emergency equipment, security devices, operating and structural equipment, general requirements of miscellaneous units, communication systems, alarm systems, fire protection equipment, and decontamination equipment.

F-2b Specific Process Inspection Requirements: 40 CFR 264.15(b)(4), 270.14(b)(5)

Specific inspection schedules for container, tank systems, and miscellaneous units are provided in Appendix F-D, Inspection Schedule for Containers.

F-2b(1) Container/ Container Management Unit Inspection: 40 CFR 264.174

The Container Management Unit (CMU)s will be inspected for adequate aisle space, potential spills or accumulation of liquids into secondary containment systems and loading or unloading areas, and deterioration of secondary containment area structures.

The containers will be visually inspected in accordance with Section C, Waste Characterization, for their condition (e.g., open, deteriorated, damaged, corroded, leaking, bulging such as may be caused by internal pressure build-up, etc.), and identification markings.

Refer to Section D, Use and Management of Containers, for a description of the CMUs. The inspection schedule for containers and container management units at the facility is presented in Appendix F-D, Inspection Schedule for Containers.

F-1b (2) <u>Tank and Tank Systems Inspection</u>40 CFR 264.193(i), 264.195

The items addressed by tank systems inspections include tanks, ancillary equipment, secondary containment systems, and areas surrounding tank systems, tank overfilling control equipment, and other control or monitoring equipment. For example

> The visible portions of the construction material of the tanks and their ancillary systems will be inspected for evidence of corrosion, deterioration, or erosion which could result in a leaking or unfit-far-use tank or tank system.
>
> The area immediately surrounding all tank systems including areas within the secondary containment systems will be inspected for obvious signs of

deterioration, accumulated liquids, or potential releases of hazardous waste.

Loading and unloading areas are inspected for obvious sign of deterioration, accumulated liquids, or potential releases of hazardous waste.

Tank overfilling control and monitoring equipment is inspected visually or (periodically) for mechanical operation.

The leak detection systems for the tanks are inspected for evidence of leakage, deterioration, or malfunction.

A list of the tanks and a description of the tank systems is provided in Section E, Tank Systems. Each of the tanks listed in Section E will be inspected for the applicable items listed above, according to Appendix F-E, Inspection Schedule for Tank Systems. Tank condition is assessed annually.

F-3 <u>Inspection Schedule:</u> 40 CFR 264.15, 270.14(b)(5)

The inspection schedules presented in Appendices F-C through F-F indicate the inspection

frequency for each item on the schedule. Inspection frequencies may range from daily to annually, depending upon the item. The frequencies have been based on the rate of probable deterioration of equipment, equipment manufacturers' recommendations, and operating experience at other Clean Harbors facilities. For example, areas within the facility subject to spills, such as truck loading and unloading areas, will be inspected daily when in use. The Inspection must be completed during treatment if treatment is taking place on that operating day.

APPENDIX F-A

EXAMPLE INSPECTION LOG

APPENDIX F-B

EXAMPLE CORRECTIVE ACTION RECORDS

Forms May be Modified

APPENDIX F-C

GENERAL FACILITY INSPECTION SCHEDULE

May 30, 2011
Revision No. 14

INSPECTION PARAMETER	INSPECTION PROCEDURE	INSPECTION FREQUENCY
General Facility and Perimeter	Visually check fences and gates for breaks or damage.	Monthly
	Visually check warning signs for clear visibility.	Monthly
	Visually check for erosion under fences.	Monthly
	Visually check access and intra-facility roads for spills.	Daily
	Visually check for vegetation obscuring warning signs along the fence.	Monthly
Safety and Emergency Equipment	Inspect tags of fire extinguishers for expiration dates and adequate pressure.	Monthly
	Test telephones for proper operation.	Monthly
	Test alarms for proper operation.	Monthly
	Test paging and loudspeaker systems for proper operation.	Monthly
	Inspect self-contained breathing apparatus (SCBA) for air pressure with a pressure gauge. Inspect regulators to verify that air passage is unobstructed. Visually check masks and hoses for serviceability.	Monthly

INSPECTION PARAMETER	INSPECTION PROCEDURE	INSPECTION FREQUENCY
	Inspect first aid stations.	Monthly
	Inspect fire hydrants for adequate water supply, and leaks or evidence of corrosion.	Annually
	Visually inspect sprinkler systems and other fire suppression systems.	Monthly
	Inspect external condition of safety showers and operate to verify adequate water flow.	Monthly
	Inspect external condition of eye wash stations and operate to verify adequate water flow.	Monthly
	Inspect spill response and decontamination equipment for operable condition. Spill response equipment includes the following: Overpack drums Absorbents Portable pumps Hand tools Brooms Detergent Absorbent towels	Monthly
	Inspect inventory of Facility PPE for adequate supplies and operable condition. PPE includes the following: Cartridge respirators Supplied air respirators	Monthly

INSPECTION PARAMETER	INSPECTION PROCEDURE	INSPECTION FREQUENCY
	Protective clothing Specialized gloves Specialized footwear Hearing protection Eye protection Hard hats	

APPENDIX F-D

INSPECTION SCHEDULE FOR CONTAINERS

This schedule applies to active Container Management Units (CMUs) at CHK, except as noted.

INSPECTION PARAMETER	INSPECTION PROCEDURE	INSPECTION FREQUENCY
Container Management System	Inspect containment system loading and unloading areas for evidence of spills or accumulated liquids.	Daily
	Inspect aisles in container storage areas for a minimum of two (2) feet of aisle space.	Daily
	Visually inspect containers for evidence of pressure build-up, structural damage, leaks, missing cap or bung, corrosion, or deterioration.	Weekly
	Visually inspect containers for legible markings or identification labels.	Weekly
	Inspect the container storage areas, concrete slab, and curbs for cracks, gaps, flaking, chips, gouges, and other signs of wear.	Daily
	Inspect sumps for presence of liquids.	Daily
	Inspect container management areas to ensure incompatible wastes are properly segregated.	Weekly
	Inspect equipment and conveyors for operability, condition.	Weekly

APPENDIX F-E

INSPECTION SCHEDULE FOR Tanks

September 24,2011
Revision No. 15

Clean Harbors Kansas, LLC
Section F - Inspection Plan
Appendix F-E - Tank Inspection Schedule

This schedule applies to active tanks at CHK, except as noted.

INSPECTION PARAMETER	INSPECTION PROCEDURE	INSPECTION FREQUENCY
Tanks systems	Inspect containment system for evidence of spills or accumulated liquids.	Daily
	Visually inspect tanks for evidence of pressure build-up, structural damage, leaks ,corrosion, or deterioration.	Daily
	Visually inspect tanks for legible markings or identification labels.	Daily
	Inspect sumps for presence of liquids.	Daily
	Inspect overfill alarm equipment	Daily
	Inspect Tank Cathodic protection	Annually
	Inspect equipment and conveyors for operability, condition.	Weekly

September 24,2011
Revision No. 15

APPENDIX F-F

INSPECTION SCHEDULE FOR AIR EMISSIONS

September 24,2011
Revision No. 15

This schedule applies to Pumps and Ancillary Equipment at CHK, except as noted.

INSPECTION PARAMETER	INSPECTION PROCEDURE	INSPECTION FREQUENCY
Pumps and Ancillary Equipment	Monitor for volatile air emissions as required	Monthly and Annually
	Visually monitor as required for evidence of leaks	Daily when in use

Clean Harbors Kansas, LLC
RCRA Permit Application
Section G
Procedures to Prevent Hazards

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Drawing G-1 Facility Layout

List of Acronyms

Clean Harbors Kansas, LLC (CHK)
Public Address (PA)
Hazardous Waste Management Unit (HWMU)
Container Management Unit (CMU)

Personal Protective Equipment (PPE)
Self-Contained Breathing Apparatus (SCBA)
National Fire Protection association (NFPA)

G-1 Introduction

Waste management processes at Clean Harbors Kansas, LLC (CHK) are designed with safety features for protection of human health, the environment, and the general public. This section is a description of the measures used to prevent hazards during waste management at the facility. The hazardous waste units at the facility include container management units, and loading and unloading facilities.

G-2 Security: 40 CFR 264.14, 270.14(b)(4)

The CHK facility will be secured to prevent the unknowing entry, and minimize the possibility for the unauthorized entry, of persons or livestock onto the active portion of the facility, and to protect human health and the environment.

G-2a Waiver 40 CFR 264.14, 270.14(b)(4)

The CHK facility is not claiming the waiver of the security procedure and equipment requirements of 40 CFR 264.14.

G-2a(1) Injury to Intruder 40 CFR 264.14, 270.14(b)(4)

The CHK facility is equipped with numerous systems to minimize the possibility of intentional

entry of the facility by intruders. These systems include conventional equipment such as fencing, locked gates, and warning signs but may also include electronic security systems. In order to prevent a possible intruder from coming in contact with the waste being managed at the facility, containers will be kept closed at all times except when physically adding, removing or sampling waste and will be stored within closed buildings. Containers of waste are typically closed with bung wrenches or chime ring bolt wrenches. These devices make it very difficult to open by hand, without special tools. Trailer trucks used to hold waste during the course of transportation that are parked at the facility will be kept locked while on facility grounds. These methods of securing the waste stored at the facility will minimize the possibility that an intruder will be injured through contact with the waste.

G-2a(2) <u>Violation Caused by Intruder</u> 40 CFR 264.14, 270.14(b)(4)

As discussed in the sections above and below, the facility security devices and container closure devices make it difficult for an intruder to come in contact with the waste and therefore potentially causing a permit violation. Should the intruder use extraordinary measures to open a container or cause damage to the container, the secondary containment in which drums are stored would prevent any potentially released waste from escaping from the facility and cause a permit or regulatory violation.

G-2b Security Procedures and Equipment:

The CHK facility will be secured to prevent the unknowing entry, and minimize the possibility for the unauthorized entry, of persons or livestock onto the active portion of the facility, to protect human health and the environment. (The active portion of the facility, hereinafter referred to in this section as "the facility," is as defined by 40 CFR 261.10.) This will be accomplished by provisions such as, fencing, gates, an electronically controlled security system, and warning signs. Presence of facility personnel during shift operations will minimize or prevent incidents of trespassing and vandalism. Fencing is not provided where buildings and building entrances provide a barrier to unauthorized entry. In addition,

employees are instructed to question and direct unauthorized visitors to the office should they try to enter the facility. These security provisions are further discussed below.

- Fence: where required for security, the facility is surrounded by a six (6) foot high chain link fence with gates at various locations. Figure G.1, Facility Layout gives the location of fencing and gates. Entry into the facility will be controlled by the fencing, gates, and buildings. Gates and doors which allow access to the facility are to remain closed and secured against entry unless in use. Personnel and vehicle access will be controlled by an

electronic system or by designated facility personnel.

- Vehicle Access: Vehicles must be authorized to enter the facility. Normal vehicle access is through the main entrance; this entrance is provided with electronic controls. However, when attended by facility personnel, other gates may be used with prior authorization. These secondary gates may also be used while evacuating the facility. In the event of a failure or scheduled shutdown of the electronic gate system, the main entrance gate will be operated manually. The operation of the secondary gates will not be affected by a power failure, since these gates will not be electronically controlled.

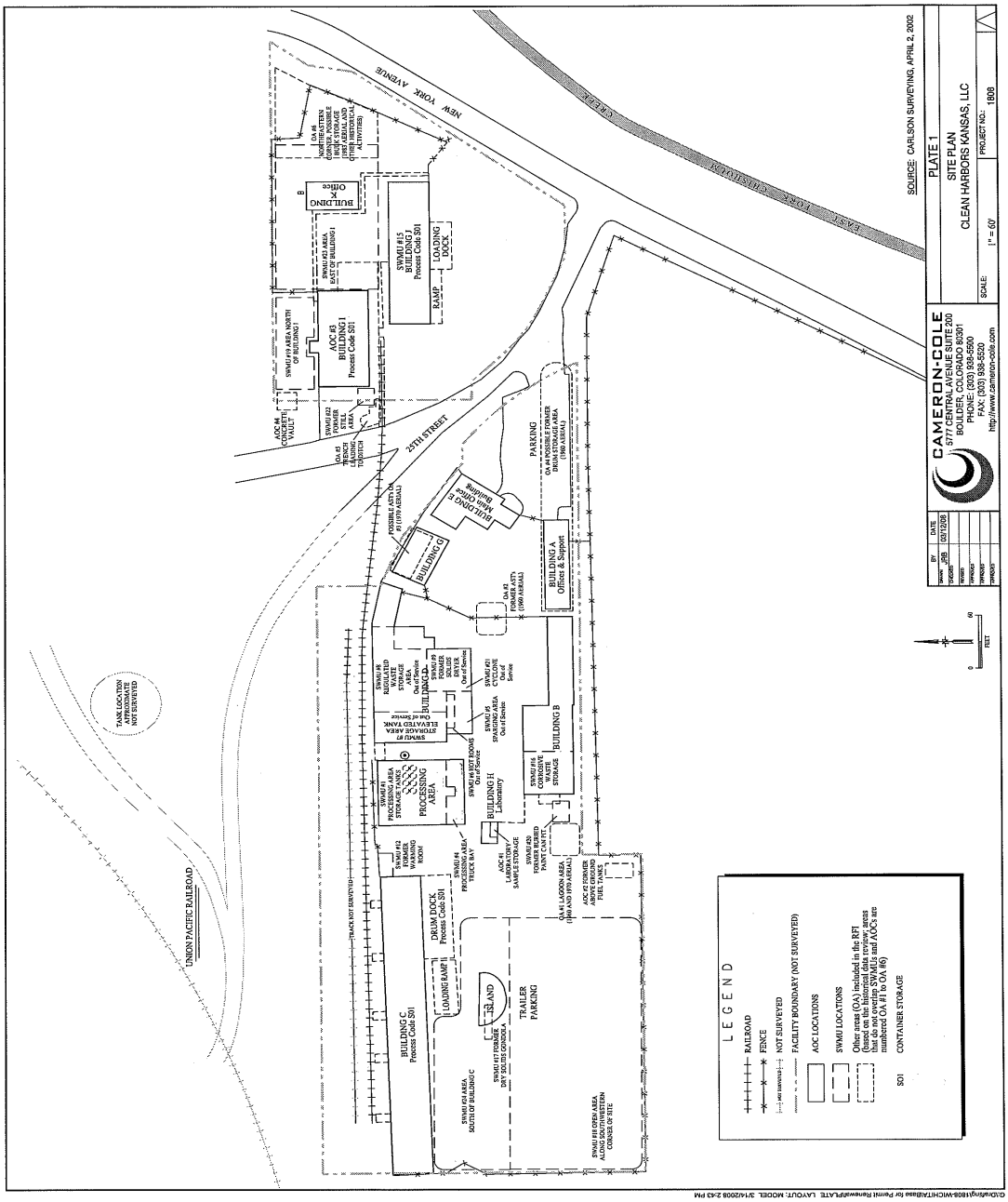
- Personnel Access: These procedures are designed to control unauthorized entry into the facility. Access into the facility will be controlled by the fencing, gates, buildings, and facility personnel. Non-employee personnel including contractors, consultants, governmental agency personnel and visitors will be required to sign in prior to being granted entry into the facility. Entry to the facility will be monitored by facility personnel.

- Warning signs: Warning signs will be posted on or adjacent to all gates. The signs, written in English, will state at a minimum, "DANGER - UNAUTHORIZED PERSONNEL KEEP OUT." The lettering on warning signs will be at least two (2)

inches high to be legible from a distance of twenty-five (25) feet. The lettering and the sign background will be contrasting colors. Warning signs will also be placed along the fence and, where appropriate, along building exterior walls so as to be seen from any approach to the facility.

- Signs are posted inside the facility to warn personnel about potential hazards. These signs may be required, for example, by OSHA regulations (e.g., NO SMOKING, EYE PROTECTION REQUIRED, HEARING PROTECTION REQUIRED, DANGER - HIGH VOLTAGE, etc.). The signs will be located as appropriate.

Figure G-1. Facility Layout



G-3 Inspection Schedule: 40 CFR 264.15, 264.33, 264.174, 270.14(b)(5)

CHK has developed an Inspection Plan to provide a systematic method of identifying potential problems, malfunctions, or deterioration which may cause or lead to a release of hazardous constituents to the environment or a threat to human health. The facility inspection plan, including inspection schedules, is presented in Section F, Inspection Plan.

G-3a Types of Problems 40 CFR 270.14(b)(5), 264.15(b)(3)

The Inspection Schedule and inspection checklists provided in Section F of this permit application indicate the types of problems that the inspector will be looking for during the inspections conducted of each area used to manage hazardous waste.

G-3b Schedule of Remedial Actions 40 CFR 270.14(b)(5), 264.15(c)

Potential problems identified on the inspection log will be corrected or addressed as soon as possible or practicable. If repairs are required, they will be made as soon as they can be safely and practically performed. If the problem identified is a threat to human health or the environment, then actions to mitigate the situation will be undertaken immediately. All steps

necessary to allow the repairs (e.g., minimizing the exposure of the workers to hazardous materials, hazardous waste, or hazardous situations) will be taken prior to beginning the repair work.

G-3c Inspection Log 40 CFR 270.14(b)(5), 264.15(d)

Copies of the paper and electronic Inspection Logs are provided in Appendix G-A. Copies of these documents are also maintained in Section F of this permit application.

G-4 Preparedness and Prevention Requirements: 40 CFR 270.14(b)(6)

CHK is operated and maintained to minimize the possibility of hazards such as fire, explosion, or unplanned release of hazardous waste, etc. to air, soil, or surface water which may threaten human health or the environment. The inspection schedule for facility safety and emergency equipment is provided in Section F, Inspection Plan.

G-4a Equipment Requirements: 40 CFR 264.32

G-4a(1) Internal Communications: 40 CFR 264.32(a)

Communications inside CHK can be achieved through a telephone system and a Public Address (PA) system. Telephones will be located so that employees will have access to a phone. An employee will be able to call any other telephone in the facility, and can access the PA system for paging. The paging system will broadcast through a series of loudspeakers. Two way communication devices or paired work crews (i.e., the buddy system) will ensure that every employee has immediate access to communication in the event of an emergency. The internal communication system will be tested monthly, as indicated in the Inspection Plan, Section F. However, use of the internal communication system during the course of normal operations will more quickly identify developing problems.

An alarm system will alert personnel to major emergencies. Alarms will consist of a siren (activated at manual pull stations) or a broadcast over the paging system loudspeakers (activated by dialing the appropriate code at any telephone). Emergency telephone numbers and instructions are posted at or nearby every telephone in the active portion of the facility; emergency telephone numbers are also available in office areas.

G-4a(2) External Communications: 40 CFR 264.32(b)

External facility communications will be available through the local telephone company. Local (Wichita) or long distance telephone connections are available. Arrangements for emergency response have been made with appropriate outside agencies; see the Contingency/Emergency Plan, Section H.

G-4a(3) Emergency Equipment: 40 CFR 264.32(c)

Portable fire extinguishers, fire control equipment, spill control equipment, and decontamination equipment will be available at the facility. Descriptions, locations, and a list of emergency equipment for the facility are provided in Section H, Contingency Plan. Emergency equipment is inspected for availability and readiness according to the schedule given in Section F, Inspection Plan.

G-4a(4) Water for Fire Control: 40 CFR 264.32(d)

The facility has a supply of water available for fire fighting. Water for fire protection is supplied by a water main that is part of the City of Wichita public water system. Hazardous Waste Management Units (HWMU) are provided with appropriate fire protection systems meeting the applicable requirements of the City Building Code and NFPA. These systems are

designed to extinguish or confine the spread and area of exposure of a fire. The systems may consist of fire hydrants, overhead sprinkler systems, or other types of fire protection systems. A description of the fire protection equipment at Clean Harbors Kansas, LLC is included in Section H, Contingency Plan.

G-4a(5) <u>Testing and Maintenance of Equipment</u> 40 CFR 270.14 (b), 264.33(b)

The facility fire hydrants are tested annually for water flow and pressure. All hydrants are inspected to ensure they are available for emergency use and are not covered by dirt or other foreign material. All hoses and equipment are inspected for integrity and readiness.

Emergency eyewashes, showers, fire extinguishers, sumps, spill kits, alarms, and other emergency equipment are inspected regularly. The inspection criteria and frequencies are outlined in the Inspection Plan in Attachment 3. If problems are found, the corrective action procedures outlined in the Inspection Plan will be implemented.

All equipment will be maintained as necessary to assure its proper operation in time of emergency.

G-4b <u>Aisle Space Requirement:</u> 40 CFR 264.35

Container Management Unit (CMU)s will have access aisles maintained to allow hand held and portable emergency response equipment to be moved. Adequate aisle space is maintained to allow unobstructed movement of personnel, fire protection equipment, or spill control equipment; and is ensured by regular inspections, per the inspection schedule in Section F, Inspection Plan. Container management areas will have a minimum aisle space of two (2) feet as described in Section D.

.

G-4c <u>Documentation of Arrangements with Local Authorities</u> 40 CFR 270.14(b), 264.37

In the event of an emergency which may require notification of outside authorities, the ERC or person designated by the ERC, shall call the appropriate emergency authorities; the KDHE will be notified within 24 hours or in as timely a manner as is possible of any events that result in implementation of this Emergency/Contingency Plan.

A telephone listing of these authorities is provided in Appendix G-B, Emergency Telephone List of Local Authorities. This telephone list will be posted at or nearby every telephone in the active portion of the facility; emergency telephone numbers are also available in office areas. The person initiating the call will provide as much of the following information as is available.

Clean Harbors Kansas, LLC has made arrangements with Wichita Police/Fire Departments, Emergency Services and the Local Emergency Planning Commission to ensure that they are familiar with facility operations. Each agency has been provided a copy of the facility Contingency Plan and are provided with periodic updates as the Plan changes.

Attachment G-B contains the emergency contact phone numbers of local officials. Attachment G-C contains the coordination agreement letters that CHK has provided to local officials and emergency services agencies.

G-5 Preventive Procedures, Structures, and Equipment: 40 CFR 270.14(b)(8)

Various structures have been constructed, safety features have been incorporated, and operating procedures have been developed, to minimize hazards to human health and the environment. Procedures, equipment, and structures utilized to prevent hazards are described in the following sections.

- A description of the Container Management Units is provided in Section D, Use and Management of Containers.

- A list of emergency equipment and a description of the emergency procedures are provided in the Contingency /Emergency Plan, Section H; a copy of this plan will be available at the facility at all times.

- Additional information regarding operating procedures are described in Section C, Waste Characterization, Section F, Inspection Plan, and Section I, Training Program.

Appropriate material handling equipment and devices will be employed in the waste management areas. Applicable safeguards will be observed during repairs performed near ignitable materials (e.g., no smoking, no sparks, no open flames, etc.). Special precautions will be taken to prevent accidental ignition of ignitable wastes or the uncontrolled mixing of incompatible wastes (Refer to G-6 of this section).

G-5a <u>Loading and Unloading Operations:</u> 40 CFR 270.14(b)(8)(i)

Facility operations personnel receive training on proper loading and unloading procedures. This training will include instruction on machinery operation, safety equipment, waste identification, and processing procedures. A description of the personnel training plan (e.g., job-specific training) is provided in Section I, Training Program.

Various structures and equipment are utilized during loading and unloading operations to prevent

environmental and health hazards. Container Management procedures are detailed in Section D, Use and Management of Containers. Standard loading/unloading procedures are described below.

- Bulk Liquid Wastes: Prior to loading or unloading a bulk liquid container (e.g., a tanker truck) the operator will visually check valve position, that hoses are secured, and that any needed hose connection plugs and caps are in place. Following the loading or unloading of a bulk liquid container, the operator will visually check valve position, and that any needed hose connection plugs and caps are in place. Bulk metal containers holding ignitable liquid wastes will be grounded and bonded prior to loading or unloading.

- Containerized Wastes: Elevated docks are provided to facilitate loading and unloading of containerized wastes at the Drum Dock, and at Building J. Trucks are loaded or unloaded using an industrial truck or a drum dolly, or other appropriate container handling equipment. Containers are typically fifty-five (55) gallon drums, although larger and smaller containers may also be handled.

Manual handling of the containers will be minimized. Industrial trucks are capable of lifting and transporting one or more containers at a time. Drum grapplers (e.g., a semi-circular shaped arm attachment to the forks) or fork attachments for the forklift truck will be used for lifting and transporting individual containers. These drum grasping attachments are capable of securely

holding a container during lifting and transporting without requiring additional straps or hooks. The operator is responsible for ensuring that the truck and the dock or ramp are properly aligned before any loading or unloading activities are initiated.

Drum dollies may be used to move individual containers (typically drums). The dollies have forks or a plate that can be inserted beneath the bottom of an individual container to support the container during lifting and transporting. The dollies either have a clip to secure the top of the container, or are shaped in an arc to cradle the container during lifting and transport.

These drum dollies have features capable of holding a container during lifting and transporting without requiring additional straps. Some manual handling of the containers may be necessary.

G-5b <u>Run-off and Run-on:</u> 40 CFR 270.14(b)(8)(ii)

Precipitation and spills in waste management areas will be contained by dedicated secondary containment structures. These structures will prevent run-off to the environment or other facility areas. Secondary containment systems may contain one or more sumps to allow collection and removal of any accumulated liquids. Accumulated liquids will be managed in accordance with Section C, Waste Characterization. Containment systems not protected from precipitation by a building have been designed to accommodate the intrusion of precipitation from a twenty-five (25) year, twenty-four (24) hour storm event. Drawings showing the design and dimensions of

containment systems are provided in Sections D, Use and Management of Containers, of this permit application.

Precipitation falling outside of the containment areas is controlled to prevent run-on of storm water into a waste management unit. Storm water falling into the active areas of the site is managed through a storm water drainage system. Spills of hazardous waste will be promptly controlled and removed, when discovered, to prevent the spread of contaminants. Spill response procedures are provided in Section H, Contingency/Emergency Plan. The spilled material and any absorbent used will be placed into appropriate containers. The waste will be managed in accordance with Section C, Waste Characterization.

G-5c <u>Water Supplies:</u> 40 CFR 270.14(b)(8)(iii)

Operations at CHK will require water for potable and process usage. Water supplies include City of Wichita water as well as ground water available on site. City (potable) water will be used for personnel decontamination (e.g., eye-wash stations, safety showers, and sanitary needs).

Process water is used for waste treatment, equipment decontamination, fire fighting, etc. The process water will be supplied either from the City of Wichita distribution system or from ground water at the facility. Potable and process water are distributed, as needed, throughout the facility.

Physical separation will be used to prevent contamination of the water in a delivery system by back-siphoning of contaminants.

G-5d <u>Equipment and Power Failure:</u> 40 CFR 270.14(b)(8)(iv)

Normally, the electrical requirements of CHK will be met with power purchased from the local power utility. There are no processes involving high pressures or reactions that, as a result of a power outage, might "run away" and cause fires, explosions, or other sudden releases of hazardous waste.

In the event of a power outage, facility personnel will proceed as follows.

- Cease operations
- Switch off process equipment
- Close appropriate valves
- Report to their supervisor(s) for further instructions

G-5e <u>Personal Protective Equipment:</u> 40 CFR 270.14(b)(8)(v)

Personal Protective Equipment (PPE) available at the facility will include the following.

- Self-Contained Breathing Apparatus (SCBA): A portable device to supply breathing air will be available on-site.

- Cartridge respirator: Employees will be issued the appropriate mask and cartridges for the work area. Cartridges for the masks will be stocked at the facility.

- Protective clothing: Employees performing specific tasks in HWMUs will be issued hard hats, protective coveralls, safety glasses, chemical resistant steel toe boots, specialized gloves, and hearing protection as appropriate. A supply of the appropriate protective clothing will be maintained at the facility.

Minimum PPE for all personnel within the active portion of the facility is a hard hat and eye protection. This minimum protection level will not apply to personnel within passenger vehicles, the administration building, control rooms, or any other office space within the facility in which the risk of a head or eye injury does not exceed normal office work risks. Personnel within specific waste management units will be provided with a hard hat, eye protection, and chemical resistant boots. Additional PPE will be provided as required for specific tasks.

Employees will be trained in proper PPE decontamination during their introductory training.

G-5f <u>Prevention of Releases to Atmosphere:</u> 40 CFR 270.14(b)(8)(vi)

The facility is designed, constructed, maintained, and operated to minimize the possibility of fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment as required by 40 CFR 264.31.

The facility Inspection Plan (Section F), Emergency/Contingency Plan (Section H), and Training Plan (Section I) have been developed to enable the facility to prevent releases including emissions and to respond to any releases that may occur.

Waste management practices designed to minimize potential releases to the atmosphere include procedures as specified in 40 CFR 264.173. Containers remain closed during storage, except when it is necessary to add or remove waste or sample the container. Containerized hazardous waste is managed in a manner that minimizes the potential for rupture of containers or damage to containers which could result in leakage. Ramps and automated transfer equipment facilitate safe movement of waste between management areas.

Container unit management practices are designed to comply with the requirements of 40 CFR Subpart I – Use and Management of Containers. Materials are not intentionally placed in a container management unit if they could cause a release to the atmosphere as the result of a spill,

leak or reaction with the contents of another container within close proximity. All spills and other releases from containers held within a container management unit will be removed and/or cleaned up at the earliest practicable time to minimize potential for release to atmosphere by evaporation.

G-6 Prevention of Reaction of Ignitable, Reactive and Incompatible Wastes:

G-6a Precautions to Prevent Ignition or Reaction of Ignitable or Reactive Waste and Mixing of Incompatible Wastes: 40 CFR 264.17(a), 270.14(b)(9)

Precautions will be taken at the facility during storage, treatment, or handling to avoid the accidental ignition or reaction of waste and mixing of incompatible wastes. These precautions are intended to prevent generation of undesirable heat, pressure, fire, explosion, toxic gases, or fumes which could result in damage to the structural integrity of any portion of the facility or cause a threat to human health or the environment.

Ignitable waste will be protected from open ignition sources such as open flames, metal welding and cutting, hot surfaces, frictional heat, spontaneous ignition (e.g., heat producing chemical reactions), radiant heat, smoking, and sparks (static, electrical, or mechanical). Company policy prohibits the use of an open flame in areas where waste management occurs without issuance of a "Hot Work Permit." Smoking is allowed only in designated areas away from all waste management areas.

Activities generating flames or sparks, such as welding or cutting, in areas where waste management occurs, are permitted only after a "Hot Work Permit" has been issued. The permit is not granted until the area has been inspected, the work area tested for flammable vapors, and all ignitable wastes have been properly removed or protected. Flammable vapor concentrations in the air are determined through the use of a portable or stationary LEL (lower explosive limit) meter.

Grounding equipment is provided to dissipate any accumulation of static charges generated by the movement of liquids. The principles of static grounding and the hazards of flammable liquids are thoroughly explained to all operating personnel during their safety training program. Bulk metal containers (tank trailers and transport tanks) of ignitable liquid wastes will be grounded and bonded before and during transfer of material through pipes or hoses. Drums of ignitable liquid wastes will be grounded and bonded before and during transfer of material between containers. Signs prohibiting smoking will be conspicuously placed within and near the ignitable waste storage areas. Applicable safeguards (e.g., no smoking, no sparks) will be observed during repairs performed near ignitable materials.

Buildings which enclose waste processing operations will be ventilated appropriately to avoid an accumulation of hazardous mists, vapors, dusts, or gases; or of flammable vapors or gases.

G-6b Management of Ignitable or Reactive Wastes in Containers: 40 CFR 264.176, 270.15(c)

Ignitable or reactive wastes in containers may be either solid, sludge, or liquid. Ignitable or reactive wastes in containers will be managed at CHK in a manner that minimizes the possibility of a fire or reaction.

Containers holding ignitable or reactive waste are kept closed at all times except when adding or removing waste or during sampling. Keeping the containers closed in this manner prevents the escape of potentially ignitable fumes that could find a remote ignition source. When it is necessary to conduct a transfer operation, the source and destination container, as well as the transfer device, will be properly grounded to prevent the generation of static electric charge.

Knowledge of the identity and characteristics of potentially ignitable and reactive wastes is key to preventing fire or unanticipated reactions. The information collected on the Waste Material Profile, Attachment G-D, will be used to determine if a particular waste stream is reactive so that appropriate storage and handling decisions can be made. Ignitable or reactive wastes are protected from spontaneous ignition caused by heat-producing chemical reactions by segregating incompatible wastes within the Container Management Building. Segregated secondary containment will prevent mixing of incompatible wastes.

The buildings have been designed to comply with the City Building Code and the appropriate codes of the National Fire Protection Association (NFPA). Interior and exterior walls of the Container Management Building meet the requirements of the applicable Building Code and NFPA codes. Equipment and personnel access doors meet the applicable codes. All containers in the Container Management Building that hold ignitable or reactive wastes are maintained a minimum of 50 feet from the facility property line.

G-6c <u>Management of Incompatible Wastes in Containers:</u> 40 CFR 264.177, 270.15(d)

Clean Harbors Kansas, LLC employs a number of protective measures to prevent the inadvertent mixing or commingling of incompatible wastes in containers. Incompatibility between wastes or a waste and a container will be determined in accordance with Section C, Waste Characterization. No containerized wastes will be mixed with other containerized wastes until it is determined that the wastes are compatible. The compatibility testing is outlined in the Waste Analysis Plan.

Containers of waste received within one truck trailer will be unloaded and managed as described in Section C, Waste Characterization. If, during incoming load analysis, incompatible wastes in a common CMU are identified, the containers holding the incompatible waste will be removed and placed in an appropriate area or provided with a portable containment system. Section D, Use and Management of Containers provides a description of the container storage and

processing procedures. Containers of incompatible materials will not be placed in the same containment area, unless one of the incompatible materials is placed on an isolation pallet or is otherwise isolated from the other material. These procedures will minimize the possibility of mixing of the incompatible materials should leaks develop in the containers holding the materials.

Wastes found to be incompatible under the procedures in Section C will not be placed in the same container. Wastes will only be added to containers that are shown to be compatible with the materials of construction of the container.

APPENDIX G-A

SAMPLE INSPECTION LOG SHEETS

Form May be Modified

Appendix G-B

Emergency Telephone Listing of Local Authorities

May 30, 2011
Revision No. 14

Emergency Telephone Listing of Local Authorities

Clean Harbors Kansas, LLC **Office Telephone No.: 316-269-7400**
2549 North New York Avenue
Wichita, Kansas, 67219

Agency	Office Telephone	Emergency Telephone
Sedgwick Co. EMS	316/383-7994	911
St. Francis Emergency Center	316/268-5052	316/268-5052
Wichita Fire Dept.	316/268-4451	911
WFD HazMat Team	316/838-8655	911
Wichita Police Dept.	316/268-4239	911
KDHE	785/296-1079	785/296-0614
EPA Region VII	913/281-0991	913/281-0991
National Response Center (NRC)	800/424-8802	800/424-8802
Derby Refinery After 5:00 PM	316/262-5703	316/267-1981
Union Pacific	316/268-9433	316/268-9433

Appendix G-C

Coordination Agreement Letters

Appendix G-D

Sample Waste Material Profile

Clean Harbors Kansas, LLC
RCRA Permit Application
Section H
Contingency/Emergency Plan

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Acronym Table

Clean Harbors Kansas, LLC (CHK)
Emergency Response Coordinator (ERC)
City of Wichita Fire Department (CWFD)
Hazardous Materials Response Team (HMRT)
City of Wichita Police Department (CWPD)
National Response Center (NRC)
Reportable Quantity (RQ)
Local Emergency Planning Committee (LEPC)
Kansas Department of Health and Environment (KDHE)
National Fire Protection Association (NFPA)
Personal Protective Equipment (PPE)
Self-Contained Breathing Equipment (SCBA)

Clean Harbors Kansas, LLC
RCRA Permit Application
Section H
Contingency/Emergency Plan

H-1 Introduction:

This Contingency/Emergency plan, when implemented, will minimize hazards to human health and the environment due to events such as fires, explosions, and/or releases of hazardous waste. This plan contains provisions addressing the requirements of 40 CFR Part 270 and 40 CFR Part 264. It is presented in a format designed to be useful for employees and response personnel during an emergency and for employee training purposes.

Copies of the plan will be kept at the facility and provided to the appropriate local authorities and emergency response agencies that may be called upon to provide emergency services. Amendment of the Emergency/Contingency Plan will be performed in accordance with the permit modification requirements of 40 CFR 270.42. The plan will be reviewed and may be amended, if necessary, whenever:

- the permit is revised;
- the plan may be improved by addressing shortcomings noted during practice or actual implementation;
- the list of Emergency Response Coordinators (ERC) changes, or the list of emergency equipment changes;

- the facility changes in a way that materially increases the potential for fires, explosions, releases of hazardous waste or hazardous waste constituents; or
- the facility changes in a way that affects the implementation of the plan.

H-2 <u>General Information:</u> 40 CFR 264.52, 264.53

H-2a <u>Facility name:</u>

Clean Harbors Kansas, LLC

H-2b <u>Owner and Operator of Facility:</u>

H-2b(1) <u>Facility Operator:</u>

Clean Harbors Kansas, LLC

2549 North New York Avenue

Wichita, Kansas 67219

H-2b(2) <u>Facility Owner(s):</u>

Clean Harbors Kansas, LLC

2549 North New York Avenue

Wichita, Kansas 67219

H-2b(3) <u>Facility Telephone Number:</u>

Office: 316/269-7400

Note: See Table H-1 for telephone numbers for Emergency Response Coordinators.

H-2c Location:

The facility is located at 2549 North New York Avenue in Wichita, Sedgwick County, Kansas, ZIP code 67219.

This address is in the Northeast quarter of the Southeast quarter of Section 4, Township 27 South, Range 1 East.

H-2d Layout and Site Plan:

See Figure H.1, Emergency Equipment/Evacuation Routes, Drawing 50-01-03-002.

Note: Full size reference drawings are available for review from the facility, and are included in Section Y of the Part B permit application, Referenced Drawings.

H-2e Description of Facility Operations:

CHK treats, recovers for recycling, and stores for subsequent off-site disposal, hazardous and nonhazardous wastes. Detailed operating and design descriptions are presented in the facility RCRA Permit Application (Parts A and B), which is available for review at the facility. All RCRA regulated storage areas and treatment equipment will have secondary containment structures, which provide adequate run-on and run-off controls.

Figure H.1. Emergency Equipment/Evacuation Routes

H-3 Emergency Response Coordinators: 40 CFR 264.52(d), 264.55

The Emergency Response Coordinator (ERC) will be responsible for implementing the Contingency/Emergency plan as necessary in the event of an exigent situation. Each of the personnel listed in Table H-1, Emergency Response Coordinators, are qualified to assume the responsibilities of ERC. Each ERC will be familiar with all aspects of the facility's Contingency/Emergency Plan, operations and activities at the facility, the location and nature of wastes handled, the location of records within the facility, and the facility layout. An attempt will be made to contact the primary ERC in the event of an exigency; if the primary ERC is not available, the alternate ERC(s) will be called until one is reached.

The personnel listed in Table H-1, Emergency Response Coordinators, have full authority to commit all facility resources necessary to carry out the Contingency/Emergency Plan. A letter providing authorization for action by an ERC is provided in Appendix H-B, Emergency Response Coordinator Authorization.

Table H-1

Emergency Response Coordinators

Primary Emergency Response Coordinator

Brian Key
6200 E. 41st Street North Circle
Bel Aire, KS 67220
Work – 316-269-7418
Home – 316-744-6327
Cell – 315-650-1216

Alternate Emergency Response Coordinator

John Martin
4421 N. Rushwood Ct
Bel Aire, Kansas 67226
Work: 316-269-7498
Home: 316-361-0031
Cellular: 316-253-4803

H-4 Implementation:

This Plan will be implemented in response to fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or waste constituents that may threaten human health and the environment. The ERC will be contacted if a fire, explosion, or release of hazardous waste might warrant implementation of this Plan. The ERC will determine whether implementation of the Contingency/Emergency Plan is necessary. Minor events which do not meet these criteria may be resolved with due regard to personnel health and safety without implementation of this plan. The following types of situations may be justification for implementing this plan.

H-4a Fires and/or Explosions:

- Fire that may cause harm to human health.
- Fire that may cause release of toxic fumes.
- Fire that may spread and could possibly ignite other nearby materials, either on-site or off-site, or could cause heat-induced explosions.
- Use of fire suppressants that could result in contaminated run-off.

- Explosion which has or could:
    - result in danger from flying fragments or shock waves
    - ignite other hazardous waste at the facility
    - release toxic fumes.

H-4b **Material Releases:**

- A release of toxic vapors or a significant volume of flammable liquids or vapors that could present a fire or vapor explosion hazard.
- A release that could result in off-site soil contamination and/or surface water contamination.
- A release that could endanger human health or the environment for other reasons.

H-5 Emergency Response Procedures:

H-5a Notification Procedures: 40 CFR 264.56(a)(2), 264.56(d)

In the event of an emergency which may require notification of outside authorities, the ERC or person designated by the ERC, shall call the appropriate emergency authorities; the KDHE will be notified within 24 hours or in as timely a manner as is possible of any events that result in implementation of this Emergency/Contingency Plan.

A telephone listing of these authorities is provided in Appendix H-B, Emergency Telephone List of Local Authorities. This telephone list will be posted at or nearby every telephone in the active portion of the facility; emergency telephone numbers are also available in office areas. The person initiating the call will provide as much of the following information as is available.

- Name of caller
- Name of facility and telephone number
- Address and location of Facility
- Time and type of incident
- Type and quantity of material(s) involved
- Extent of injuries

- Possible hazards to health and environment outside the facility

The specific authorities to be notified are as follows.

- The Sedgwick County Emergency Medical Service (EMS) will be called to respond to injuries to personnel as needed. Arrangements to treat personnel injuries have been made with Via Christi (St. Francis) Emergency Center.

- In the event of a fire, explosion, or major spill, the City of Wichita Fire Department (CWFD) will be notified as needed. Arrangements have been made with the CWFD Hazardous Materials Response Team (HMRT); the HMRT is prepared to respond to a fire, explosion, or major spill at the CHK facility.

- Similarly, for situations which may require response from the local police (i.e., evacuation), the City of Wichita Police Department (CWPD) will be notified. If the CWPD officials determine that additional assistance is needed, they may contact the Sedgwick County Sheriff, and/or the Kansas Highway Patrol.

In the event that the ERC determines that the facility has had a release, fire, or explosion which could threaten human health or the environment outside the facility, the

appropriate local emergency authorities will be notified. The ERC will be available to assist authorities in evaluating the situation regarding potential evacuation of an area outside of the facility. In addition, the National Response Center (NRC) will be notified in the event of a release of a Reportable Quantity (RQ) within a twenty-four (24) hour period.

If there is evidence of a Section 304 RQ release off site, the Local Emergency Planning Committee (LEPC) will be notified in accordance with said section of the Emergency Planning and Community Right-to-Know Act of 1986 (40 CFR 355).

The Kansas Department of Health and Environment (KDHE) will be notified of incidents through reporting as specified in Section H-9.

H-5b Identification of Hazardous Materials: 40 CFR 264.56(b)

Whenever there is a release, fire, or explosion that may threaten human health or the environment, the ERC will immediately attempt to determine the character, exact source, amount, and areal extent of any released materials. Facility records, manifests, truck placards, etc. may be reviewed or inspected in an effort to identify the waste that may be involved in an exigent situation. A chemical analysis may be performed as necessary.

H-5c Hazard Assessment: 40 CFR 264.56(c)

The ERC will assess possible hazards to human health or the environment that may result from the release, fire or explosion. This assessment will consider both direct and indirect effects of the release, fire, or explosion, including:

- the possible effects of any toxic, irritating, or asphyxiating gases that are generated,
- the possibility of fire spreading to other areas or causing a heat induced explosion,
- the risk to which facility personnel might be exposed by attempting to control a fire or release,

- the effects of any hazardous surface water run-off from water or chemical agents used to fight fires, and
- the potential of contaminating surface water or ground water from a spill or release of hazardous material.

The ERC will utilize available information to make this assessment, including the quantity of hazardous material involved, the rate of release, and the conditions surrounding the incident.

H-5d <u>Control Procedures:</u> 40 CFR 264.52(a), 264.56

In the event of an emergency, the necessary provisions of this Contingency/Emergency plan will be carried out as described below.

The person who first discovers the incident, if it is safe to do so, will:

- evacuate injured personnel,
- Notify the Emergency Response Coordinator,
- stop the spread of contamination (e.g., turn off a valve on a tank),
- begin primary containment of liquids (i.e., dikes, sumps),
- order the evacuation of other personnel from the area surrounding the incident, if necessary.

Once the ERC has been notified and is on the scene, he/she will then assess the situation further with the information that is available at this time. The ERC will immediately implement, as necessary, the following provisions of this Contingency/Emergency Plan (if not previously implemented).

- Activate internal facility alarms or communication systems to notify all facility personnel of the incident.
- Identify the character, exact source, amount, and areal extent of any released material, if possible.

- Assess the possible hazards to human health or the environment. If the assessment indicates that there is a threat to human health or the environment outside the facility, or if there is evidence of a release of a RQ of hazardous material outside the facility, the ERC will implement the notification provisions of this Contingency/Emergency Plan per 40 CFR 264.56(d).
- Coordinate the evacuation of personnel from immediate danger and coordinate first aid for injured personnel.

After the initial assessment is completed, the ERC will also, as necessary, implement the following procedures.

- Coordinate the appropriate response procedures according to the incident. These procedures are presented in H-5e.
- Initiate remedial actions to reduce the impact of the incident, as appropriate.
- Ensure that any waste generated during clean up is properly managed, and that no waste that may be incompatible with the released material is managed at the affected unit until the cleanup procedures are completed.

Additional responses may be warranted depending on the type of incident. The response procedures outlined in H-5e include the items that the ERC will consider in determining

additional responses. This Plan serves as a guide rather than an unyielding set of procedures. The ERC will consider all options presented in this Plan and implement them as appropriate.

H-5e Emergency Response Procedures: 40 CFR 264.56

H-5e(1) Injuries to Personnel:

The following response actions are to be considered in the event that an injury occurs at the facility.

- Based on the assessment of hazards to health which may be present, and if it is safe to do so, evacuate injured personnel from immediate danger using appropriate Personal Protective Equipment (PPE).
- Perform CPR or artificial respiration, if needed, on the injured.
- Notify Sedgwick County EMS according to notification procedures in Section H-5a.
- Wash eyes, skin, etc. of injured personnel with water, if needed.
- Treat injuries (see Figure H.2 for the location of first aid stations).
- Establish emergency operations center.

- Notify emergency operations center of incoming injured.
- Dispatch site personnel to meet and direct incoming emergency vehicles.

H-5e(2) **Fires/Explosions:**

During an emergency, the ERC will take all reasonable measures necessary to ensure that fires and explosions do not occur, recur, or spread to other hazardous waste at the facility.

The following response actions are to be considered if a fire and/or explosion should occur at the facility.

- Establish an emergency operations center.
- Extinguish any fire with fire extinguishers, if appropriate.
- Call the Wichita Fire Department HMRT.
- Evacuate site according to evacuation procedures in H-8.
- Notify Derby refinery and Union Pacific in the event of an evacuation.
- Contact appropriate local agencies (see H-5 for notification procedures). The telephone list is posted at or near telephones or is available in office areas.
- Notify the KDHE.
- Notify the National Response Center (NRC).

- Dispatch site personnel to meet and direct incoming emergency vehicles.
- Use water spray to cool tanks and containers that are exposed to heat as a result of the fire and/or explosion.
- Protect other operations and vehicles from the incident. This includes, where applicable, stopping processes and operations, collecting and containing released wastes, removing or isolating containers, or moving vehicles.
- Monitor for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment.
- Stop the release of liquid by plugging, patching, or unloading any leaking tanks, pipes, or other equipment.
- Absorb liquid waste with absorbent materials and place in containers for management. Alternatively, larger spills can be pumped into containers or tanks.

H-5e(3) **<u>Releases:</u>**

During an emergency, the ERC will take all reasonable measures necessary to ensure that releases do not occur or recur. The following list contains response procedures to be considered in the event that a release of hazardous waste occurs.

- Evacuate immediate area around incident.

- Attempt to contain spills, if it is safe to do so.
- Transfer leaking or ruptured container(s) to an overpack.
- Establish emergency operations center.
- Determine the source of spill/release and shut down the affected unit to eliminate additional material release.
- Stop additional release of material to the environment and control surface leakage (e.g., pump the spilled material to tanks, transfer contents of tank to another tank, build containment dikes, transfer released materials to containers).
- Clean up the spill using on-site equipment. As appropriate, these procedures will include soaking up liquid with absorbants; removal of standing liquids and/or waste from sumps, trenches, or low points of the floor; removal of material adhering to the surface; and steam cleaning and/or a water rinse.
- If on-site personnel cannot contain/cleanup spill, contact appropriate state and local agencies (see Section H-5a for notification procedures).
- Contact the Wichita Fire Department Hazardous Materials Response Team (HMRT) for RQ spills. The telephone lists is posted next to all phones or in all offices in the facility (see Appendix H-B for phone numbers).
- Evacuate the facility (see H-8 for evacuation procedures and routes).
- Within twenty-four (24) hours, or as soon as practicable after detection of the release, transfer sufficient waste from the tank or container, as necessary, to

prevent further release of hazardous waste to the environment and to allow inspection of the unit. Any tank system from which there has been a leak or spill, or which is unfit for use, will be emptied and removed from service in accordance with 40 CFR 264.196.

- After the release is controlled, and it is deemed safe to do so, response personnel will enter the affected building or area to assess damage and to determine the condition of waste containers, and other affected equipment.
- Stop the release of liquid into an area by plugging, patching, or unloading any leaking tanks, pipes, or other equipment.
- Stop the release of liquid from its container by placing the leaking container into an overpack drum.

After an emergency, the ERC will initiate clean-up activities including the treatment, storage, and/or disposal of recovered waste, contaminated soil or surface water, or other material that results from a release, fire, or explosion at the facility.

H-5f <u>Post-Emergency Activities:</u> 40 CFR 264.56(h)(2), (i)

When operations of a waste management unit have been suspended due to an emergency resulting in implementation of this Plan, the unit and all equipment that was used in implementing the Plan will be assessed. Emergency equipment used in response to the

emergency must be determined to be fit for reuse or replaced. The Regional Administrator (Region VII) and the KDHE will be notified (per 40 CFR 264.56) when the equipment is fit for use, prior to resuming operation of the affected unit.

The following actions will be considered when decontaminating emergency equipment.

- Provide adequate safety equipment and protective clothing for CHK personnel involved in remedial actions.
- After a fire, explosion, or spill event is controlled and it is deemed safe to do so, enter the affected building or area to assess damage and determine the condition of waste containers, tanks, and other affected equipment.
- Utilize on-site equipment for remedial actions (see H-6 for list of on-site equipment).
- The Tanker Bay in the Processing Area may be used to decontaminate vehicles and equipment (i.e., trucks, portable pumps, etc.). The rinsate will be collected and managed as a hazardous waste.
- Reusable PPE will be decontaminated, as appropriate. PPE which is unsuitable for reuse will be managed for disposal.
- Inspect the affected unit(s) and ensure that no waste that is incompatible with the released material is managed in the unit(s) until cleanup procedures are

completed. If incompatible waste is discovered near each other, the incompatible waste will be removed to a safe location away from other incompatible wastes.

- If there is a release to a secondary containment system of a tank or tank system that damages the secondary containment system, the secondary containment system will be repaired before the tank(s) are returned to normal operation. If the secondary containment system cannot be repaired, that tank or tank system will have to be closed pursuant to 40 CFR §264.196(e)(1).
- Note in the operating record the time, date, and details of any incident that required implementing the contingency plan.
- Submit, from CHK or the ERC, a written report of the incident to the Secretary within 15 days after the incident (see H-9 for the detailed reporting requirements).
- Submit, from CHK or the ERC, a written report to the Secretary certifying that any emergency equipment involved in the incident or in the response and remediation are fit for their intended use.

H-6 Emergency Equipment:

Emergency equipment is available at the facility for response to emergency situations. Emergency equipment maintained on site is summarized in Table H-2, Emergency

Equipment List. This equipment will be accessible and will be regularly inspected and appropriately serviced. A description of this equipment is listed below.

H-6a Emergency Alarm and Communication Systems:

The facility is equipped with emergency alarm and communication systems to be used to notify and give emergency directions to both on-site and off-site personnel. These systems include:

- a facility-wide alarm system (siren), which is capable of alerting personnel of emergencies;
- a PA system which includes an intercom system accessible by telephones throughout the facility; and
- telephones, which are the primary means of communication within the facility and between the facility and the local emergency authorities.

Table H-2

Emergency Equipment List

Equipment	Capabilities
Fire Extinguishers	Small fire control
Foam Supply	Fire control
Portable Sump Pump	Collection of spills/leaks
SCBA/Respirators	Minimize exposure of personnel
Personal Protective Equipment	Minimize exposure of personnel
Air Compressor	Supplied air line
Containers/Overpacks	Storage of collected material
Absorbants	Spill control
Squeegee, Shovel	Spill collection/containment
Portable P.A. System	Communication

H-6b Fire extinguishers:

There are fire extinguishers located throughout the facility as required by the appropriate local fire code as well as the National Fire Protection Association (NFPA) code. The facility employs Type ABC fire extinguishers which are multipurpose combinations of the extinguisher types listed below.

- Type A is capable of extinguishing fires involving ordinary combustible wastes such as wood, cloth, paper, rubber, and many plastics.
- Type B is capable of extinguishing fires involving flammable liquids, oils, greases, tars, oil base paints, lacquers, and flammable gases.
- Type C is capable of extinguishing fires involving energized electrical equipment.

In Buildings I and J, small containers of dry powder fire extinguisher will be kept on hand in any area where open containers are handled (i.e., Areas I300 and J200). In addition, Buildings I and J will be provided with a foam fire suppression system instead of the water sprinklers provided in other areas of the plant.

H-6c Fire hydrants:

Fire hydrants are available for fire control. They receive their water supply from the City of Wichita Department of Water.

H-6d First Aid Stations:

Cabinets of first aid and medical supplies such as bandages, tape, antibacterial ointments, pain relievers, splints, local and topical anesthetics and eyewash bottles and solution are located throughout the facility (see Figure H.1 for first aid station locations).

H-6e Personal Protective Equipment (PPE):

The PPE listed below is available to facility personnel; PPE is issued as appropriate.

- Chemically resistant garments
- Chemically resistant gloves
- Chemically resistant boots
- Coveralls
- Steel-toed boots
- Hard hats
- Face shields and protective eyeglasses
- Air purifying respirators

- Self-contained air supply (as described below)

H-6f <u>Safety Showers and Eye Wash Stations:</u>

There are two (2) stations located in the facility. They are designed to meet OSHA requirements. Locations for these stations are provided on Figure H.1, Emergency Equipment/Evacuation Routes.

H-6g Self-Contained Breathing Apparatus (SCBA):

SCBAs are available to provide breathing air, which may be needed by some personnel in the event of an emergency situation.

H-6h <u>Other Emergency Response Equipment:</u>

- Portable Pumps - Pumps that handle liquids and sludges are available for recovering any released contaminants.

- Stabilizing agents - Stabilizing materials will be stored in Building B to assist in spill release containment and cleanup.

- Overpack drums - Overpack drums will be available in each Container Storage Building where containerized hazardous waste is stored. Leaking drums may be placed inside these overpack drums for containment.

- Site Equipment - Mobile equipment may be used to respond to hazardous waste releases. Facility equipment typically maintained includes industrial trucks (forklifts) and a multi-purpose vehicle (Bobcat).

H-7 Coordination Agreements: 40 CFR 264.52(c), 264.37

H-7a Emergency Authorities:

Coordination agreements with local emergency authorities have been negotiated; letters to these authorities are presented in Appendix H-C, Coordination Agreement Letters in compliance with 40 CFR 264.37. Copies of this plan will be submitted to the organizations identified in Appendix H-C; amendments to the plan will be forwarded to these authorities as required. Procedures for notification of emergency authorities are described in Section H-5a.

H-7b Local Contractors:

In the event that on-site cleanup of a spill or release is required, CHK has limited equipment on-site to respond. Outside contractors may be used as needed to respond to a spill or release. In addition, Clean Harbors has a Remedial Services Division that is capable of responding to hazardous waste spills and/or releases.

H-8 Evacuation Plan: 40 CFR 264.52(f)

In each exigent situation, the ERC will determine whether a facility evacuation is necessary to protect the health and safety of facility personnel. The following criteria will be considered in making this decision.

H-8a Criteria for Evacuation:

- Fire and/or explosion that releases vapors or fumes which will endanger the health of facility personnel.
- Fire and/or explosion that could ignite other hazardous wastes and, in turn, endanger facility personnel.
- Spill and/or release that releases vapors or fumes that will endanger the health of facility personnel.

If the ERC determines that a site evacuation is necessary, the following procedures will be followed to implement the evacuation.

- The ERC or person designated by the ERC shall activate the appropriate alarms/sirens indicating that a site evacuation is required. If the alarm/siren system is not functioning, the intercom system will be used.
- All facility personnel shall meet at the appropriate evacuation point(s).
- The ERC or person(s) designated by the ERC will perform a count of all personnel at the evacuation point(s).
- If any persons are not accounted for, the ERC will coordinate efforts to search the appropriate areas to locate the missing personnel.
- Personnel shall evacuate the site according to the evacuation routes shown on Figure H.1. All personnel will be informed of these procedures and routes in their initial training program.

Personnel may return to the site when allowed to do so by the ERC.

H-9 Required Reports: 40 CFR 264.56(j)

H-9a Reports to the Secretary:

If the Contingency Plan is implemented per 40 CFR 264.51(b), CHK will submit a written report to the Secretary within 15 days after the incident in compliance with 40 CFR 264.56(j).

The report will include the following information.

- Name, address, and telephone number of the owner or operator
- Name, address, and telephone number of the facility
- Date, time, and type of incident (e.g., fire, explosion)
- Name and quantity of material(s) involved
- The extent of injuries, if any
- An assessment of actual or potential hazards to human health or the environment, where this is applicable
- Estimated quantity and disposition of recovered material that resulted from the incident
- Notification that the equipment used in response to the incident is fit for its intended use

H-9b <u>SARA Reporting:</u>

As soon as practicable after a release which requires notice under the Superfund Amendments and Reauthorization Act (SARA), CHK or the ERC will provide a written report to the LEPC as required by regulations set forth under that Act.

Appendix H-A

Emergency Response Coordinator Authorization

NIELSEN, DAVID B

From: Foley, Michael A
Sent: Tuesday, May 13, 2008 6:56 AM
To: NOBLE, JAMES M; MARTIN, JOHN R
Cc: ANDERSON, KEITH LYNN; NIELSEN, DAVID B; Crisenbery, Michael

Folks,

This e mail is to authorize you to commit any and all company recourses in response to a contingency emergency.

Mike

Mike Foley
Vice President of TSDF Operations
Clean Harbors Environmental Services
42 Longwater Drive
PO Box 9149
Norwell, MA 02061-9149
Office: 781.792.5000 Ext. 5166
Mobile: 617.590.0942
Fax: 781.792.6915
Email: foleym@cleanharbors.com
Web: www.cleanharbors.com

Appendix H-B

Emergency Telephone Listing of Local Authorities

Emergency Telephone Listing of Local Authorities

Clean Harbors Kansas, LLC Office Telephone No.: 316-269-7400
2549 North New York Avenue
Wichita, Kansas, 67219

Agency	Office Telephone	Emergency Telephone
Sedgwick Co. EMS	316/383-7994	911
St. Francis Emergency Center	316/268-5052	316/268-5052
Wichita Fire Dept.	316/268-4451	911
WFD HazMat Team	316/838-8655	911
Wichita Police Dept.	316/268-4239	911
KDHE	785/296-1079	785/296-0614
EPA Region VII	913/281-0991	913/281-0991
National Response Center (NRC)	800/424-8802	800/424-8802
Derby Refinery After 5:00 PM	316/262-5703	316/267-1981
Union Pacific	316/268-9433	316/268-9433

Note: See Table H-1 for list of ERCs.

Appendix H-C

Coordination Agreement Letters

May 30, 2011
Revision No. 14

Clean Harbors of Wichita
2549 North New York Street
Wichita, KS 67219

May 15, 2012

RE: Emergency Coordinator authorization to commit the resources needed to carry out the contingency plan (CFR 40 265.55)

I authorize Brian Key, the Wichita facility Emergency Coordinator, to commit resources in response to a Contingency plan activation.

Sincerely,

Mike Foley
SVP TSDF Operations

Cc;
Brian Key
Part B permit

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Appendix I-B, Introductory Training Seminar Outline
Appendix I-C, Example Introductory Training Seminar Test
Appendix I-D, Job-Specific Training Topics (Examples)

List of Acronyms

Clean Harbors Kansas, LLC (CHK)
Health, Safety and Training Manager (HSTM)
Material Safety Data Sheets (MSDS)

I-1 Outline of Training Program: 40 CFR 270.14(b)(12) and 270.16

This training program has been developed in accordance with the regulatory requirements of 40 CFR Parts 270 and 264. The program is designed to provide the information needed by Clean Harbors Kansas, LLC(CHK) personnel to assist them in understanding the processes and materials with which they are working and the potential safety and health hazards associated with those processes and materials. The training program also facilitates instruction of facility personnel in the proper procedures for preventing and reacting effectively to emergency situations. Where appropriate, the training program provides information regarding inspection, repair, and replacement of facility emergency equipment.

The goal of the training program is to train personnel to perform their job functions in an efficient and safe manner, and in compliance with applicable regulations and permit requirements.

I-1a Job Titles and Duties: 40 CFR 264.16(d)(1), (2) and (3)

As required in 40 CFR 264.16, records at the facility will include:

- the job titles for positions at the facility related to hazardous waste management,
- the names of the employees filling these jobs,
- a description of these jobs including duties, and
- a description of the minimum qualifications for employees filling these jobs.

The following are job titles that are most relevant to the compliant operation of CHK

- Facility Manager
- Operations Manager
- Laboratory Manager/Senior Chemist
- Laboratory Technician
- Facility Inspector
- Health, Safety and Training Manager
- Operator
- Operator Helper
- Secretary/clerk

Examples of typical job descriptions are contained in Appendix I-A, Typical Job Descriptions,

Duties, and Training. These job descriptions include a summary of the duties, qualifications, and training for the job titles listed above.

I-1b <u>Training Content, Frequency and Techniques:</u> 40 CFR 264.16(a)(3), 264.16(c) and 264.16(d)(3)

Initial training of facility employees will consist of:

- 24 hours of safety training as described by 29 CFR 1910.120(p)(7), for operations personnel,
- an introductory training seminar, and
- job specific training.

Each employee must complete the introductory training seminar prior to working without direct supervision in any hazardous waste management area at the facility. The introductory training seminar will last approximately sixteen (16) hours. The topics covered during this seminar include facility specific items such as the Contingency/Emergency Plan, as well as basic training in general topics such as chemistry and occupational safety. An outline of the seminar is provided in Appendix I-B, Introductory Training Seminar Outline. After completion of the

introductory training seminar, the employees will be tested to evaluate their comprehension of the information presented. An example of the type of test employees may be given is provided in Appendix I-C, Example Introductory Training Seminar Test.

In addition to the introductory training seminar, employees will be provided with job-specific training such as on-the-job training. The type and content of the job-specific training will depend on the skills and level of expertise demanded by the job. Appendix I-D, Typical Job-Specific Training Topics includes a list of typical topics for job-specific training that will be provided to the appropriate employees. The job-specific training completes the employee's initial training. Employees will not be allowed to perform unsupervised, hazardous waste management duties prior to completion of initial training.

Continuing training will be provided for employees performing certain jobs after the employee completes the initial training. At a minimum, the continuing training will consist of an annual review of the introductory training seminar.

Training techniques will vary depending on the subject. Typically, training techniques may involve classroom lecture, on-the-job, and audio/visual demonstration. Training instructors will

include personnel who have experience and/or training in that area and outside instructors such as manufacturer's representatives. On-the-job training is conducted by qualified facility personnel.

I-1c <u>Director of the Training Program:</u> 40 CFR 264.16(a)(2)

The Health, Safety and Training Manager (HSTM) will administer the training program. The duties and qualifications of the HSTM are provided in Appendix I-A. The duties of the HSTM include maintaining records that demonstrate that personnel are receiving the appropriate training in accordance with the training program. The minimum qualifications for the HSTM will be a college degree and/or equivalent experience with a knowledge of regulatory and safety requirements. The HSTM will be trained in hazardous waste management procedures.

I-1d <u>Relevance of Training to Job Position:</u> 40 CFR 264.16(a)(2)

It is important that employees be trained and possess a knowledge of the concepts required to perform their duties. Each employee engaged in hazardous waste management activities must be able to act correctly and safely while fulfilling job responsibilities.

In addition to the introductory training seminar that all employees will attend, relevant job-specific training will be provided to appropriate employees. For example, if an employee is in a supervisory or management position requiring an understanding of the Kansas rules for the management of hazardous waste, then the employee is trained accordingly. The job descriptions contained in Appendix I-A include examples of job-specific training that are relevant to the position. Appendix I-D contains outlines of typical topics for job-specific training.

I-1e Training for Emergency Action/Response: 40 CFR 264.16(a)(3)

The introductory training seminar includes training on the Contingency/Emergency Plan. Emergency action procedures are included in the Contingency/Emergency Plan. In accordance with 29 CFR 1910.120(p)(8) and CHK's Contingency/Emergency Plan, the facility may evacuate employees in the event of an emergency, and may not have a specially trained Emergency Response Team. The training topics provided during the seminar regarding the Contingency/Emergency Plan are provided in Appendix I-B. The seminar is designed to train employees to act appropriately during emergency situations.

In addition to the introductory training seminar, appropriate employees will receive job-specific

training on emergency procedures, equipment, and systems. Where applicable, this job-specific training will include:

- waste identification;
- waste processing procedures;
- instruction on machinery operation;
- procedures for the shutdown of operations;
- instruction on safety equipment;
- procedures for using, inspecting, repairing, and replacing facility emergency equipment;
- procedures for using the communications or alarm systems;
- procedures for fires or explosions; and
- procedures for incidents of potential soil or ground-water contamination.

I-2 Implementation of Training Program: 40 CFR 264.16(b), 264.16(d)(4) and 264.16(e)

The HSTM will monitor the training program to ensure that all employees complete their initial training and an annual review of the introductory training seminar. The initial training must be completed within six (6) months of either:

- initial employment,
- assignment to CHK if the individual is employed by Clean Harbors at the time of the assignment (unless equivalent training was received in his/her previous assignment), or
- transfer to a new position within the facility, if the employee has not previously received the appropriate training.

In the last two (2) cases, the employee will only be required to receive instruction in those portions of the initial training for which the employee has not yet been trained. For example, an employee who transfers from one position to another within CHK will not be required to repeat the introductory training seminar or any job-specific training the employee has already completed.

Records of the training provided to employees as part of the training program will be maintained

at the facility and on a corporate supported database. These training records will include:

- date of training,
- training topics,
- instructor's name,
- employees in attendance, and
- any test results, if appropriate.

Training records for current employees will be maintained until closure of the facility. Training records for former employees will be maintained for at least three (3) years from the date the employee last worked at the facility. Employee training records may accompany personnel transferred to CHK from another facility operated by Clean Harbors.

APPENDIX I-A

JOB DESCRIPTIONS, DUTIES AND TRAINING

(EXAMPLES)

JOB TITLE:	Facility Manager
JOB DESCRIPTION AND DUTIES:	Responsible for the safe and efficient management of operations at the facility. Approves the development of all records and manuals at the facility. Responsible for the enforcement of facility safety programs. Coordinates all facility operations with corporate office.
QUALIFICATIONS:	College degree and substantial experience in hazardous waste management. Knowledge of State and Federal Regulations dealing with hazardous waste management.
TRAINING:	Introductory training seminar, safety training, technical training, hazardous waste management training.

JOB TITLE:	Operations Manager
JOB DESCRIPTION AND DUTIES:	Responsible for the management of facility operations. Coordinates all material handling operations in the facility. Responsible for the enforcement of all safety programs. Assists in formulating all records and manuals at the facility. Assumes management of the facility as required.
QUALIFICATIONS:	College degree and/or experience in hazardous waste management operations including regulations.
TRAINING:	Introductory training seminar, operations training, safety training, technical training, hazardous waste management training.

JOB TITLE:	Laboratory Manager/Senior Chemist
JOB DESCRIPTION AND DUTIES:	Responsible for the routine operation of the laboratory including organizing and maintaining all laboratory records. Supervises technical employees to insure that all analyses are performed correctly and in a timely manner. Responsible for the analysis of incoming waste samples and designating the appropriate treatment and disposal for them. Participates in environmental monitoring as needed.
QUALIFICATIONS:	Degree in Chemistry or Physical Science which included a minimum of sixteen (16) hours of chemistry. A knowledge of chemistry and general laboratory experience such as would be acquired by four (4) years of academic study in the field of chemistry supplemented by at least three (3) years experience performing hands-on analytical laboratory chemistry work.
TRAINING:	Introductory training seminar, safety training, technical training, hazardous waste management training.

JOB TITLE:	Laboratory Technician
JOB DESCRIPTION AND DUTIES:	Responsible for the routine operation of the laboratory under the direction of the Senior Chemist. Performs analysis on pre-shipment samples. Assists in determining the designation of treatment and disposal of customer waste. Responsible for assisting in maintaining all laboratory records and inventory. Responsible for the collection and analysis of environmental samples.
QUALIFICATIONS:	Two (2) years college including a minimum of thirteen (13) college credit hours of chemistry plus other science related courses or a minimum of two (2) years laboratory experience.
TRAINING:	Introductory Training, First Aid and CPR, Continued Safety Training, Technical Training.

JOB TITLE:	Facility Inspector
JOB DESCRIPTION AND DUTIES:	Responsible for the timely and effective completion of all facility inspections. Maintains tank gauging records and all other regulatory inspection records for the facility.
QUALIFICATIONS:	One (1) year's experience in hazardous waste disposal operations.
TRAINING:	Introductory training seminar, operations training, safety training.

JOB TITLE:	Health, Safety and Training Manager
JOB DESCRIPTION AND DUTIES:	Formulates and implements facility Health and Safety Programs. Ensures that personal protection equipment is available for facility employees. Responsible for routine inspections of facility safety equipment. Responsible for the formulation of the facility Training Program. Responsible for keeping records of Health, Safety, and Training Programs that demonstrate compliance with Federal and State regulations.
QUALIFICATIONS:	College degree and/or equivalent experience working with State and Federal regulations, including OSHA regulations.
TRAINING:	Introductory training seminar, operations training, safety training, technical training, hazardous waste management training.

JOB TITLE:	Operator
JOB DESCRIPTION AND DUTIES:	Responsible for the assignment and effective completion of all field activities during a shift. Coordinates operations with area supervisors. Assists in the enforcement of company policy and safety regulations.
QUALIFICATIONS:	A minimum of one (1) year experience in industrial waste operation, including basic chemistry knowledge.
TRAINING:	Introductory training seminar, operations training, safety training.

JOB TITLE:	Operator Helper
JOB DESCRIPTION AND DUTIES:	Responsible for the effective and safe completion of all assigned facility operations under the direction of the Operations Manager and/or Operator.
QUALIFICATIONS:	Equipment/process experience preferred.
TRAINING:	Introductory training seminar, operations training, safety training.

JOB TITLE:	Secretary/clerk
JOB DESCRIPTION AND DUTIES:	Responsible for administrative support activities such as typing, answering the phone, filing and recordkeeping.
QUALIFICATIONS:	High school diploma or equivalent with office experience.
TRAINING:	Introductory training seminar.

APPENDIX I-B

EXAMPLE INTRODUCTORY-TRAINING SEMINAR OUTLINE

INTRODUCTORY-TRAINING SEMINAR OUTLINE

I. ORIENTATION: (2 hours)

1. Introduction
2. New Employee Communication Checklist
3. Company History
4. Facility Tour

II. REVIEW OF OPERATIONS: (4 hours)

1. General Facility Description
2. Contingency Plan
   - Contingency plan implementation procedures
   - Access and use of communication and alarm systems
   - Response to fires, explosions, spills and/or releases
   - Site evacuation procedures

III. CHEMICAL TRAINING: (2 hours)

Basic understanding of the characteristics of acids, caustics, and solvents

1. Basic Chemistry
2. Incompatible Wastes

IV. SAFETY TRAINING: (4 hours)

Facility safety requirements and emergency equipment including location and capabilities

1. Facility Housekeeping
2. Job Specific Safety Equipment
3. Eye & Face Safety
   - Equipment location, inspection, repair and operation

4. Respiratory Protection
   - Equipment location, inspection, repair and operation
5. Emergency Equipment
   - Equipment location, inspection, repair and operation

V. INTRODUCTORY JOB-SPECIFIC TRAINING: (RCRA) (4 hours)

1. Office Procedures - (Clerical & Technical Personnel)
   - Telecommunication System
   - Load Arrival Procedures
   - Filing System
   - Log Maintenance

2. Technical Training - (Laboratory and Supervisory Personnel)
   - Office Procedures
   - Load Arrival Procedures
   - Truck Sampling Procedures

3. Operational Training - (Operations Personnel)
   - Review Job Description
   - Truck Unloading Procedures
   - Equipment Operation

VI. Clean Harbors INITIAL TRAINING TEST: (RCRA) (30 minutes)
See Appendix I-C for example test

APPENDIX I-C

EXAMPLE INTRODUCTORY TRAINING SEMINAR TEST

EXAMPLE INTRODUCTORY TRAINING SEMINAR TEST

1) What safety gear is required for general facility activities?

2) Who is responsible for facility housekeeping and why?

3) When and where should you wear eye protection?

4) When is it necessary to wear a face shield?

5) What areas are designated for "SMOKING"?

6) How do you gain access to the loud speaker system?

7) What is the "EMERGENCY NOTIFICATION LIST"?

8) Where are the "EYEWASH STATIONS" in your work area and how do they operate?

9) When and why should you have respiratory protection?

10) What are some of the dangers associated with acids?

11) Can "fumes" be dangerous to your health?

12) What is a Contingency Plan and where is it located?

13) What are the two kinds of "EMERGENCY ALARMS"?

14) What is the proper procedure for reporting a fire?

15) Where are the gathering points in case of an evacuation?

16) Name the location of a fire extinguisher in your work area?

17) What is the "BUDDY SYSTEM" and why is it used?

18) What is the best defense against injury?

APPENDIX I-D

JOB-SPECIFIC TRAINING TOPICS

(EXAMPLES)

TYPICAL JOB-SPECIFIC TRAINING TOPICS

OPERATIONS TRAINING:

- Site Security
  - Security procedures and equipment

- Procedures for using, inspecting, repairing, and replacing facility emergency and monitoring equipment

- Preparedness and Prevention
  - Access to and use of internal communications and alarm systems
  - Access to and use of telephone for summoning off-site help
  - Access to and use of portable fire extinguishers, spill control equipment, and decontamination equipment
  - Access to and use of firewater system
  - Shut down of operations

- Contingency/Emergency Plan
  - Contingency/Emergency Plan implementation procedures
  - Access and use of communications and alarm systems
  - Response to fires, explosions, spills, groundwater contamination, and air emissions
  - Site evacuation procedures
  - Job-specific use and maintenance of emergency equipment

- Hazard Communication Manual
  - Right-to-Know
  - Material Safety Data Sheets (MSDS)

- Tank Operation and Controls
  - Site procedures and 40 CFR Part 264, Subpart J

- Use and Management of Containers
  - Site procedures and 40 CFR Part 264, Subpart I

SAFETY TRAINING:

- Industrial Hygiene and Decontamination Procedures and policies for decontamination

- Protective Equipment
  - Job-specific Protective Equipment

- First Aid - General Information
  - Wound and burn management

- Care in Handling Waste
  - Procedures for safety in handling and treating wastes

- Loading and Unloading of Trucks
  - Site procedures for trucks

- Specialized Equipment Operation
  - Procedures for operation and maintenance of heavy equipment

- Basic Chemistry
  - Safety in handling chemicals

TECHNICAL TRAINING:

- Updating of Waste Stream Approvals
  - Customer profile updates
- Manifest Systems
  - Proper manifest preparation
- Records
  - Site-specific records system
- Sampling and Approval Procedures
  - Procedure for sampling trucks properly and waste stream approval
- Waste Identification and Segregation
  - Procedures for identifying and handling incompatible materials

HAZARDOUS WASTE MANAGEMENT TRAINING

- Overview of RCRA hazardous waste management regulations
- Proper characterization and identification of hazardous wastes
- Land Disposal Restrictions
- Overview of DOT hazardous waste management regulations

Appendix J Closure Plan for Buildings B, D, and J

February 10, 2012
Revision No. 15

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Figure J.3, Hazardous Waste Management Units

Acronym Table

Clean Harbors Kansas, LLC (CHK)
Treatment, Storage, or Disposal Facilities (TSDFs)
Title 40 of the Code of Federal Regulations (40 CFR)
Hazardous Waste Management Units (HWMUs)
National Priorities List (NPL)
Potentially Responsible Party (PRP)
Kansas Department of Health and Environment (KDHE)
Toxic Characteristic Leaching Procedure (TCLP)
Container Management Unit (CMU)
Toxic Characteristic Leaching Procedure (TCLP)

J-1 Introduction

This plan describes the activities to be performed at Clean Harbors Kansas, LLC at the time of specific unit closure; it addresses closure of the following units:

Container Management Units – Buildings B, D, and J
Tanks – V9, V10, V11, V12, V13, V14, V15A, V15B, V15C, V15D, V16, V17[1], V26[2]
Miscellaneous units – V26[2], V34, V35

[1]V17 is a permitted hazardous tank that is and always has been used for storage of gasoline as a product.
[2]V26 is a dispersion tank and is permitted as both a tank and a miscellaneous unit. There is only one tank permitted as both.

Clean Harbors Kansas, LLC has determined that the units referenced above are to be "closed. This closure term describes a container management unit, tank and/or miscellaneous unit closure with soil sampling under the concrete containment.

J-2 Hazardous Waste Management Units to be Closed

The Clean Harbors Kansas, LLC facility's hazardous waste management units to be closed are summarized in Table J.1, - Clean Harbors Kansas, LLC - Hazardous Waste Management Units, presented in Appendix JC-A, Tables. Specific descriptions of container management units and tank systems are located in Sections D (Container Management) and E (Tank Management) respectively. Miscellaneous units include all remaining units that have not been previously closed. V26 is the former dispersion tank, V34 is the drum washer and V35 is the drum scraper.

All container management units, tanks 9-14, 15a-15d and 16 and miscellaneous units to be closed have been emptied of all waste. Documentation of the cleaning tanks 9-14, 15a-15d and 16 is contained in Appendix C- Invoice for cleaning of tanks9-14, 15a-15d, and 16

J-3 Closure Performance Standard

Clean Harbors Kansas, LLC will close each hazardous waste management unit and/or the entire facility in a manner that minimizes the need for further maintenance, and controls, minimizes, or eliminates (to the extent necessary to protect human health and the environment) post-closure escape of hazardous waste, hazardous constituents, contaminated run-off, or hazardous waste decomposition products to the ground or surface waters or to the atmosphere. Closure activities will be performed in a manner that will comply with the closure performance standards as described in 40 CFR 264.111, 264.114 and 264.197.

Clean Harbors Kansas; LLC will meet these performance standards by removing all hazardous waste constituents to acceptable levels (see Section J-4a). All containers, tanks, miscellaneous units, piping, and other ancillary parts to the systems will be closed in one of the following ways:

1. They will be dismantled and disposed as hazardous waste at a RCRA/HSWA permitted off-site disposal facility.

2. They will be decontaminated in accordance with the procedures discussed in Section J-4a and disposed at a solid waste landfill.

3. They will be decontaminated sufficiently to be salvaged for future use.

4. They will be transferred for use at another RCRA facility.

All permanent structures (e.g., concrete containment systems) will be decontaminated in accordance with the procedures discussed in Section J-4a and maintained in place.

Prior to use,a representative sample of the tap water utilized in the clean up, will be analyzed as a blank for the same parametyers as the closure samples. If KDHE approves the use of this water, corresponding detectable chemicals of concern from compound table in Appendix J-Amay be deducted from the analytical results from each final rinse sample as correction factors (e.g. if tap water sample has 0.1 ug/l 2,4,-D and the rinse water is 0.2 ug/l 2,4,-D, we would subtract 0.1ug/l from the rinse water and get a final value of 0.1ug/l 2,4-D) Use of tap water analytical results as correction factors is subject to prior KDHE approval

Analyte	**Analytical Method**
27 metal compounds	Various SW846 methods
Volatile organic compounds	EPA 8260
Semivolatiles	EPA 8270
Organochlorine pesticides	EPA 8081/8082
Herbicides	EPA 8151

A detail analyte list is contained in Closure Plan for Buildings B, D, and J Appendix A
Laboratory Analytical Method Detection Limits (MDL)

All analyses performed to verify that closure performance standards are met shall be performed at a laboratory certified by the state of Kansas for the specific analytical procedures used.

J-3a Establishment of Cleanup Standards

At closure, CHK will use Tier 2 risk based standards for residential soil to ground water pathway found in KDHE's guidance document, "Risk Based Standards for Kansas (RSK)", 2010 as the closure performance target level standards for rinse water at the site.

J-4 Closure Activities

Clean Harbors Kansas, LLC will close the units described in J-1 in accordance with the following procedures.

1. Clean Harbors Kansas, LLC has notified the Kansas Department of Health and Environment (KDHE) or the United States Environmental Protection Agency (USEPA), Region 7, Administrator per this submittal.

2. If modifications to this closure plan are desired and have not been previously approved in accordance with 40 CFR 270.42 and 264.112, the modified portions of the plan will not be implemented until approval by KDHE or other authorized agencies has been received.

3. Clean Harbors Kansas, LLC will complete closure activities within 180 days after receiving closure plan approval from KDHE, unless an extension has been requested and approved in accordance with 40 CFR 264.113(b).

4. Clean Harbors Kansas, LLC will close the facility in accordance with the schedule discussed in Section J-7 and outlined in Table J.3, Closure Activity Schedule - Facility Closure, of this closure plan.

5. The container management units will be closed in accordance with Section J-9a of this closure plan. The tank and miscellaneous systems will be closed in accordance with Section J-9b of this plan.

6. All contaminated equipment and structures will be either properly disposed as hazardous waste or decontaminated in accordance with Section J-4a of this closure plan. After decontamination, equipment (such as conveyers) and structures may be salvaged for future use.

7. All wastes generated from closure activities will be handled in accordance with Section J-4b of this closure plan.

8. The Clean Harbors Kansas, LLC facility does not contain disposal units. All tank systems have secondary containment meeting the requirements of 40 CFR 264.193 (b) through (f). Also, all hazardous wastes and hazardous waste constituents will be removed from the facility during final closure and all structures will be decontaminated in accordance with this closure plan. If clean closure is not achieved, facility will submit a post-closure plan to the regulatory authority.

9. Clean Harbors will inform KDHE and EPA two weeks before closure activities are initiated. Confirmation samples (soil, final rinse water) must be collected in the presence of KDHE/EPA personnel and a Kansas Professional Engineer.

10. Within 60 days of closure completion, Clean Harbors Kansas, LLC will submit, either by hand delivery or by registered mail, a certification of closure and a closure report, to KDHE and the Regional Administrator of the USEPA, Region 7. The certification will be signed by CHK, as the owner/operator of the facility and by an independent Kansas registered professional engineer attesting that the units were closed in accordance with

this closure plan.

11. Closure activies will be conducted in accordance with KDHE approved closure-specific work plans, sampling and analysis plans and quality assurance project plans.

J-4a Disposal or Decontamination of Equipment and Structures

During closure, all contaminated equipment and structures will be either properly disposed or decontaminated. Activities will be performed in a manner that will comply with the closure performance standards as described in 40 CFR 264.111, 264.114 and 264.197.

J-4a(1) Soil

During closure operations, the soil beneath containment systems of all hazardous waste management units will be investigated as follows.

1. Each management unit containment area will be mapped with a grid system. A 25’ x 25’ grid will be used in material storage areas and a 15’ x 15’ grid will be used in material processing areas. A soil sample will be taken in the center of each grid. If necessary, concrete borings will be done to sample each required location. Additionally, if a crack exists, a sample will be collected under the crack every 10’. (Note: This does not apply to surface cracks) A sample will also be collected under every sump.

2. Collect samples at soil interface beneath the concrete surface and below the underlying subgrade rock where rock exists, and analyze using SW-846 standard methods for the parameters identified in Appendix A. Borings for soil samples in non active containment areas will remain open until any additional sampling required by the EPA or KDHE for closure or corrective action purposes at that location has been completed.

3. Proper QA/QC procedures will be followed to control the potential loss of VOCs during sampling and transport.

4. For closure Soil will be considered clean for closure when results of sample analyses are at or below the Tier 2 risk based standards for non-residential soil pathway or the Residential Soil to Ground Water pathway, whichever is lower, found in KDHE's guidance document, "Risk Based Standards for Kansas (RSK)" 2010

5. If large areas of soil contamination, in excess of closure standards, are identified, a project specific assessment and cleanup plan will be prepared and submitted

to the KDHE for approval and subsequent implementation. This will be done in accordance with the permit modification procedures of 40 CFR 270.42. Alternatively, this may be addressed in the site's corrective action program if formally deferred to the corrective action process by the regulatory agencies.

6. KDHE can ask for additional soil samples at any location and depths within the regulatory unit, if staining of soil or other indications of contamination are present.

J-4a(2) Hazardous Waste Management Units (HWMUs)

Decontamination procedures for hazardous waste management units (i.e., tank systems, miscellaneous units and container storage units) are discussed in the following paragraphs. Specific procedures are outlined based on configuration of the equipment. "Exposed surfaces" are external surfaces and those internal surfaces that are readily scraped, sandblasted, brushed, or swept (i.e., accessible to standard techniques for removal of residual materials).

J-4a(2)(a) HWMUs with no internal or complicated external parts

All tank systems, miscellaneous units, container management units, and their associated secondary containment system components and ancillary equipment will be decontaminated as follows (unless the unit has internal and/or complicated external parts exposed to waste).

1. Surfaces will be scraped, sandblasted, brushed, or swept to remove all loose or caked residue. Surfaces will then be triple rinsed. The first wash/rinse will be performed with a high-pressure stream of steam or water with suitable detergents or other cleaning additives. The second wash/rinse will be performed using clean water with cleaning additives. Accumulated liquids from the two first washes will be collected and handled in accordance with Section J-4b of this closure plan. The third wash/rinse will be performed with clean (potable) water.

2. The equipment will be visually inspected after the triple wash/rinse to assess the presence of visible residue. If necessary, the facility will repeat all, or part, of the above procedures.

3. A representative sample will be taken of the rinse water from the final rinse of each hazardous waste management unit. These samples will be analyzed for total concentrations of all constituents identified in J-3.The constituents in J-3 are broken down further by compound in Appendix A – Laboratory Analytical Method Detection Limits (MDL)

4. Prior to use, a representative sample of the tap water utilized in the clean up, will be analyzed as a blank for the same parameters as the closure samples. If KDHE approves the use of this water, corresponding detectable chemicals of concern from compound table in Appendix J-A may be deducted from the analytical results from each final rinse sample as correction factors (e.g. if tap water sample has 0.1 ug/l 2,4,-D and the rinse water is 0.2 ug/l 2,4,-D, we would subtract 0.1ug/l from the rinse water and get a final value of 0.1ug/l 2,4-D) Use of tap water analytical results as correction factors is subject to prior KDHE approval

5. A unit will be considered decontaminated when the rinsate sample analysis results are lower than the Tier 2 risk based standards for non- residential ground water found in KDHE's guidance document, "Risk Based Standards for Kansas (RSK)", 2010 or the analytical detection level if there is not a corresponding RSK standard.

6. If the unit is not decontaminated after performing Steps 1 through 5, the facility will either repeat the above procedures or dismantle the unit for further management and/or disposal at an off-site permitted TSDF as a hazardous waste. Equipment disposed in a landfill will meet the applicable Land Disposal Restriction (LDR) standards of 40 CFR 268.

J-4a(2)(b) <u>HWMUs with internal or complicated external parts</u>

Any miscellaneous unit or tank system with external or complicated internal parts exposed to wastes will be decontaminated as follows.

1. Exposed surfaces(i.e. building walls, floors) will be scraped, sandblasted, brushed, or swept to remove all loose or caked residue. Surfaces will then be triple rinsed. The first wash/rinse will be performed with a high-pressure stream of steam or water with suitable detergents or other cleaning additives. The second wash/rinse will be performed using clean water with cleaning additives. Accumulated solids and liquids from the two first washes will be handled in accordance with section J.4b of this closure plan. The third wash/rinse will be performed with clean water.

2. The equipment will be visually inspected after the triple wash/rinse to assess the presence of visual residue. If necessary the facility will repeat all, or part, of the above procedures.

3. If visible contamination remains, go to Step 6 below. If no visible contamination remains, a representative sample will be taken of the rinse water from the final rinse of each hazardous waste management unit. These samples will be analyzed for total concentrations of all constituents identified in J-3. .The constituents in J-3 are broken down further by compound in Appendix J-A.

4. Prior to use, a representative sample of the tap water utilized in the cleanup will be analyzed as a blank for the same parameters as the closure samples. If KDHE approves the use of this water, corresponding detectable chemicals of concern from the compound table in Appendix J-A may be deducted from the analytical results from each final rinse sample as correction factors (e.g. if tap water sample has 0.1 µg/l 2,4,-D and the rinse water is 0.2 µg/l 2,4,-D, we would subtract 0.1 µg/l from the rinse water and get a final value of 0.1 µg/l 2,4,-D). Use of tap water analytical results as correction factors is subject to prior KDHE approval.

5. A unit will be considered decontaminated when the rinsate sample analysis results are lower than the Tier 2 risk based standards for non-residential ground water found in KDHE's guidance document, "Risk Based Standards for Kansas (RSK)", 2010 or the analytical detection level if there is not a corresponding RSK standard.

6. If, after performing the above rinsing procedures, the equipment can not be decontaminated, the equipment will be transported by a licensed/permitted hauler to an off-site, permitted TSDF for further treatment or disposal. Equipment disposed in a landfill will meet the applicable Land Disposal Restriction (LDR) standards of 40 CFR 268.

J-4a(3) <u>Closure of Miscellaneous Handling Equipment</u>

A wide variety of equipment on site may be used for hazardous waste management. Equipment that has been in contact with hazardous waste will be decontaminated during closure activities. Equipment which may require decontamination during closure includes (but is not limited to) industrial trucks, drum dollies, handcarts, conveyers, augers, and other material transfer equipment, as well as hand tools such as shovels, brushes, scrapers, etc. During facility closure, this equipment may remain on-site in continued service or will be closed in one of the following ways:

- For closure of small equipment (such as hand tools), if visible contamination exists, the equipment will be disposed as hazardous waste at a RCRA/HSWA permitted off-site disposal facility,

- For closure of all equipment (including hand tools), if visible contamination exists, equipment will be decontaminated and disposed at a solid waste landfill. If evidence of contamination exists after decontamination, the equipment will be transported by a permitted/licensed hauler to a permitted RCRA/HSWA off-site TSDF for further treatment or disposal, or

- For closure of all equipment (including hand tools), if visible contamination exists, equipment will be decontaminated sufficiently to be salvaged for future use and potentially transferred for use at another RCRA facility. All decontamination activity will be performed over a portable, disposable decontamination pad (Example: kid swimming pool)

J-4a(3)(a) Decontamination of small miscellaneous handling equipment

All hand tools and equipment without internal or complicated external parts will be decontaminated in accordance with the following procedures.

1. Surfaces will be scraped, sandblasted, brushed, or swept to remove all loose or caked residue. Surfaces will then be rinsed with a high-pressure stream of steam or water, possibly with suitable detergents or other cleaning additives, until either all visible contamination is removed, or until further removal is not feasible. All accumulated solids and liquids will be handled in accordance with section J-4b of this closure plan.

2. The equipment will be visually inspected for evidence of visible contamination.

3. The equipment will be considered decontaminated when no visible evidence of contamination exists.

4. If visible evidence of contamination remains and cannot be removed, the equipment will be disposed as a hazardous waste.

J-4a(3)(b) Decontamination of large miscellaneous handling equipment with no internal or complicated external parts

All large equipment with no internal or complicated external parts will be decontaminated as follows.

1. Surfaces will be scraped, sandblasted, brushed, or swept to remove all loose or caked residue. Surfaces will then be triple rinsed. The first wash/rinse will be performed with a high-pressure stream of steam or water with suitable detergents or other cleaning additives. The second wash/rinse will be performed using clean water with cleaning additives. Accumulated solids and liquids from the two first washes will be handled in accordance with section J.4b of this closure plan. The third wash/rinse will be performed with clean water.

2. The equipment will be visually inspected after the triple wash/rinse to assess the presence of visual residue. If necessary, the facility will repeat all, or part, of the above procedures.

3. A representative sample will be taken of the rinse water from the final rinse of each hazardous waste management unit. These samples will be analyzed for total concentrations of all constituents identified in J-3. The constituents in J-3 are broken down further by compound in Appendix A – Laboratory Analytical Method Detection Limit (MDL)

4. Prior to use, a representative sample of the tap water utilized in the clean up, will be

analyzed as a blank for the same parameters as the closure samples. If KDHE approves the use of this water, corresponding detectable chemicals of concern from compound table in Appendix J-A may be deducted from the analytical results from each final rinse sample as correction factors (e.g. if tap water sample has 0.1 ug/l 2,4,-D and the rinse water is 0.2 ug/l 2,4,-D, we would subtract 0.1ug/l from the rinse water and get a final value of 0.1ug/l 2,4-D) Use of tap water analytical results as correction factors is subject to prior KDHE approval

5. Except in cases where the Hazardous Waste Debris Rule applies, the equipment will be considered decontaminated when the rinsate sample analysis results are lower than the Tier 2 risk based standards for non-residential ground water found in KDHE's guidance document, "Risk Based Standards for Kansas (RSK)", 2010 or the analytical detection level if there is not a corresponding RSK standard.

6. If the unit is not decontaminated after performing Steps 1 through 5, the facility will either repeat the above procedures or dismantle the unit and transport it by a licensed/permitted hauler to an off-site, permitted TSDF for further treatment or disposal.

J-4a(3)(c) <u>Decontamination of large miscellaneous handling equipment with internal or complicated external parts</u>

All large equipment with internal and/or complicated external parts that contact waste will be decontaminated in accordance with the following procedures.

1. Surfaces will be scraped, sandblasted, brushed, or swept to remove all loose or caked residue. Surfaces will then be triple rinsed. The first wash/rinse will be performed with a high-pressure stream of steam or water with suitable detergents or other cleaning additives. The second wash/rinse will be performed using clean water with cleaning additives. Accumulated solids and liquids from the two first washes will be handled in accordance with section J-4b of this closure plan. The third wash/rinse will be performed with clean water.

2. The equipment will be visually inspected after the triple wash/rinse to assess the presence of visual residue. If necessary the facility will repeat all, or part, of the above procedures.

3. If visible contamination remains, go to Step 6 below. If no visible contamination remains, the facility will take a representative sample of the rinse water from the final rinse of each hazardous waste management unit. These samples will be analyzed for total concentrations of all constituents identified in J-3 are broken down further by compound in Appendix A – Laboratory Analytical Method Detection Limit (MDL)

4. Prior to use, a representative sample of the tap water utilized in the cleanup will be analyzed as a blank for the same parameters as the closure samples. If KDHE

approves the use of this water, corresponding detectable chemicals of concern from the compound table in Appendix J-A may be deducted from the analytical results from each final rinse sample as correction factors (e.g. if tap water sample has 0.1 µg/l 2,4,-D and the rinse water is 0.2 µg/l 2,4,-D, we would subtract 0.1 µg/l from the rinse water and get a final value of 0.1 µg/l 2,4,-D). Use of tap water analytical results as correction factors is subject to prior KDHE approval.

5. A unit will be considered decontaminated when the rinsate sample analysis results are lower than the Tier 2 risk based standards for non-residential ground water found in KDHE's guidance document, "Risk Based Standards for Kansas (RSK)", 2010 or the analytical detection level if there is not a corresponding RSK standard.

6. If after performing the above rinsing procedures, the equipment can not be decontaminated, the equipment will be transported by a licensed/permitted hauler to an off-site, permitted TSDF for further treatment or disposal. Equipment disposed in a landfill will meet the applicable Land Disposal Restriction (LDR) standards of 40 CFR 268.

J-4a(4) <u>Disposal of Cleanup Equipment/Clothing and Residue</u>

a. All contaminated equipment used during the cleanup that can't be decontaminated, such as shovels, dustpans and brooms, are shipped to approved KDHE/EPA-disposal facilities in DOT-approved containers or decontaminated using the triple wash/rinse method.
b. All contaminated clothing, plastic sheets, rags, etc., generated during cleanup that can't be decontaminated, are sent to KDHE/EPA-approved disposal facilities in DOT approved containers.
c. All hazardous waste residues from the cleanup of areas and equipment will be sent to KDHE/EPA-approved disposal facilities in DOT approved containers.

J-4b <u>Hazardous Waste Handling Procedures</u>

All contaminated solids, liquids, sludges, soils, and debris generated by the closure process will be managed in accordance with applicable regulations as site generated solid waste (i.e., Clean Harbors Kansas, LLC is the generator). Generated wastes meeting the definition of "hazardous waste" under 40 CFR 261.3 will be handled in the manner discussed below.

Site-generated hazardous wastes may be stored on-site in containers, existing tanks, or temporary portable tanks prior to treatment or removal from the facility. The wastes may be consolidated on-site in accordance with the facility's RCRA/HSWA permit. A temporary storage area may be developed for storage of these generated wastes, and if so, wastes will be stored in this area for less than ninety days. These wastes will then be transported to a permitted off-site Treatment, Storage, or Disposal Facility (TSDF) by a permitted hazardous waste hauler for

appropriate disposal or further treatment (e.g. landfill, deep-well injection, incineration, cement kiln, recycling facility).

J-5 Maximum Extent of Operations

Table J.1 lists all hazardous waste management units to be closed under this closure plan existing at the Clean Harbors Kansas, LLC facility. This table represents the maximum extent of operations that are currently planned to be closed at this facility.

J-6 Maximum Waste Inventory

The units to be closed have been emptied of all waste.

J-7 Schedule for Final Closure

Table J.3, Closure Activity Schedule – Facility Closure outlines the anticipated schedule for closing the Clean Harbors Kansas, LLC facility.

During closure, hazardous waste management units may be closed simultaneously or sequentially. Also, a temporary storage area may be developed for storage of wastes which are generated on-site during closure activities, and if so, wastes will be stored in this area for less than ninety days in appropriate containers or temporary tanks.

J-7a Expected Year of Closure

Clean Harbors Kansas, LLC intends to conduct this closure within 180 days after approval of this plan by KDHE.

J-8 Closure Plan Amendment

Clean Harbors Kansas, LLC maintains a copy of the closure plan at the facility. Clean Harbors Kansas, LLC will submit a written request for approval to change the closure plan, in accordance with 40 CFR 264.112(c) and 40 CFR 270.42, whenever one of the following occurs.

1. Changes in operating plans or facility design affect the closure plan.

2. Change in the estimated year of final closure (see section J-7a).

3. In conducting closure activities, unexpected events occur which affect the closure plan.

This notification will include a copy of the amended closure plan for review or approval by KDHE. It will be submitted at least 60 days prior to the proposed change in facility design or operation or no later than sixty days after an unexpected event has occurred which has affected the closure plan. If an unexpected event occurs during the closure period, Clean Harbors Kansas, LLC will submit the notification or request no later than 30 days after the unexpected event's occurrence.

J-9 Individual Unit Closures

This section details the closure procedures of each individual hazardous waste management unit. During facility closure each hazardous waste management unit will be closed in accordance with this section.

J-9a Building B, D, and J Closure

At closure of buildings B, D, and J, all hazardous waste and hazardous waste residues will be removed from the buildings. Remaining containers, liners and bases containing or contaminated with hazardous waste or hazardous waste residues will be either decontaminated or removed.

J-9a(1) Process and Unit Description

The building B, D, and J at the Clean Harbors Kansas, LLC facility are used for storing and staging containers of hazardous and non-hazardous wastes. The wastes managed in these areas include liquids, sludges, and solids and are managed in containers of varying sizes. The CHK facility manages containerized waste in container management areas, each roofed and constructed with concrete diking to minimize run-on and run-off. Figure J.3, depicts the location of each Hazardous waste management units at the facility.

J-9a(2) Unit Closure Procedures

For the purposes of this closure plan, each building includes the following structures/equipment:

- Containers, drums, pallets, marino bags, etc., and associated hazardous wastes, waste residues and constituents.
- All associated secondary containment structures (concrete pads, curbs, ramps, etc.).
- Associated equipment (e.g., conveyors, etc.).

During closure operations, the soil beneath containment systems of all hazardous waste management units including buildings will be investigated as follows.

1. Each management unit containment area will be mapped with a grid system. A 25’ x 25’ grid will be used in material storage areas and a 15’ x 15’ grid will be used in material processing areas. A soil sample will be taken in the center of each grid. If necessary, concrete borings will be done to sample each required location. Additionally, if a crack exists, a sample will be collected under the crack every 10’. (Note: This does not apply to surface cracks) A sample will also be collected under every sump.

2. Collect samples at soil interface beneath the concrete surface and below the

underlying subgrade rock where rock exists. Borings for soil samples in non active containment areas will remain open until any additional sampling required by the EPA or KDHE for closure or corrective action purposes at that location has been completed. These samples will be analyzed using SW-846 standard methods, and will be analyzed for total concentrations of all constituents identified in J-3. The constituents in J-3 are broken down further by compound in Appendix J-A– Laboratory Analytical Method Detection Limit (MDL).

3. Proper QA/QC procedures will be followed to control the potential loss of VOCs during sampling and transport.

4. Soil will be considered clean for closure when results of sample analyses are at or below the Tier 2 risk based standards for non-residential soil pathway or the Residential Soil to Ground Water pathway, whichever is lower, found in KDHE's guidance document, "Risk Based Standards for Kansas (RSK)" 2010

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5. If large areas of soil contamination, in excess of closure standards, are identified, a project specific assessment and cleanup plan will be prepared and submitted to the KDHE for approval and subsequent implementation. This will be done in accordance with the permit modification procedures of 40 CFR 270.42. Alternatively, this may be addressed in the site's corrective action program if formally deferred to the corrective action process by the regulatory agencies.

6. KDHE can ask for additional soil samples at any location and depths within the regulatory unit, if staining of soil or other indications of contamination are present.

Clean Harbors Kansas, LLC will close building B, D, and J as follows.

A. If modifications to the closure plan are desired and have not been previously approved in accordance with 40 CFR 270.42 and 264.112, the modified portions of the plan will not be implemented until approval by KDHE or other authorized agencies has been received.

B. Clean Harbors Kansas, LLC will close the buildings in accordance with the schedule outlined in Table J.3, Closure Activity Schedule and as discussed in Section J-9a(3) of this closure plan.

C. All contaminated equipment, structures, and secondary containment systems will be:

1. Dismantled and disposed as hazardous waste at a RCRA/HSWA permitted off-site disposal facility, or

2. Decontaminated in accordance with Section J-4a and disposed of at a solid waste landfill, or

3. Decontaminated in accordance with Section J-4a and either salvaged for future use or left in place.

4. Successfully decontaminated equipment may be transferred to another TSDF for use.

D. All wastes generated on-site from closure activities will be handled in accordance with Section J-4b of this closure plan.

E. Clean Harbors Kansas, LLC will complete closure activities within 180 days after this plan has been approved by KDHE, unless an extension has been requested and approved in accordance with 40 CFR 264.113(b).

F. The buildings B, D, and J are not disposal units. Also, all hazardous wastes and hazardous waste constituents will be removed from the buildings during closure and all structures will be decontaminated in accordance with this closure plan. If Clean Closure is not achieved, the facility will submit a post-closure plan to the regulatory authority.

J-9a(3)Unit Closure Schedule

Table J.3 outlines the anticipated schedule for closure of closure of building B, D, and J at the Clean Harbors Kansas, LLC facility.

J-9b Tank System or Miscellaneous Unit Closure

At closure of a tank or tank system or miscellaneous unit, all hazardous waste and hazardous waste residues will be removed from the unit. Tanks, ancillary equipment and miscellaneous units containing or contaminated with hazardous waste or hazardous waste residues will be either decontaminated or removed.

J-9b(1) Process and Unit Description

The tanks miscellaneous units used at Clean Harbors Kansas, LLC vary in size. All hazardous waste management units operating under this permit have secondary containment designed, installed, and operated to prevent migration of wastes or accumulated liquid to the environment. These containment systems, consisting of concrete slabs surrounded by concrete walls or dikes of varying height, enable the detection of and collection of releases and accumulated liquids. The concrete containment liner is also maintained free from cracks and gaps.

These units are summarized in Table J.1. In addition, Figure J.3, shows the location of each

tank or miscellaneous unit to be closed at the facility

J-9b(2) Unit Closure Procedures

For the purposes of this closure plan, each tank system or miscellaneous unit includes:

- Tanks and associated hazardous wastes, waste residues and constituents;
- All ancillary equipment including, but not limited to, piping, fittings, flanges, valves, and pumps; and
- All associated secondary containment structures (concrete pads, curbs, ramps, etc.). Note: V26, V34 and V35 are in a containment area that will remain in use to provide containment for existing tanks. This containment area is not subject to decontamination per this closure plan.

V17 is permitted as a hazardous waste tank. It is used for gasoline product and has never been used for waste. This tank was inappropriately permitted as a hazardous waste tank. It will be emptied of product and triple washed. After the triple wash process, the tank will be considered decontaminated and will be put back in service to store product.

During closure operations, the soil beneath containment systems of all hazardous waste management units will be investigated as follows.

1. Each management unit containment area will be mapped with a grid system. A 25’ x 25’ grid will be used in material storage areas and a 15’ x 15’ grid will be used in material processing areas. A soil sample will be taken in the center of each grid. If necessary, concrete borings will be done to sample each required location. Additionally, if a crack exists, a sample will be collected under the crack every 10’. (Note: This does not apply to surface cracks) A sample will also be collected under every sump.

2. Collect samples at soil interface beneath the concrete surface and below the underlying subgrade rock where rock exists. and analyze using SW-846 standard methods for the parameters identified in Appendix A. Borings for soil samples in non active containment areas will remain open until any additional sampling required by the EPA or KDHE for closure or corrective action purposes at that location has been completed.

3. Proper QA/QC procedures will be followed to control the potential loss of VOCs during sampling and transport.

4. For closure, Soil will be considered clean for closure when results of sample

analyses are at or below the Tier 2 risk based standards for non-residential soil pathway or the Residential Soil to Ground Water pathway, whichever is lower, found in KDHE's guidance document, "Risk Based Standards for Kansas (RSK)" 2010

5. If large areas of soil contamination, in excess of closure standards, are identified, a project specific assessment and cleanup plan will be prepared and submitted to the KDHE for approval and subsequent implementation. This will be done in accordance with the permit modification procedures of 40 CFR 270.42. Alternatively, this may be addressed in the site's corrective action program if formally deferred to the corrective action process by the regulatory agencies..

6. KDHE can ask for additional soil samples at any location and depths within the regulatory unit, if staining of soil or other indications of contamination are present.

Clean Harbors Kansas, LLC will close building B, D, and J and anytank system or miscellaneous unit contained in thos buildings as follows.

A. If modifications to the closure plan are desired and have not been previously approved in accordance with 40 CFR 270.42 and 264.112, the modified portions of the plan will not be implemented until approval by KDHE or other authorized agencies has been received.

B. Clean Harbors Kansas, LLC will close the buildings in accordance with the schedule outlined in Table J.3, Closure Activity Schedule and as discussed in Section J-9a(3) of this closure plan.

C. All contaminated equipment, structures, and secondary containment systems will be:

1. Dismantled and disposed as hazardous waste at a RCRA/HSWA permitted off-site disposal facility, or

2. Decontaminated in accordance with Section J-4a and disposed of at a solid waste landfill, or

3. Decontaminated in accordance with Section J-4a and either salvaged for future use or left in place.

4. Successfully decontaminated equipment may be transferred to another TSDF for use.

D. All wastes generated on-site from closure activities will be handled in accordance with Section J-4b of this closure plan.

E. Clean Harbors Kansas, LLC will complete closure activities within 180 days after this plan has been approved by KDHE, unless an extension has been requested and approved in accordance with 40 CFR 264.113(b).

F. The buildings B, D, and J are not disposal units. Also, all hazardous wastes and hazardous waste constituents will be removed from the buildings during closure and all structures will be decontaminated in accordance with this closure plan. Therefore, the buildings B, D, and J are not subject to the post-closure care requirements of 40 CFR 264.116 through 264.120.

The following sequence of work events will be implemented at each tank location:

- Visually inspect the tank location in relation to overhead utilities, adjacent utilities, building load bearing supports, present of contamination and electrical components and make the necessary plans to remove or work around in a safe manner.
- Position the scissors lift below and adjacent to the tank and place personnel and equipment into the scissors lift platform
- Secure/Harness all personnel and equipment a required.
- Lift the necessary manpower and equipment to the top of the tank.
- Remove any non-structural or non building supporting structures which may be impeding the tank removal.
- Open the tank via the man way.
- Monitor the inside gas vapors and implement the necessary purging procedures previous to arc weld cutting.
- Make initial cut into a ¼ section of the tank and secure a hook via the boom
- Continue to cut the ¼ section of the tank until it has separated from the remaining ¾ section of the tank.
- Lower the entire ¼ section of the tank to the ground surface

- Continue to cut the ¼ section of the tank into manageable piece on the ground surface utilizing the boom as necessary to prevent free falling pieces.
- Continue the above process for the reaming ¾ section of tank removing ¼ section sections a time and lowing to the ground surface.
- When sufficient pieces have accumulated on the ground surface, load the tank pieces onto the flat bed truck with the skid steer/fork lift.
- Dispatch the truck to the local metal recycling facility.
- Maintain accurate records of truck net weights of metal.
- Continue the above process for all inside tanks

J-9b(3) Unit Closure Schedule

Table J.3 outlines the anticipated schedule for the closure of a tank/tank system at the Clean Harbors Kansas, LLC facility.

J-10 Certification of Closure

Within 60 days of final closure completion, Clean Harbors Kansas, LLC will submit, either by hand delivery or by registered mail, a certification of closure to KDHE and to the Regional Administrator of the USEPA, Region 7 per 40 CFR 264.115. The certification will be signed by CHK, as the owner/operator of the facility and by an independent Kansas registered professional engineer attesting that the units were closed in accordance with this closure plan.

J-11 Closure Report

Within 60 days of final closure completion, Clean Harbors Kansas, LLC will submit, either by hand delivery or by registered mail, the Closure report to KDHE and to the Regional Administrator of the USEPA, Region 7 . The final closure report will include the following as applicable to each area being closed:

- Site history information;
- A map of the site indicating the location of the units being closed;
- Visual observation made at the time of closure with respect to condition of the units;
- Documentation of the methods used to clean/decontaminate the units;
- Photographs associated with the closure of the units (before, during, and after closure) used in conjunction with written documentation;

- The volume of waste and waste residue removed, including the waste (residue) resulting from decontamination activities;
- A description of the method of waste handling and transport;
- Waste manifest numbers or copies of manifests from the removal of waste and waste residues;
- A description of the sampling and analytical methods used, including sample preservation and chain of custody methods;
- Laboratory records;
- A narrative description of the closure field tasks performed;
- A chronological field log of closure activities;
- Tests performed and methods;
- Location of the sampling points;
- Results of laboratory analyses, summarized in a tabular format and with the laboratory reports as an appendix;
- Documentation of off-site disposal for any materials taken off-site; and,
- A brief description of the current regulatory status and operations at the site
- A comparison of the results of laboratory analyses with the performance standards for clean closure

J-12 Requirements for Kansas Engineer

An independent Kansas registered professional engineer must be present at all sampling events and must also certify the closure report and the closure certification. The engineer must have relative experience with closure operations. The Engineering will have experience similar to the example resume in Appendix B.

APPENDIX JC-A

TABLES

Appendix J-B
Example Engineer Resume

TABLE J-C.1

EXTENT OF OPERATIONS

CLEAN HARBORS KANSAS, LLC - HAZARDOUS WASTE MANAGEMENT UNITS

HWMU	UNIT	Wastes Stored/Function
C	Building B	Hazardous waste - Container Management
C	Building D	Hazardous waste - Container Management
C	Building J	Hazardous waste - Container Management
T	V-9	Hazardous Waste Liquid
T	V-10	Hazardous Waste Liquid
T	V-11	Hazardous Waste Liquid
T	V-12	Hazardous Waste Liquid
T	V-13	Hazardous Waste Liquid
T	V-14	Hazardous Waste Liquid
T	V-15A	Hazardous Waste Liquid
T	V-15B	Hazardous Waste Liquid
T	V-15C	Hazardous Waste Liquid
T	V-15D	Hazardous Waste Liquid
T	V-16	Hazardous Waste Liquid
T	V-17	Hazardous Waste Liquid
T	V-26	Hazardous Waste Liquid
M	V-26	Hazardous Waste Liquid
M	V-34	Hazardous Waste Liquid
M	V-35	Hazardous Waste Liquid

Note: V26 is permitted as a tank and a miscellaneous unit. There is only 1 unit permitted both as a tank and miscellaneous unit.

TABLE J-C.3

CLOSURE ACTIVITY SCHEDULE - FACILITY CLOSURE

Calendar Days Lapsed	Closure Activity
0	Closure Plan approved by KDHE
120	Complete decontamination of tanks, miscellaneous and container management units. Collect and Analyze rinsate and water samples.
150	Complete dismantling/removal of all generated wastes, temporary storage units, and decontaminated tanks, equipment, and structures (if removal is necessary). Collect and Analyze rinsate and soil samples.
180	Complete final closure activities.
200	Inspection of facility by a Professional Engineer.
240	Submit a certification of closure to KDHE or the EPA Region 7 Administrator.

Appendix A – Laboratory Analytical Method Detection Limit s(MDL)

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Acronym Table

Clean Harbors Kansas, LLC (CHK)
Treatment, Storage, or Disposal Facilities (TSDFs)
Title 40 of the Code of Federal Regulations (40 CFR)
Hazardous Waste Management Units (HWMUs)
National Priorities List (NPL)
Potentially Responsible Party (PRP)
Kansas Department of Health and Environment (KDHE)
Toxic Characteristic Leaching Procedure (TCLP)
Container Management Unit (CMU)
Toxic Characteristic Leaching Procedure (TCLP)

J-1 Introduction

This plan describes the activities to be performed at Clean Harbors Kansas, LLC at the time of facility closure; it addresses final facility closure.

The facility stores hazardous and nonhazardous wastes. Clean Harbors Kansas, LLC blends BTU containing materials for beneficial use and energy recovery as cement kiln fuel. CHK also stores, processes, and/or manages waste solvents, sludges, solids, and water for subsequent shipment to other permitted Treatment, Storage, or Disposal Facilities (TSDFs) for distillation, beneficial reuse, further treatment or disposal. Clean Harbors Kansas, LLC also stores waste solvent, hydrocarbons, paint-related waste streams, solids, corrosive waste streams, and water-based waste streams. Storage occurs in both containers and tanks. (For a more complete description of activities at Clean Harbors Kansas, LLC, see Section B, Facility Description.) The facility operates under EPA I.D. No. KSD007246846.

The Clean Harbors Kansas, LLC facility does not include disposal units. Also, all tank systems are equipped with secondary containment meeting the requirements of Title 40 of the Code of Federal Regulations (40 CFR) 264.193 (b) through (f). Therefore, the facility is subject to neither the post-closure care requirements of 40 CFR 264.116 through 264.120, nor the contingent post-closure plan requirements of 40 CFR 264.197(c). In the event clean closure cannot be achieved, a post closure plan will be submitted to KDHE.

J-2 Hazardous Waste Management Units to be Closed

The Clean Harbors Kansas, LLC facility's existing hazardous waste management units are summarized in Table J.1, Maximum Extent of Operations - Clean Harbors Kansas, LLC - Hazardous Waste Management Units, presented in Appendix J-A, Tables. Specific descriptions of container management units and tank systems are located in Sections D (Container Management) and E (Tank Management) respectively.

J-3 Closure Performance Standard

Clean Harbors Kansas, LLC will close each hazardous waste management unit and/or the entire facility in a manner that minimizes the need for further maintenance, and controls, minimizes, or eliminates (to the extent necessary to protect human health and the environment) post-closure escape of hazardous waste, hazardous constituents, contaminated run-off, or hazardous waste decomposition products to the ground or surface waters or to the atmosphere.

Clean Harbors Kansas, LLC will meet this performance standard by removing all hazardous wastes and hazardous waste constituents to acceptable levels (see Section J-4a).

Prior to use,a representative sample of the tap water utilized in the clean up, will be analyzed as a blank for the same parametyers as the closure samples. If KDHE approves the use of this water, corresponding detectable chemicals of concern from compound table in Appendix J-Amay be deducted from the analytical results from each final rinse sample as correction factors (e.g. if tap water sample has 0.1 ug/l 2,4,-D and the rinse water is 0.2 ug/l 2,4,-D, we would subtract 0.1ug/l from the rinse water and get a final value of 0.1ug/l 2,4-D) Use of tap water analytical results as correction factors is subject to prior KDHE approval

Analyte	**Analytical Method**
27 metal compounds	Various SW846 methods
Volatile organic compounds	EPA 8260
Semivolatiles	EPA 8270
Organochlorine pesticides	EPA 8081/8082

A detail analyte list is located in, Appendix J-A Laboratory Analytical Method Detection Limits (MDL) –of Appendix J-C

All containers, tanks, miscellaneous units, piping, and other ancillary parts to the systems will be closed in one of the following ways:

1. They will be dismantled and disposed as hazardous waste at a RCRA/HSWA permitted off-site disposal facility.

2. They will be decontaminated in accordance with the procedures discussed in Section J-4a and disposed at a solid waste landfill.

3. They will be decontaminated sufficiently to be salvaged for future use.

4. They will be transferred for use at another RCRA facility.

All permanent structures (e.g., concrete containment systems) will be closed in one of the following ways.

1. They will be dismantled and disposed as hazardous waste at a RCRA/HSWA permitted off-site disposal facility.

2. They will be decontaminated in accordance with the procedures discussed in Section J-4a and disposed at a solid waste landfill.

3. They will be decontaminated in accordance with the procedures discussed in Section J-4a and maintained in place for future use.

All analyses performed to verify that closure performance standards are met shall be performed at a laboratory certified by the state of Kansas for the specific analytical procedures used.

J-3a Establishment of Cleanup Standards

Clean Harbors Kansas, LLC will close the subject Hazardous Waste Management Units (HWMUs) by removal of the waste so that there will not be any need for post-closure monitoring and maintenance of the units. In the event clean closure cannot be achieved, a post closure plan will be submitted to KDHE.

Since all units at Clean Harbors Kansas, LLC have secondary containment, any leaks, spills, drips, etc. will have been contained, removed, and cleaned up in accordance with the operating conditions of this permit.

The property on which the Clean Harbors Kansas, LLC facility is located is included within the boundaries of the North Industrial Corridor (NIC) Comprehensive Environmental Response, Compensation, and Liability Act or "Superfund" Site in Wichita, Kansas. The NIC Superfund Site is listed on the National Priorities List (NPL). Reid Supply Company has been named a Potentially Responsible Party (PRP) in the NIC Site. In 1986, Conservation Services, Inc. purchased certain assets, including the permit (operating under EPA I.D. #KSD007246846), from Reid Supply Co., Inc. Subsequently, Hydrocarbon Recyclers, Inc. of Wichita acquired the capital stock of Conservation Services, Inc. in 1987. Clean Harbors Kansas LLC acquired the site in 2002. The Reid Supply Company property functioned as storage, recycling, and collection point for hazardous waste material and as a bulk chemical repackaging and distribution center since the 1970s.

The NIC site is located in a heavy industrial area and has evolved over an approximately 95 year time span. Current industry includes, but is not limited to, chemical supply companies, grain elevators, railroad facilities, metal fabricating companies, foundries, refineries, meat processing companies, recyclers/salvage facilities, roofing companies, concrete companies, food processing companies, and gasoline retailers.

Past investigations, including one performed by Groundwater Technology, Inc., have indicated the presence of soil and groundwater contamination.

Soil will be considered clean for closure when results of sample analyses are at or below the Tier 2 risk based standards for non-residential soil pathway or the Residential Soil to Ground Water pathway, whichever is lower, found in KDHE's guidance document, "Risk Based Standards for Kansas (RSK)" 2010

Because the scope and extent of future site remediation is unknown, this closure plan will address only potential contamination which resulted from hazardous waste management at Clean Harbors Kansas, LLC. Consequently, all areas where evidence of visible contamination exists and areas beneath regulated units and secondary containment will be evaluated and

closed in accordance with J-4a of this closure plan.

During facility operations under this permit application, hazardous waste management areas are covered and have secondary containment that includes diking. These controls minimize precipitation run-on and run-off and will subsequently be maintained during closure. These structures will not be removed until after all associated hazardous waste management units are decontaminated; or, if demolition is required, other practical methods will be implemented to control run-on and run-off.

Because the Clean Harbors Kansas, LLC facility does not contain waste piles or surface impoundments, and the facility is not a disposal facility, other activities such as groundwater monitoring and leachate collection are not applicable as part of closure.

J-4 Partial Closure and Final Closure Activities

Partial facility closure (i.e., closure of individual hazardous waste management units) may be necessary during the active life of the facility. If partial closure is necessary, the individual hazardous waste management unit would be closed in accordance with Section J-9 of this closure plan. Currently CHK is the process of closing buildings B, D, and J as described in Appendix J-C.CHK plans to close the remaining hazardous waste management units during the final facility closure. Clean Harbors Kansas, LLC will close the facility in accordance with the following procedures.

1. Clean Harbors Kansas, LLC has notified the Kansas Department of Health and Environment (KDHE) or the United States Environmental Protection Agency (USEPA), Region 7, Administrator per this submittal.

2. If modifications to this closure plan are desired and have not been previously approved in accordance with 40 CFR 270.42 and 264.112, the modified portions of the plan will not be implemented until approval by KDHE or other authorized agencies has been received.

3. Clean Harbors Kansas, LLC will complete closure activities within 180 days after receiving closure plan approval from KDHE, unless an extension has been requested and approved in accordance with 40 CFR 264.113(b).

4. Clean Harbors Kansas, LLC will close the facility in accordance with the schedule discussed in Section J-7 and outlined in Table J.3, Closure Activity Schedule - Facility Closure, of this closure plan.

5. The container management units will be closed in accordance with Section J-9a of this closure plan. The tank and miscellaneous systems will be closed in accordance with Section J-9b of this plan.

6. All contaminated equipment and structures will be either properly disposed as hazardous waste or decontaminated in accordance with Section J-4a of this closure plan. After decontamination, equipment (such as conveyers) and structures may be salvaged for future use.

7. All wastes generated from closure activities will be handled in accordance with Section J-4b of this closure plan.

8. The Clean Harbors Kansas, LLC facility does not contain disposal units. All tank systems have secondary containment meeting the requirements of 40 CFR 264.193 (b) through (f). Also, all hazardous wastes and hazardous waste constituents will be removed from the facility during final closure and all structures will be decontaminated in accordance with this closure plan. If clean closure is not achieved, facility will submit a post-closure plan to the regulatory authority.

9. Clean Harbors will inform KDHE and EPA two weeks before closure activities are initiated. Confirmation samples (soil, final rinse water) must be collected in the presence of KDHE/EPA personnel and a Kansas Professional Engineer.

10. Within 60 days of closure completion, Clean Harbors Kansas, LLC will submit, either by hand delivery or by registered mail, a certification of closure and a closure report, to KDHE and the Regional Administrator of the USEPA, Region 7. The certification will be signed by CHK, as the owner/operator of the facility and by an independent Kansas registered professional engineer attesting that the units were closed in accordance with this closure plan.

11. Closure activates will be conducted in accordance with KDHE approved closure-specific work plans, sampling and analysis plans and quality assurance project plans.

J-4a <u>Disposal or Decontamination of Equipment, Structures and Soils</u>

During the partial and final closure periods, all contaminated equipment and structures will be either properly disposed of or decontaminated.

J-4a (1) <u>Soils</u>

During closure operations, the soil beneath containment systems of all hazardous waste management units will be investigated as follows.

1. Each management unit containment area will be mapped with a grid system. A 25’ x 25’ grid will be used in material storage areas and a 15’ x 15’ grid will be used in material processing areas. A soil sample will be taken in the center of each grid. If necessary, concrete borings will be done to sample each required location. Additionally, if a crack exists, a sample will be collected under the crack every 10’. (Note: This does not apply to surface cracks) A sample will also be collected under every sump.

2. Collect samples at soil interface beneath the concrete surface and below the underlying subgrade rock where rock exists, and analyze using SW-846 standard methods for the parameters identified in Appendix A. Borings for soil samples in non active containment areas will remain open until any additional sampling required by the EPA or KDHE for closure or corrective action purposes at that location has been completed.

4. Proper QA/QC procedures will be followed to control the potential loss of VOCs during sampling and transport.

5. For closure, soil will be considered clean for closure when results of sample analyses are at or below the Tier 2 risk based standards for non-residential soil pathway ,or the Residential Soil to Ground water pathway, whichever is lower found in KDHE's guidance document, "Risk Based Standards for Kansas (RSK)", 2010.

6. If large areas of soil contamination, in excess of closure standards, are identified, a project specific assessment and cleanup plan will be prepared and submitted to the KDHE for approval and subsequent implementation. This will be done in accordance with the permit modification procedures of 40 CFR 270.42. Alternatively, this may be addressed in the site's corrective action program if formally deferred to the corrective action process by the regulatory agencies.

7. KDHE can ask for additional soil samples at any location and depths within the regulatory unit, if staining of soil or other indications of contamination are present.

J-4a (2) <u>Hazardous Waste Management Units (HWMUs)</u>

Decontamination procedures for hazardous waste management units (i.e., tank systems and container storage units) are discussed in the following paragraphs. Specific procedures are outlined based on configuration of the equipment. "Exposed surfaces" are external surfaces and those internal surfaces that are readily scraped, sandblasted, brushed, or swept (i.e., accessible to standard techniques for removal of residual materials).

J-4a (2) (a) <u>HWMUs with no internal or complicated external parts</u>

All tank systems, miscellaneous units, container management units, and their associated secondary containment system components and ancillary equipment will be decontaminated as follows (unless the unit has internal and/or complicated external parts exposed to waste).

1. Surfaces will be scraped, sandblasted, brushed, or swept to remove all loose or caked residue. Surfaces will then be triple rinsed. The first wash/rinse will be performed with a high-pressure stream of steam or water with suitable detergents or other cleaning additives. The second wash/rinse will be performed using clean water with cleaning additives. Accumulated liquids from the two first washes will be collected and handled in accordance with Section J-4b of this closure plan. The third wash/rinse will be performed with clean (potable) water.

2. The equipment will be visually inspected after the triple wash/rinse to assess the presence of visible residue. If necessary, the facility will repeat all, or part, of the above procedures.

3. A representative sample will be taken of the rinse water from the final rinse of each hazardous waste management unit. These samples will be analyzed for total concentrations of all constituents identified in J-3.The constitutions in J-3 are broken down further by compound in Appendix A – Laboratory Analytical Method Detection Limit (MDL) located in Appendix J-C of this section.

4. Prior to use, a representative sample of the tap water utilized in the clean up, will be analyzed as a blank for the same parameters as the closure samples. If KDHE approves the use of this water, corresponding detectable chemicals of concern from compound table in Appendix J-A may be deducted from the analytical results from each final rinse sample as correction factors (e.g. if tap water sample has 0.1 ug/l 2,4,-D and the rinse water is 0.2 ug/l 2,4,-D, we would subtract 0.1ug/l from the rinse water and get a final value of 0.1ug/l 2,4-D) Use of tap water analytical results as correction factors is subject to prior KDHE approval

5. A unit will be considered decontaminated when the rinsate sample analysis results are lower than the Tier 2 risk based standards for non-residential ground water found in KDHE's guidance document, "Risk Based Standards for Kansas (RSK)", 2010 or the analytical detection level if there is not a corresponding RSK standard.

6. If the unit is not decontaminated after performing Steps 1 through 5, the facility will either repeat the above procedures or dismantle the unit for further management and/or disposal at an off-site permitted TSDF as a hazardous waste. Equipment disposed in a landfill will meet the applicable Land Disposal Restriction (LDR) standards of 40 CFR 268.

J-4a (2) (b) HWMUs with internal or complicated external parts

Any miscellaneous unit or tank system with external or complicated internal parts exposed to wastes will be decontaminated as follows.

1. Exposed surfaces (i.e. building walls, floors) will be scraped, sandblasted, brushed, or swept to remove all loose or caked residues. Surfaces will then be triple rinsed. The first wash/rinse will be performed with a high-pressure stream of steam or water with suitable detergents or other cleaning additives. The second wash/rinse will be performed using clean water with cleaning additives. Accumulated solids and liquids from the two first washes will be handled in accordance with section J.4b of this closure plan. The third wash/rinse will be performed with clean water.

2. The equipment will be visually inspected after the triple wash/rinse to assess the presence of visual residue. If necessary the facility will repeat all, or part, of the above procedures.

3. If visible contamination remains, go to Step 6 below. If no visible contamination remains, a representative sample will be taken of the rinse water from the final rinse of each hazardous waste management unit. These samples will be analyzed for total concentrations of all constituents identified in J-3. .The constitutions in J-3 are broken down further by compound in Appendix A – Laboratory Analytical Method Detection Limit (MDL) located in Appendix J-C of this section.

4. Prior to use,a representative sample of the tap water utilized in the clean up, will be analyzed as a blank for the same parametyers as the closure samples. If KDHE approves the use of this water, corresponding detectable chemicals of concern from compound table in Appendix J-Amay be deducted from the analytical results from each final rinse sample as correction factors (e.g. if tap water sample has 0.1 ug/l 2,4,-D and the rinse water is 0.2 ug/l 2,4,-D, we would subtract 0.1ug/l from the rinse water and get a final value of 0.1ug/l 2,4-D) Use of tap water analytical results as correction factors is subject to prior KDHE approval

5. A unit will be considered decontaminated when the rinsate sample analysis results are lower than the Tier 2 risk based standards for non-residential ground water found in KDHE's guidance document, "Risk Based Standards for Kansas (RSK)", 2010 or the analytical detection level if there is not a corresponding RSK standard.

6. If, after performing the above rinsing procedures, the equipment can not be decontaminated, the equipment will be transported by a licensed/permitted hauler to an off-site, permitted TSDF for further treatment or disposal. Equipment disposed in

a landfill will meet the applicable Land Disposal Restriction (LDR) standards of 40 CFR 268.

J-4a (3) Closure of Miscellaneous Handling Equipment

A wide variety of equipment on site may be used for hazardous waste management. Equipment that has been in contact with hazardous waste will be decontaminated during closure activities. Equipment which may require decontamination during closure includes (but is not limited to) industrial trucks, drum dollies, handcarts, conveyers, augers, and other material transfer equipment, as well as hand tools such as shovels, brushes, scrapers, etc. During final facility closure, this equipment will be closed in one of the following ways:

- For closure of small equipment (such as hand tools), if visible contamination exists, the equipment will be dismantled and disposed of as hazardous waste at a RCRA/HSWA permitted off-site disposal facility,

- For closure of all equipment (including hand tools), if visible contamination exists, equipment will be decontaminated and disposed of at a solid waste landfill. If evidence of contamination exists after decontamination, the equipment will be transported by a permitted/licensed hauler to a permitted RCRA/HSWA off-site TSDF for further treatment or disposal, or

- For closure of all equipment (including hand tools), if visible contamination exists, equipment will be decontaminated sufficiently to be salvaged for future use and potentially transferred for use at another RCRA facility.

J-4a (3) (a) Decontamination of small miscellaneous handling equipment

All hand tools and equipment without internal or complicated external parts will be

decontaminated in accordance with the following procedures.

1. Surfaces will be scraped, sandblasted, brushed, or swept to remove all loose or caked residues. Surfaces will then be rinsed with a high-pressure stream of steam or water, possibly with suitable detergents or other cleaning additives, until either all visible contamination is removed, or until further removal is not feasible. All accumulated solids and liquids will be handled in accordance with section J-4b of this closure plan.

2. The equipment will be visually inspected for evidence of visible contamination.

3. The equipment will be considered decontaminated when no visible evidence of contamination exists.
4. If visible evidence of contamination remains and cannot be removed, the equipment will be disposed of as a hazardous waste.

J-4a (3) (b) <u>Decontamination of large miscellaneous handling equipment with no internal or complicated external parts</u>

All large equipment with no internal or complicated external parts will be decontaminated as follows.

1. Surfaces will be scraped, sandblasted, brushed, or swept to remove all loose or caked residue. Surfaces will then be triple rinsed. The first wash/rinse will be performed with a high-pressure stream of steam or water with suitable detergents or other cleaning additives. The second wash/rinse will be performed using clean water with cleaning additives. Accumulated solids and liquids from the two first washes will be handled in accordance with section J.4b of this closure plan. The third wash/rinse will be performed with clean water.

2. The equipment will be visually inspected after the triple wash/rinse to assess the presence of visual residue. If necessary, the facility will repeat all, or part, of the above procedures.

3. A representative sample will be taken of the rinse water from the final rinse of each

hazardous waste management unit. These samples will be analyzed for total concentrations of all constituents identified in J-3. The constitutions in J-3 are broken down further by compound in Appendix A – Laboratory Analytical Method Detection Limit (MDL) located in Appendix J-C(closure plan for buildings B, D, and J) .

4. Prior to use, a representative sample of the tap water utilized in the clean up, will be analyzed as a blank for the same parameters as the closure samples. If KDHE approves the use of this water, corresponding detectable chemicals of concern from compound table in Appendix J-A may be deducted from the analytical results from each final rinse sample as correction factors (e.g. if tap water sample has 0.1 ug/l 2,4,-D and the rinse water is 0.2 ug/l 2,4,-D, we would subtract 0.1ug/l from the rinse water and get a final value of 0.1ug/l 2,4-D) Use of tap water analytical results as correction factors is subject to prior KDHE approval

5. Except in cases where the Hazardous Waste Debris Rule applies, the equipment will be considered decontaminated when the rinsate sample analysis results are lower than the Tier 2 risk based standards for non-residential ground water found in KDHE's guidance document, "Risk Based Standards for Kansas (RSK)", 2010 or the analytical detection level if there is not a corresponding RSK standard.

6. If the unit is not decontaminated after performing Steps 1 through 5, the facility will either repeat the above procedures or dismantle the unit and transport it by a licensed/permitted hauler to an off-site, permitted TSDF for further treatment or disposal.

J-4a(3)(c) Decontamination of large miscellaneous handling equipment with internal or complicated external parts

All large equipment with internal and/or complicated external parts that contact waste will be decontaminated in accordance with the following procedures.

1. Surfaces will be scraped, sandblasted, brushed, or swept to remove all loose or caked residue. Surfaces will then be triple rinsed. The first wash/rinse will be performed with a high-pressure stream of steam or water with suitable detergents or other cleaning additives. The second wash/rinse will be performed using clean water with cleaning additives. Accumulated solids and liquids from the two first washes will be handled in accordance with section J-4b of this closure plan. The third wash/rinse will be performed with clean water.

2. The equipment will be visually inspected after the triple wash/rinse to assess the presence of visual residue. If necessary the facility will repeat all, or part, of the above procedures.

3. If visible contamination remains, go to Step 6 below. If no visible contamination remains, the facility will take a representative sample of the rinse water from the final rinse of each hazardous waste management unit. These samples will be analyzed for total concentrations of all constituents identified in Appendix A – Laboratory Analytical Method Detection Limit (MDL) located in Appendix J-C of this section..

4. Prior to use, a representative sample of the tap water utilized in the clean up, will be analyzed as a blank for the same parameters as the closure samples. If KDHE approves the use of this water, corresponding detectable chemicals of concern from compound table in Appendix J-A may be deducted from the analytical results from each final rinse sample as correction factors (e.g. if tap water sample has 0.1 ug/l 2,4,-D and the rinse water is 0.2 ug/l 2,4,-D, we would subtract 0.1ug/l from the rinse water and get a final value of 0.1ug/l 2,4-D) Use of tap water analytical results as correction factors is subject to prior KDHE approval
5. A unit will be considered decontaminated when the rinsate sample analysis results are lower than the Tier 2 risk based standards for non-residential ground water found in KDHE's guidance document, "Risk Based Standards for Kansas (RSK)", 2010 or the analytical detection level if there is not a corresponding RSK standard.

6. If after performing the above rinsing procedures, the equipment can not be decontaminated, the equipment will be transported by a licensed/permitted hauler to an off-site, permitted TSDF for further treatment or disposal. Equipment disposed in a landfill will meet the applicable Land Disposal Restriction (LDR) standards of 40 CFR 268.

J-4a(4) <u>Disposal of Cleanup Equipment/Clothing and Residue</u>

a. All contaminated equipment used during the cleanup that can't be decontaminated, such as shovels, dustpans and brooms, are shipped to approved KDHE/EPA-disposal facilities in DOT-approved containers or decontaminated using the triple wash/rinse method.
b. All contaminated clothing, plastic sheets, rags, etc., generated during cleanup that can't be decontaminated, are sent to KDHE/EPA-approved disposal facilities in DOT approved containers.
c. All hazardous waste residues from the cleanup of areas and equipment will be sent to KDHE/EPA-approved disposal facilities in DOT approved containers.

J-4b <u>Hazardous Waste Handling Procedures</u>

All contaminated solids, liquids, sludges, soils, and debris generated by the closure process will

be managed in accordance with applicable regulations as site generated solid waste (i.e., Clean Harbors Kansas, LLC is the generator). Generated wastes meeting the definition of "hazardous waste" under 40 CFR 261.3 will be handled in the manner discussed below.

Site-generated hazardous wastes may be stored on-site in containers, existing tanks, or temporary portable tanks prior to treatment or removal from the facility. The wastes may be treated on-site in accordance with the facility's RCRA/HSWA permit. A temporary storage area may be developed for storage of these generated wastes, and if so, wastes will be stored in this area for less than ninety days. These wastes will then be transported to a permitted off-site Treatment, Storage, or Disposal Facility (TSDF) by a permitted hazardous waste hauler for appropriate disposal or further treatment (e.g. landfill, deep-well injection, incineration, cement kiln, recycling facility).

J-5 Maximum Extent of Operations

Table J.1 lists all existing hazardous waste management units at the Clean Harbors Kansas, LLC facility. This table represents the maximum extent of operations that are currently planned to exist at this facility.

J-6 Maximum Waste Inventory

The maximum inventory of wastes in storage exists when all hazardous waste management units contain their maximum permitted capacity of waste. The facility's potential maximum waste inventory is 260,259 gallons.[a]

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[a] The maximum waste inventory was calculated by adding S01 (storage in containers) and S02 (storage in tanks) in the Part A permit application.

174,570 gallons (S01) + 85,689 gallons (S02) = 260,259 gallons

J-7 Schedule for Final Closure

Table J.3, Closure Activity Schedule - Final Facility Closure outlines the anticipated schedule for closing the Clean Harbors Kansas, LLC facility. The schedule assumes that all hazardous waste management units identified in this plan (See Table J.1) will be closed.

During final closure, hazardous waste management units may be closed simultaneously or sequentially. Also, a temporary storage area may be developed for storage of wastes which are generated on-site during closure activities, and if so, wastes will be stored in this area for less than ninety days in appropriate containers or temporary tanks.

J-7a Expected Year of Final Closure

Clean Harbors Kansas, LLC does not expect to close the facility prior to the permit expiration (i.e., ten years after the effective date of the permit). Since the facility does not consist of disposal units such as landfills or surface impoundments, capacity restraints (such as landfill capacity) do not exist to force facility closure. Therefore, Clean Harbors Kansas, LLC will not estimate the year of final closure [per 40 CFR 264.112(b)(7)].

J-8 Closure Plan Amendment

Clean Harbors Kansas, LLC maintains a copy of the closure plan at the facility. Clean Harbors Kansas, LLC will submit a written request for approval to change the closure plan, in accordance with 40 CFR 264.112(c) and 40 CFR 270.42, whenever one of the following occurs.

1. Changes in operating plans or facility design affect the closure plan.

2. Change in the estimated year of final closure (see section J-7a).

3. In conducting partial or final closure activities, unexpected events occur which affect the closure plan.

This notification will include a copy of the amended closure plan for review or approval by KDHE. It will be submitted at least 60 days prior to the proposed change in facility design or operation, or no later than sixty days after an unexpected event has occurred which has affected the closure plan. If an unexpected event occurs during the partial or final closure period, Clean Harbors Kansas, LLC will submit the notification or request no later than 30 days after the unexpected event's occurrence.

J-9 Individual Unit Closures

This section details the closure procedures of each individual hazardous waste management unit. During final facility closure and partial facility closure, each hazardous waste management unit will be closed in accordance with this section.

J-9a Individual Hazardous Waste Management Unit (HWMU) Closure

Partial facility closure (closure of an individual hazardous waste management unit), may be necessary during the active life of the facility. If a management unit must be closed during the active life of the facility, it will be closed in accordance with this section (J-9a). At final closure of a management unit, all hazardous waste and hazardous waste residues will be removed from the containment system. Remaining containers, liners, bases, and soil containing or contaminated with hazardous waste or hazardous waste residues will be either decontaminated or removed.

J-9a (1) Process and Unit Description

The Hazardous Waste management units at the Clean Harbors Kansas, LLC facility are used for storing and staging containers of hazardous and non-hazardous wastes. The management units may also be used for the treatment of hazardous waste in containers. The wastes managed in these areas include liquids, sludges, and solids and are managed in containers of varying sizes. The CHK facility manages containerized waste in four management areas, each roofed and constructed with concrete diking to minimize run-on and run-off. These buildings are divided into independently contained sub-areas. The maximum total permitted storage capacity of the management units on site is approximately 174,570 gallons. Figure J.1, Material Containment Areas depicts the location of each CMU at the facility; Section D of this permit application describes each area in more detail.

Figure J.1. Material Containment Areas

J-9a(2) Unit Closure Procedures

For the purposes of this closure plan, each Hazardous Waste management unit includes the following structures/equipment:

- Containers, drums, pallets, marino bags, etc., and associated hazardous wastes, waste residues and constituents.
- All associated secondary containment structures (concrete pads, curbs, ramps, etc.).
- Associated equipment (e.g., conveyors, etc.).

Clean Harbors Kansas, LLC will close all HWMUs at the facility as follows.

1. If modifications to the closure plan are desired and have not been previously approved in accordance with 40 CFR 270.42 and 264.112, the modified portions of the plan will not be implemented until approval by KDHE or other authorized agencies has been received.

2. Clean Harbors Kansas, LLC will close the CMU(s) in accordance with the schedule outlined in Table J.4, Closure Activity Schedule - Container Management Unit (CMU) and discussed in Section J-9a(3) of this closure plan.

3. Within ninety days after receiving the final volume of hazardous wastes at the CMU(s), Clean Harbors Kansas, LLC will remove all waste inventory and portable equipment from the area unless an extension has been requested and approved in accordance with 40 CFR 264.113(a). All waste inventories will be either treated on-site in accordance with the facility's RCRA/HSWA permit or transported to a permitted TSDF for off-site

management. Clean Harbors Kansas, LLC will attempt to empty all drums to the extent described by 40 CFR 261.7(b) to satisfy the requirements for the exemption as defined by 40 CFR 261.7(a)(1). The successfully emptied drums will be transported to an off-site industrial waste disposal facility or a permitted RCRA/HSWA TSDF for disposal. If a container cannot be emptied to meet the definition in 40 CFR 261.7(b), then the container will be transported by a licensed hazardous waste hauler to a permitted off-site RCRA/HSWA TSDF for management.

4. All contaminated equipment, structures, and secondary containment systems will be:

   A. Dismantled and disposed as hazardous waste at a RCRA/HSWA permitted off-site disposal facility, or

   B. Decontaminated in accordance with Section J-4a and disposed of at a solid waste landfill, or

   C. Decontaminated in accordance with Section J-4a and either salvaged for future use or left in place.

   D. Successfully decontaminated equipment may be transferred to another TSDF for use.

5. Clean Harbors Kansas, LLC will visually inspect the surface soils around the CMU(s). Any visible evidence of contamination will be evaluated for hazardous constituents and (if contamination is present) subsequently removed for proper management in accordance with Section J-4a of this closure plan.

   At final closure, the soil beneath the containment systems of all hazardous waste management systems, including buildings, will be closed in accordance with Section J-4a of this closure plan.

6. All wastes generated on-site from closure activities will be handled in accordance with Section J-4b of this closure plan.

7. Clean Harbors Kansas, LLC will complete closure activities within 180 days after receiving either the final volume of hazardous wastes or closure plan approval by the agency, unless an extension has been requested and approved in accordance with 40 CFR 264.113(b).

8. The HWMUs are not disposal units. Also, all hazardous wastes and hazardous waste constituents will be removed from the CMU during closure and all structures will be decontaminated in accordance with this closure plan. If clean closure is not achieved, the facility will submit a post-closure plan to the regulatory authority.

J-9a(3) Unit Closure Schedule

Table J.4 outlines the anticipated schedule for the individual closure of a container management unit at the Clean Harbors Kansas, LLC facility. During final closure of the facility, all HWMUs may be closed simultaneously and in accordance with the schedule presented in Table J.3.

J-9b Tank System Closure

Partial facility closure (closure of an individual hazardous waste management unit) may be necessary during the active life of the facility. If a tank or tank system must be closed during the active life of the facility, it will be closed in accordance with this section (J-9b). At closure of a tank or tank system, all hazardous waste and hazardous waste residues will be removed from the tank/tank system. Tanks, ancillary equipment, liners, bases, and soil containing or contaminated with hazardous waste or hazardous waste residues will be either decontaminated or removed.

J-9b(1) Process and Unit Description

Tank systems at the Clean Harbors Kansas, LLC facility include storage/treatment tanks; the maximum permitted storage capacity of tanks on site is 85,689 gallons. The storage/treatment tanks have several uses at the Clean Harbors Kansas, LLC facility, some of which are discussed below.

- Solvent and solid waste streams are blended, accumulated, and stored in tanks prior to being transported to an off-site cement kiln to be burned as an alternative fuel.

- Other wastes are received from generators either in drums or bulk and are transferred to tanks to await transportation to an off-site reclamation facility, incinerator, deep-well injection facility, landfill or other permitted TSDF.

The tanks used at Clean Harbors Kansas, LLC vary in size. All tanks utilized for hazardous waste management are equipped with a manual gaging port and high level alarms to minimize the potential for overflow. All hazardous waste management tanks operating under this permit have secondary containment designed, installed, and operated to prevent migration of wastes or accumulated liquid to the environment. These containment systems, consisting of concrete slabs surrounded by concrete walls or dikes of varying height, enable the detection of and collection of releases and accumulated liquids. The concrete containment liner is also maintained free from cracks and gaps.

These tanks are summarized in Table J.1. In addition, Figure J.2, Tank Locations, shows the location of each tank system at the facility. Section E of this permit application describes the tank systems in more detail. The tank systems are designed, constructed, and operated in accordance with 40 CFR 264.190 through 199.

J-9b(2) Unit Closure Procedures

For the purposes of this closure plan, each tank system includes:

- Tanks and associated hazardous wastes, waste residues and constituents;
- All ancillary equipment including, but not limited to, piping, fittings, flanges, valves, and pumps; and
- All associated secondary containment structures (concrete pads, curbs, ramps, etc.).

Figure J2. Tank Locations

1. Each management unit containment area will be mapped with a grid system. A 25' x 25' grid will be used in material storage areas and a 15' x 15' grid will be used in material processing areas. A soil sample will be taken in the center of each grid. If necessary, concrete borings will be done to sample each required location. Additionally, if a crack exists, a sample will be collected under the crack every 10'. (Note: This does not apply to surface cracks) A sample will also be collected under every sump.

2. Collect samples at soil interface beneath the concrete surface and below the underlying subgrade rock where rock exists. and analyze using SW-846 standard methods for the parameters identified in Appendix A. Borings for soil samples in non active containment areas will remain open until any additional sampling required by the EPA or KDHE for closure or corrective action purposes at that location has been completed.

3. Proper QA/QC procedures will be followed to control the potential loss of VOCs during sampling and transport.

4. For closure, soil will be considered clean for closure when results of sample analyses are at or below the Tier 2 risk based standards for non-residential soil pathway ,or the Residential Soil to Ground water pathway, whichever is lower found in KDHE's guidance document, "Risk Based Standards for Kansas (RSK)", 2010.

5. If large areas of soil contamination, in excess of closure standards, are identified, a project specific assessment and cleanup plan will be prepared and submitted to the KDHE for approval and subsequent implementation. This will be done in accordance with the permit modification procedures of 40 CFR 270.42. Alternatively, this may be addressed in the site's corrective action program if formally deferred to the corrective action process by the regulatory agencies..

6. KDHE can ask for additional soil samples at any location and depths within the regulatory unit, if staining of soil or other indications of contamination are present.

The tank units at the Wichita facility may undergo periodic changes and upgrading in order to accommodate required regulatory and capacity changes and improvements in technology. Also, CHK will replace tanks if they become unfit for use.

J-9b (2)(a) Tank Closure Procedures

Clean Harbors Kansas, LLC will close all tanks and/or tank systems at the facility as follows.

1. If modifications to the closure plan are desired and have not been previously approved in accordance with 40 CFR 270.42 and 264.112, the modified portions of the plan will not be implemented until approval by KDHE or other authorized agencies has been received.

2. Clean Harbors Kansas, LLC will close the tanks and/or tank systems in accordance with the schedule outlined in Table J.5, Closure Activity Schedule - Tanks and Tank Systems and as discussed in Section J-9b(3) of this closure plan.

3. Within ninety days after receiving the final volume of hazardous wastes into the tank/tank system, Clean Harbors Kansas, LLC will remove all waste inventory from the unit(s) unless an extension has been requested and approved in accordance with 40 CFR 264.113(a). All waste inventories will be either treated on-site in accordance with the facility's RCRA/HSWA permit or transported to a permitted TSDF for off-site management.

4. All tanks, ancillary equipment, structures, and secondary containment systems (when applicable) will be:

   A. Dismantled and disposed of as hazardous waste at a RCRA/HSWA permitted off-site disposal facility, or

   B. Decontaminated in accordance with Section J-4a and disposed of at a solid waste landfill, or

C. Decontaminated in accordance with Section J-4a and either salvaged for future use or left in place.

D. Successfully decontaminated equipment may be transferred to another TSDF for use.

5. This step applies only when closing an entire tank system, including its secondary containment. If only closing a tank unit, go to Step 6 below. When closing a tank system, CHK will visually inspect the surface soils around the tank system containment area. In accordance with Section J-4a of this closure plan, any visible evidence of contamination will be evaluated for hazardous constituents and, if contamination is present, subsequently removed for proper disposal or other appropriate off-site management.

   At final closure, the soil beneath the secondary containment systems will be closed in accordance with Section J-4a of this closure plan.

6. All wastes generated on-site from closure activities will be handled in accordance with Section J-4b of this closure plan.

7. Clean Harbors Kansas, LLC will complete closure activities within 180 days after receiving either the final volume of hazardous wastes into the tank unit(s) or closure plan approval from the agency, whichever is later, unless an extension has been requested and approved in accordance with 40 CFR 264.113(b).

8. The tank systems are not disposal units, and they have secondary containment meeting the requirements of 40 CFR 264.193(b) through (f). Also, all hazardous wastes and hazardous waste constituents will be removed from the tanks/tank systems during closure and all structures will be decontaminated in accordance with this closure plan. If clean closure is not achieved, the facility will submit a post-closure plan to the regulatory

authority.

J-9b(3) Unit Closure Schedule

Table J.5 outlines the anticipated schedule for the individual closure of a tank/tank system at the Clean Harbors Kansas, LLC facility. During final closure of the facility, all HWMUs may be closed either sequentially or simultaneously and in accordance with the schedule presented in Table J.3.

J-10 Financial Requirements

Closure costs are estimated in Appendix J-B, Closure Cost Estimate.

Financial requirements for hazardous waste TSDFs are addressed in Section K, Financial Requirements of this document.

J-11 Certification of Closure

Within 60 days of final closure completion, Clean Harbors Kansas, LLC will submit, either by hand delivery or by registered mail, a certification of closure to KDHE and to the Regional Administrator of the USEPA, Region 7 per 40 CFR 264.115. The certification will be signed by CHK, as the owner/operator of the facility and by an independent Kansas registered professional engineer attesting that the units were closed in accordance with this closure plan.

J-12 Closure Report

Within 60 days of final closure completion, Clean Harbors Kansas, LLC will submit, either by hand delivery or by registered mail, the Closure report to KDHE and to the Regional Administrator of the USEPA, Region 7 . The final closure report will include the following as applicable to each area being closed:

- Site history information;
- A map of the site indicating the location of the units being closed;
- Visual observation made at the time of closure with respect to condition of the units;

- Documentation of the methods used to clean/decontaminate the units;
- Photographs associated with the closure of the units (before, during, and after closure) used in conjunction with written documentation;
- The volume of waste and waste residue removed, including the waste (residue) resulting from decontamination activities;
- A description of the method of waste handling and transport;
- Waste manifest numbers or copies of manifests from the removal of waste and waste residues;
- A description of the sampling and analytical methods used, including sample preservation and chain of custody methods;
- Laboratory records;
- A narrative description of the closure field tasks performed;
- A chronological field log of closure activities;
- Tests performed and methods;
- Location of the sampling points;
- Results of laboratory analyses, summarized in a tabular format and with the laboratory reports as an appendix;
- Documentation of off-site disposal for any materials taken off-site; and,
- A brief description of the current regulatory status and operations at the site
- A comparison of the results of laboratory analyses with the performance standards for clean closure

APPENDIX J-A

TABLES

TABLE J.1

MAXIMUM EXTENT OF OPERATIONS

CLEAN HARBORS KANSAS, LLC - HAZARDOUS WASTE MANAGEMENT UNITS

HWMU[b]	UNIT	Wastes Stored/Function
C	Building C	Hazardous waste - Container Management
C	Building I	Hazardous waste - Container Management
C	Processing Area	Hazardous waste - Container Management
C	Drum Dock	Hazardous waste - Container Management
T	V-1	Hazardous Waste Liquid
T	V-2	Hazardous Waste Liquid
T	V-3	Hazardous Waste Liquid
T	V-4	Hazardous Waste Liquid
T	V-5	Hazardous Waste Liquid
T	V-6	Hazardous Waste Liquid
T	V-7	Hazardous Waste Liquid
T	V-8	Hazardous Waste Liquid

[b] HWMU - Hazardous Waste Management Unit - All HWMUs at the HRI Wichita facility are either Container Management Areas (C) or Tanks/Tank Systems (T) as defined by 40 CFR 260.10. The unit closure procedures for these units are detailed in Section J-9a and Section J-9b respectively.

TABLE J.3

CLOSURE ACTIVITY SCHEDULE - FINAL FACILITY CLOSURE

Calendar Days Lapsed	Closure Activity
-45	Notification to KDHE or the EPA Region 7 Administrator.
0	Receipt of known final volume of hazardous waste or receipt of final closure plan approval from agency (whichever is later). Begin work-force mobilization.
	Begin treatment and removal of tank waste inventory.
	Begin treatment and removal of container waste inventory.
90	Complete treatment and removal of all hazardous waste inventories.
120	Complete decontamination of tanks, container management units and miscellaneous units.
150	Complete dismantling/removal of all generated wastes, temporary storage units, and decontaminated tanks, equipment, and structures (if removal is necessary).Collect and analyze rinsate and soil samples.
	Visually inspect surface soils for contamination and begin remediation procedures if necessary.
180	Complete final closure activities.
200	Inspection of facility by a Professional Engineer.
240	Submit a certification of closure to KDHE or the EPA Region 7 Administrator.

TABLE J.4

CLOSURE ACTIVITY SCHEDULE - Hazardous Waste Management UNIT

Calendar Days Lapsed	Closure Activity
0	Receipt of known final volume of hazardous waste into the container management unit or receipt of closure plan approval from agency (whichever is later). Begin work-force mobilization. Begin treatment and removal of waste inventory.
90	Complete treatment and removal of all hazardous waste inventories.
120	Complete emptying all drums and removal of drums from facility.
150	Complete decontamination of secondary containment structures and hazardous waste handling equipment. Visually inspect surface soils for contamination and begin remediation procedures if necessary.
180	Complete final closure activities.

TABLE J.5

CLOSURE ACTIVITY SCHEDULE - TANKS AND TANK SYSTEMS

Calendar Days Lapsed	Closure Activity
0	Receipt of known final volume of hazardous waste or receipt of closure plan approval from agency (whichever is later). Begin work-force mobilization. Begin treatment and removal of tank waste inventory.
90	Complete treatment and removal of all hazardous waste inventories.
120	Complete decontamination of tanks, ancillary equipment, and secondary containment systems (when applicable).
150	Complete dismantling/removal of decontaminated tanks, equipment, and secondary containment structures (when removal is necessary). Visually inspect surface soils for contamination and begin remediation procedures if necessary. Collect and analyze soils and rinsate samples
180	Complete final closure activities.

APPENDIX J-B

CLOSURE COST ESTIMATE

APPENDIX J-C

CLOSURE PLAN FOR BUILDINGS B, D, AND J

Summary - Closure Cost Estimate

Clean Harbors Kansas, LLC
Wichita, Kansas

The following table is a summary of the cost for closing the Clean Harbors Kansas, LLC facility. The figures for closing the facility are set forth assuming the plant has the maximum storage of hazardous waste. The Closure Cost Estimate has been prepared in accordance with 40 CFR 264.142 (Cost Estimate for Closure). Cost estimate calculations are attached.

Cost	Section
$194,771.89	Waste Disposal of Maximum Inventory
$10,945	Tank Decontamination
$3,592	Equipment Decontamination
$69,626	Assessment of Soil
$46,778	Decontaminate Concrete
$9,000	Closure Certification
$334,712	Subtotal
$50,206	Contingency 15%
$384,918	**Total Closure Cost Estimate**

Clean Harbors Kansas, LLC
RCRA Permit Application
Section J-A
Closure Plan
Appendix J-B - Closure Cost Estimate

1.0 MANAGMENT OF HAZARDOUS WASTE INVENTORY

Maximum container storage is as follows:

Storage Building	Area (ft^2)	Capacity (gallons)	Drum Equiv. (55 gal)
Processing Area	6278	9900	180
Building C	13520	99110	1802
Drum Dock	2880	14980	272
Building I	5250	50,600	920
Total	22678	123990	2254

Maximum tank storage is as follows:

Tank	Capacity (gal)
V1	7181
V2	7084
V3	7181
V4	7181
V5	20095
V6	20095
V7	7181
V8	7181
Total	83179

Container Management Unit area for soil sampling

Unit Designation	Area (ft^2)	# Sumps/ unit	# Soil Samples Required
Building I	5250	1	9
Building J	6400	1	11
Building D	10800	5	22
Building C	13520	0	22
Building B	7600	2	14
Processing Area	6278	3	31
Drum Dock	2880	0	5

1.1 Transportation and Disposal Unit Prices

The following treatment/disposal facilities and costs were used to calculate the closure cost estimate. These figures represent third party transportation and disposal costs as of May 2012. Based on historical averages, the following types and amounts of wastes are expected to be on-site at closure.

Waste Type	Disposal Outlet	Transportation Cost	Disposal Cost	T&D Total Cost
Landfill	**EQ- Detroit Michigan**	**$50/DM**	**$125/DM**	**$175/DM**
Fuels	**Systech – Fredonia KS**	**$0.10/gal**	**$0.12/gal**	**$0.22/gal**
Fuels	**Systech – Fredonia KS**	**$5.55/DM**	**$55/DM**	**$60.55/DM**
Incineration	**WTI- East Liverpool, OH**	**$0.90/gal**	**$0.28/gal**	**$1.18/gal**
Deepwell	**Texas Molecular – Deer Park, TX**	**$0.56/gal**	**$0.38/gal**	**$0.94/gal**

Drum Disposal Method	**Percentages**	**# drums**	**# gallons**
Liquid Fuel	30	952	52360
Solid Fuel	20	635	NA
Incineration	30	952	52360
Deepwell	20	635	34925
Tank Disposal Method			
Liquid Fuel	55	NA	46628
Incineration	20	NA	16955
Deepwell	25	NA	21196

1.2 Inventory Management Assumptions

Clean Harbors makes the following assumptions concerning the disposal of its hazardous waste inventory:

(a). The amount of hazardous waste on-site at the time of closure will be equal to the maximum permitted capacity of each waste management unit.
(b). Based on historical operating data, each tank can be clean of waste and residue without entering the tank.
(c). A local third party contractor will operate the Clean Harbors facility in order to perform closure.
(d). 1 yd^3 = 2000 lbs.
(e). Liquid drums will be pumped and disposed offsite as bulk waste.
(f). Empty drums will be sent offsite for recycling. No cost benefits are considered in this estimate.

1.3 Decontamination Assumptions

Clean Harbors makes the following assumptions concerning the decontamination of equipment:

(a). The forklifts will be cleaned using detergents and/or solvents.
(b). 500 gallons of contaminated rinseate will be generated during decontamination activities. This liquid will be bulked and sent off-site for disposal.
(c). One (1) 55-gallon drums of contaminated debris (e.g., PPE, plastic sheeting, etc.) will be generated during equipment decontamination. Each drum will weigh 400 pounds.
(d). The decontaminated equipment will be sold and/or sent to a scrap metal dealer. No cost benefits from this will be considered.

Analytical costs

Analyte	Water Cost/Sample ($)	Soil Cost/ Sample ($)
12 RCRA Metals	144	144
Volatile Organic Compounds	70	75
Semivolatile	120	150
Organochlorine Pesticides	75	80
Herbicides	95	100
Total	504	549

2.1 Container and Tank Waste Disposal

TASK	SOURCE FOR QUOTE	QUOTE	TOTAL COST
Characterize, Load, Transport & Dispose Drummed Waste			
Liquid Fuel (52,360 G)	Systech (as bulk liquid)	$.18/gal	$9,425
Solid Fuel (635 DM)	Systech (as drums)	$40.55/DM	$25,749
Incineration (52,360 G)	WTI (as bulk liquid)	$1.07/gal	$56,025
Deepwell (34,925 G)	Texas Molecular	$.91/gal	$31,782
Supervisor- 16 manhours	Average contractor rates for area	$62.50/hour	$1,000
Pump drums/load drums (labor-32 manhours)	Average contractor rates for area	$38.00/hour	$1,216
Safety equipment- 6 man-days		$100/man/day	$600
Misc equipment – 2 day		$600/day	$1,200
SUBTOTAL			$126,997
Characterize, Load, Transport & Dispose Tank Waste			
Liquid Fuel (46,628 G)	Systech (as bulk liquid)	$.18/gal	$8,393
Incineration (16,955 G)	WTI (as bulk liquid)	$1.07/gal	$18,142
Deepwell (21,196 G)	Texas Molecular	$.91/gal	$19,288
Supervisor- 8 manhours	Average contractor rates for area	$62.50/hour	$500
Pump drums/load drums (labor-16 manhours)	Average contractor rates for area	$38.00/hour	$608
Safety equipment- 3 man-days		$100/man/day	$300
Misc equipment – 1 day		$600/day	$600
SUBTOTAL			$47,831
TOTAL			$174,828

2.2 Tank Decontamination

TASK	SOURCE FOR QUOTE	QUOTE	TOTAL COST
Decontaminate 8 Tanks			
Supervisor- 32 manhours	Average contractor rates for area	$62.50/hour	$2,000
labor-64 manhours	Average contractor rates for area	$38.00/hour	$2,432
Safety equipment- 12 man-days		$100/man/day	$1,200
Misc equipment – 4 days		$600/day	$2,400
Cleaning supplies			$80
Analysis – 8 samples		$504/sample	$4,032
Deepwell (1,320 G)	Texas Molecular	$.91/gal	$1,201
TOTAL			$10,945

Note: 185 gallons water generated per tank.

2.3 Equipment Decontamination

TASK	SOURCE FOR QUOTE	QUOTE	TOTAL COST
Decontaminate Equipment			
Supervisor- 8 manhours	Average contractor rates for area	$62.50/hour	$500
labor-16 manhours	Average contractor rates for area	$38.00/hour	$608
Safety equipment- 3 man-days		$100/man/day	$300
Misc equipment – 1 days		$600/day	$600
Cleaning supplies			$80
Analysis – 2 samples		$504/sample	$1,008
Deepwell (500 G)	Texas Molecular	$.91/gal	$455
Solid Fuel (1 DM)	Systech (as drums)	$40.55/DM	$41
TOTAL			$3,592

2.4 Assessment of Soil

TASK	SOURCE FOR QUOTE	QUOTE	TOTAL COST
Core concrete and sample soil			
labor-80 manhours	Average contractor rates for area	$38.00/hour	$3,040
Safety equipment- 10 man-days		$100/man/day	$1,000
Misc equipment – 5 days		$600/day	$3,000
Analysis (114 samples)		$549/sample	$62,586
TOTAL			$69,626

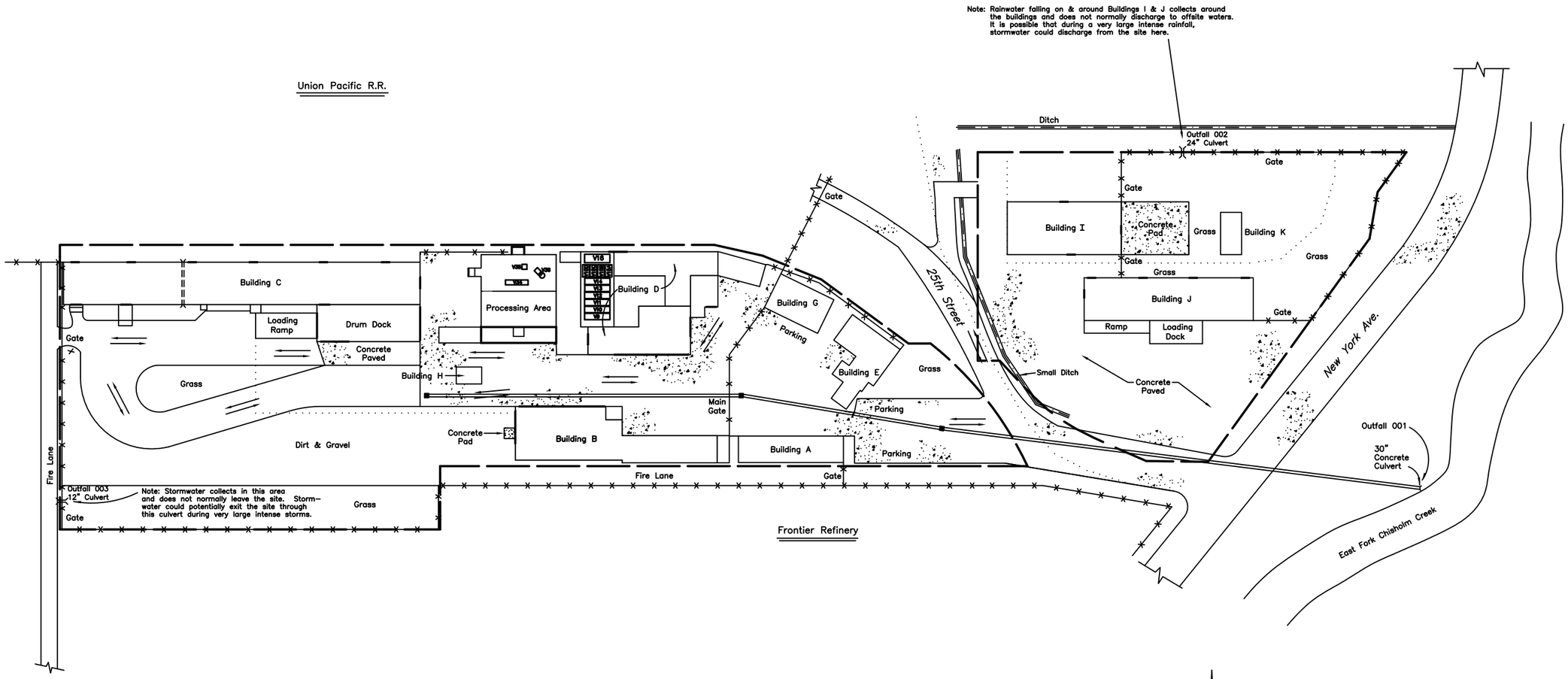
2.5 Decontaminate concrete

TASK	SOURCE FOR QUOTE	QUOTE	TOTAL COST
Decontaminate concrete			
Supervisor- 48 manhours	Average contractor rates for area	$62.50/hour	$3,000
labor-96 manhours	Average contractor rates for area	$38.00/hour	$3,648
Safety equipment- 18 man-days		$100/man/day	$1,800
Misc equipment – 56 days		$600/day	$3,600
Analysis (11 samples)		$504/sample	$5,544
Deepwell (4,600 G)	Texas Molecular	$.91/gal	$4,186
Health Risk Assessment		Lump sum	$25,000
TOTAL			$46,778

Notes: Water generated assumed to be RCRA hazardous for disposal cost purposes

2.6 Professional Engineer Certification

TASK	SOURCE FOR QUOTE	QUOTE	TOTAL COST
PE Services			
On site - 40 hours		$150/hour	$6,000
Report Preparation – 20 hours		$150/hour	$3,000
SUBTOTAL			$9,000
TOTAL			$9,000



Building Legend

Building A	Laboratory/Administration
Building C	Hazardous Waste Management Building
Building E	Administration
Building G	Personnel Decon/Break Room
Building H	Operations Office
Building I	Hazardous Waste Management Building
Processing Area	Hazardous Waste Management Area
Drum Dock	Hazardous Waste Management Area

Legend:

- : Railroad Tracks
- : Fence
- : Property Line
- : Loading and Unloading Area
- : Secondary Containment Berm or Wall
- : Pavement
- : Drainage Boundary
- : Storm Drain Catch Basins
- : Underground Storm Sewer Line
- : Truck Routes

N

50 0 50 100
SCALE OF FEET

Notes:

1. TANKS & MISCELLANEOUS UNIT LOCATIONS SUBJECT TO CLOSURE ARE IDENTIFIED IN THE PROCESSING AREA AND BUILDING D.
2. CONTAINER MANAGEMENT UNITS SUBJECT TO CLOSURE INCLUDE:
   BUILDING B
   BUILDING D
   BUILDING J

FIGURE J–3

REFERENCE DRAWINGS	REV.	DESCRIPTION	DRAWN BY	DATE	APPR. BY
	C	RCRA PART B SUBMITTAL UPDATE	K.M.C.	6/25/12	S.A.B.
	B	RCRA PART B SUBMITTAL UPDATE	K.M.C.	9/3/10	S.A.B.
	A	RCRA PART B SUBMITTAL	K.M.C.	3/27/09	M.C.

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DRAWN	CHECKED	SCALE	DATE
K.M.C.	M.C.	AS NOTED	03/24/09

TITLE
CLEAN HARBORS KANSAS, LLC
WICHITA FACILITY
HAZARDOUS WASTE MANAGEMENT AREAS

DRAWING NO. HWMA
REV. C

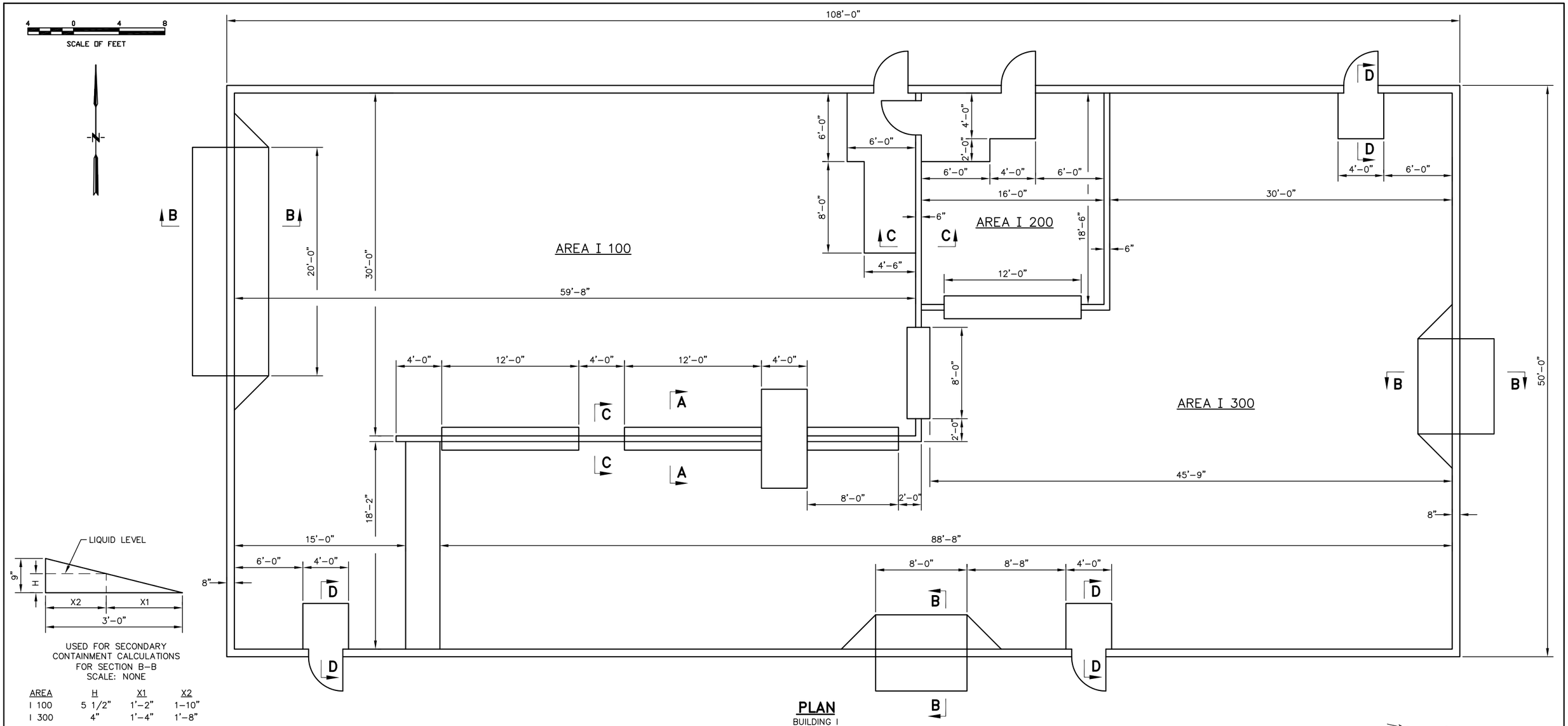

FIGURE D-6

REV.	DESCRIPTION	DRAWN BY	DATE	APPR. BY
A	RCRA PART B SUBMITTAL	K.M.C.	6/1/11	S.A.B.

REFERENCE DRAWINGS

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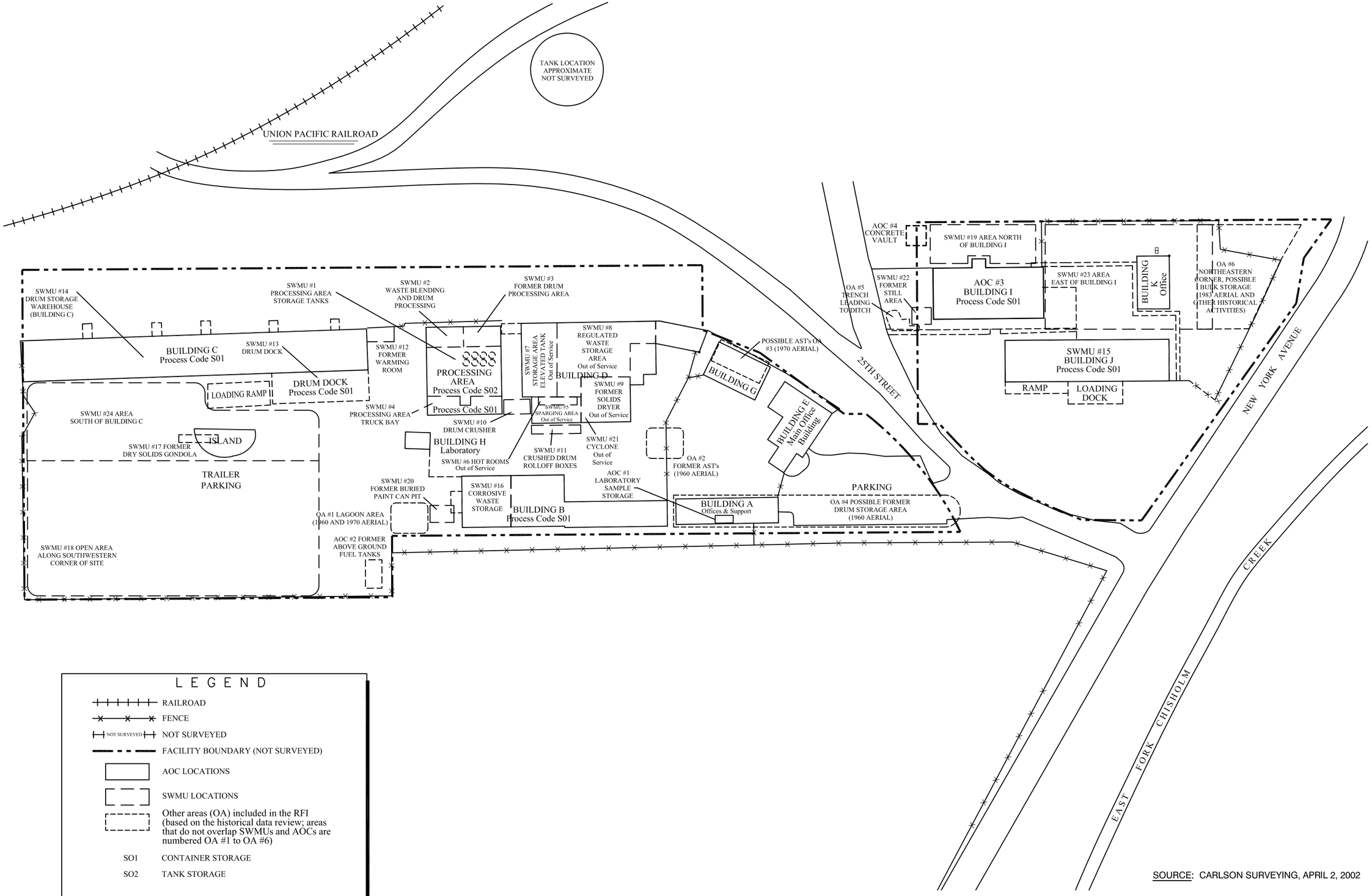
DRAWN	CHECKED	SCALE	DATE
K.M.C.		1/4"=1'-0"	05/24/11

TITLE
CLEAN HARBORS KANSAS, LLC
WICHITA FACILITY
BUILDING I – DIKING AND RAMPS

DRAWING NO. 67WA-0200-500

REV. A



LEGEND

- RAILROAD
- FENCE
- NOT SURVEYED
- FACILITY BOUNDARY (NOT SURVEYED)
- AOC LOCATIONS
- SWMU LOCATIONS
- Other areas (OA) included in the RFI (based on the historical data review; areas that do not overlap SWMUs and AOCs are numbered OA #1 to OA #6)
- SO1 CONTAINER STORAGE
- SO2 TANK STORAGE

0 60 FEET

SOURCE: CARLSON SURVEYING, APRIL 2, 2002

FIGURE L–1

REV.	DESCRIPTION	DRAWN BY	DATE	APPR. BY
C	RCRA PART B SUBMITTAL UPDATE	K.M.C.	8/12/10	S.A.B.
B	RCRA PART B SUBMITTAL UPDATE	K.M.C.	3/27/09	M.C.
A	RCRA PART B SUBMITTAL	K.M.C.	6/20/08	M.C.

REFERENCE DRAWINGS

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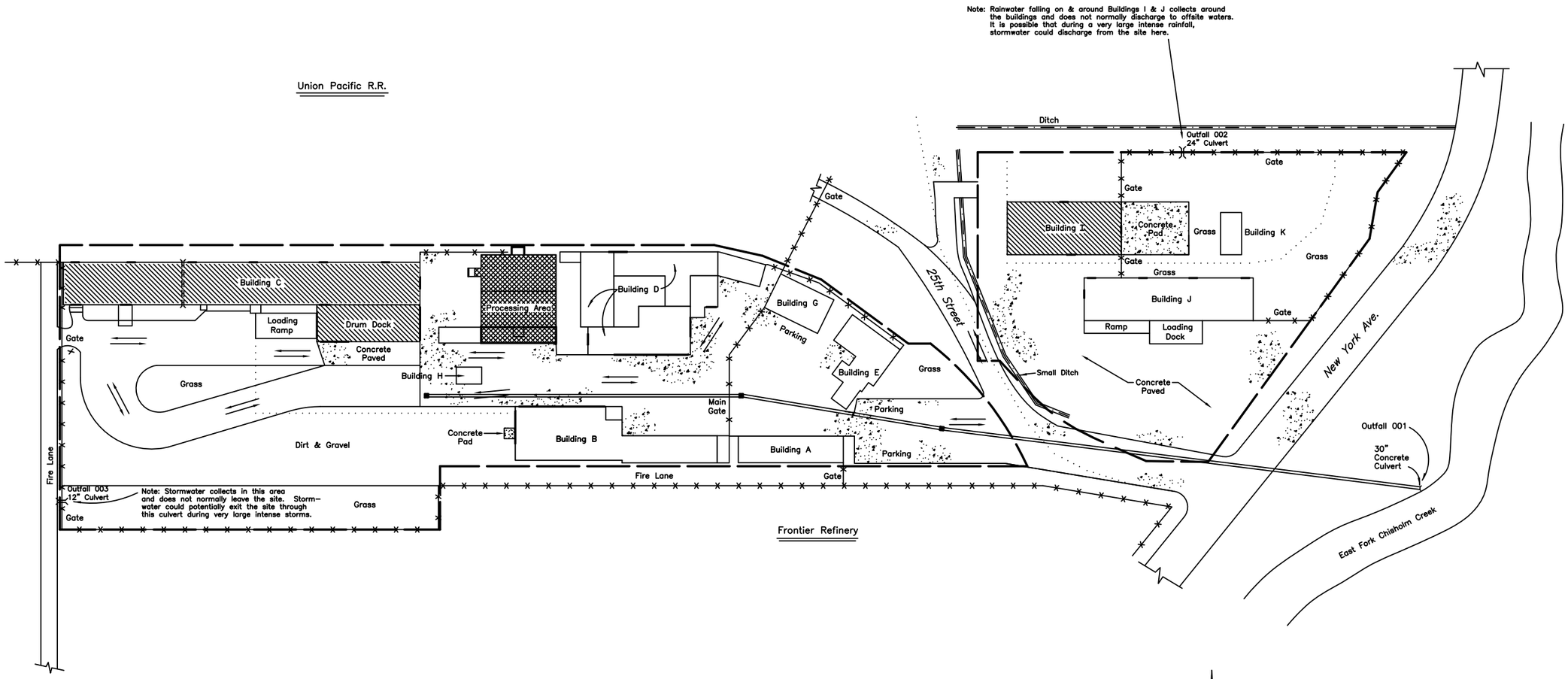
DRAWN	CHECKED	SCALE	DATE
K.M.C.	M.C.	AS NOTED	06/18/08

TITLE: CLEAN HARBORS KANSAS, LLC
WICHITA FACILITY
SWMU's

DRAWING NO. SWMU

REV. C



Building Legend

Building A	Laboratory/Administration
Building C	Hazardous Waste Management Building
Building E	Administration
Building G	Personnel Decon/Break Room
Building H	Operations Office
Building I	Hazardous Waste Management Building
Processing Area	Hazardous Waste Management Area
Drum Dock	Hazardous Waste Management Area

Legend:

- : Railroad Tracks
- : Fence
- : Property Line
- : Container Storage Area
- : Container and Tank Storage Area
- : Loading and Unloading Area
- : Secondary Containment Berm or Wall
- : Pavement
- : Drainage Boundary
- : Storm Drain Catch Basins
- : Underground Storm Sewer Line
- : Truck Routes

N

50 0 50 100
SCALE OF FEET

FIGURE B–4

REFERENCE DRAWINGS	REV.	DESCRIPTION	DRAWN BY	DATE	APPR. BY
	C	RCRA PART B SUBMITTAL UPDATE	K.M.C.	9/3/10	S.A.B.
	B	RCRA PART B SUBMITTAL UPDATE	K.M.C.	3/27/09	M.C.
	A	RCRA PART B SUBMITTAL	K.M.C.	6/20/08	M.C.

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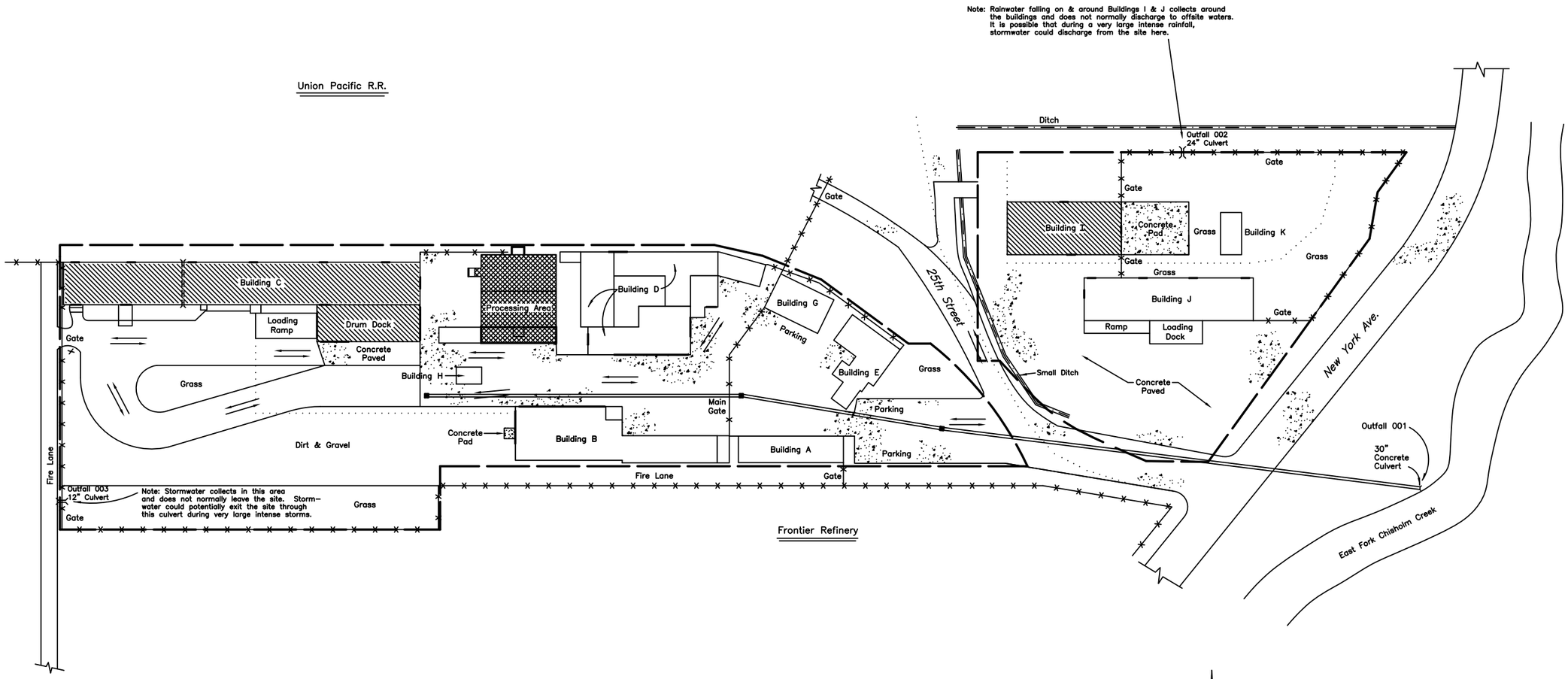
DRAWN	CHECKED	SCALE	DATE
K.M.C.	M.C.	AS NOTED	04/01/08

TITLE
CLEAN HARBORS KANSAS, LLC
WICHITA FACILITY
HAZARDOUS WASTE MANAGEMENT AREAS

DRAWING NO. HWMA
REV. C



Building Legend

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Building E	Administration
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Building H	Operations Office
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- : Pavement
- : Drainage Boundary
- : Storm Drain Catch Basins
- : Underground Storm Sewer Line
- : Truck Routes

N

50 0 50 100
SCALE OF FEET

FIGURE D-1

REFERENCE DRAWINGS	REV.	DESCRIPTION	DRAWN BY	DATE	APPR. BY
	C	RCRA PART B SUBMITTAL UPDATE	K.M.C.	9/3/10	S.A.B.
	B	RCRA PART B SUBMITTAL UPDATE	K.M.C.	3/27/09	M.C.
	A	RCRA PART B SUBMITTAL	K.M.C.	6/20/08	M.C.

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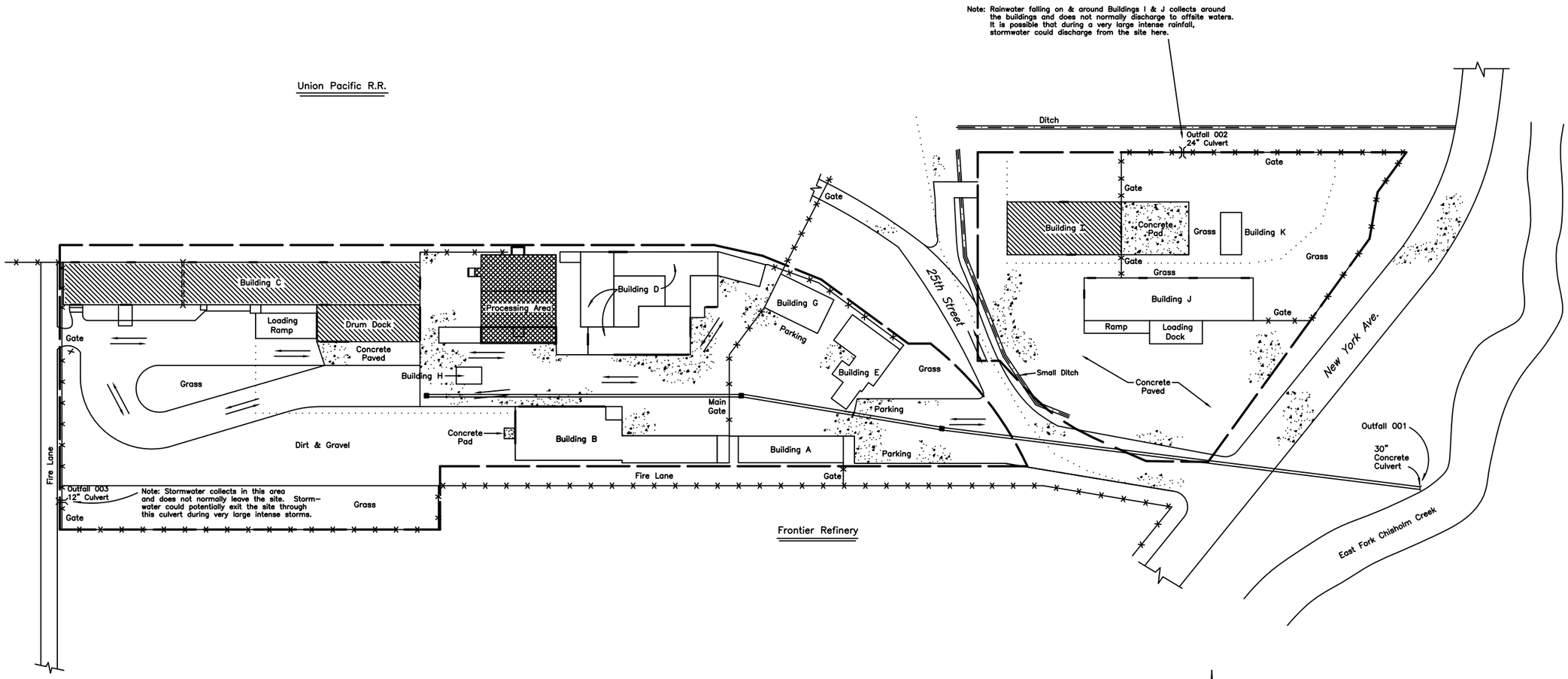
DRAWN	CHECKED	SCALE	DATE
K.M.C.	M.C.	AS NOTED	04/01/08

TITLE
CLEAN HARBORS KANSAS, LLC
WICHITA FACILITY
HAZARDOUS WASTE MANAGEMENT AREAS

DRAWING NO. HWMA
REV. C



Building Legend

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- : Pavement
- : Drainage Boundary
- : Storm Drain Catch Basins
- : Underground Storm Sewer Line
- : Truck Routes

N

50 0 50 100
SCALE OF FEET

FIGURE E-1

REFERENCE DRAWINGS	REV.	DESCRIPTION	DRAWN BY	DATE	APPR. BY
	C	RCRA PART B SUBMITTAL UPDATE	K.M.C.	9/3/10	S.A.B.
	B	RCRA PART B SUBMITTAL UPDATE	K.M.C.	3/27/09	M.C.
	A	RCRA PART B SUBMITTAL	K.M.C.	6/20/08	M.C.

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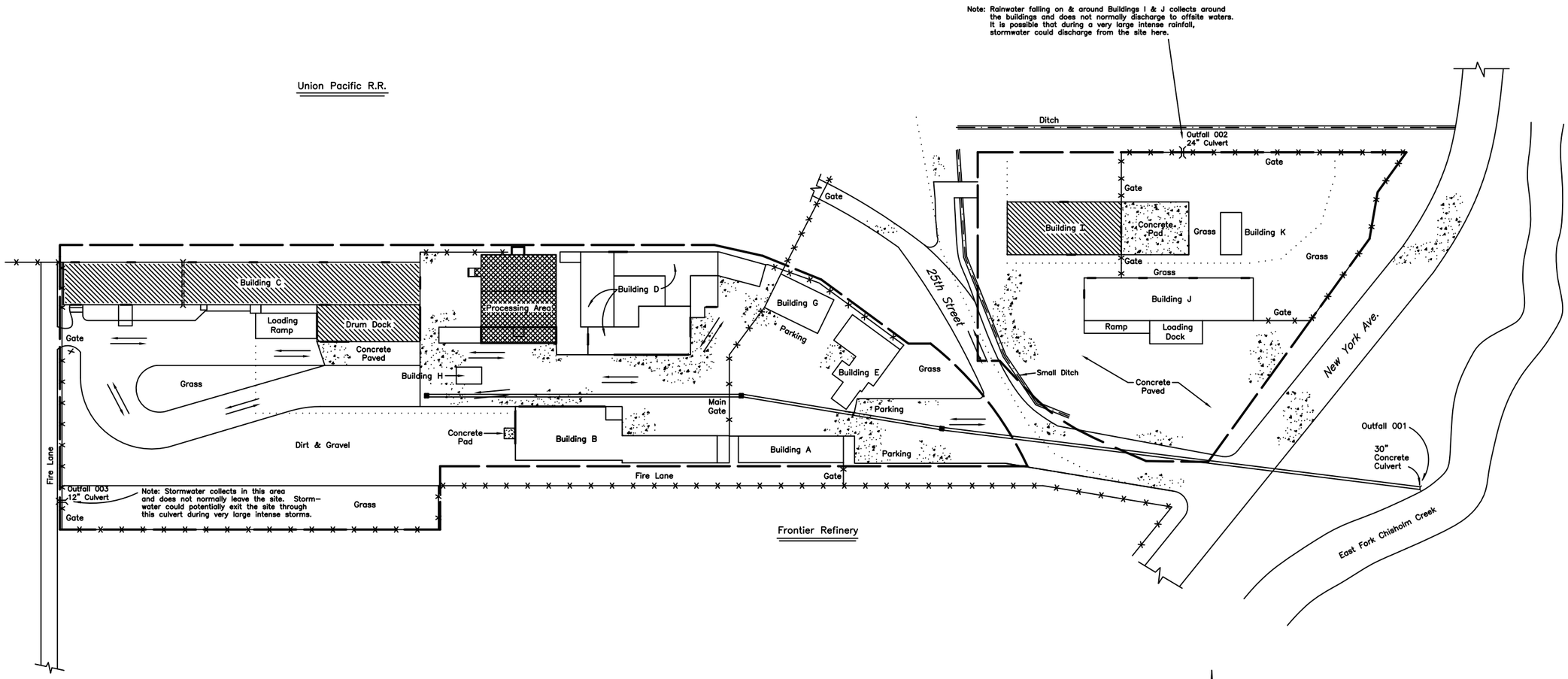
DRAWN	CHECKED	SCALE	DATE
K.M.C.	M.C.	AS NOTED	04/01/08

TITLE
CLEAN HARBORS KANSAS, LLC
WICHITA FACILITY
HAZARDOUS WASTE MANAGEMENT AREAS

DRAWING NO. HWMA
REV. C



Building Legend

Building A	Laboratory/Administration
Building C	Hazardous Waste Management Building
Building E	Administration
Building G	Personnel Decon/Break Room
Building H	Operations Office
Building I	Hazardous Waste Management Building
Processing Area	Hazardous Waste Management Area
Drum Dock	Hazardous Waste Management Area

Legend:

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- : Property Line
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- : Container and Tank Storage Area
- : Loading and Unloading Area
- : Secondary Containment Berm or Wall
- : Pavement
- : Drainage Boundary
- : Storm Drain Catch Basins
- : Underground Storm Sewer Line
- : Truck Routes

N

50 0 50 100
SCALE OF FEET

FIGURE D-2

REFERENCE DRAWINGS	REV.	DESCRIPTION	DRAWN BY	DATE	APPR. BY
	C	RCRA PART B SUBMITTAL UPDATE	K.M.C.	9/3/10	S.A.B.
	B	RCRA PART B SUBMITTAL UPDATE	K.M.C.	3/27/09	M.C.
	A	RCRA PART B SUBMITTAL	K.M.C.	6/20/08	M.C.

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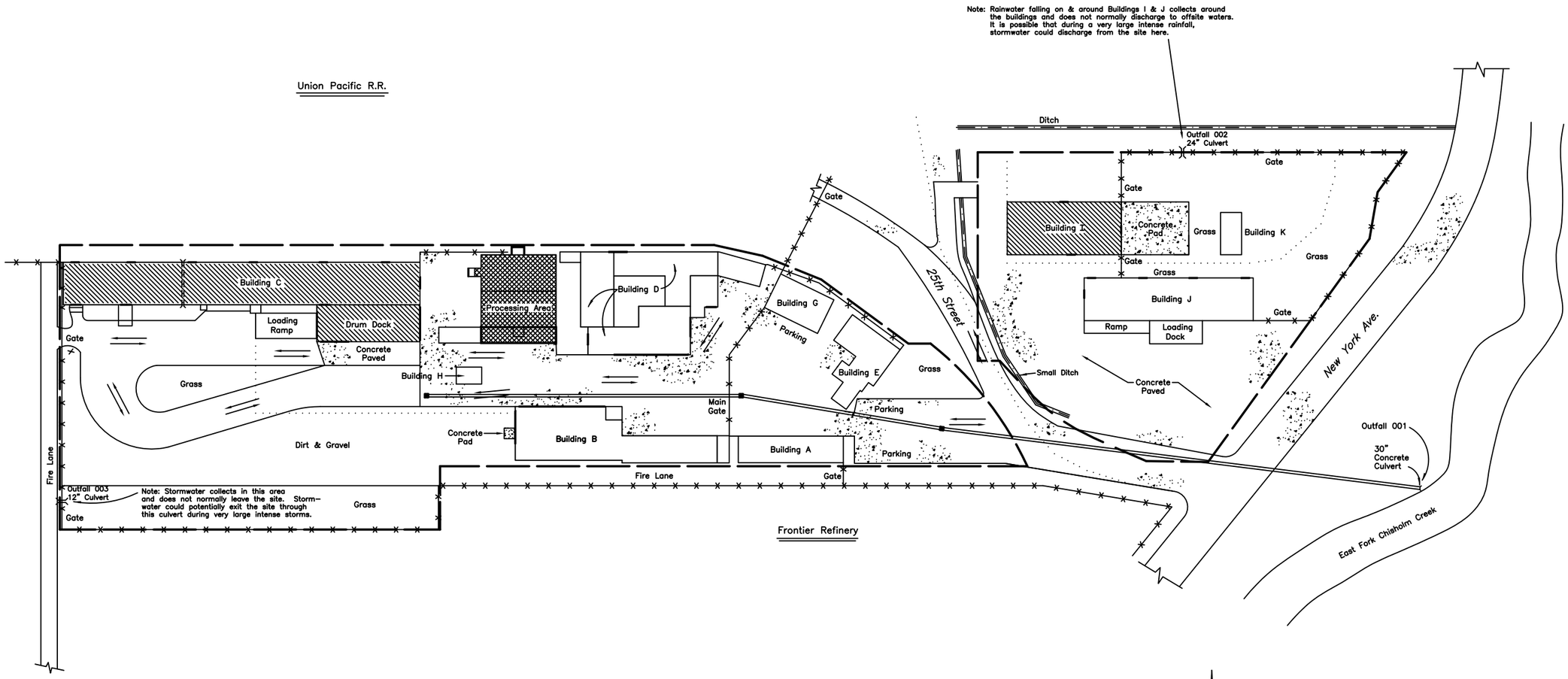
DRAWN	CHECKED	SCALE	DATE
K.M.C.	M.C.	AS NOTED	04/01/08

TITLE
CLEAN HARBORS KANSAS, LLC
WICHITA FACILITY
SITE PLAN

DRAWING NO. WICHSITE

REV. C



Building Legend

Building A	Laboratory/Administration
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Building E	Administration
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Legend:

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- : Loading and Unloading Area
- : Secondary Containment Berm or Wall
- : Pavement
- : Drainage Boundary
- : Storm Drain Catch Basins
- : Underground Storm Sewer Line
- : Truck Routes

N

50 0 50 100
SCALE OF FEET

FIGURE G-1

REFERENCE DRAWINGS	REV.	DESCRIPTION	DRAWN BY	DATE	APPR. BY
	C	RCRA PART B SUBMITTAL UPDATE	K.M.C.	9/3/10	S.A.B.
	B	RCRA PART B SUBMITTAL UPDATE	K.M.C.	3/27/09	M.C.
	A	RCRA PART B SUBMITTAL	K.M.C.	6/20/08	M.C.

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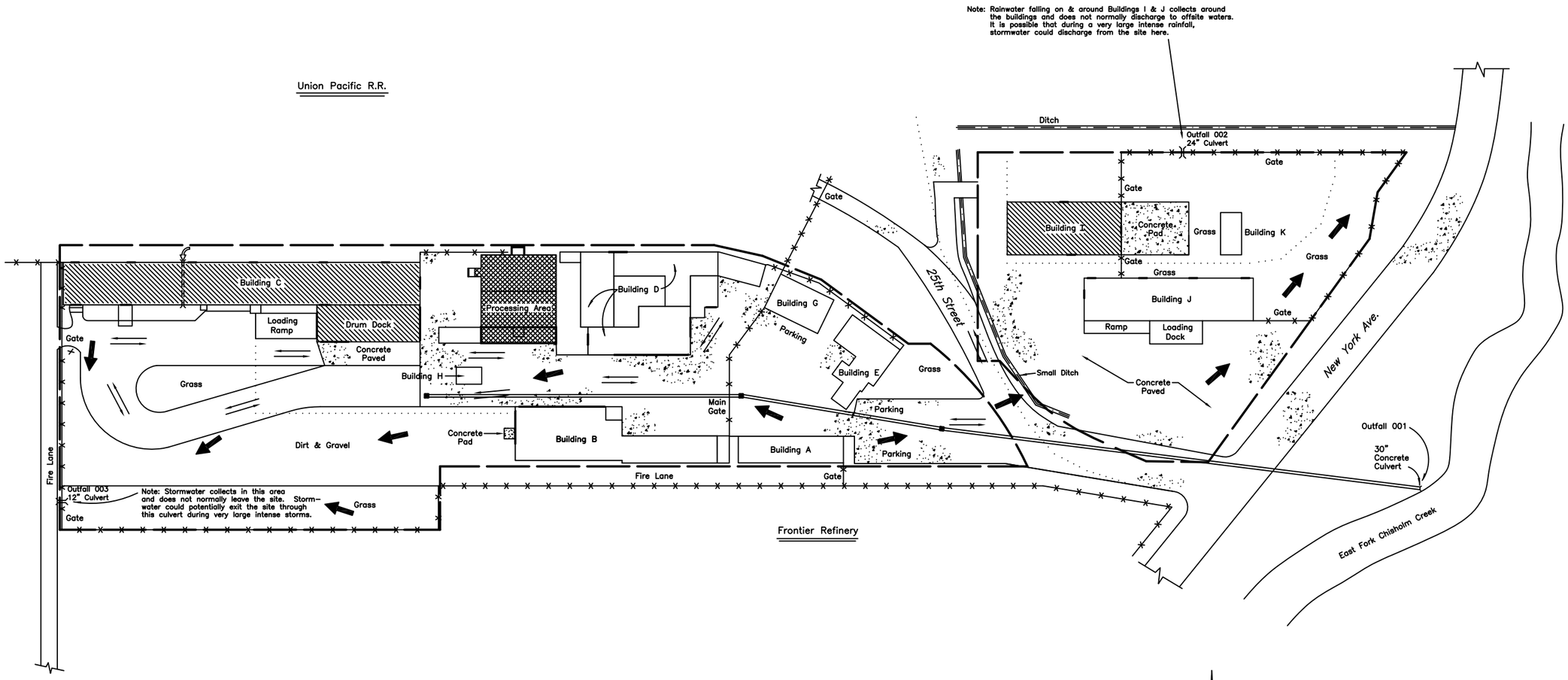
DRAWN	CHECKED	SCALE	DATE
K.M.C.	M.C.	AS NOTED	04/01/08

TITLE
CLEAN HARBORS KANSAS, LLC
WICHITA FACILITY
SITE PLAN

DRAWING NO. WICHSITE

REV. C



Building Legend

Building A	Laboratory/Administration
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- : Loading and Unloading Area
- : Secondary Containment Berm or Wall
- : Pavement
- : Drainage Boundary
- : Storm Drain Catch Basins
- : Underground Storm Sewer Line
- : Truck Routes
- : Stormwater Flow Directions

N

50 0 50 100
SCALE OF FEET

FIGURE B–3A

REFERENCE DRAWINGS	REV.	DESCRIPTION	DRAWN BY	DATE	APPR. BY
	C	RCRA PART B SUBMITTAL UPDATE	K.M.C.	9/3/10	S.A.B.
	B	RCRA PART B SUBMITTAL UPDATE	K.M.C.	3/27/09	M.C.
	A	RCRA PART B SUBMITTAL	K.M.C.	6/20/08	M.C.

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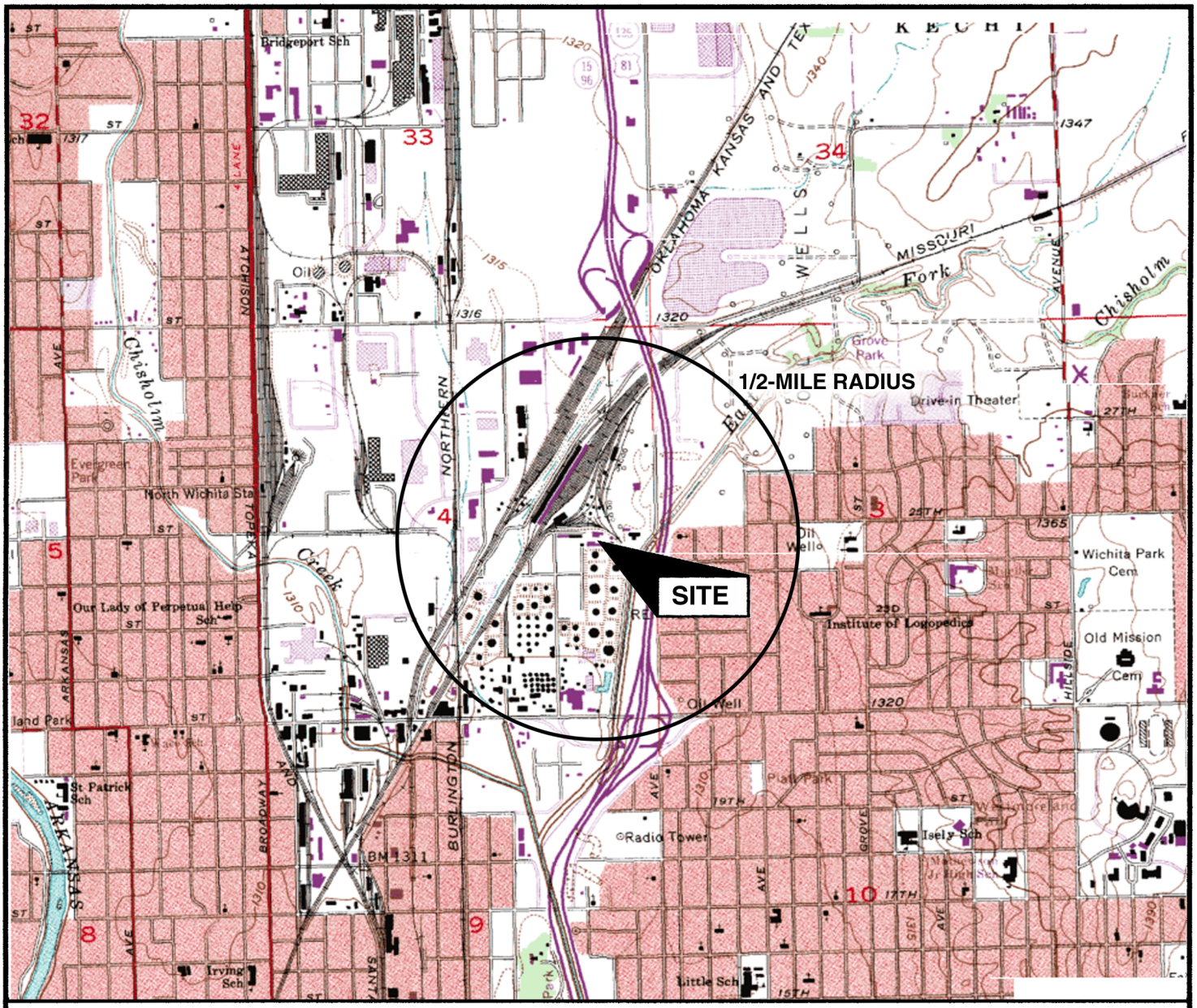
DRAWN	CHECKED	SCALE	DATE
K.M.C.	M.C.	AS NOTED	04/01/08

TITLE
CLEAN HARBORS KANSAS, LLC
WICHITA FACILITY
SITE PLAN
STORMWATER FLOW DIRECTIONS

DRAWING NO. WICHSITE

REV. C



SCALE 1:24 000

1 ½ 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

QUADRANGLE LOCATION

N

COORDINATES						
LONGITUDE: W 97° 19' 11" LATITUDE: N 37° 43' 49"	A	RCRA PART B PERMIT	CJM	CJM	CJM	5/08
	ISSUE	DESCRIPTION	DRWN	CHKD	APPR	DATE

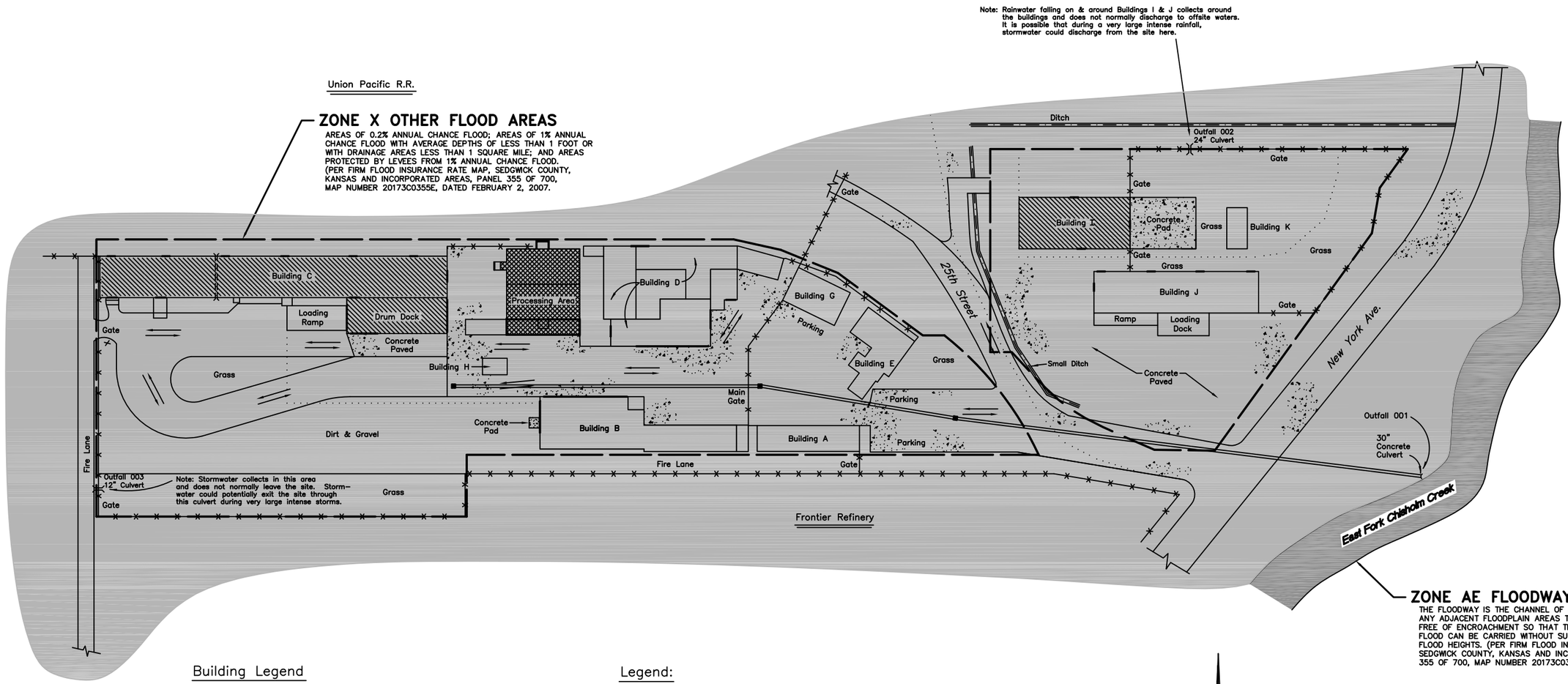
BASE MAP: USGS TOPOGRAPHIC MAP PRINTED FROM TOPO! © 1998 WILDFLOWER PRODUCTIONS

CleanHarbors
Environmental Services®
42 Longwater Drive
Norwell, Massachusetts 02061

CLEAN HARBORS KANSAS, LLC
2549 N. NEW YORK STREET
WICHITA, KS 67219

SITE LOCATION MAP

JOB NO.: WHFACGEN08
SCALE: AS SHOWN
DWG. NO. FIGURE B-1



Building Legend

Building A	Laboratory/Administration
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Legend:

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- : Secondary Containment Berm or Wall
- : Pavement
- : Drainage Boundary
- : Storm Drain Catch Basins
- : Underground Storm Sewer Line
- : Truck Routes

N

50 0 50 100
SCALE OF FEET

FIGURE B-3

REV.	DESCRIPTION	DRAWN BY	DATE	APPR. BY
D	RCRA PART B SUBMITTAL UPDATE	K.M.C.	9/3/10	S.A.B.
C	RCRA PART B SUBMITTAL UPDATE – ADDED FLOOD ZONES	K.M.C.	4/3/09	M.C.
B	RCRA PART B SUBMITTAL UPDATE	K.M.C.	3/27/09	M.C.
A	RCRA PART B SUBMITTAL	K.M.C.	6/20/08	M.C.

REFERENCE DRAWINGS

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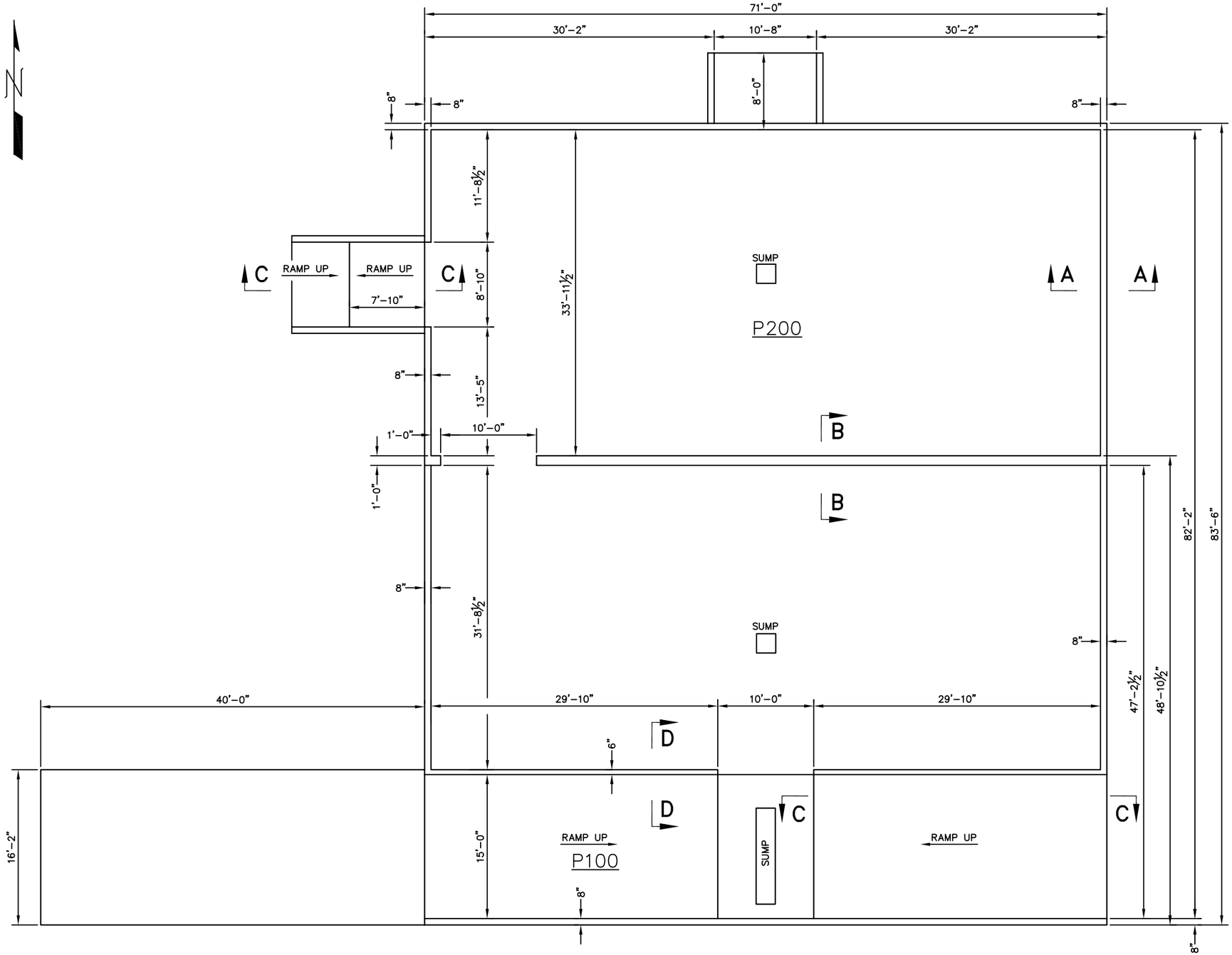
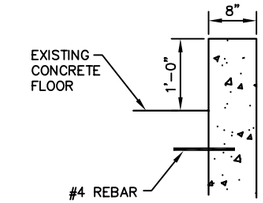
DRAWN	CHECKED	SCALE	DATE
K.M.C.	M.C.	AS NOTED	04/01/08

TITLE
CLEAN HARBORS KANSAS, LLC
WICHITA FACILITY
SITE PLAN

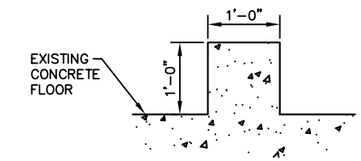
DRAWING NO. WICHSITE
REV. D





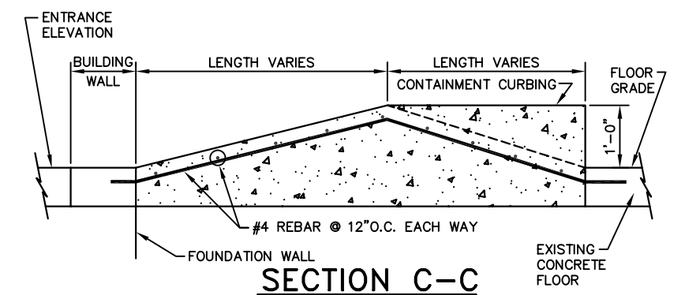
SECTION A–A

TYPICAL CURB CROSS SECTION
SCALE: 1"=1'-0"



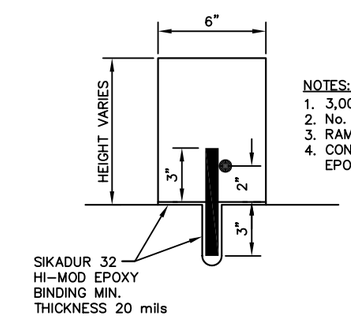
SECTION B–B

TYPICAL CURB CROSS SECTION
SCALE: 1"=1'-0"



SECTION C–C

TYPICAL CONCRETE RAMP CROSS SECTION
SCALE: NONE



NOTES:
1. 3,000 psi CONCRETE.
2. No. 4 REBAR ON 24" CENTERS.
3. RAMPS FURNISHED AND INSTALLED BY HRI.
4. CONCRETE TO BE SANDBLASTED WHERE EPOXY BONDING GOES.

SECTION D–D

TYPICAL DIKE CROSS SECTION
SCALE: 3"=1'-0"

FIGURE D–3

REV.	DESCRIPTION	DRAWN BY	DATE	APPR. BY
A	RCRA PART B SUBMITTAL	K.M.C.	7/2/08	M.C.

REFERENCE DRAWINGS

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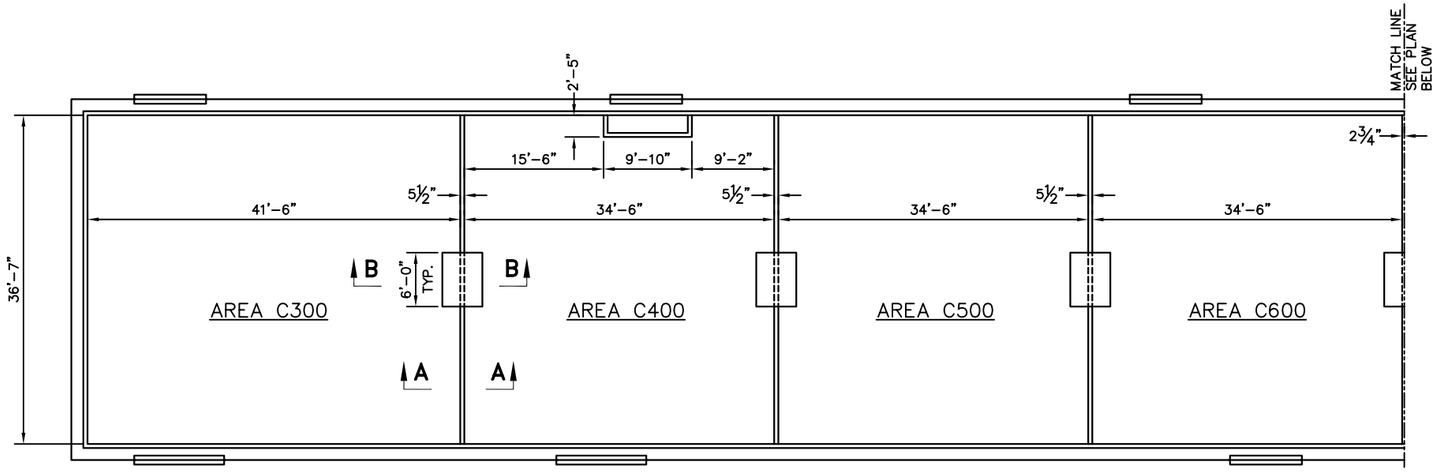
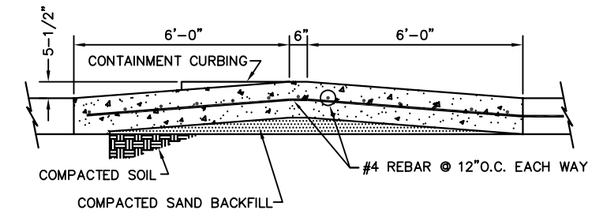
DRAWN	CHECKED	SCALE	DATE
K.M.C.	M.C.	3/16"=1'-0"	06/26/08

TITLE
CLEAN HARBORS KANSAS, LLC
WICHITA FACILITY
PROCESS BUILDING

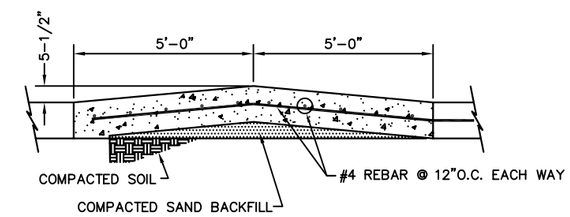
DRAWING NO. P 200 — REV. A



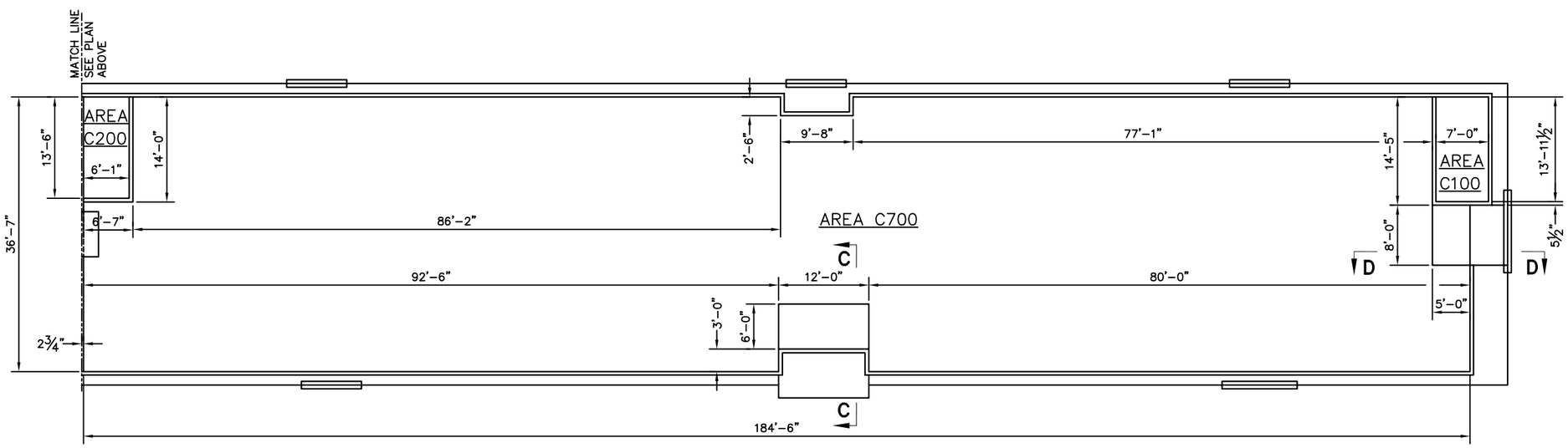
PLAN
BUILDING C



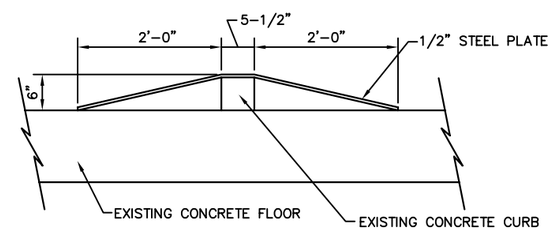
SECTION C–C
CONCRETE RAMP CROSS SECTION
SCALE: 1/2"=1'-0"



SECTION D–D
CONCRETE RAMP CROSS SECTION
SCALE: 1/2"=1'-0"

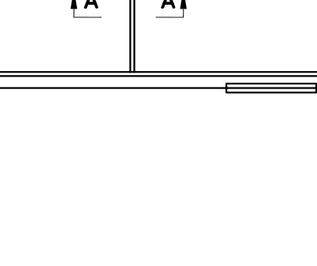


PLAN
BUILDING C



SECTION B–B
TYPICAL STEEL RAMP CROSS SECTION
SCALE: 1"=1'-0"

NOTES:
1. 3,000 psi CONCRETE.
2. No. 4 REBAR ON 24" CENTERS.
3. RAMPS FURNISHED AND INSTALLED BY HRI.
4. CONCRETE TO BE SANDBLASTED WHERE EPOXY BONDING GOES.



SECTION A–A
TYPICAL DIKE CROSS SECTION
SCALE: 3"=1'-0"

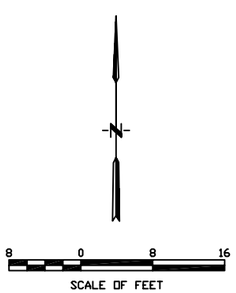


FIGURE D–4

REV.	DESCRIPTION	DRAWN BY	DATE	APPR. BY
A	RCRA PART B SUBMITTAL	K.M.C.	6/30/08	M.C.

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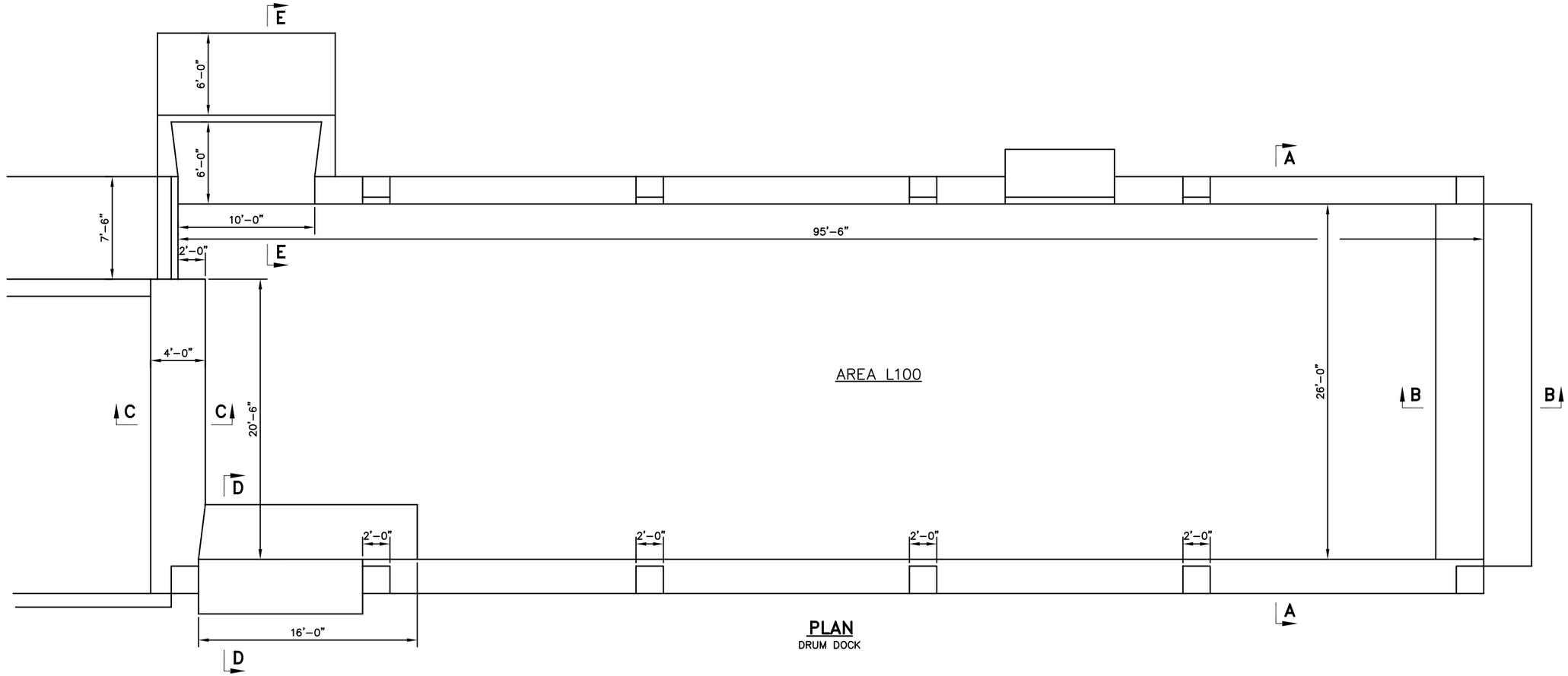
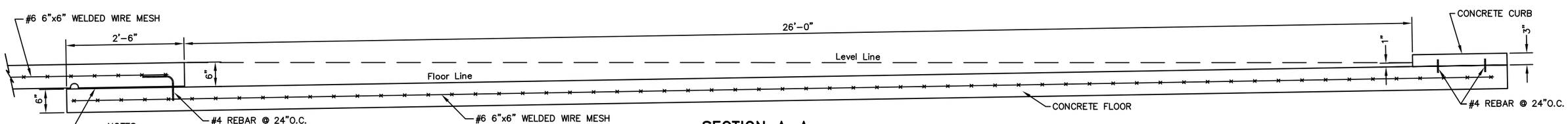
DRAWN	CHECKED	SCALE	DATE
K.M.C.	M.C.	1/8"=1'-0"	06/27/08

TITLE
CLEAN HARBORS KANSAS, LLC
WICHITA FACILITY
BUILDING C – DIKING AND RAMPS

DRAWING NO. C 500 REV. A

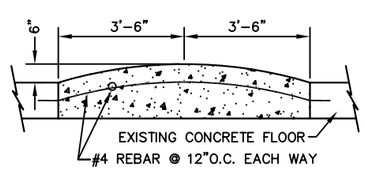


PLAN
DRUM DOCK

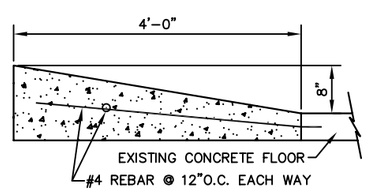


NOTES:
1. 3,000 psi CONCRETE.
2. No. 4 REBAR ON 24" CENTERS.
3. RAMPS FURNISHED AND INSTALLED BY HRI.
4. CONCRETE TO BE SANDBLASTED WHERE EPOXY BONDING GOES.

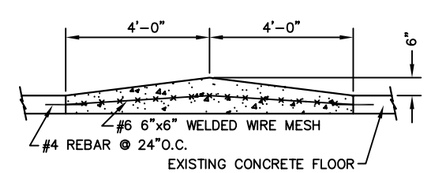
SECTION A–A
TYPICAL CURB CROSS SECTION
SCALE: 1"=1'-0"



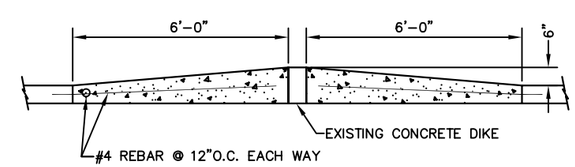
SECTION B–B
CONCRETE RAMP CROSS SECTION
SCALE: 1/2"=1'-0"



SECTION C–C
CONCRETE RAMP CROSS SECTION
SCALE: 1"=1'-0"



SECTION D–D
TYPICAL RAMP CROSS SECTION
SCALE: 1/2"=1'-0"



SECTION E–E
CONCRETE RAMP CROSS SECTION
SCALE: 1/2"=1'-0"

FIGURE D–5

N

4 0 4 8
SCALE OF FEET

REV.	DESCRIPTION	DRAWN BY	DATE	APPR. BY
A	RCRA PART B SUBMITTAL	K.M.C.	7/1/08	M.C.

REFERENCE DRAWINGS

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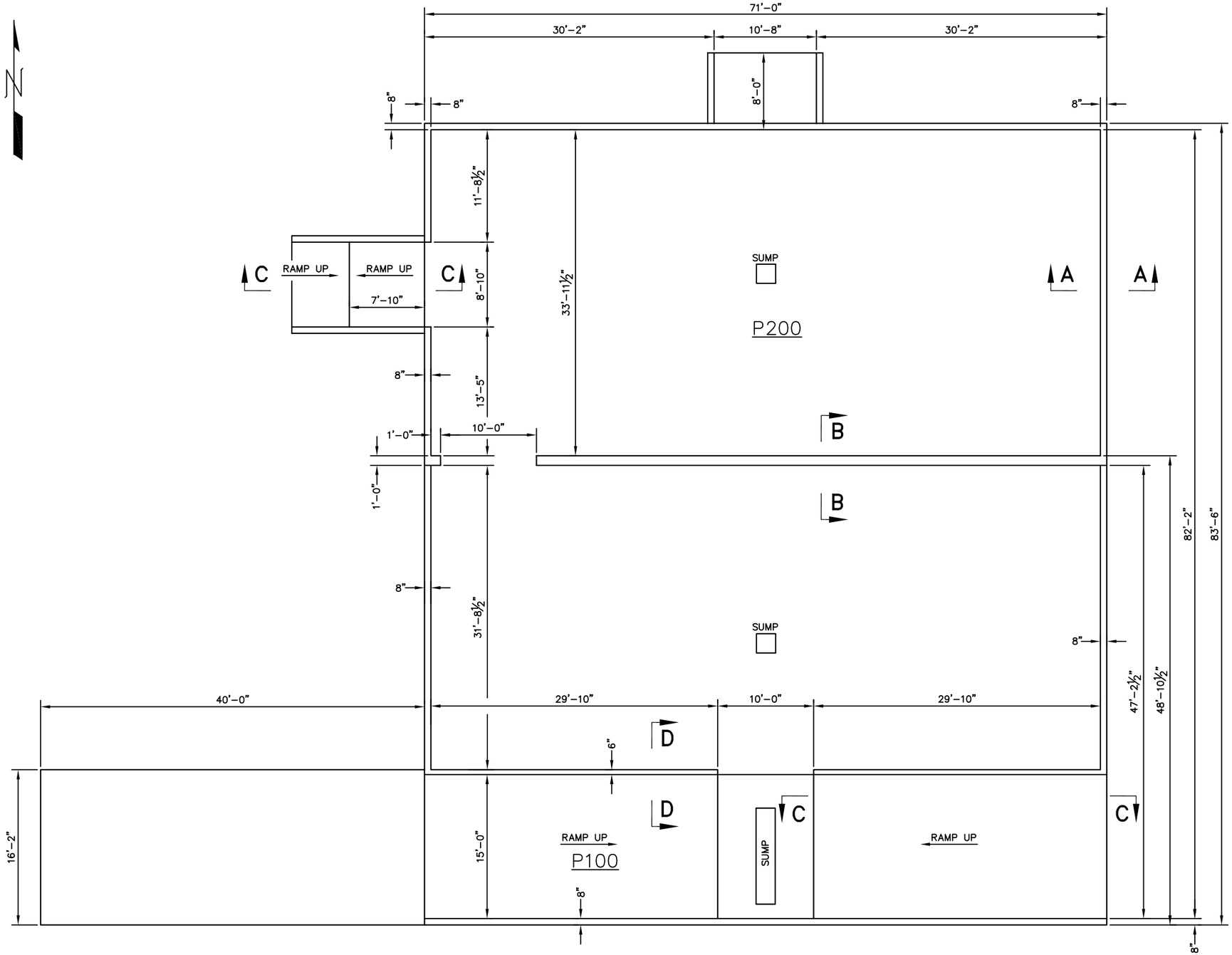
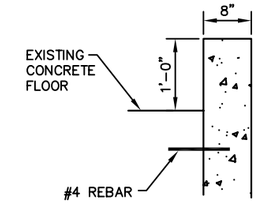
DRAWN	CHECKED	SCALE	DATE
K.M.C.	M.C.	1/4"=1'-0"	06/30/08

TITLE
CLEAN HARBORS KANSAS, LLC
WICHITA FACILITY
DRUM DOCK – DIKING AND RAMPS

DRAWING NO. L 100

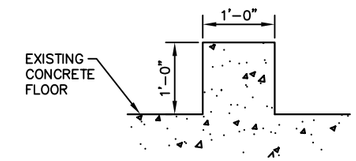
REV. A





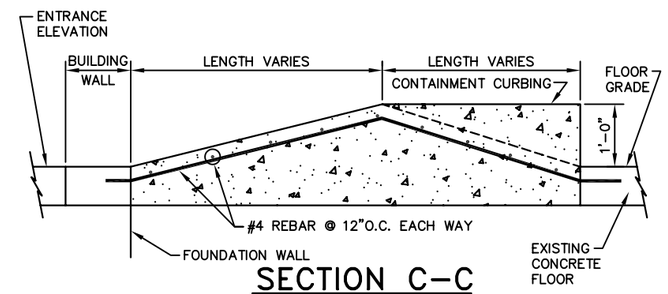
SECTION A–A

TYPICAL CURB CROSS SECTION
SCALE: 1"=1'-0"



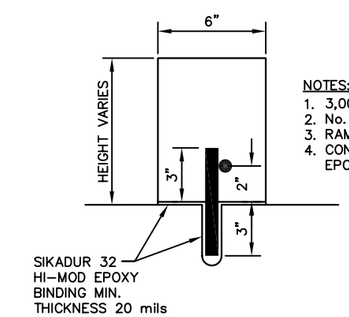
SECTION B–B

TYPICAL CURB CROSS SECTION
SCALE: 1"=1'-0"



SECTION C–C

TYPICAL CONCRETE RAMP CROSS SECTION
SCALE: NONE



NOTES:
1. 3,000 psi CONCRETE.
2. No. 4 REBAR ON 24" CENTERS.
3. RAMPS FURNISHED AND INSTALLED BY HRI.
4. CONCRETE TO BE SANDBLASTED WHERE EPOXY BONDING GOES.

SECTION D–D

TYPICAL DIKE CROSS SECTION
SCALE: 3"=1'-0"

FIGURE E–2

REV.	DESCRIPTION	DRAWN BY	DATE	APPR. BY
A	RCRA PART B SUBMITTAL	K.M.C.	7/1/08	M.C.

REFERENCE DRAWINGS

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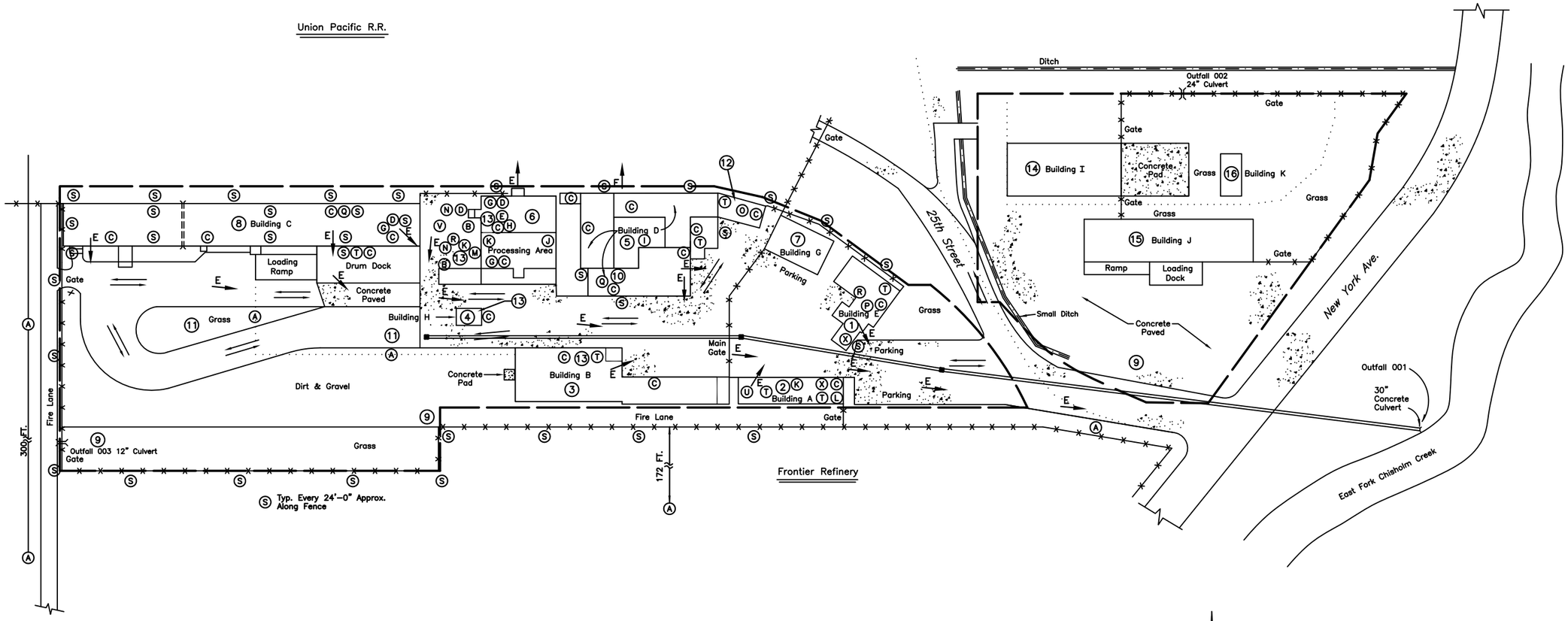
DRAWN	CHECKED	SCALE	DATE
K.M.C.	M.C.	3/16"=1'-0"	07/01/08

TITLE
CLEAN HARBORS KANSAS, LLC
WICHITA FACILITY
PROCESS BUILDING

DRAWING NO. P 100/P 200

REV. A



Emergency Equipment Legend:

- (A) Fire Hydrant
- (B) Portable 150 Lb. Fire Extinguisher
- (C) Hand–Held Fire Extinguisher
- (D) Emergency Alarm
- (E) Shovel
- (F) Portable P.A. System
- (G) Oil Absorbant
- (H) Empty Drums
- (I) Air Compressor
- (J) Flexible Hose & Quick Cplgs.
- (K) Shower & Eye Wash
- (L) Goggles & Face Shields
- (M) Organic Vapor Masks, SCBA, Body Harness
- (N) Protective Clothes & Boots
- (O) Portable Sump Pump
- (P) First Aid Kit
- (Q) Squeegee
- (R) Hardhats
- (S) No Smoking/Danger Signs
- (T) Telephone
- (U) Foam Equipment
- (V) Vehicles
- (W) Oxygen
- (X) Fire Blanket
- E → Evacuation Route

Building Legend:

1. Administration Offices, Building 'E'
2. Lab/Admin., Building 'A'
3. Building 'B'
4. Operations Office, Building 'H'
5. Building 'D'
6. Process Area
7. Break Room, Building 'G'
8. Hazardous Waste Management, Building 'C'
9. Monitoring Wells
10. Sparging/Hot Room Area
11. Remote Sprinkler Tie In
12. Maintenance
13. Emergency Showers
14. Hazardous Waste Management, Building 'I'
15. Building 'J'
16. Offices, Building 'K'

N

50 0 50 100
SCALE OF FEET

Legend:

- : Railroad Tracks
- : Fence
- : Property Line
- : Secondary Containment Berm or Wall
- : Pavement
- : Drainage Boundary
- : Storm Drain Catch Basins
- : Underground Storm Sewer Line
- : Truck Routes

FIGURE H–1

REV.	DESCRIPTION	DRAWN BY	DATE	APPR. BY
C	RCRA PART B SUBMITTAL UPDATE	K.M.C.	9/3/10	S.A.B.
B	RCRA PART B SUBMITTAL UPDATE	K.M.C.	3/27/09	M.C.
A	RCRA PART B SUBMITTAL	K.M.C.	6/20/08	M.C.

REFERENCE DRAWINGS

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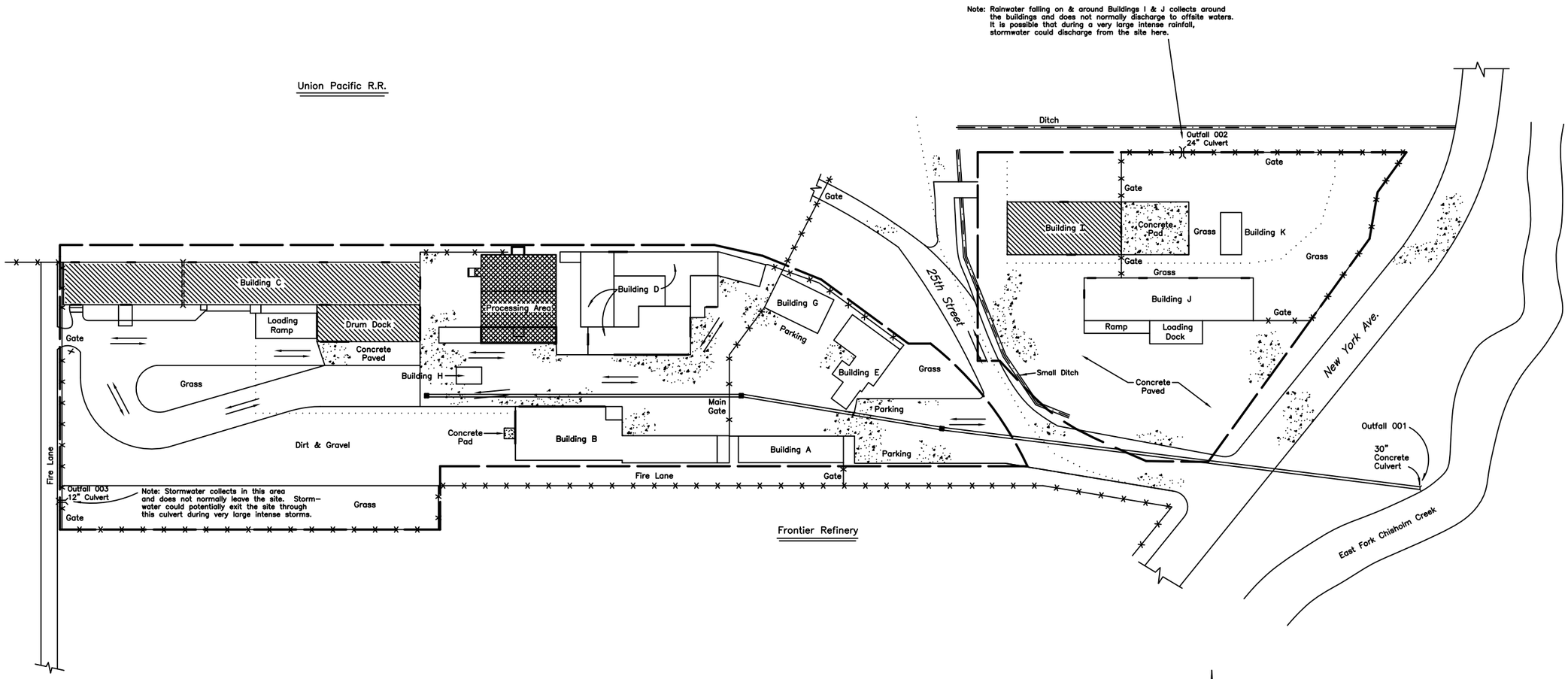
DRAWN	CHECKED	SCALE	DATE
K.M.C.	M.C.	AS NOTED	05/16/08

TITLE
CLEAN HARBORS KANSAS, LLC
WICHITA FACILITY
EMERGENCY EQUIPMENT/EVACUATION ROUTES PLAN

DRAWING NO. WICHFIRE
REV. C



Building Legend

Building A	Laboratory/Administration
Building C	Hazardous Waste Management Building
Building E	Administration
Building G	Personnel Decon/Break Room
Building H	Operations Office
Building I	Hazardous Waste Management Building
Processing Area	Hazardous Waste Management Area
Drum Dock	Hazardous Waste Management Area

Legend:

- : Railroad Tracks
- : Fence
- : Property Line
- : Container Storage Area
- : Container and Tank Storage Area
- : Loading and Unloading Area
- : Secondary Containment Berm or Wall
- : Pavement
- : Drainage Boundary
- : Storm Drain Catch Basins
- : Underground Storm Sewer Line
- : Truck Routes

N

50 0 50 100
SCALE OF FEET

FIGURE J–1

REFERENCE DRAWINGS	REV.	DESCRIPTION	DRAWN BY	DATE	APPR. BY
	C	RCRA PART B SUBMITTAL UPDATE	K.M.C.	9/3/10	S.A.B.
	B	RCRA PART B SUBMITTAL UPDATE	K.M.C.	3/27/09	M.C.
	A	RCRA PART B SUBMITTAL	K.M.C.	6/20/08	M.C.

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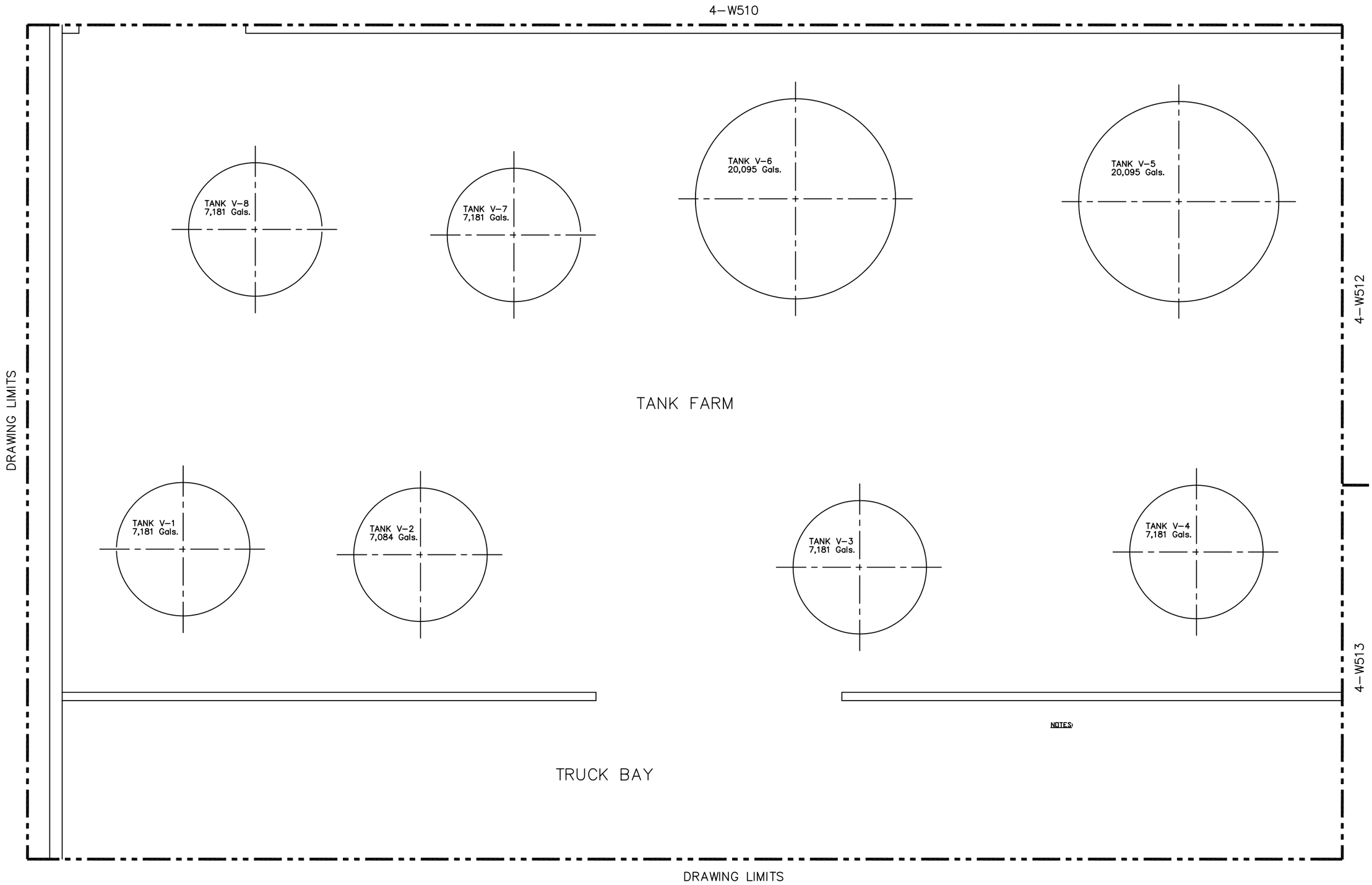
DRAWN	CHECKED	SCALE	DATE
K.M.C.	M.C.	AS NOTED	04/01/08

TITLE
CLEAN HARBORS KANSAS, LLC
WICHITA FACILITY
HAZARDOUS WASTE MANAGEMENT AREAS

DRAWING NO. HWMA
REV. C



NOTES:

FIGURE J–2

REV.	DESCRIPTION	DRAWN BY	DATE	APPR. BY
A	RCRA PART B SUBMITTAL	K.M.C.	6/20/08	M.C.

REFERENCE DRAWINGS

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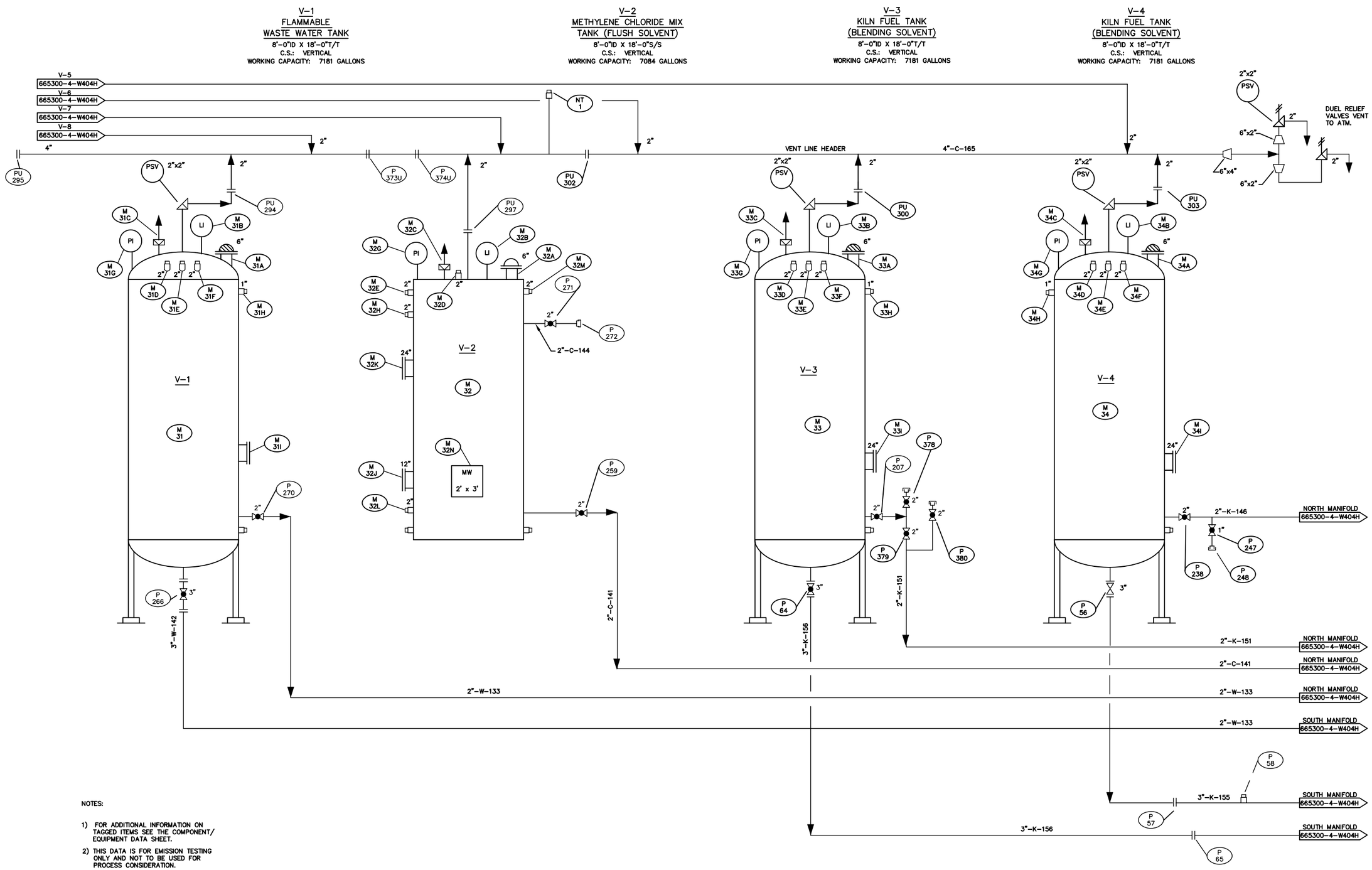
DRAWN	CHECKED	SCALE	DATE
K.M.C.	M.C.	3/8"=1'–0"	06/17/08

TITLE

CLEAN HARBORS KANSAS, LLC
WICHITA FACILITY
TANK FARM1/2 TANK LOCATIONS

DRAWING NO. TKFRM1/2–W511–1

REV. A



NOTES:

1) FOR ADDITIONAL INFORMATION ON TAGGED ITEMS SEE THE COMPONENT/ EQUIPMENT DATA SHEET.

2) THIS DATA IS FOR EMISSION TESTING ONLY AND NOT TO BE USED FOR PROCESS CONSIDERATION.

FIGURE 201

REV.	DESCRIPTION	DRAWN BY	DATE	APPR. BY
B	RCRA PART B SUBMITTAL UPDATE	K.M.C.	6/10/11	
A	RCRA PART B SUBMITTAL	K.M.C.	6/20/08	M.C.

REFERENCE DRAWINGS

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DRAWN	CHECKED	SCALE	DATE
K.M.C.	M.C.	NONE	06/17/08

TITLE

CLEAN HARBORS KANSAS, LLC
WICHITA FACILITY
PIPING & INSTRUMENTATION DIAGRAM
TANK FARM I/V-1, V-2, V-3 & V-4

DRAWING NO. P&ID-W404G

REV. B

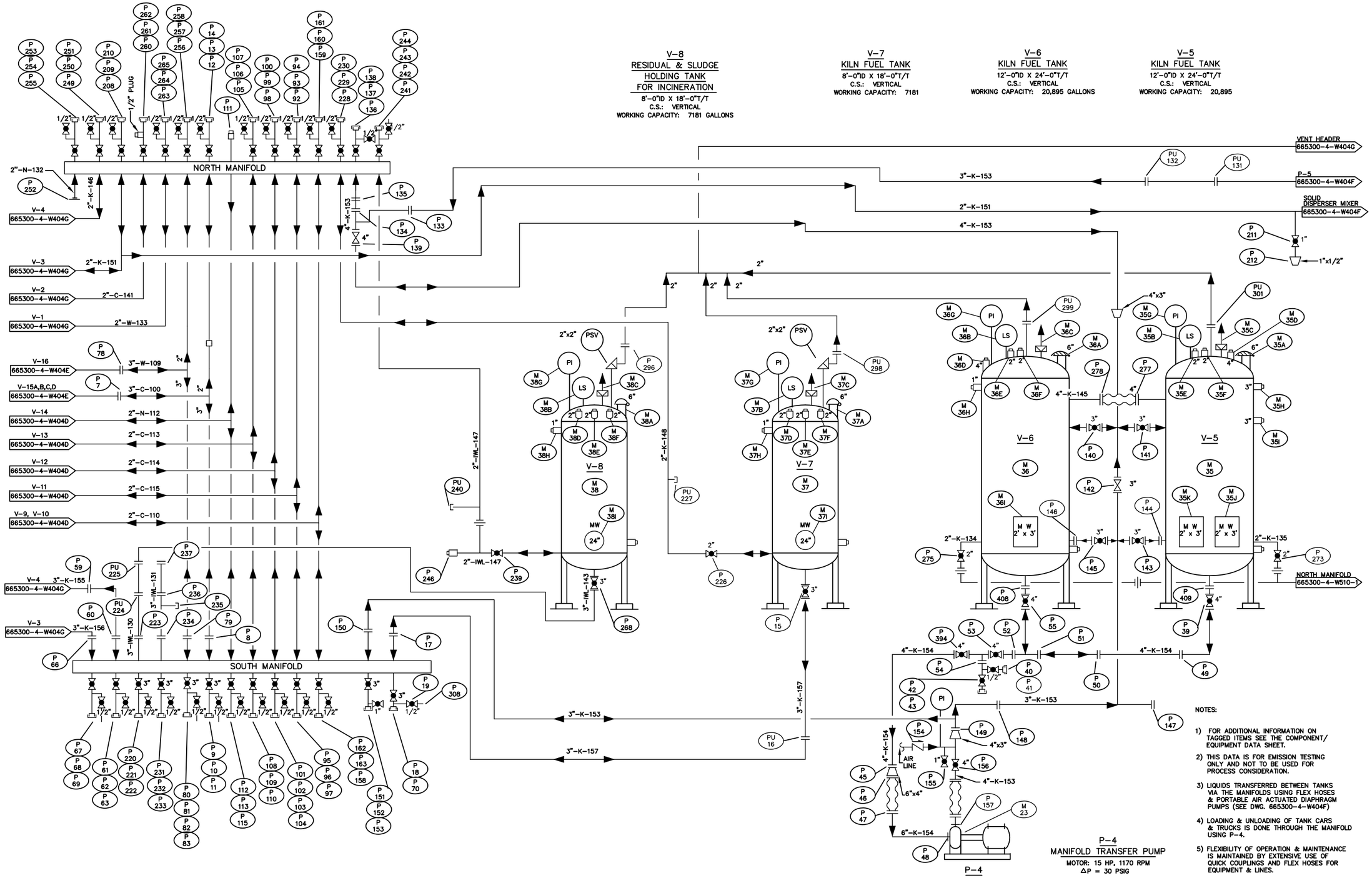

FIGURE 202

REV.	DESCRIPTION	DRAWN BY	DATE	APPR. BY
B	RCRA PART B SUBMITTAL UPDATE	K.M.C.	6/10/11	
A	RCRA PART B SUBMITTAL	K.M.C.	6/20/08	M.C.

REFERENCE DRAWINGS

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DRAWN	CHECKED	SCALE	DATE
K.M.C.	M.C.	NONE	06/17/08

TITLE
CLEAN HARBORS KANSAS, LLC
WICHITA FACILITY
PIPING & INSTRUMENTATION DIAGRAM
TANK FARM 2/V-5 , V-6, V-7 & V-8

DRAWING NO. P&ID-W404H

REV. B

K-1 Financial Assurance: 40 CFR 264.143

Clean Harbors Kansas, LLC (CHK) has chosen to use a Certificate of Insurance for Closure or Post Closure Care (CI) to meet facility closure financial assurance requirements. The CI is currently issued by Steadfast Insurance Company of Schaumburg, Illinois.

Appendix K-A, Financial Assurance Information, summarizes facility information, funds assured for closure, and details regarding the CI. The CI is amended annually for inflation as required by 40 CFR 264.142(b) for hazardous waste Treatment, Storage, and Disposal (TSD) facilities operating under a Hazardous Waste Permit. The facility closure cost estimate and corresponding funding instrument will be adjusted on an annual basis for: 1) inflation; and 2) whenever facility changes affecting closure costs occur. A copy of the CI is presented in Appendix K-B, Certificate of Insurance for Closure or Post Closure Care.

One of the options specified in 40 CFR 264.143 paragraphs (a) through (f) must be established to provide financial assurance for closure of a TSD facility. CHK may convert the financial instrument described above to an alternate option specified by federal regulations.

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List of Appendices i

List of Acronyms i

K-1 Financial Assurance: 1

K-2 Insurance Coverage: 2

K-3 Notice in Deed: 3

List of Appendices

Appendix K-A, Financial Assurance Information
Appendix K-B, Certificate of Insurance for Closure or Post Closure Care
Appendix K-C, Hazardous Waste Certificate of Insurance
Appendix K-D, Notice in Deed

List of Acronyms

Clean Harbors Kansas, LLC (CHK)
Certificate of Insurance for Closure or Post Closure Care (CI)
Treatment, Storage and Disposal (TSD)
Kansas Administrative Regulations (KAR)

K-2 **Insurance Coverage:** 40 CFR 264.147

CHK maintains insurance policies to cover general liability, automobile liability, workers compensation, employers' liability and environmental impairment liability (pollution legal liability). The environmental impairment liability includes both sudden and non-sudden pollution coverage. A copy of the Hazardous Waste Facility Certificate of Insurance for accidental occurrences is presented in Appendix K-C, Hazardous Waste Certificate of Insurance.

K-3 **Notice in Deed:** 40 CFR 119(b)(1)

In compliance with Kansas Administrative Regulations (KAR) 28-31-8(c) and in anticipation of Post-closure Notices required of TSDFs, CHK has submitted correspondence dated April 16, 1991 regarding property use for hazardous waste management activities to the Registrar of Deeds for Sedgwick County. Copies of these documents are presented in Appendix K-D, Notice in Deed.

Appendix K-A

Financial Assurance Information

Facility Information

EPA ID NO:	KSD007246846
Facility Name:	Clean Harbors Kansas, LLC
Facility Location:	2549 North New York, Wichita, Kansas 67219

Certificate of Insurance for Closure or Post Closure Care (CI)

CI Policy Number:	ENC 5254308-02
Issuing Institution:	Steadfast Insurance Company, Schaumburg, IL
Execution Date:	September 6, 2006
Funds Assured:	$ 1,698,848

KANSAS CERTIFICATE OF INSURANCE
FOR CLOSURE OR POST-CLOSURE CARE

Name and Address of Insurer (herein called the "Insurer"):	Steadfast Insurance Company 1400 American Lane Schaumburg, Illinois 60196
Name and Address of Insured (herein called the "Insured"):	Clean Harbors, Inc. 42 Longwater Drive Norwell, MA 02061
Facilities Covered:	EPA Identification No. KSD 981-506-025 Clean Harbors PPM, LLC 2474 Highway 169 North Industrial Park Coffeyville, KS 67337 Closure Costs: $2,242,285 Corrective Action Costs : $2,407,578
	EPA Identification No. KSD 007-246-846 Clean Harbors Kansas, LLC 2549 North New York Street Wichita, KS 67219 Closure Costs: $1,698,848
Face Amount:	$6,348,711
Policy Number:	BNC 5254308-02
Effective Date:	September 6, 2006

The Insurer hereby certifies that it has issued to the Insured the policy of insurance identified above to provide financial assurance for closure for the facilities identified above. The Insurer further warrants that such policy conforms in all respects with the requirements of 40 CFR 264.143(e), 264.145(e), 265.143(d), and 265.145(d), as applicable and as such regulations were constituted on the date shown immediately

below. It is agreed that any provision of the policy inconsistent with such regulations is hereby amended to eliminate such inconsistency.

Whenever requested by the Secretary of the Kansas Department of Health and Environment, the Insurer agrees to furnish to the Secretary a duplicate original of the policy listed above, including all endorsements thereon.

I hereby certify that the wording of this certificate is identical to the wording specified in 40 CFR 264.151(e) as such regulations were constituted on the date shown immediately below.

Chris DeLauder – Regional Vice President

Authorized Representative of: Steadfast Insurance Company
Administrative Officer
1400 American Lane
Schaumburg, IL 60196-1056

Signature of witness or notary:

Date: 4/2/2008

CERTIFICATE HOLDER

Secretary of the Kansas Department of Health & Environment
Kansas Department of Health & Environment
Bureau of Waste Management
1000 SW Jackson, Suite 320
Topeka, KS 66612

Appendix K-B

Certificate of Insurance for Closure or Post Closure Care

Client# 2749 CLEANH05

ACORD™ CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY) 9/6/06

PRODUCER
William Gallagher Associates
Insurance Brokers, Inc.
470 Atlantic Avenue
Boston, MA 02210

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

INSURED
Clean Harbors Environmental Services
Inc. Its Subsidiary
& Affiliated Companies
42 Longwater Drive Norwell, MA 02061

INSURERS AFFORDING COVERAGE	NAIC #
INSURER A: Steadfast Insurance Company	26387
INSURER B:	
INSURER C:	
INSURER D:	
INSURER E:	

COVERAGES

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	ADD'L INSRD	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS	
		GENERAL LIABILITY				EACH OCCURRENCE	$
		COMMERCIAL GENERAL LIABILITY				DAMAGE TO RENTED PREMISES (Ea occurrence)	$
		CLAIMS MADE / OCCUR				MED EXP (Any one person)	$
						PERSONAL & ADV INJURY	$
						GENERAL AGGREGATE	$
		GEN'L AGGREGATE LIMIT APPLIES PER: POLICY / PRO-JECT / LOC				PRODUCTS - COMP/OP AGG	$
		AUTOMOBILE LIABILITY				COMBINED SINGLE LIMIT (Ea accident)	$
		ANY AUTO					
		ALL OWNED AUTOS				BODILY INJURY (Per person)	$
		SCHEDULED AUTOS					
		HIRED AUTOS				BODILY INJURY (Per accident)	$
		NON-OWNED AUTOS					
						PROPERTY DAMAGE (Per accident)	$
		GARAGE LIABILITY				AUTO ONLY - EA ACCIDENT	$
		ANY AUTO				OTHER THAN AUTO ONLY: EA ACC	$
						AUTO ONLY: AGG	$
		EXCESS/UMBRELLA LIABILITY				EACH OCCURRENCE	$
		OCCUR / CLAIMS MADE				AGGREGATE	$
							$
		DEDUCTIBLE					$
		RETENTION $					$
		WORKERS COMPENSATION AND EMPLOYERS' LIABILITY				WC STATU-TORY LIMITS / OTH-ER	
		ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? If yes, describe under SPECIAL PROVISIONS below				E.L. EACH ACCIDENT	$
						E.L. DISEASE - EA EMPLOYEE	$
						E.L. DISEASE - POLICY LIMIT	$
A		OTHER Closure, Post Closure, Corrective Action	ENC3681588-04	9/6/06	9/6/09		

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES / EXCLUSIONS ADDED BY ENDORSEMENT / SPECIAL PROVISIONS

CERTIFICATE HOLDER

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE

Certificate of Closure Insurance
Attachment A

INSURER:	Steadfast Insurance Company, a Subsidiary of Zurich-American Insurance Group (Best's Rating: A XV)
INSURED:	Clean Harbors, Inc. & Subsidiaries 42 Longwater Drive Norwell, MA 02061
POLICY PERIOD:	9/6/06 – 9/06/09
COVERED FACILITIES:	The coverage afforded under this policy applies to the following facilities:

State	*Facility*	*EPA Identification No.*	*Policy*
AR	Clean Harbors El Dorado, LLC, 309 American Circle El Dorado, AR 71730	ARD069748192	ENC9678036-00
AZ	Clean Harbors Arizona, LLC 1340 West Lincoln St., Phoenix, AZ 85007	AZD049318009	ENC5254317-02
CA	Clean Harbors Los Angeles, LLC 5756 Alba Street, Los Angeles, CA 90058	CAD050806850	ENC5254327-02
CA	Clean Harbors San Jose, LLC 1021 Beressa, San Jose, CA 95133	CAD059494310	ENC5254327-02
CA	Clean Harbors Buttonwillow, LLC 2500 W. Lokern Rd., Buttonwillow, CA 93206	CAD980675276	ENC5254327-02
CA	Clean Harbors Westmorland, LLC 5295 S. Garvey Rd., Westmorland, CA 92281	CAD000633164	ENC5254327-02
CA	Clean Harbors Wilmington, LLC 1737 E. Denni Wilmington CA 90744	CAD044429835	ENC5254327-02
CO	Clean Harbors Deer Trail, LLC 108555 East Hgwy. 36, Deer Trail, CO 80195	COD991300484	ENC5254333-02
CT	Clean Harbors of Connecticut, Inc., 51 Broderick Road, Bristol, CT 06010	CTD000604488	ENC3681588-04
FL	Clean Harbors Florida, LLC 170 Bartow Municipal Airport, Bartow, FL 33830	FLD980729610	ENC5254338-02
GA	Clean Harbors PPM, LLC 1875 Forge St., Tucker, GA 30084	GAD980839187	ENC5255062-02
IL	Clean Harbors Services, Inc., 11800 South Stony Island Avenue, Chicago, IL 60617	ILD000608471	ENC3681588-04
IL	Clean Harbors Pecatonica, LLC 6125 N. Pecatonica Rd., Pecatonica, IL 61063	ILD980502744	ENC5254304-02
KS	Clean Harbors Kansas, LLC 2549 N. New York St., Wichita, KS 67219	KSD007246846	ENC5254308-02
KS	Clean Harbors Coffeyville, LLC Hgwy. 169 North, Industrial Pk, Coffeyville, KS 67337	KSD981506025	ENC5254308-02
LA	Clean Harbors Plaquemine, LLC 32655 Gracie Lane., Plaquemine, LA 70764	LAD000778514	ENC5254310-02
LA	Baton Rouge Disposal, LLC 13351 Scenic Hgwy., Baton Rouge, LA 70807	LAD010395127	ENC5254310-02
LA	Clean Harbors White Castle, LLC 52735 Clark Rd., White Castle, LA 70788	TD0471410	ENC5254310-02
LA	Clean Harbors Colfax, LLC 3763 Hgwy 471, Colfax, LA 71417	LAD981055791	ENC5254310-02

State	Facility	EPA Identification No.	Policy
LA	Crowley Disposal, LLC 2029 Bayou Plaquemine Rd., Rayne, LA 70527	LAD079464095	ENC5254310-02
MA	Clean Harbors of Braintree, Inc., 1 Hill Avenue, Braintree, MA 02184	MAD053452637	ENC3681588-04
MA	Clean Harbors of Natick, Inc., 10 Mercer Road, Natick, MA 01760	MAD980523203	ENC3681588-04
MA	Clean Harbors Kingston Facility Corporation, 30 Joseph Street, Kingston, MA 02364	MA5000000034	ENC3681588-04
MA	Murphy's Waste Oil Services, Inc., 252 Rear Salem Street, Woburn, MA 01801	MAD066588005	ENC3681588-04
MD	Clean Harbors of Baltimore, Inc., 1910 Russell Street, Baltimore, MD 21230	MDD980555189	ENC3681588-04
MD	Clean Harbors Laurel, LLC 3527 Whiskey Bottom Rd., Laurel, MD 20724	MDD980554653	ENC5254307-02
ME	Clean Harbors Environmental Services, Inc., 37 Rummery Road, South Portland, ME 04106	MED980672182	ENC3681588-04
MO	Clean Harbors PPM, LLC 806 Genessee, Kansas City, MO 64101	MOD069277549	ENC5254308-02
NC	Clean Harbors Reidsville, LLC 208 Watlington Industrial Dr., Reidsville, NC 27320	NCD000648451	ENC5255062-02
ND	Sawyer Disposal Services, LLC PO Box 168, 12400 247th Ave SE, Sawyer, ND 58781	ND0000351270	ENC5254314-02
NE	Clean Harbors Environmental Services, Inc., Highway 71, 5 Miles South of Kimball Kimball, NE 69145	NED981723513	ENC3681588-04
NJ	Bridgeport Disposal, LLC Rte. 322 & I-295 Bridgeport, NJ 08014	NJD053288239	ENC5254316-02
OH	Spring Grove Resource Recovery, Inc., 4879 Spring Grove Avenue, Cincinnati, OH 45232 (*TSCA*)	OHD000816629	ENC5255062-02
OH	Spring Grove Resource Recovery, Inc., 4879 Spring Grove Avenue, Cincinnati, OH 45232 (*RCRA*)	OHD000816629	ENC3681588-04
OH	Clean Harbors PPM, LLC 1672 E. Highland Rd., Twinsburg, OH 44087	OHD986975399	ENC5255062-02
OH	Clean Harbors PPM, LLC 1302 West 38th Street, Ashtabula, OH 44004	OHD981093420	ENC5255062-02
OH	GSX Disposal, LLC 7415 Bessemer Ave., Cleveland, OH 44127	OHD980569438	ENC5254597-02
OH	GSX Disposal, LLC 2516 Train St., Cleveland, OH 44113	OHD077786309	ENC5254597-02
OK	Clean Harbors Lone Mountain, LLC 5 Miles East and 1 Mile North of the Junction of US Highway 281 and US Highway 412, Waynoka, OK 73860	OKD065438376	ENC5254602-02
OK	Clean Harbors Lone Mountain, LLC 37647 Ellis Road Avard, OK 73717	OK0000070136	ENC5255062-02
OK	Tulsa Disposal, LLC 5324 W. 46th St. South Tulsa, OK 74107	OKD000632737	ENC5255062-02
PA	Clean Harbors PPM, LLC 4105 Whitaker Ave., Philadelphia, PA 19124	PAD981113749	ENC5255062-02
SC	Roebuck Disposal, LLC 301 Railroad Rd., Roebuck, SC 29376	SCD981467616	ENC5254603-02
TN	Clean Harbors Tennessee, LLC	TND000645770	ENC5254588-02

State	Facility	EPA Identification No.	Policy
	2815 Old Greenbrier Pike, Greenbrier, TN 37073		
TN	Clean Harbors Antioch, LLC 1640 Antioch Pike, Antioch, TN 37013	TND00772277	
TN	Clean Harbors Chattanooga, LLC 3300 Cummings Rd., Chattanooga, TN 37419	982141392	ENC5873125-02
TX	Clean Harbors Environmental Services, Inc. 131 N. Richey Road, Pasadena, TX 77506	A85519	ENC5254601-02
TX	Clean Harbors Environmental Services, Inc. 1410 Industrial Road, Royse City, TX 75189	A85468	ENC5254601-02
TX	Clean Harbors LaPorte, LP 500 Battleground Road, LaPorte TX 77571	A85635	ENC5254601-02
TX	Clean Harbors La Porte, LP 500 Battleground Rd., La Porte, TX 77571	TXD982290140	ENC5254601-02
TX	Altair Disposal Services, LLC 2 mi North of Altair, left side of Highway 71, Altair, TX 77412	TXD980624274	ENC5254601-02
TX	Clean Harbors Deer Park, LP 2027 Battleground Rd., Deer Park, TX 77536	TXD055141378	ENC5254601-02
TX	Disposal Properties, LLC 4303 Profit Dr., San Antonio, TX 78219	TXD052649027	ENC5254601-02
UT	Clean Harbors Grassy Mountain, LLC Ex. 41 off I-80 3 mi E, 7 mi N of Knolls, Knolls, UT 84029	UTD991301748	ENC5255058-02
UT	Clean Harbors Aragonite, LLC 11600 N. Aptus Rd., Aragonite, UT 84029	UTD981552177	ENC5257050-02
UT	Clean Harbors, Inc Exit 49 off I-80 3.5 miles south, Clive, UT 84083	UTD982595795	ENC5257047-02

Appendix K-C

Hazardous Waste Certificate of Insurance

ACORD™ # CERTIFICATE OF LIABILITY INSURANCE

Date: 4/29/08

PRODUCER
Willis North America, Inc.
26 Century Blvd
Nashville, TN 37214

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

INSURED
Clean Harbors Environmental Services, Inc.
and its affiliates.
42 Longwater Drive
Norwell, MA 02061

INSURERS AFFORDING COVERAGE		NAIC#
INSURER A	Zurich American Insurance Company	16535-002
INSURER B	American Guarantee and Liability Insurance	26247-003
INSURER C	Steadfast Insurance Company	26387
INSURER D		
INSURER E		

COVERAGES

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED, NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN. THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

CO LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY	LIMITS	
A	GENERAL LIABILITY X COMMERCIAL GENERAL LIABILITY CLAIMS MADE / X OCCUR X XCU X Contractual GEN'L AGGREGATE LIMIT APPLIES PER: POLICY / X PROJECT / LOC	GLO 9681229-01	11/1/2007	11/1/2008	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS-COMP/OP AGG	$2,000,000 $ 100,000 $ 5,000 $2,000,000 $3,000,000 $2,000,000
A	AUTOMOBILE LIABILITY X ANY AUTO ALL OWNED AUTOS SCHEDULED AUTOS HIRED AUTOS NON-OWNED AUTOS X MCS-90	BAP 6681231-01	11/1/2007	11/1/2008	COMBINED SINGLE LIMIT BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE	$5,000,000 $ $ $
	GARAGE LIABILITY ANY AUTO				AUTO ONLY – EA ACCIDENT OTHER THAN AUTO ONLY EACH ACCIDENT AGGREGATE	$ $ $ $
B	EXCESS LIABILITY X OCCUR / CLAIMS MADE DEDUCTIBLE RETENTION $	AUC4275262-03	11/1/2007	11/1/2008	EACH OCCURRENCE AGGREGATE	$10,000,000 $10,000,000 $
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? If yes, describe under SPECIAL PROVISIONS below	WC 9681232-01	11/1/2007	11/1/2008	X WC STATUTORY LIMITS / OTHER E.L. EACH ACCIDENT E.L. DISEASE-EA EMPLOYEE E.L. DISEASE-POLICY LIMIT	$ 2,000,000 $ 2,000,000 $ 2,000,000
C	OTHER Contractors Pollution Liability	PEC365668112	11/1/2007	11/1/2008	$10,000,000 $10,000,000	Each Claim All Claims

C — DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/EXCLUSIONS ADDED BY ENDORSEMENT/SPECIAL PROVISIONS
Environmental Impairment Liability #PLC374393608 5/1/08-11/1/08 $10,000,000 Each Claim/Aggregate

CERTIFICATE HOLDER

For Reference Purposes Only

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING COMPANY WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO MAIL SUCH NOTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE COMPANY, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE

©ACORD CORPORATION 1988

Appendix K-D

Notice in Deed

Sedgwick County Courthouse
4th Floor
Registrar of Deeds
525 N. Main
Wichita, Ks. 67203

4/16/91

Dear Registrar of Deeds

This letter serves as official owner notification for the property at 2549 N. New York Ave., HRI operated property.

North Industrial Park Fourth Addition,

block 2, lot 1 Key Number 87-0- -B-1 3826-012583-6703

This is in accordance with Kansas environmental regulation K.A.R. 28-31-8c. This property has been used to manage hazardous waste and all records regarding permits, closure or both are available for review at the Kansas Department of Health and Environment offices in Topeka.

David Trombold

David Trombold
Vice President
Associated Chemical, Inc.

MONICA D. BORDEN
Notary Public - State of Kansas
My Appt. Expires 2-16-94

Monica D. Borden
9-13-91

For an acknowledgment in a reprsentative capacity:
State of Kansas
(County) of Sedgwick
This instrument was acknowledged before me on
September 13, 1991
by David Trombold
as Vice President
of Associated Chemical, Inc.

Monica D. Borden
(Signature of notarial officer)

Title (and Rank)

Sedgwick County Courthouse
4th Floor
Registrar of Deeds
525 N. Main
Wichita, Ks. 67203

4/16/91

Dear Registrar of Deeds

This letter serves as official owner notification for the property at 2549 N. New York Ave., HRI operated property.

North Industrial Park Fourth Addition,

		Key Number
block 1,	lot 2	89-0- -B-13819-060842-6703
	lot 3	89-0- -B-13820-026393-6703
	lot 4	89-0- -B-13821-026394-6703
	lot 5	89-0- -B-13822-026395-6703

This is in accordance with Kansas environmental regulation K.A.R. 28-31-8c This property has been used to manage hazardous waste and all records regarding permits, closure or both are available for review at the Kansas Department of Health and Environment offices in Topeka.

David Trombold

David Trombold

MONICA D. BORDEN
Notary Public - State of Kansas
My Appt. Expires 2-16-94

Monica D. Borden
9-13-91

For an acknowledgment in a representative capacity:
State of Kansas
(County) of Sedgwick
This instrument was acknowledged before me on
September 13, 1991
by David Trombold
as Vice President
of Associated Chemical, Inc.

Monica D. Borden
(Signature of notarial officer)

Title (and Rank)

Clean Harbors Kansas, LLC
RCRA Permit Application
Section L
Solid Waste Management Units and Corrective Action

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L-1a **Description of Solid Waste Management Units:** .....Page 2

L-2 **Information Pertaining to Releases:**.....Page 3

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February 10, 2012
Revision No. 15

List of Figures

Figure L.1, Location of SWMUs, AOCs, and OAs -

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Appendix L-A, RCRA Facility Investigation report
Appendix L-B, SWMU, AOC, OA
Appendix L-C RFI Addendum

Acronym Table

Solid Waste Management Unit (SWMU)
Clean Harbors Kansas, LLC (CHK)
Kansas Administrative Regulations (KAR)
United States Environmental Protection Agency (USEPA)

L-1 Information Requirements for Solid Waste Management Units: 40 CFR 270.14(d)

The purpose of this section is to provide information regarding the Solid Waste Management Unit (SWMU)s at the Clean Harbors Kansas, LLC facility located in Wichita, Kansas. This section is provided to fulfill the requirements of the Kansas Administrative Regulations (KAR), Title 28, Article 31 and 40 CFR Part 270. Article 31, Hazardous Waste Management Standards and Regulations, of the KAR incorporates, with few additions, the RCRA regulations contained in 40 CFR Parts 260 through 270. Therefore, this section will refer only to the federal regulations. A copy of the Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) of the Clean Harbors Kansas, LLC facility (the facility) is located in Appendix L-A .The site was formerly owned by Safety-Kleen (Wichita), Inc. The subject site is located at 2549 New York Avenue, in an industrialized area of Wichita. The RFI report was originally submitted to the United States Environmental Protection Agency (USEPA) and the Kansas Department of Health and Environment (KDHE) on January 20, 2003. The revised RFI report was submitted in October 2004. An RFI Addendum was submitted to the agencies on August 29, 2005 and additional amended text for inclusion in the RFI was submitted on January 20, 2006. The RFI and RFI Addendum were approved with comment by the EPA on April 28, 2006. Clean Harbors Kansas continues to work with KDHE and USEPA as part of the on-going corrective action program.

L-1a Description of Solid Waste Management Units: 40 CFR 270.14(d)(1)

Type, Location and Description of the SWMUs:

Appendix L-B lists the location and general description of all SWMU located on site. In addition, Figure L-1 illustrates the location of each SWMU within the facility as required by 40 CFR 270(b)(19). Waste characterization information is contained inside the excerpt in appendix L-A.

Dates of Operation:

CHK is an existing waste management facility. However, the site has been used for other business purposes by companies which have sequentially located at the site for some forty years. The industrial district of the area developed over the past 95 years. The history of hazardous waste operations under EPA ID No. KSD007246846 began in 1979 with Reid Supply Co., Inc. Conservation Services, Inc. purchased certain assets, including the permit (e.g., from Reid Supply Co. in 1986. Subsequently, Hydrocarbon Recyclers, Inc. (HRI), a subsidiary of U.S. Pollution Control, Inc. (USPCI), acquired Conservation Services, Inc. in 1988. USPCI was owned by Union Pacific Corporation from 1988 through 1994. Laidlaw Environmental Services (LES) purchased USPCI in 1995; LES changed the name to Safety-Kleen (SK) Inc. after acquiring SK in 1998.

Effective September 7, 2002, Clean Harbors, Inc. purchased from Safety-Kleen Services, Inc. the Wichita site

Description of Wastes:

The CHK facility stores, treats, and recovers for recycling hazardous and nonhazardous wastes. The types of wastes managed in the RCRA regulated SWMUs are identified in Sections A (Part A Application) and C (Waste Characterization). The sampling and analysis provisions for managing these waste types are provided in Appendix C-A (Waste Analysis Plan) of Section C.

L-2 Information Pertaining to Releases: 40 CFR 270.14(d)(2)

CHK is not aware of any releases of hazardous waste or hazardous waste constituents from regulated units within the facility. Therefore, the information required under 40 CFR 270.14(d)(2) is not available (i.e., 40 CFR 270.14(d)(2) is not applicable).

A site inspection for the purpose of identifying potential SWMUs was completed by B. & V. Waste Science and Technology Corporation under contract Number 68-W9-0006 to United States Environmental Protection Agency (USEPA) Region VII in 1990

L-3 Superfund Activities

The CHK facility is located within the area identified as the North Industrial corridor

.Environmental Response, Compensation, and Liability Act or "Superfund" site in the Wichita

North Industrial District. The facility RFI report is attached as Appendix L-A

Appendix L-A

Facility RFI report

Appendix L-B
SWMU, AOC, OA

PROCESS AREA STORAGE TANKS (SWMU #1)

The Process Area Storage Tanks are located between Buildings C and D, along the northern margin of the property. The tanks were installed in June of 1988. There are eight (8) aboveground storage tanks constructed of carbon steel and located in a diked portion of the processing area. The materials handled in these tanks are various hazardous wastes including non-chlorinated petroleum based solvents and chlorinated solvents destined for onsite management, recycling as waste fuel, or transport offsite for additional management. Five (5) of the tanks have a 7,000-gallon capacity. There are two (2) 21,000 gallon capacity tanks used for storage of blendable wastes and a 7000-gallon capacity tank for non-chlorinated solvents. A 500-gallon tank is also used for storage of gasoline for use as fuel.

SWMU#2, Waste blending and drum processing area

The Waste blending and drum processing area is located between Buildings C and D, adjacent to the Process area Storage tanks (SMWU # 1). The materials handled in this area are various hazardous wastes including non-chlorinated petroleum based solvents and chlorinated solvents destined for onsite management, recycling as waste fuel, or transport offsite for additional management.

SWMU #3, Former Drum Processing area

The Former Drum Processing area is located between Buildings C and D, adjacent to the Process area Storage tanks (SMWU # 1). The materials handled in this area are various hazardous wastes including non-chlorinated petroleum based solvents and chlorinated solvents destined for onsite management, recycling as waste fuel, or transport offsite for additional management.

PROCESS AREA TRUCK BAY (SWMU #4)

The truck bay is used for the transfer of wastes between tanker trucks and the process area storage tanks (SWMU #1) to the north of the truck bay. The bay is ramped to the west and equipped with a centrally located blind trench sump. The bay is constructed with bermed curbs and a protective guardrail along the southern berm. No releases are known to have occurred from this area.

SPARGING AREA (SWMU #5)

Three steam-heated spargers, located in the southwest corner of Building D, were formerly used for stripping PCE from dry cleaning canisters and filters. The sparging area had a central sump. This process was initiated sometime between 1984 and 1986, but is no longer in operation at the facility. No historical releases are known to have occurred in this area.

HOT ROOMS (SWMU #6)

Two small enclosed rooms were kept at temperatures of up to 190 degrees and used to lower the viscosity of certain wastes such as waxes and greases prior to waste blending. This area is approximately 25x10x8 feet. No floor drains are present. This room is not currently in use. The wastes placed in this room were typically waxes and greases. No historical releases are known to have occurred in this area.

ELEVATED TANK STORAGE AREA (SWMU #7)

The tanks in the elevated tank storage area are located in the northwest corner of Building D and are installed approximately 15 feet above the floor level. The tanks vary in capacity from 2,000 to 9,000-gallons and are made of carbon steel. They were used to store recycled PCE, chlorinated solvents waste water, oils, diesel fuel, and nonhazardous waste oil. The tanks are currently out of service and have been emptied and cleaned. The area is equipped with containment controls and a collection sump. No historic releases are known in this area.

REGULATED WASTE STORAGE AREA (SWMU #8)

This area is located in the north central and northeastern part of Building D and is permitted as a regulated hazardous waste storage area, although the RFA describes it as a non-regulated storage area. Because there is no sprinkler system in this area, no flammable or reactive wastes are stored here. This area is diked to meet the requirements for storage of hazardous waste in containers. No releases have been reported from this area.

SOLIDS DRYER (SWMU #9)

This unit was formerly located in the southeastern corner of Building D, but is no longer in use. It was used to recover solvents from shredded dry cleaning filters. No releases were reported from this unit during its operation.

Drum Crusher (SWMU#10)

This unit is located between southwest corner of Building D and the Processing area. This unit was utilized to crush empty drums prior to disposal. Crushed empties from this SMWU would be placed in Crushed-drum Roll-off boxes located in SMWU #11

Crushed-drum Roll-off boxes (SWMU # 11)

This unit is located south of Building D. It is used to collect crushed empties from the drum crusher.

WARM ROOM (SWMU # 12)

This SWMU was in a former site building (Building F) located to the east of the northeast corner of Building C, almost against the northern site fence-line. The building was approximately 30 feet long, and the eastern two-thirds of the building housed the former warm room used during the winter months to thaw iced drums prior to waste processing. An office was located in the western third of the building. No historic releases were reported from this area.

Dock Area (SWMU #13)

The Drum Dock is utilized for container storage, treatment, and management. Waste managed in this area may be processed or treated in containers. Diking provides one (1) contained area in this building. A more detailed description is located in Section D of the Part B application.

Building C, Drum Storage Warehouse (SWMU #14)

Building C is utilized for container storage, treatment, and management. Waste managed in this area may be processed or treated in containers. Diking divides this building into seven (7) contained areas. A more detailed description is located in Section D of the Part B application

BUILDING J (SWMU #15)

Building J is a relatively large warehouse in the east area of the facility on what was previously operated as the RSC North Plant and subsequently used by SCSC (see "Site History", Section 2.2). It was historically used for drum storage of virgin flammable and chlorinated solvents, chemical product distribution, and as office space. It was also used by USPCI for storage of household wastes, consisting primarily of paint wastes. It is currently used for laboratory pack/repack operations. The building is elevated at dock level above the ground surface. No releases have been reported from this area of the facility.

CORROSIVE WASTE STORAGE AREA (SWMU #16)

Corrosive wastes are stored in Building B, located in the south-central part of the facility. Building B is divided into four container management units. The materials stored there include corrosive and non-ignitable hazardous wastes destined for off-site management, recycling as waste fuel, wastewater management, and solvent recovery or off-site transport for additional management. The storage capacity for the entire building is 55,000 gallons.

Dry Solids Gondola (SWMU #17)

A gondola (a closed-top roll-off box) owned by USPCI was located south of Building C and was reportedly formerly used for temporary storage of dry solids. At the time of the site visit for the RFA, it contained metals-impacted soil intended for landfill disposal. Wastes held in the gondola for subsequent landfill disposal included soil and debris impacted with metals, nonflammable dry paint solids containing no F-listed wastes, and non-blendable solids exhibiting some hazardous waste characteristics. This gondola is no longer in use. No releases have been reported in this area.

OPEN AREA ALONG SOUTHWESTERN CORNER OF SITE (SWMU #18)

This portion of the site has not historically been used for waste handling or processing. During a USEPA inspection in April 1984, the area along the western facility border was being used for empty drum storage. At that time, drummed waste was observed staged south of the drum storage warehouse, in an area east of the dry gondola area. A mound of tires was observed during the 1984 USEPA inspection. In June of 1988, during a KDHE inspection, an out-of-service distillation unit was sited in this area. This area is currently an open, undeveloped space. It has no known reported releases.

OPEN AREA NORTH OF BUILDING I (SWMU #19)

The open area north of Building I was used in the past for bulk storage of virgin solvents and the storage of drummed wastes by RSC up until about 1985. The area was later used by SCSC for the bulk storage of sulfuric and nitric acid in elevated aboveground tanks (north and east of Building I) up until about 1990 as part of an acid repackaging operation performed by SCSC. The drummed waste managed by RSC contained paint wastes, waste thinner, and liquid caustic. The virgin non-chlorinated solvents included acetone, xylene, toluene, isopropyl alcohol, methyl ethyl ketone, methanol, denatured alcohol, mineral spirits, and butyl cellosolve. An April 1984 USEPA inspection report noted that many of the drums were open and some were in a deteriorated condition. All drums had been removed from the site or overpacked for subsequent offsite disposal as observed during a July 1984 USEPA inspection. Surface staining was noted along the fenceline northeast of this building during the 1984 USEPA inspection of the site. The area is comprised of gravel and earthen cover.

PAINT CAN BURIAL PIT (SWMU #20)

Buried paint cans and paint related wastes were discovered in 1992 west of Building B by HRI, the owner at the time, during excavation for site improvements. The wastes were located in an area of approximately 20 ft^2, approximately 20 feet west of the southwestern corner of Building B. The waste area was excavated and residual soil samples were reportedly collected and were clean. Information on historical disposal in this area is not known; however, the property was used for paint manufacturing from the mid 1940s until 1979 and the burial likely predated RSC's purchase of the property in 1979.

CYCLONE (SWMU #21)

This piece of machinery was located within the south-central part of Building D, along the west wall of the shredder/granulator room; however the unit has been closed and the equipment removed. It was previously used to recover solid material from the shredder/granulator. It was located within well-maintained secondary containment. Potential for release from this unit was expected to have been low, since the machinery was mounted above grade within a building, underlain by concrete. No visible cracks or drains were observed near the cyclone.

OLD STILL AREA WEST OF BUILDING I (SWMU #22)

This area west of Building I was used in connection with solvent distillation and reclamation operations conducted by RSC at Building I. Solvent reclamation operation reportedly began in this area by RSC in 1982. The area is covered by concrete, just outside the southwest corner of Building I. This was not identified as a SWMU in the RFA, but was subsequently listed in the HSWA permit. The historic location of this SMWU has not been determined.

AREA EAST OF BUILDING I (SWMU #23)

This SMWU is the open space east of Building I and north of Building J. This area may have historically been used for bulk storage of solvents and drummed waste as described for SWMU #19, Area North of Building I. This was not identified as a SWMU in the RFA, but was subsequently listed in the HSWA permit.

AREA SOUTH OF BUILDING C (SWMU #24)

This area is open, undeveloped space on the site. Known historic features in this area are limited to those described in Section 2.5, which includes a review of aerial photographs. This was not identified as a SWMU in the RFA, but was subsequently listed in the HSWA permit.

LABORATORY SAMPLE STORAGE AREA (AOC #1)

This storage area was maintained in Building A for clients' samples awaiting analysis, but is no longer in use. It is a small closet-like room located on the south side of the building. There have been no known releases reported in this area.

Former Aboveground Fuel Tanks (AOC #2)

Two former elevated 500-gallon tanks used for fueling were located in the southwestern portion of the facility, west of Building B. One was used for unleaded gasoline and the other for diesel fuel. The tanks sat on steel frame supports. The area underlying the tanks was covered with gravel. No reported releases have occurred from this area, although overrun and spillage is common in fueling areas.

Building I (AOC #3)

This building was historically used for solvent distillation processing and acid repackaging. Chlorinated and nonchlorinated solvents were handled in this area, as well as virgin acids including sulfuric, nitric and hydrochloric. No known releases have been reported in this area.

CONCRETE VAULT (AOC #4)

A concrete vault, located in the northeastern portion of the facility, northwest of Building I, served as a discharge basin for cooling water during the solvent distillation process. Wastes previously

used in the area of the concrete vault included chlorinated and non-chlorinated solvents. No history of release is known for this area, and the vault is no longer in use. The vault currently appears to be filled with gravel at the ground surface.

The Lagoon Area (OA #1) was located in the southwestern portion of the site and observed in aerial photographs from 1960 and 1970.

Former ASTs (OA #2) were identified in a 1960 aerial photograph, located southeast of Building D in the central portion of the site.

Possible Former AST Area (OA #3) was potentially identified in the 1970 aerial photograph near the present Building G (Figure 5-7). B-37 was drilled in the vicinity of these possible ASTs to assess the presence of potential subsurface impacts.

The Possible Former Drum Storage Area (OA #4) was an area of possible historical drum storage at the current location of Building A and the area east of Building A.

Trench Leading to Ditch (OA #5) is an area in the northeastern part of the site, noted historically in the KDHE file review, where wastes were reportedly observed draining north to the E-W ditch that discharges to the East Fork of Chisholm Creek. The historic location of this SMWU has not been determined.

Northeastern Corner (OA #6) is an area of possible bulk storage of materials, waste solvent tanks, and waste handling located in the very northeastern corner of the property as noted in the 1983 aerial photograph and KDHE files.

Appendix L-C

RFI Addendum

Clean Harbors Kansas, LLC
RCRA Permit Application
Section M
Groundwater Monitoring

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M-1 Introduction

This section addresses groundwater monitoring per 40 CFR 270.14. Information contained in this section has been summarized from the results of a Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) of the Clean Harbors Kansas, LLC facility (the facility). The information in this section is based on that RFI. A copy of which is located in section L Appendix L-A .The site was formerly owned by Safety-Kleen (Wichita), Inc. The subject site is located at 2549 New York Avenue, in an industrialized area of Wichita. The RFI report was originally submitted to the United States Environmental Protection Agency (USEPA) and the Kansas Department of Health and Environment (KDHE) on January 20, 2003. The revised RFI report was submitted in October 2004. An RFI Addendum was submitted to the agencies on August 29, 2005 and additional amended text for inclusion in the RFI was submitted on January 20, 2006. The RFI and RFI Addendum were approved with comment by the EPA on April 28, 2006. Clean Harbors Kansas continues to work with KDHE and USEPA as part of the on-going corrective action program.

The RFI work was conducted in several phases beginning in November 1999. The work focused on an evaluation of the nature and extent of soil and groundwater quality impacts at various solid waste management units (SWMUs), areas of concern (AOCs), and several other areas (OAs) identified at the facility as part of the RFI. Each phase of work was conducted according to a USEPA approved work plan. The Phase I RFI Work Plan (Environmental Decision Group, Inc., 1999) was initially prepared in 1998 and final approval was received from the agencies on December 2, 1999. The Phase I Work Plan identified the initial sampling activities and provided a description of investigation methodologies, standard operating procedures (SOPs), and a Quality Assurance Plan (QAP) for the RFI. Subsequent phases of work were conducted in accordance with

approved work plan addenda consisting primarily of a Phase II Work Plan (Cameron-Cole, 2001) approved November 6, 2001, and a Phase III Work Plan (Cameron-Cole, 2002) approved July 18, 2002. The work plans and RFI activities were completed on behalf of Clean Harbors Kansas by Cameron-Cole, LLC, formerly Safety-Kleen Consulting, formerly, the Environmental Decision Group.

The facility lies within the North Industrial Corridor (NIC) site, which is a large industrialized area within Wichita that has been identified as having a dissolved groundwater plume of chlorinated volatile organic compounds (VOCs) present. Many potential responsible parties that currently own or previously owned property within this industrialized area are involved in the NIC investigation. As previously agreed upon by the agencies, the data collected for the purposes of the RFI will also serve as a potential source area investigation for the site with respect to the NIC chlorinated VOC plume.

The site is currently permitted to conduct regulated waste management activities including the management of paints and related wastes, batteries, fluorescent lights, incinerable hazardous solids, lab packs, mercury, household hazardous waste, off-specification and production wastes from industries, chlorinated and non-chlorinated petroleum-based waste solvents, plating wastes, and corrosives. Wastes that are received at the facility are directed to an appropriate off-site facility for final management.

The site is approximately six acres in size and lies within an industrialized area of north-central Wichita, Kansas. The property has been used for manufacturing and/or chemical waste handling for approximately 60 years. The site lies within the North Industrial Corridor (NIC), which includes most of the industrial corridor near the facility. The NIC, which includes over 4,000 acres of property, is undergoing its own environmental

investigation of a dissolved chlorinated VOC plume under the supervision of the City of Wichita, with oversight by KDHE.

M-2 Hydrogeology

The local shallow geology is comprised primarily of permeable alluvial sediments and terrace deposits underlain by the Wellington Shale, which is approximately 200 feet thick in the site vicinity. The unconsolidated sediments below the site are primarily gravelly clay with silt to approximately 7 to 17 feet, underlain by a sand unit, approximately 9 to 17 feet thick. A 2 to 4 foot thick clay layer is then encountered across most of the site, with the exception of the southwestern corner. Another 8 to 9 feet of sand underlie the clay. As mentioned above, these unconsolidated sediments are underlain by the Wellington Shale.

The depth to groundwater is generally less than 15 feet below ground surface (bgs) in the site vicinity. Across most of the site, the alluvial aquifer is separated into an upper and lower zone. Groundwater in the upper zone occurs under water table conditions and is approximately 10 to 12 feet thick. It is underlain by a clay unit approximately 2 to 4 feet thick. This clay layer pinches out in the southwestern portion of the site. The lower zone of the alluvial aquifer is under semi-confined conditions across most of the site, bounded by the 2 to 4-foot thick clay layer above and the Wellington Shale below. The saturated thickness is generally 8 to 9 feet.

The direction of groundwater flow has been consistently south/southeast across the site. Groundwater flow is toward the East Fork of Chisholm Creek located about 150 feet east of the site. Based on the information in the RCRA facility Investigation, the creek is a gaining stream, accepting base flow from groundwater. This is consistent with a

comparison of the elevation of groundwater to the elevation of the creek, which indicates groundwater discharges to the creek. The creek flows from north to south and is the closest surface water body to the site. A groundwater reinjection system has been operated by the refinery on the property to the south of the facility. When in operation, this system may divert the natural groundwater flow toward the East Fork of Chisholm Creek in a slightly more easterly direction.

The hydraulic conductivity of the alluvial aquifer in the site vicinity is estimated at 135 feet per day to 435 feet per day with a hydraulic gradient of between 0.002 and 0.003. The estimated flow (i.e., seepage) velocity of the groundwater is between 400 and 1,300 feet per year. A slight upward vertical gradient exists across most of the site, confirming that the lower zone is under semi-confined conditions in most locations. In view of the 2 to 4-foot thick clay layer and the upward vertical gradient, the downward migration of dissolved constituents from the upper zone to the lower zone is very limited.

M-2A Regional Hydrogeology

The depth to groundwater in the site vicinity is generally less than 15 feet bgs (CDM, 2002), occurring in the sandy alluvial and terrace deposits. These deposits comprise a shallow alluvial aquifer. The alluvial aquifer is reportedly used for irrigation, household gardening, and industrial applications (CDM, 2002). While this aquifer is an important source of groundwater in general within Sedgwick County (PRC, 1990), little groundwater is used within the industrialized area that includes the NIC site. A City of Wichita ordinance *(Ord. NO. 43-156 S 2)* is in place that does not allow groundwater use within the NIC for household or domestic purposes: however it is still potentially used for industrial purposes. In the NIC Draft Baseline Risk Assessment (BLRA) (CDM, 2002b) the City of Wichita has indicated that isolated cases of groundwater use within the NIC

have been identified, however, specific information has not been provided in the BLRA. The City has indicated (CDM 2002c) it is in the process of confirming groundwater use for water supply at other properties and terminating use as appropriate under the ordinance. The Arkansas River Alluvium underlines the Clean Harbors Facility Although the alluvium and terrace deposits are stratified and lenticular in occurrence, the sand and gravel beds are interconnected. Therefore, the stratified unconsolidated beds respond to long-term withdrawals of groundwater as a single hydraulic unit. Fully penetrating wells within the alluvial aquifer of the Arkansas River Valley may yield up to 2,000 gallons per minute (gpm) (Lane and Miller, 1965). Wells screened in the shallow terrace deposits may yield 500 to 1000 gpm. An area between Wichita, Newton, and Hutchinson contains deposits of clay, silt, and gravel referred to as the "Equus Beds Aquifer". The Wichita well field, located approximately 20 miles northwest of the city and upgradient of the site, is one of the primary potable sources of water for the city (CDM, 2002). The City of Wichita also reportedly maintains water supply wells in the Arkansas River alluvium between the Arkansas and Little Arkansas Rivers. The Arkansas River alluvium is considered a drinking water aquifer.

The saturated unconsolidated deposits in the site vicinity provide much greater yields than the fine-grained shale bedrock. Regionally, groundwater is obtained at yields less than 10 gpm (Bevans, 1989) from the weathered zone of the Wellington Formation, and it may be highly mineralized (PRC, 1990).

The vicinity groundwater flow direction identified in the NIC Remedial Investigation (RI) Report (CDM, 2002) is south to southeastward in the middle portion of the site (near the facility) and southern portion of the NIC site (south of the site). The East Fork of Chisholm Creek is reported to be a gaining stream in the NIC RI Report, which means a stream receiving baseflow groundwater recharge (CDM, 2002).

Precipitation is the primary source of recharge in the Arkansas River Valley. The approximate net average recharge to the unconsolidated deposits in the Arkansas Valley is 20% of the annual precipitation (or six inches in years of normal rainfall).

M-2B Site Hydrogeology

The discussion below on the site hydrogeology is based primarily upon information obtained from monitoring wells installed in the upper portion and the lower portion of the alluvial aquifer (i.e., the portion below the clay layer). These wells were surveyed and gauged over the course of the RFI field efforts. The following is a summary of the findings for the site hydrogeology. The discussion has been divided into separate sections for the upper and lower zones of the aquifer. A two to four foot thick clay layer separates these flow zones across much of the site.

M-2B1 Upper Zone

Based on monitoring data collected at the facility since November 1999, the depth to groundwater at the site is typically 12 to 16 feet bgs, but can vary a foot or more based on recent precipitation events. The saturated portion of the alluvial aquifer is 21 to 23 feet thick in total. It is underlain by clay that functions as a shallow semi-confining unit within the alluvial aquifer beneath the site. Groundwater occurs in the upper sand zone under water table conditions.

The direction of groundwater flow identified in the upper zone in each gauging event has been to the southeast. The direction of flow is consistent with that shown for the aquifer as a whole based on the NIC investigation data. Based on RFI data, the direction of flow

and gradient are consistent. The hydraulic gradient varies from approximately 0.002 to 0.003.

A comparison of surface water elevations to groundwater elevations from the November 2001 and August 2002 potentiometric surface maps suggests that groundwater in the shallow zone of the alluvial aquifer may be hydraulically connected to the East Fork of Chisholm Creek.

Quantitative estimates of hydraulic properties have been generated from work performed as part of the NIC activities. The hydraulic conductivity varies throughout the NIC site, ranging from 135 feet/day to 435 feet/day. A pumping test conducted near 22nd Street and Broadway resulted in an estimated hydraulic conductivity of 185 feet/day (CDM, 2002). The velocity of groundwater flow (i.e., seepage velocity) for the shallow portion of the alluvial aquifer can be estimated from Darcy's Law by multiplying the hydraulic conductivity by the hydraulic gradient, and dividing that value by the effective porosity of the formation. Using an estimated effective porosity of 0.3, a hydraulic gradient of 0.0025, and the range of hydraulic conductivities provided above, the estimated groundwater flow velocity is from 400 to 1,300 feet/year.

M-2B2 Lower Zone

Groundwater occurs in the lower zone under semi-confined conditions across most of the site based on observations during drilling as noted on boring logs. The extent of the clay lens upgradient and downgradient of the Clean Harbors facility has not been fully determined and vertical stratification of contaminants in the aquifer also occur where this clay lens is absent. These conditions are a result of the overlying two to four foot-thick clay layer. The clay is encountered below most of the site at an approximate elevation of 1288 to 1290 msl. This clay is expected to retard downward migration of shallow

groundwater and associated dissolved constituents to the deeper zone of the alluvial aquifer over areas of the site where the clay lens is present. The clay pinches out in the southwestern portion of the site. The weathered bedrock and shale bedrock at the base of the alluvial aquifer provide a barrier to downward migration of groundwater and dissolved constituents in the lower zone of the alluvial aquifer, to deeper units.

An evaluation of the groundwater flow direction in the lower zone of the alluvial aquifer was conducted for comparison to the shallow zone. This review indicated that the groundwater flow direction in the lower zone is to the south-southeast, which is similar to the upper zone.

Groundwater elevations collected for the five well pairs at the site were compared to evaluate the direction and magnitude of the vertical gradient between the upper and lower zones of the aquifer. The data are listed below:

	SK-1 S/D		**SK-2 S/D**		**SK-3 S/D**		**SK-4 S/D**		**SK-5 S/D**	
Date	***dHH***	***Vgrad***	***dHH***	***Vgrad***	***dHH***	***Vgrad***	***dHH***	***Vgrad***	***dHH***	***Vgrad***
10/26/2000	1.02	0.073	0.05	0.003	0.95	0.053	NDA	NDA	-0.27	-0.016
4/25/2001	0.53	0.038	0.05	0.003	-0.16	-0.009	NDA	NDA	0.01	0.001
11/12/2001	0.65	0.046	0.17	0.011	0.01	0.001	0.21	0.016	0.16	0.01
8/23/2002	0.53	0.038	0.01	0.001	-0.1	-0.006	0.19	0.014	0.01	0.001
10/19/03	1.21	0.086	0.37	.023	0.18	0.010	-0.06	-0.004	0.27	0.016
10/21/04	0.9	0.064	0.23	.014	0.06	0.003	-0.01	-0.001	0.16	0.010

dHH = Difference in hydraulic head (positive is an upward gradient; negative is a downward gradient)

Vgrad = Estimated Vertical Gradient

NDA = No Data Available

The values labeled “dHH” provided in the preceding table represent the difference in hydraulic head (as measured in feet msl) between water levels measured in each well

pair. The column labeled Vgrad represent the estimated vertical gradient between the lower and upper portions of the alluvial aquifer, which takes into account the approximate vertical distance between the midpoint of the deeper screen and the midpoint of the saturated shallow screen interval.

The positive values indicate that in each well pair the potentiometric surface (i.e., the groundwater elevation) in the deeper zone was generally higher than the potentiometric surface in the shallow zone. Those differences in head (dHH) values greater than 0.1 are considered significant differences in hydraulic head. The overall hydraulic head differential data collected between October 2000 and October 2004 demonstrates that a slight upward vertical hydraulic gradient generally exists in the deeper zone of the alluvial aquifer in the vicinity of well pairs SK-1S/1D and SK-2S/2D, and to a lesser extent at well pair SK-5S/5D at the site. This data suggests that the clay layer in the vicinity of these well pairs may act as a semi-confining unit within the alluvial aquifer, and may impede the downward migration of dissolved constituents to the lower aquifer zone. The magnitude of the head differential appears to decrease in the well pairs (SK-3S/3D and SK-4S/4D) on the western side of the site, where the clay unit pinches out.

Immediately to the south and downgradient of the facility, petrochemical manufacturing, production, and refining activities have been conducted at the El Paso Corporation Refinery since 1920 (CDM, 2000). This groundwater elevation data was obtained from CDM's March 2001 potentiometric surface map for the NIC site. The operation of recovery wells and a re-injection system may affect the natural groundwater flow system locally in this area as indicated by work conducted by El Paso. The recovery and re-injection system was designed in 1994 and operations were phased in over a period of time beginning in 1995. The water pumped from the ground is re-injected after treatment through a series of 40 injection wells located at the north end of the facility,

approximately 300 feet south of the facility property. At the northeastern margin of the El Paso property, well RW-20 has historically had been operated as a groundwater recovery well for hydraulic control in connection with the operation of the injection system, pumping at a rate of about 10 gallons per minute (gpm). The operation ceased about 5 years ago.

M-3 Groundwater Monitoring

Ten groundwater monitoring wells were installed in the shallow and deeper portions of the unconsolidated aquifer below the site. These wells were surveyed, developed, sampled and gauged as part of the Phase I RFI. Six shallow wells were installed in the uppermost zone of the alluvial aquifer (SK-1S through SK-6S) with 15-foot length screens. Deeper zone wells SK-1D, SK-2D, SK-3D and SK-5D were installed with 5-foot length screens just above the Wellington shale, at the base of the unconsolidated aquifer. Also included in the monitoring program were HRI-03 and RSC-1 (fully penetrating wells in the alluvial aquifer that were installed prior to the RFI). Selected wells on UPRR's site also were included in the monitoring program to assess upgradient conditions. These included MW-10, MW-11, MW-14, and WND-32S.

Two off-site shallow wells (SK-10S and SK-11S), one on-site shallow well (SK-B68), and one on-site deep well (SK-4D) were installed in the alluvial aquifer as part of the Phase II RFI. SK-10S and SK-11S are located southeast and downgradient of the site, east of New York Avenue, and west of the East Fork of Chisholm Creek. SK-4D was installed adjacent to SK-4S to complete another well pair. SK-B68 was located between the processing area and Building D to assess impacts to the groundwater from constituents detected in soil at B-68 and B-21.

Another complete round of groundwater sampling was conducted on the existing monitoring wells during November 2001. Well WND-32(D) was added to the monitoring program during the Phase II work. This well was installed on UPRR property by CDM as part of the NIC Remedial Investigation in July 2001. Well WND-32D is a deep well screened in the lower zone of the shallow aquifer and is located adjacent to WND-32(S). WND-32(S) is screened in the upper zone of the shallow aquifer.
In addition to the collection and analysis of groundwater samples from monitoring wells, groundwater grab samples were also collected at selected GeoProbe® soil borings. These samples were collected to assess whether impacted soil affected groundwater and to aid in locating potential source areas.

During October 2004, three deep monitoring wells (SK-7D, SK-8D, and SK-9D) and one shallow well (SK-8S) were installed to complete the assessment of groundwater quality upgradient of the facility. Sampling and analysis details are incorporated in the RFI. A Long-term Sampling and Analysis Plan will be developed and implemented in the future and modified as necessary.

M-4 Site-Wide Groundwater Quality

With respect to groundwater quality, characterization of the upgradient groundwater quality was especially important at this facility since the NIC site has widespread chlorinated hydrocarbon contamination in the groundwater. As determined from sampling during the RFI, constituents detected in groundwater migrating on site from upgradient sources include concentrations of chlorinated hydrocarbon compounds and aromatic hydrocarbon compounds. The chlorinated hydrocarbon compounds include TCE (up to 200 μg/L), cis-1,2-DCE (up to 45 μg/L), chloroform (up to 44 μg/L), and carbon tetrachloride (up to 17 μg/L).

Impacts to the groundwater at the site as a result of historical operations on the Clean Harbors facility appear to be limited for the most part to the upper zone of the alluvial aquifer. The vertical migration of constituents in the upper zone to the lower zone is impeded by a clay layer that occurs over much of the site, and by a slight upward vertical gradient. Constituents detected in the deep zone in the 2005 sampling events were primarily those constituents observed in the deep zone at upgradient wells, cis-1,2 DCE and TCE. PCE was detected at low concentrations in SK-2D in April 2005 and at trace concentrations in SK-3D, SK-4D, and SK-12D in February, April, and July 2005, but was also detected in deep upgradient well WND-32D in April and July 2005.

A chlorinated hydrocarbon signature is present in groundwater from each of the wells installed in the upper zone across the site. All shallow wells show at least low levels (in the range of 5 to 100 μg/L) of PCE, TCE, and cis-1,2 DCE. Based on characterization of upgradient groundwater quality, it appears that the widespread occurrence of TCE and cis-1,2 DCE is at least in part explained by the occurrence of these constituents in upgradient groundwater quality. The occurrence of PCE appears primarily attributable to site impacts. Although of lesser prevalence than TCE, cis-1,2-DCE, and PCE, twelve additional VOCs were identified in the site groundwater exceeding the Region 9 PRGs or MCLs. It should be noted that concentrations of naphthalene on site do not exceed the concentrations observed upgradient of the facility. In addition, the carbon tetrachloride and chloroform, a degradation product of carbon tetrachloride, occur at concentrations similar to, but slightly less than those observed in shallow upgradient well WND-32S. These constituents are considered to originate from upgradient sources.

The area of greatest impact to groundwater on site is the area downgradient of the Process Area Storage Tanks and the Elevated Tank Storage Area (SWMUs # 1 and 7).

Groundwater impacts in this area consist predominantly of cis-1,2 DCE and PCE ranging in concentrations up to 1,500 and 1,100 µg/L, respectively, in monitoring wells and up to 11,000 and 1,800 µg/L, respectively, in Geoprobe water samples. This area of impacts is defined by monitoring well data at SK-2S, SK-5S, SK-B68. Concentrations of cis-1,2 DCE, PCE, and TCE at these wells each occur at values greater than the MCLs of 5, 5, and 70 µg/L, respectively. Groundwater quality impacts are observed to the west and east of the process area and Building D, but at lower concentrations. Groundwater quality impacts also occur in the vicinity of the former Paint Can Burial Pit (SWMU #20). The constituents include a variety of substituted aromatic compounds consistent with a paint-related source. This area is likely associated with the historic manufacturing of paint at the facility.

The impacts to groundwater associated with the facility migrate southeast, toward the East Fork of Chisholm Creek. The concentrations decline significantly toward the creek, but occur in offsite monitoring well SK-10S at values above the MCLs for PCE, TCE, cis-1,2 DCE, and VC. The creek may be a hydraulic barrier to groundwater migration further to the east; however, it has not been fully assessed. Additional evaluation of the interaction between thwe groundwater and the creek will be conducted as required by EPA.

M-4A Upgradient Groundwater Quality

Characterization of the upgradient groundwater quality was especially important at this facility since the NIC site has widespread chlorinated hydrocarbon contamination in the groundwater. Characterization of the upgradient impacts may help discriminate between the impacts attributable to, or originating from the site, from that of the NIC plume(s).

The following monitoring wells are located within 200 to 600 feet upgradient of the facility: SK-7D, SK-8S, SK-8D, SK-9D, MW-10, MW-11, MW-14, MW-15, MW-18, WND-32[S] and WNC-32[D]. During October 2004, the facility installed three additional deep upgradient wells (SK-7D, SK-8D, and SK-9D) and one additional shallow upgradient well (SK-8S) on UPRR property to complete the upgradient assessment of groundwater quality (Phase II Work Plan). The locations of wells SK-7D and SK-9D were chosen to create nested well pairs with the existing UPRR shallow upgradient monitoring wells. Upgradient monitoring was conducted on five existing wells (MW-10, MW-11, MW-14, WND-32[S] and WNC-32[D]) on UPRR property from April 2001 through October 2004, and at two existing wells (MW-15 and MW-18) during October 2003 and October 2004. The newly installed wells were sampled once during October 2004. Groundwater samples from each of the wells were analyzed for VOCs by EPA Method 8260B, in addition to the other groundwater monitoring constituents. Based on groundwater monitoring data within the RFI report, the following constituents occur in upgradient groundwater that may be migrating onto the site.

Upgradient Groundwater Constituents	Maximum Concentration Detected April 2001 to October 2004 (μg/L)
Carbon Tetrachloride	17(S)
Chloroform	44(S)
Cis-1,2-Dichloroethene	45(D)/3.9(S)
Methylene Chloride	1.2(S)
Napthalene	150(S)
Trichloroethene	200 (D)/ 13(S)
n-propylbenzene	11(S)
sec-butylbenzene	10(S)

n-butylbenzene	15(S)
1,2,4-trimethylbenzene	1.6(S)
1,1,2,2 tetrachoroethane	50(S)

Note: (D) = Maximum concentration in deep well; (S) = Maximum concentration in shallow wells

Until October 2004, the only well pair upgradient was WND-32(S) and WNC-32(D), north of the northwest corner of the site. Carbon tetrachloride (CCl_4), chloroform, cis-1,2-DCE, methylene chloride and TCE were detected in WND-32(S) from April 2001 through August 2002. These constituents were not detected during October 2003 and October 2004. Cis-1,2-DCE and TCE were detected in the deep well of the pair. TCE was detected in shallow wells MW-10, MW-14, MW-15 and SK-8S at concentrations ranging from 2.6 to 14 µg/L. Cis-1,2-DCE was also detected in MW-10, MW-11, MW-14, MW-15, and SK-8S at concentrations ranging from 1.0 to 3.9 µg/L. Concentrations of TCE and cis-1,2-DCE were detected in each of the newly installed deep wells (SK-7D, SK-8D, and SK-9D) with the concentrations of 200, 40, and 47 µg/L and 45, 2.2, and 8.3 µg/L, respectively.

These results indicate upgradient sources of TCE and CCl_4. (Chloroform and cis-1,2-DCE are probable degradation products of the CCl_4 and TCE, respectively.) Likewise, naphthalene was detected at 89 to 150 µg/L in MW-10. This may be creating the detection of naphthalene observed in SK-2S. The high detection of naphthalene may have masked detections of TCE in MW-10, since the detection limits were elevated to quantify the naphthalene present during April and November 2001. (Note: TCE of 13 µg/L was reported in August 2002, October 2003 and October 2004 when the detection limits were not as elevated.)

Historical data collected from the upgradient wells WND-31S and WNC-32S in connection with the NIC indicate that concentrations of chlorinated hydrocarbons have been detected upgradient of the facility consistently since at least 1991. Groundwater monitoring indicates concentrations of TCE just upgradient of the site as being on the order of 20-100 μg/L in both the shallow and deep portions of the aquifer, and concentrations of cis-1,2-DCE as being on the order of 20 μg/L. Constituents consistently detected upgradient in historical data collected in connection with the NIC included carbon tetrachloride (maximum concentration 140 μg/L), chloroform (120 μg/L), PCE (6.9 μg/L), and TCE (maximum concentration 21 μg/L), among others from data collected between 1991 and 1997.

M-4B Facility Groundwater Quality

M-4B1 VOCs – Upper Zone

A chlorinated hydrocarbon signature is present in groundwater from each of the wells across the site. All shallow wells show at least low levels (in the range of 5 to 100 μg/L) of PCE, TCE, and cis-1,2 DCE. Based on the upgradient groundwater quality, it appears that the widespread occurrence of TCE and cis-1,2 DCE maybe attributed in part to the upgradient groundwater quality conditions; however, since the shallow concentations onsite are often higher than those upgradient, there may be onsite sources for these constituents. The occurrence of PCE appears largely attributable to site activities.

Based on the results of the source characterization, existing impacts to groundwater quality at the site occur above screening levels in five, relatively discrete areas (each with some overlap). These are, from west to east across the site, as follows:

- The western portion of the property;
- The area of the former buried paint can pit;
- The process area and Building D area in the center of the property; and
- The northeastern corner of the property.
- The southeast portion of the site, in the vicinity of monitoring wells SK-1S/1D.

The western area is encompassed by SWMU #18, the Open Area Along the Southwest Corner and SWMU #24, the Area South of Building C, and includes SWMU #17, the Former Dry Solids Gondola. Groundwater quality in this area contains low concentrations of PCE, cis-1,2 DCE, TCE, TCA, carbon tetrachloride and chloroform. The carbon tetrachloride and chloroform, a degradation product of carbon tetrachloride, occur at concentrations similar to, but slightly less than that observed in shallow upgradient well WND-32S, and these constituents appear to originate from upgradient sources. Of the remaining constituents detected in groundwater samples from monitoring wells and Geoprobe® locations, only PCE and TCE occur above MCLs (5 µg/L), ranging in concentration up to 1300 and 190 µg/L, respectively. Although TCE is detected on site at concentrations similar to those upgradient, TCE is also a degradation product of PCE, which appears to be at higher concentrations on site.

At the former buried paint can pit, SWMU #20, several VOCs were detected at the SK-3 and SK-5 well pairs that were not detected at the other monitoring wells. These VOCs are generally described as substituted benzene ring (aromatic) compounds. The following VOCs are unique to the SK-3 and SK-5 well pairs.

- 1,2,4-Trimethylbenzene
- 1,3,5-Trimethylbenzene

- n-Butylbenzene
- n-Propylbenzene
- Isopropylbenzene
- p-Isopropyltoluene
- Naphthalene

The aromatic compounds toluene, ethylbenzene, and xylenes (TEX) were also detected. These TEX constituents are commonly associated with fuel related compounds when benzene is present. The fact that benzene is not detected, combined with the detections of the other substituted aromatics, is consistent with the TEX compounds being associated with the former paint company operations, rather than related to any fuel source. Of these aromatic compounds detected in this area of the site, naphthalene, 1,3,5 trimethylbenzene and 1,2,4 trimethylbenzene exceeded Region 9 PRGs during several sampling events. MCLs are not available for these constituents. PCE and TCE detections in these groundwater samples exceed MCLs based on the groundwater sampling events conducted from October 2000 through October 2004.

In the vicinity of and downgradient of the process area and Building D, groundwater impacts occur that consist predominantly of aromatic hydrocarbons, and cis-1,2 DCE and PCE ranging in concentrations up to 1,500 and 1,100 µg/L, respectively, in monitoring wells and up to 11,000 and 1,800 µg/L, respectively, in Geoprobe water samples. The highest concentrations of cis-1,2 DCE and PCE observed at the site were detected at boring B-21. The concentration of cis-1,2 DCE generally occurs at a value equal to or greater than PCE. Concentrations of PCE, TCE and cis-1,2 DCE each occur at values greater than the MCLs of 5, 5 and 70 µg/L, respectively.

The northeastern area of groundwater quality impacts includes OA #6 and the area south of Building J. Monitoring wells SK-6S located within OA#6, and SK-1S and SK-10S downgradient of Building J contain low concentrations of PCE, cis-1,2 DCE and TCE near or below the MCLs In addition, south of Building J, VC was detected in the GeoProbe® water samples and is observed above the MCL of 2 µg/L in downgradient monitoring wells SK-1S (3.6 µg/L) detected in October 2003 and SK-10S (59 µg/L) detected in November 2001. Several Geoprobe water samples collected from areas within and downgradient of OA#6 and south of Building J contained PCE, cis-1,2 DCE and TCE above MCLs.

The southeast area of groundwater quality impacts at the site occur in the vicinity of monitoring wells SK-1S/1D. Impacts in this area include PCE, TCE, cis-1,2-DCE, and VC. PCE concentrations at SK-1S ranged from 1.4 to 24 µg/L with concentrations exceeding the MCL of 5 µg/L during three of the six sampling events. VC exceeded the MCL of 2 µg/L in one sample collected during October 2003 (3.6 µg/L). GeoProbe® water samples collected from core boring EB-5 and B-79 contained elevated concentrations of PCE, TCE, cis-1,2 DCE, and VC above the MCLs for these constituents.

M-4B2 VOCs – Lower Zone

Most of the facility is underlain by a low permeable clay layer that would retard the downward migration of the dissolved groundwater constituents. A comparison of the results in shallow and deep well pairs does reflect appreciable differences in groundwater quality between the upper zone and lower zone. These are most evident in the SK-3S/3D pair. Constituents detected at high levels in the shallow wells do not occur in the deep

zone. Similarly, PCE, which occurs across the site in the shallow zone, is absent in the deep zone, with the exception of detections that are less than 5 µg/L at SK-4D and a one-time detection of 66 µg/L in SK-3D in October 2000 that has not been observed again. However, SK-4D is located in the southwestern portion of the site where the clay pinches out. The only other constituents consistently detected in the deep zone are the two constituents noted in the deep zone upgradient wells, cis-1,2 DCE and TCE. The concentrations of these constituents in the deep zone wells at the facility are comparable to upgradient values and indicate their origin is most likely associated with upgradient groundwater impacts.

M-4C Groundwater Quality Conditions Downgradient of the Facility

Groundwater quality data for VOCs is available for a number of monitoring wells and GeoProbe® samples on the El Paso Refinery property in the area just south of the site but upgradient of the re-injection wells. Groundwater quality in this area is of interest in assessing the extent of migration from the facility. Monitoring wells for which VOC data are available (July 2000 data) are MW-1, MW-3, and MW-380. The El Paso Refinery has also sampled the groundwater from recovery well RW-20 for VOCs. GeoProbe® water samples in this area, collected recently on the El Paso property as part of the NIC investigation, include GP10F-02 through GP10F-05. Cameron-Cole split samples from the GeoProbe® locations GP10F-04 and GP10F-05 during sampling in March 2000.

Of the wells listed, only MW-3 and RW-20 are directly downgradient of the facility and these wells only penetrate the shallow zone of the aquifer. Monitoring well MW-380 was located east of the East Fork of Chisholm Creek. MW-380 was destroyed during construction activities along Interstate 135. MW-3 shows cis-1,2 DCE at 14 µg/L, which is a constituent observed in the shallow zone in the facility wells and other upgradient monitoring wells. The well sample also contained 2,2 dichloropropane, which has not

been detected on the site. Groundwater recovery well RW-20 has low levels of PCE, TCE, and cis-1,2 DCE. All of these constituents occur at concentrations less than the MCLs.

Of the GeoProbe® samples analyzed in March 2000, only GP10F-04 and GP10F-05 are directly downgradient of the facility. Water samples at these locations were collected from three different depth intervals in the aquifer: the shallow, middle, and deep zones. The shallow and deep samples correspond to the upper and lower zones of the aquifer sample in wells on the site. It is not clear whether the 2 – 4 foot thick clay layer observed on the site occurs at these offsite GeoProbe® locations, and whether middle zone samples are above or below this layer. The samples show a number of both petroleum hydrocarbon and chlorinated constituents. Concentrations generally decrease in the deeper samples. The exceptions are the concentrations of TCE and cis-1,2 DCE in GP10F-04 and GP10F-05, which are highest in the deepest sample.

In January 2003, KDHE installed and sampled Geoprobe boring MIP/GW-6 (13-17') on the El Paso refinery property. The analytical results indicate the occurrence of chlorinated constituents similar to those in the shallow aquifer zone of the facility. TCE and cis-1,2-DCE exhibit the highest concentrations of constituents detected in this Geoprobe.

M-5 General Groundwater Chemistry

Groundwater samples were collected for analysis of selected inorganic constituents in order to assess groundwater quality in terms of general geochemistry parameters and non-target compounds. The following analyses were performed for the groundwater samples

collected from the monitoring well network during October 2000, April 2001, November 2001, and August 2002 sampling events.

- Dissolved Gases – Methane, Ethane, and Ethene
- Dissolved Metals – Calcium, Iron, Potassium, Magnesium, and Manganese
- Total Metals – Iron and Manganese
- Total Dissolved Solids
- Alkalinity
- Nitrate as Nitrogen
- Sulfate
- Chloride
- Total Organic Carbon

Additionally, in-situ (down-hole-probe) water quality measurements, and field analysis of ferrous iron (Hach Kit), were performed beginning with the November 2001 sampling event. These analyses were performed to further assess groundwater geochemistry at the facility, and to evaluate conditions that may promote natural attenuation of contaminants.

- Dissolved Oxygen
- Oxidation Reduction Potential
- Temperature
- pH
- Ferrous Iron

During the October 2003 annual sampling event, samples collected from the monitoring well network were analyzed for VOCs only. During October 2004, all monitoring network samples collected were analyzed for VOCs. Additionally, the samples collected from the newly installed upgradient wells were analyzed for the general geochemistry parameters and the non-target compounds listed above.

The results of the general chemistry analyses are presented in Tables 5-9 and 5-10 and the dissolved gases results are presented in Table 5-7. The general chemistry parameters show that there are some significant differences in groundwater geochemistry between the shallow and the deep zones of the alluvial aquifer. The most notable difference is for dissolved oxygen (DO). In an uncontaminated aquifer, dissolved oxygen concentrations are typically higher in the shallow water table zone, and lower in the deeper zone of a confined aquifer. However, results for the site are just the reverse, with DO concentrations nearly an order of magnitude lower in the shallow zone (with the exception of the SK-3S/D well pair). A similar trend is noted for nitrate, sulfate, and ORP. Iron and manganese have the opposite trend, with the higher concentrations found in the shallow wells. Total iron concentrations are generally two orders of magnitude higher in the shallow wells.

These results indicate that biogenic activities, potentially associated with groundwater contamination, have taken place in the shallow zone that have resulted in depletion of electron acceptors, particularly DO. When DO is consumed, anaerobic microorganisms typically use additional electron acceptors (as available) in the following order of preference: nitrate, ferric iron, sulfate, and finally carbon dioxide. The relative depletion of nitrate and sulfate noted in some of the shallow wells, compared to the deeper, supports this mechanism. As the shallow groundwater become more reducing, iron and manganese become more soluble, and their concentrations increase in the shallow zone.

M-5A GeoProbe® Groundwater Chemistry

Groundwater samples were collected directly from GeoProbe® sampling equipment throughout the three phases of the RFI. Overall, the groundwater grab samples confirmed the findings of the monitoring well sample results. The samples detected concentrations of TCE, PCE, TCA, DCA, DCE, cis-1,2-DCE, chloroform, CCl_4, xylenes, toluene, trans-1,2-DCE, benzene, and ethylbenzene. Primarily, the groundwater grab samples confirm the monitoring well detections and relatively low levels of dissolved chlorinated hydrocarbons occur in the groundwater across most of the site. The occurrence of the aromatic hydrocarbons was more limited in area and extent.

The groundwater quality assessed by the direct push grab samples was not equivalent quantitatively with the groundwater quality assessed by the subsequently-installed monitoring wells. Concentrations of specific constituents were often higher in the grab sample. This is most likely due to the occurrence of some vertical stratification of contaminants in the aquifer near source areas and the difference in the depth and sampling interval for groundwater samples obtained from monitoring wells vs. Geoprobe borings. Contaminants in groundwater originating from a nearby surface source typically exhibit higher concentrations at the water table and diminish in concentration at depth with mixing in the aquifer. Additionally, groundwater samples collected from Geoprobe borings are collected without well development and as a result typically have high turbidity. In view of these factors, the analytical results for groundwater samples obtained at a given location (whether from samples collected at monitoring wells or Geoprobe borings) will vary depending on both the depth and length of the sampling interval within the saturated zone from which the samples were obtained. Both monitoring well and Geoprobe data have been used to assess the extent and chemical character of dissolved impacts in the alluvial aquifer, recognizing that differences and/or limitations in the two different types of data may be present.

M-6 Summary

M-6A Hydrogeology

- The unconsolidated sediments below the site consist of gravelly clay with silt to approximately 7 to 17 feet, underlain by a sand unit, approximately 9 to 17 feet thick. A 2 to 4 foot clay layer is then encountered across most of the site, with the exception of the southwestern corner. Another 8 to 9 feet of sand underlie the clay. These unconsolidated sediments are underlain by the Wellington Shale.

- The depth to groundwater is generally less than 15 feet bgs in the site vicinity. The alluvial aquifer is separated into an upper and lower zone by a 2 to 4 thick clay layer across most of the site. The upper zone is under water table conditions and is approximately 10 to 12 feet thick. This clay layer pinches out in the southwestern portion of the site. Groundwater occurs under semi-confined conditions in the lower zone over most of the site.

- The direction of groundwater flow is to the south/southeast across the site in both the upper and lower zone. Groundwater flows toward the East Fork of Chisholm Creek located approximately 150 feet east of the site. The estimated groundwater seepage velocity is 400 to 1,300 feet per year.

- A slight upward vertical gradient exists in the deeper zone in the vicinity of well pairs SK-1S/1D, SK-2S/2D, and SK-5S/5D at the site. Due to the presence of the clay layer and the upward vertical gradient in the vicinity of these well pairs, , the downward migration of dissolved constituents from the upper zone to the lower zone on the site may be impeded.

M-6B Groundwater Quality

- Groundwater migrating on site from upgradient sources includes concentrations of chlorinated hydrocarbon compounds and aromatic hydrocarbon compounds. The highest concentrations of chlorinated hydrocarbon compounds observed in historical and recent sampling includes TCE (up to 110 μg/L), cis-1,2-DCE (up to 200 μg/L), chloroform (up to 44 μg/L), and carbon tetrachloride (up to 17 μg/L). Other hydrocarbons include napthalene, n-propylbenzene, sec-butylbenzene, n-butylbenzene, and 1,2,4-trimethylbenzene.These concentrations were in shallow wells.

- Impacts to the groundwater at the site as a result of historical operations on the facility appear to be largely limited to the upper zone of the alluvial aquifer. The vertical migration of constituents from the upper zone to the lower zone is impeded by a clay layer that occurs over much of the site, and by a slight upward vertical gradient. The only constituents detected in the deep zone in the most recent sampling are constituents observed in the deep zone at upgradient wells, cis-1,2 DCE and TCE, with the exception of VC detected in October 2003 in SK-4D.

- A chlorinated hydrocarbon signature is present in groundwater from each of the wells installed in the upper zone across the site. All shallow wells show at least low levels (in the range of 5 to 100 μg/L) of PCE, TCE, and cis-1,2 DCE. Based on characterization of upgradient groundwater quality, it appears that the widespread occurrence of TCE and cis-1,2 DCE is at least in part explained by the occurrence of these constituents in upgradient groundwater quality. The occurrence of PCE appears largely attributable to site impacts.

- Twelve VOC constituents identified in the upper zone of the site groundwater exceeded the Region 9 PRGs or MCLs in at least one of the six groundwater sampling events conducted during the RFI. These constituents include the following: 1,1,1-TCA, 1,1-

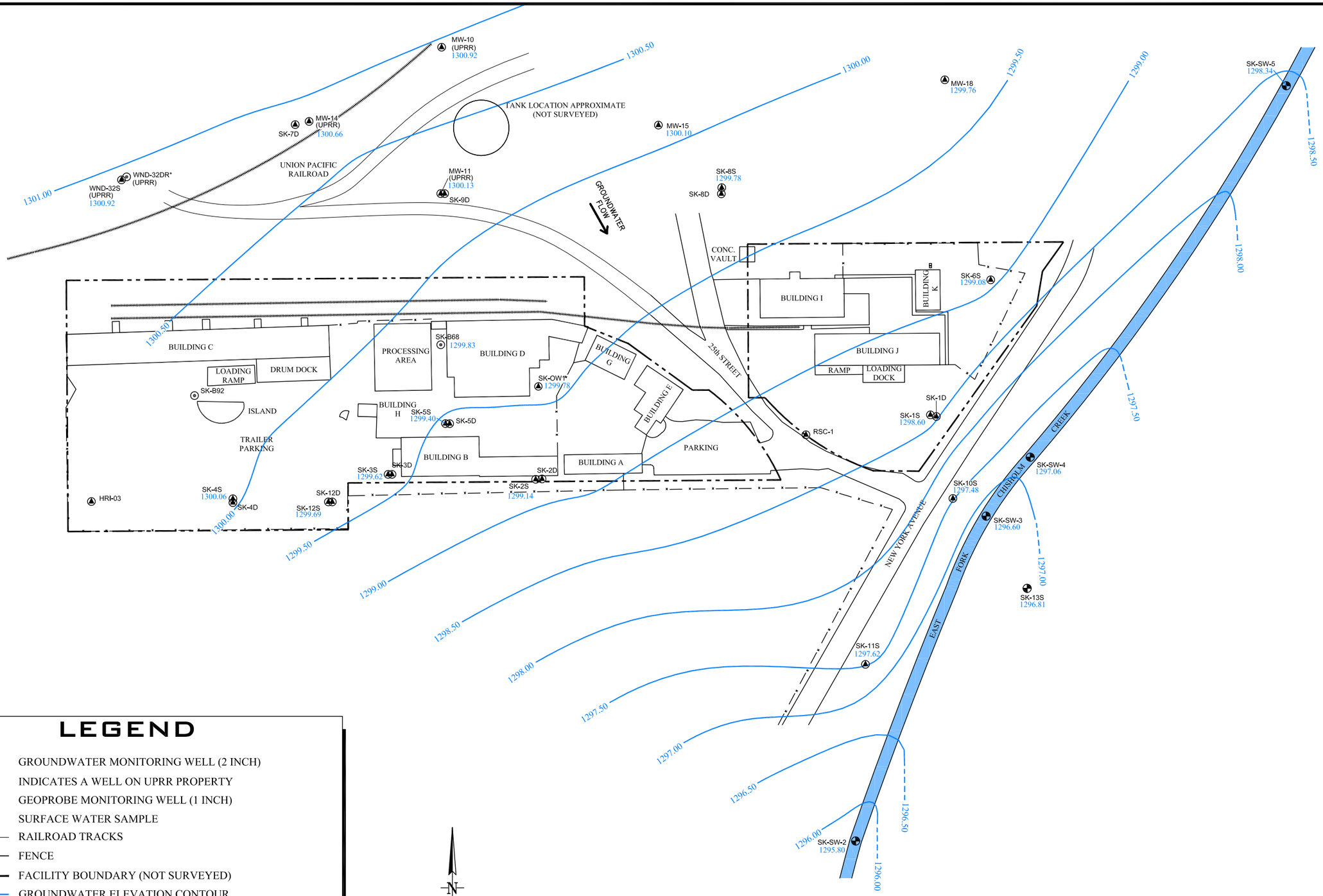
DCE, 1,2,4-TMB, 1,3,5-TMB, bromodichloromethane, carbon tetrachloride, chloroform, cis-1,2-DCE, naphthalene, PCE, TCE, and VC. It should be noted that concentrations of naphthalene on site do not exceed the concentrations observed upgradient of the facility. In addition, the carbon tetrachloride and chloroform, a degradation product, occur at concentrations similar to, but slightly less than that observed in shallow upgradient well WND-32S, and these constituents are considered to originate from upgradient sources.

- The area of greatest impact to groundwater is the area downgradient of the Process Area Storage Tanks and the Elevated Storage Tank Area in Building D (SWMUs #1 and 7). Groundwater impacts in this area consist predominantly of cis-1,2 DCE and PCE at concentrations up to 1,500 and 1,100 μg/L. The area is defined by monitoring well data at SK-2S, SK-5S, SK-B68. Concentrations of PCE, TCE, and cis-1,2 DCE each occur at values greater than the MCLs of 5, 5, and 70 μg/L, respectively. Groundwater quality impacts are observed to the west and east of the Process Area and Building D, but at lower levels.

- Groundwater quality impacts occur in the vicinity of the Former Buried Paint Can Pit (SWMU #20). The constituents include a variety of substituted aromatic compounds that are consistent with a paint related source and are likely associated with the historic manufacturing of paint at the facility when it was owned by the Enmar Paint Company.

- The impacts to groundwater associated with the facility migrate southeast, toward Chisholm Creek. The concentrations decline significantly toward the creek but occur in nearby offsite monitoring well SK-10S at values above the MCLs for PCE, TCE cis-1,2 DCE and VC. The creek is expected to be a hydraulic barrier to groundwater migration further to the east.

- Anaerobic biodegradation of constituents in soil and groundwater is occurring at the site but is limited by the low availability of electron donors.



LEGEND

▲	GROUNDWATER MONITORING WELL (2 INCH)
(UPRR)	INDICATES A WELL ON UPRR PROPERTY
⊙	GEOPROBE MONITORING WELL (1 INCH)
⊕	SURFACE WATER SAMPLE
———	RAILROAD TRACKS
———	FENCE
—·—·—	FACILITY BOUNDARY (NOT SURVEYED)
———	GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
1299.14	GROUNDWATER ELEVATION (FT. M.S.L.)
*	WELL NOT SURVEYED, LOCATION APPROXIMATE

NOTE: LEVELS MEASURED ON APRIL 29, 2010

N

0 125
FEET

	BY	DATE
DRAWN	JGM	06/07/10
CHECKED		
REVISED		
APPROVED		
APPROVED		

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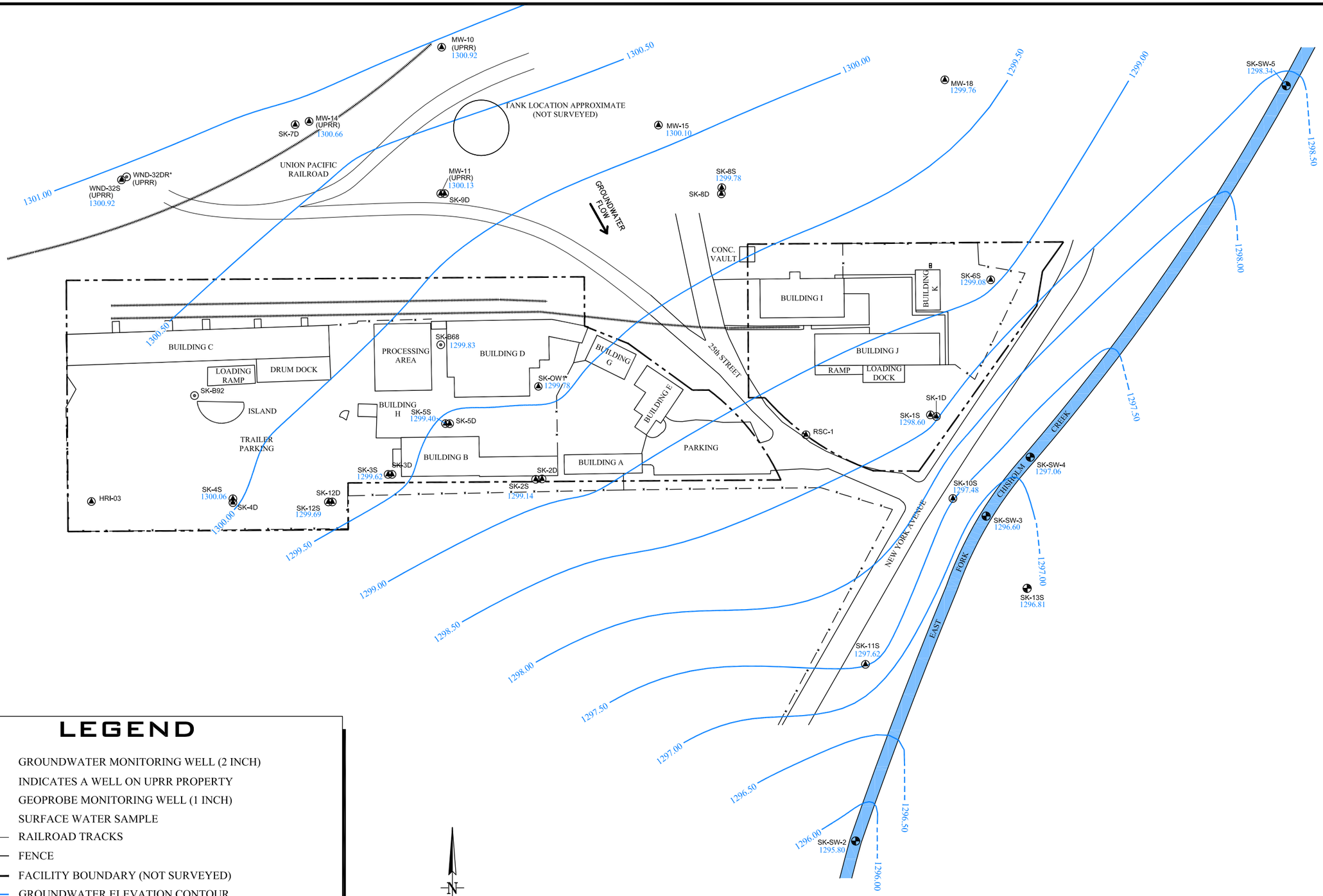
FIGURE 3

GROUNDWATER CONTOUR MAP OF UPPER ZONE
2ND QUARTER 2010
CLEAN HARBORS KANSAS, LLC

SCALE: 1" = 125'

PROJECT: 1808

M:\clients\Cameron-Cole\1808-Clean-Harbors\Kansas\2ndQtr-10\FIGURE 3_4-10.dwg



LEGEND

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1299.14	GROUNDWATER ELEVATION (FT. M.S.L.)
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NOTE: LEVELS MEASURED ON APRIL 29, 2010

N

0 125
FEET

	BY	DATE
DRAWN	JGM	06/07/10
CHECKED		
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FIGURE 3

GROUNDWATER CONTOUR MAP OF UPPER ZONE
2ND QUARTER 2010
CLEAN HARBORS KANSAS, LLC

SCALE: 1" = 125'

PROJECT: 1808

M:\clients\Cameron-Cole\1808-Clean-Harbors\Kansas\2ndQtr-10\FIGURE 3_4-10.dwg

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N-1 Air Emission Standards for Process Vents

Per 40 CFR 264.1031, *Process vent* means any open-ended pipe or stack that is vented to the atmosphere either directly, through a vacuum-producing system, or through a tank (e.g., distillate receiver, condenser, bottoms receiver, surge control tank, separator tank, or hot well) associated with hazardous waste distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations.

Except for §264.1034, paragraphs (d) and (e), this subpart applies to process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations that manage hazardous wastes with organic concentrations of at least 10 ppmw.

N-1a Applicability

The Clean Harbors Kansas, LLC (CHK) facility stores hazardous waste and hazardous waste fuel. (For a more complete description of hazardous waste management activities at CHK, refer to Section B, Facility Description.) The hazardous waste management units at CHK will fulfill the subpart AA process vent requirements according to 40 CFR 264.1030 and 1031 and 270.14 once the tanks are activated. However, there are no regulated units currently operated at the CHK facility subject to the 40 CFR 264 Subpart AA process vent emissions standards.

N-2 Air Emissions Standards for Equipment Leaks

N-2a Applicability

The CHK facility stores hazardous waste and hazardous waste fuel. The waste lines and equipment are used at CHK to transfer hazardous waste liquids between or from waste storage tanks or from or to trucks for off site receipt or shipment. It is assumed, based on knowledge of

process, that the hazardous waste liquids or gases handled in these lines at the facility potentially contact hazardous waste in excess of ten (10) percent total organic carbon (TOC) and are therefore subject to these standards. Appendix N-A, Facility and Process Drawings, contains diagrams of the pertinent equipment and piping in use at CHK.

A majority of the equipment at the CHK facility is potentially in ten (10) percent, or greater, TOC hazardous waste liquid or gas service except for water, air, or fire suppressant lines. These lines are identified separately from all other lines by their color or labelling.

N-2b <u>Pumps in Light Liquid Service</u>

All pumps at the CHK facility are assumed to be in light liquid service at some time due to the varied nature of the wastes managed at the facility. Because the exact composition of the waste stream varies, a heavy liquid service designation is difficult to sustain during actual operations. Therefore, all pumps at the facility are potentially subject to light liquid service standards and will be monitored monthly to detect leaks using the method specified in 264.1063 (b) unless exempted by a classification of no detectable emissions.

All pumps at the facility are subject to regular RCRA inspections, as described in Section F, Inspection Plan. These will occur at a minimum of once per week to locate indications of liquids dripping from pump seals. If there are indications that liquids are dripping from the pump seal (e.g., staining of surrounding substrate, visible liquids), a leak is considered to be detected. A leak is also be detected if the leak detection instrument measures 10,000 ppm or greater organics.

When a leak is detected, a first attempt at repair shall be made within five (5) calendar days and a permanent repair attempted within fifteen (15) calendar days of detection unless the standards of 264.1059 are met.

There are currently no pumps in operation at the CHK facility with a dual mechanical seal that includes a barrier fluid. When these types of pumps are installed, CHK will comply with the requirements of 40 CFR 264.1052 (d) if these pumps are to be exempted from monitoring requirements.

There are several pumps at the CHK facility which are eligible for the "no detectable emissions" exemption from 264.1052 (a), (b), and (d) with an instrument reading of 500 ppm or less above background. These pumps have no externally actuated shaft that penetrates the pump housing, and operate with no detectable emissions (i.e., less than 500 ppm measured by the method specified in 264.1063 (c)) and have been initially tested for compliance with this standard and will be tested annually for leaks above 500 ppm. Pumps which are eligible for the "no detectable emissions" exemption will be tested when requested by the Regional Administrator, as specified in 40 CFR 264.1052(e)(3).

N-2c Compressors

There are no compressor units subject to air emission standards at the CHK facility.

N-2d Pressure Relief Devices

There are no pressure relief devices installed on equipment subject to the 40 CFR Subpart BB regulations currently being operated in hazardous waste gas/vapor or liquid service at CHK.

N-2e Sampling Connection Systems

All sampling systems at the CHK facility are of the *in situ* type, are used in-line, and are not subject to subparagraphs (a) and (b) of 264.1055. These systems typically consist of a valve with an open ended line. This equipment is subject to the leak emissions standards and is included in the monitoring plan as required by 264.1056 or 264.1057. This system is operated in method consistent with the basis for the standards contained in 264.1055 (a) and (b) in that any purged waste prior to sampling is returned to the process.

N-2f Open-ended Valves or Lines

All open-ended valves and lines at the CHK facility are equipped with caps or plugs intended to seal the open end when the line or valve is not in service. All double block lines at the facility (i.e., lines with two valves) are operated such that the valve on the hazardous waste stream side is closed before the second valve is closed.

N-2g Valves in Gas/Vapor Service or in Light Liquid Service

All valves at the CHK facility are assumed to be in ten (10) percent or greater organic content light liquid gas/vapor service at some time due to the varied nature of the wastes managed at the facility. Because the exact composition of the waste streams varies, a heavy liquid service designation is difficult to sustain during actual operations. Therefore all valves at the facility are potentially subject to light liquid service requirements and will be treated as being in light liquid service for the purpose of complying with the air emission regulations. This designation assures that CHK complies with the requirements of 264.1063 (g).

Valves will be monitored monthly to detect leaks using the method specified in 264.1063 (b) unless exempted according to 264.1061 or according to 264.1057 (f), (g), or (h). If an instrument reading in excess of 10,000 ppm is measured during monitoring, a leak subject to the repair

provisions of this program is detected.

When a leak is detected, a first attempt at repair shall be made within five (5) days and a permanent repair attempted within fifteen (15) calendar days of detection unless the standards of 264.1059 are met. First attempts at repair shall include tightening of bonnet bolts, replacement of bonnet bolts, tightening of packing gland nuts, and/or injection of lubricant into lubricated packings.

There are no valves in use at the CHK facility eligible for the no detectable emission exemption. Similarly, there are no valves designated as unsafe-to-monitor.

There are numerous valves designated as difficult-to-monitor pursuant to this paragraph on the existing units that were in operation prior to June 21, 1990. These valves have been determined to be difficult to monitor due to their location or elevation as specified in 264.1064 (h) (2). All valves currently designated as difficult-to-monitor are so designated in the log because of their location at or above two meters above a supported surface. Valves that have been identified as difficult-to-monitor are identified in the tables in Appendix N-D by the identification number P-XXXU/PXXXU or M-XXXU/MXXXU. These valves will be monitored according to this written plan for obtaining access to these valves for monitoring at a minimum of once per year.

N-2h <u>Pumps & Valves in Heavy Liquid Service; Flanges, and Other Connectors</u>

There are no pumps or valves designated in heavy liquid service at the CHK facility. Flanges and other connectors shall be monitored within five (5) calendar days by the method specified in 264.1063 (b) if evidence of a potential leak is found by visual, audible, olfactory, or other method. These potential leaks will normally be initially identified by observation of dripping or accumulated liquids or of stained substrate during scheduled inspections of the tank system and

associated piping.

When a leak is detected, a first attempt at repair shall be made within five (5) calendar days and a permanent repair attempted within fifteen (15) calendar days of detection unless the standards of 264.1059 are met.

The practices specified in paragraph 264.1057 (e) shall constitute a first attempt at repair.

N-3 Delay of Repair

In the event that any repair of a connection, pump, or valve associated with a process unit must be delayed beyond fifteen (15) calendar days because it requires the shutdown of the hazardous waste management unit, that repair shall be completed during the next unit shutdown.

A delay of any other repair of a connection, pump, or valve will extend beyond the (15) days only if the equipment for which a leak has been detected can be isolated from the system and no longer contacts hazardous waste liquid or gas/vapor in concentrations exceeding ten (10) percent by weight.

N-3a Valves:

In delaying a repair of a valve beyond fifteen (15) calendar days, CHK will follow procedures as specified by 40 CFR 1059. CHK will determine whether or not the emissions from an immediate repair would exceed those likely to result from the procedures that would be used if repair could be delayed. Delay of repair will only occur when the emissions would be reduced by the delay, when the equipment is isolated from the hazardous

waste management unit, or when the repair is technically infeasible without a hazardous waste management unit shutdown (in this case, the repair shall occur before the end of the next hazardous waste management unit shutdown). Delay of repair of a valve beyond the next hazardous waste management unit shutdown will only occur if valve assembly replacement is necessary during the shutdown, valve assembly supplies have been depleted, and valve assembly supplies had been sufficiently stocked before supplies were depleted. Delay of repair beyond the next hazardous waste management unit shutdown will only occur if the next hazardous waste management unit shutdown occurs sooner than six months after the first hazardous waste management unit shutdown.

CHK will comply with 40 CFR 264.1059 when repair of a valve is delayed. If delay of repair is performed in accordance with 40 CFR 264.1059(c)(2), the purged material collected during the repair will be destroyed or recovered in a control device complying with 40 CFR 264.1060, and to 40 CFR 1033.(h), 1033(i), and/or 1033(j).

Repairs of valves may be delayed at CHK beyond the first unit shutdown in the event that the repair requires spare parts which were well stocked prior to the shutdown but were depleted and unavailable at the time of shutdown. Additional delays beyond the second unit shutdown will only occur if the second shutdown occurs within six (6) months after the first.

N-3b <u>Pumps:</u>

Repairs of pumps will be delayed by CHK beyond fifteen (15) calendar days if the repair requires the use of a dual mechanical seal and barrier fluid system. Such delayed repairs of pumps will be completed as soon as practicable but no later than six (6) months from the time the leak was detected.

N-4 Alternative Standards - Valves in Gas/Vapor Service or Light Liquid Service:

N-4a Percentage of Valves Allowed to Leak

All valves at the CHK facility in light liquid or gas service are identified on the attached drawings, are associated with hazardous waste management units, are subject to 264.1057, and are eligible for this alternative standard. CHK elects to meet the two (2) percent standard for valves by meeting the following requirements of 264.1061 (b) (1) - (3).

A copy of the letter notifying the Regional Administrator of CHK's implementation of this alternative standard is included in Appendix N-B.

A performance test using the method specified in 264.1063 (b) was performed on all identified valves at the facility on December 17, 1990. No leaks greater than 10,000 ppm were detected in any valves. This test shall be repeated annually and at the request of the Regional Administrator.

Future annual performance tests shall detect a leak if readings exceed 10,000 ppm. If a leak is detected, it will be repaired in accordance with 264.1057 (d) and (e).

Future annual performance tests shall calculate the percentage leak rate by dividing the number of valves with readings in excess of 10,000 ppm by the total number of valves eligible. The initial performance test conducted in December 1990 did not detect any leaking valves. The resulting leak rate for the initial performance test of zero (0) percent meets the two (2) percent standard.

Should CHK decide to discontinue meeting this alternative standard, the Regional Administrator

will be notified.

N-4b Skip Period Leak Detection and Repair

CHK does not elect to meet this alternative standard for valves in the regulated service at this time. Should CHK elect to meet this alternative standard in the future, the Regional Administrator shall be notified and the program revised to comply with 264.1062 (b).

N-5 Test Methods and Procedures

The test methods used by CHK comply with 264.1063. Relevant instrument and method information is included in this document as Appendix N-C.

Monitoring performed at CHK is done in accordance with Method 21 as set forth in 40 CFR Part 60.

The instrument currently being used for monitoring is a Foxboro OVA Model 108; other instruments may be utilized depending on performance and instrument availability. The performance criteria for this instrument against Method 21 requirements are well documented and are included in Appendix N-C. The instrument is calibrated according to Method 21 requirements and the results documented as part of the monitoring. Examples of calibration forms for documenting this information appear in Appendix N-C. Calibration gases conform to Method 21 requirements and are documented with each calibration (see Appendix N-C). Future monitoring procedures, monitoring equipment, and calibration of that equipment shall comply with 40 CFR 264.1063.

N-5a Testing for No Detectable Emissions

The only equipment at CHK designated as meeting the "no detectable emission" standard are pumps meeting the criteria of 264.1052 (e). These pumps will be monitored annually following the procedures of 264.1052 (b). The background levels will be recorded as set forth in Method 21 in determining the leakage rates from these pumps.

When monitoring for leaks, the instrument probe is traversed around all potential leak sources from these pumps as close to the interface as possible as described in Method 21.

The background value shall be subtracted from the highest reading on each pump in determining compliance with the 500 ppm level for no detectable leakage.

N-5b <u>Testing Organic Concentration</u>

All identified hazardous waste equipment in waste service contacts ten (10) percent or greater liquid wastes. CHK has made this determination based on knowledge of the waste streams handled by CHK and complies with 264.1063 (g). Additional testing using methods stipulated by paragraphs 264.1063 (d) (1) and (2) for this initial designation is not required at CHK Since all identified hazardous waste equipment has been designated as being in light liquid, ten (10) percent or greater organic liquid waste service, documentation of this determination based on knowledge of process is not required.

Should CHK determine that a system can be designated as contacting less than ten (10) percent organic concentration streams, or the Regional Administrator does not agree that a stream contains less than ten (10) percent by weight organics, the determination will only be revised after following the procedures in 264.1063 (d) (1) or (2).

Any samples used to determine the percent organic content shall be representative of the highest total organic content hazardous waste that is expected to be handled in or contact the equipment.

Since all equipment at the CHK facility has been designated in light liquid service, no waste constituent vapor pressure determinations are necessary.

No control device efficiency tests are performed at the CHK facility since emissions reductions using control devices are not required by 264.1034.

N-6 Recordkeeping Requirements

CHK is subject to the leak detection and repair requirements only and has no closed vent or control devices. The recordkeeping provisions of this paragraph for the Subpart BB program only apply to CHK. Although CHK is owned by Clean Harbors and is part of a multiple facility system subject to these standards, CHK elects to maintain the required records on site. Additional information on this program for CHK may also be maintained at Clean Harbors corporate office in Braintree Massachusetts.

N-6a Equipment Information

The identification numbers for equipment subject to leak detection and repair requirements and associated hazardous waste management units appear in the Tables in Appendix N-D. The numbers separate the equipment into two categories. Valves and connections are identified with PXXX number, pumps are identified by a MXXX number. These numbers are unique to each piece of equipment.

Drawings of the process and facility plot plan are included in Appendix N-A. These drawings also show each piece of equipment subject to these standards and their identification numbers. The exact location of each piece of equipment is identified for monitoring and repair tracking from this information.

The tables in Appendix N-D include equipment descriptions, types, models, serial numbers, and operating characteristics where available.

Hazardous waste streams handled at the CHK facility have been assumed to exceed the ten (10) percent organic content limit and a majority are liquids. The gas/vapor service equipment is identified by type of associated process. This service is limited to equipment on condensers and vent lines, and is identified in the tables included in Appendix N-D. All pipelines subject to these standards are identified as being in either vapor or liquid service in the pipe line lists in Appendix N-D. Light liquid services are identified by the identification number for the pipeline in which the equipment is installed. K-XXX represents a kiln fuel service, N-XXX represents a non-chlorinated organics service, C-XXX represents a chlorinated organics service, W-XXX represents an aqueous organics service, and O-XXX represents waste oil service.

Each piece of equipment subject to 40 CFR Subpart BB standards is marked in such a manner that it can be distinguished readily from other pieces of equipment. Markings include identification tags and/or color coding as appropriate.

N-6b Method Of Compliance

Pumps are monitored monthly in accordance with 264.1052 (a), (b), and (c); except for those pumps listed in Appendix N-E. Those pumps are tested for compliance with no detectable emissions standards annually.

Valves are tested annually for leaks in accordance with 264.1061, (standards allowing no greater than two (2) percent of the valves to leak); except for those valves that are designated as difficult to monitor. These valves are monitored for leaks annually.

Flanges and other connectors are inspected weekly and monitored if evidence of a leak is found.

All open-ended valves and lines at the CHK facility are equipped with caps or plugs intended to seal the open end when the line or valve is not in service. All double block lines at the facility are operated such that the valve on the hazardous waste stream side is closed before the second valve is closed.

N-6c Control Devices

No control devices are required on the units at the CHK facility, so no implementation schedule for their installation, their design, or performance test plans have been prepared.

N-6d Leak Identification

Whenever a leak is detected on any equipment, a weatherproof tag shall be attached showing the equipment identification number, the date a potential leak was visually identified, the date a leak was detected in accordance with 264.1058 (a). This equipment identification tag will be

removed after repair except for valves.

The equipment identification tag will remain on repaired valves until two (2) successive months of monitoring indicate that the leak has been repaired by measurements less than 10,000 ppm.

When a leak has been detected by exceeding a 10,000 ppm measurement, information on the leak and its repair will be documented and made part of the operating record. An example of the leak reports and repair records are included in Appendix N-F. This information shall include the following.

- The instrument and operator and the leaking equipment identification number.
- The date a potential leak was identified.
- The date a leak was detected by exceeding 10,000 ppm on the instrument and the date of each attempted repair.

- The repair method applied with each attempt to repair the leak.
- The monitoring results following each repair attempt and the indication of "greater than 10,000 ppm" if the reading is above 10,000 ppm.
- The notation "Repair Delayed" if repairs are delayed past fifteen (15) days.
- Documentation of the repair delay in accordance with 264.1059 (c).
- The signature of the owner or operator whose decision it is to delay the repair due to the need for a hazardous waste management unit shutdown.
- The expected date of successful repair of the leak if it is not repaired within fifteen (15) days.
- The date of successful repair.

N-6e **<u>Equipment List</u>**

The list of equipment subject to the requirements of 264.1052 through 264.1060 appears in the tables in Appendix N-D.

N-6f No Detectable Emission Equipment

A list of equipment designated by CHK as meeting the no detectable emissions standards for pumps from 264.1052 (e) appears in Appendix N-E along with a statement signed by Clean Harbors designee at the CHK facility.

The dates of the compliance tests, the background value, and the highest value measured for each pump designated according to 264.1052 (e) and identified according to paragraph (g) (2) (i) of this section appears in Appendix N-F along with all field records of the monthly monitoring performed on all regulated equipment at the CHK facility.

N-6g Pressure Relief and Vacuum Equipment

There are no pressure relief devices at the CHK facility subject to this requirement.

N-6h Difficult to Monitor Valves

Valves that have been identified as difficult to monitor are identified in the tables in Appendix N-D by the identification number P-XXXU/PXXXU or M-XXXU/MXXXU. CHK does not elect to identify any equipment as unsafe-to-monitor at this time. The difficult-to-monitor valves identified pursuant to 264.1057 (h) listed in the tables in Appendix N-D are all located at or above two (2) meters above a supported surface. The valves will be monitored annually when a portable structure capable of safely supporting monitoring personnel can be scheduled.

N-6i Process Information for Exemptions

Information is available in the facility records that indicate the design capacity of the hazardous waste management units.

The facility operating record includes information on the influent and effluent of each hazardous waste management unit subject to these requirements.

No hazardous waste management unit exclusively handles heavy liquids and all equipment is covered by sections of the requirements which apply to light liquids. All identified hazardous waste equipment in waste service contacts waste with ten (10) percent or greater organics. CHK has made this determination based on knowledge of the waste streams. No exemptions are currently being claimed on the basis of weight percent organics in the waste stream or type of liquid service (heavy or light). This information constitutes the supporting information on the applicability of these requirements at the CHK facility and will be updated on a regular basis.

N-6j Operating Information

The records required by 264.1064 (d) and (e) will be maintained on site for a period of three years.

N-6k Additional Fugitive Emission Requirements

CHK is not subject to the additional requirements from 40 CFR Part 60, subpart VV; or Part 61, subpart V; and therefore cannot document compliance with this section using duplicative information.

N-7 SUBPART CC - COMPLIANCE PROGRAM - AIR EMISSION STANDARDS FOR TANKS,

The WICHITA facility has various waste management units that are regulated under the requirements of Subpart CC. This Subpart applies to tanks, surface impoundments, containers and miscellaneous units, which are used to manage hazardous wastes with an average volatile organic concentration of equal to or greater than 500 ppm by weight at the "point of waste origination".

The "point of waste origination" is defined in 40 CFR 265.1081 as follows:

> *For a generator, the point of waste origination is the point where a solid waste is produced, or is determined to be a hazardous waste as defined in 40 CFR 261.*
>
> *For a TSDF which is not the generator of the waste, the point of waste origination is defined as the point where the facility owner or operator first accepts delivery or takes possession of the waste. At WICHITA, this would be the point where the wastes first enter the facility.*

N-7a <u>Affected Units/Activities</u>

N-7b <u>Surface Impoundments and Miscellaneous Units</u>

The WICHITA facility does not currently operate any surface impoundments, or miscellaneous units therefore the RCRA Subpart CC requirements associated with these of units are not applicable and will not be discussed.

N-7c <u>Tanks</u>

Subpart CC established two levels of air controls for tanks: Level 1 and Level 2. Under Level 1, fixed-roof tanks may operate without emission control devices and without

periodic air monitoring for leak detection provided that certain restrictions regarding tank design/operation and maximum organic vapor pressure (MOVP) limits are met. Any tank that does not qualify for Level 1 controls must comply with the Level 2 control standards which require more sophisticated emission control techniques (e.g., floating roofs, control devices, etc.) and mandatory, periodic air monitoring for leak detection. The WICHITA facility operates eight (8) storage tanks which are affected by Subpart CC. These tanks and their capacities are as follows.

Tank Farm			
Tank	V-1	7,363	gallons
Tank	V-2	7,363	gallons
Tank	V-3	7,363	gallons
Tank	V-4	7,363	gallons
Tank	V-5	20,985	gallons
Tank	V-6	20,895	gallons
Tank	V-7	7,363	gallons
Tank	V-8	7,363	gallons

N-7d <u>Tank Level Emission Control Standards</u>

Level 1-tank standards are applicable if any the following criteria are met:

A. The MOVP of the hazardous waste in the tank is less than the MOVP limit for the tank's design capacity as provided below:
   a. The tank design capacity is greater than or equal to 151 cubic meters (39,894 gallons) and the MOVP in the tank is not greater than 5.2 kpa (0.757 psia); or
   b. The tank design capacity is greater than or equal to 75 cubic meters (19,815

gallons) but less than 151 cubic meters, and the MOVP in the tank is not greater than 27.6 kPa (4.02 psia); or

c. The tank design capacity is less than 75 cubic meters and the MOVP in the tank is not greater than 76.7 kPa (11.17 psia)

B. The waste is not heated to a temperature that is greater than the temperature at which the MOVP was determined; and

C. The waste is not treated using a stabilization process

All tanks at Wichita operated under Level 1 controls must be equipped with a fixed roof that meets the following requirements:

A. The fixed roof and its closure devices are designed to form a continuous barrier over the entire surface area of waste in the tank;
B. Each opening in the fixed roof is equipped with a closure device or connected to a closed vent that is vented to an air emissions control system; and

N-7e <u>Inspection/Monitoring Requirements</u>

The only regulated units presently subject to Subpart CC at the WICHITA facility are tanks and containers. The inspection and monitoring requirements applicable to these units are provided below.

N-7f <u>Tanks Inspections</u>

Tanks require a visual inspection to check for defects including, but not limited to:

A. Visible cracks, holes or gaps in the roof sections or between the roof and the tank wall;
B. Broken, cracked or otherwise damaged seals or gaskets on closure devices; and
C. Broken or missing hatches, access covers, or other closure devices.

This visual inspection must be conducted on or before the effective date of the rule (December 6, 1996) and annually thereafter. The results of the inspections must be documented and maintained on-site.

If a defect is noted during an inspection, the first efforts at repair of the defect must occur no later than five (5) calendar days after detection, and shall be completed as soon as possible, but no later than forty five (45) calendar days after detection. Repair of the defect may be delayed beyond 45 days if the repair requires emptying or temporarily removing the tank from service for repair and no alternative tank capacity is available at the facility to accept the waste that is normally managed in the defective tank. In the case of a delayed repair, the repair shall be made the next time the process or unit that is generating the waste managed in the defect tank stops operation. Repair of the defect shall be completed before the process or unit resumes operation.

N-7g <u>Record Keeping Requirements</u>

All Subpart CC records shall be kept for a minimum of three (3) years. Design information, equipment certification information, and design analyses of performance tests shall be kept in the facility records for the life of the equipment. Unit specific recordkeeping requirements are provided below

3.1 The following information shall be recorded for those tanks subject to Subpart CC at WICHITA :

(A) Tank identification number, or other unique identifier;

(B) A record of each inspection required by 40 CFR 265.1085, including:

(1) Date of inspection

(2) For each defect identified:

a) Location of the defect

(b) Description of the defect

(c) Date of detection

(d) Corrective action taken to repair the defect

(e) Reason for delay of repair (if any)

(f) Expected date of completion of delayed repair

(C) For a fixed roof Level 1 control tank, the MOVP determination performed in accordance with 40 CFR 265.1085

(D) Information concerning units that are "unsafe to inspect and monitor" per 40 CFR 265.1085(1) or 265.1086(g):

(1) Identification numbers for units with covers that have been designated "unsafe to inspect and monitor"

N-7h <u>Reporting Requirements</u>

1. Under Subpart AA and BB, the facility must report the following to the Regional Administrator within 15 days (264.1090).

- Each occurrence when hazardous waste containing VOCs in excess of 500 ppmw is placed into a container which is not part of this plan or has not been designated as complying with this plan (e.g., into a "exempt" unit).

N-8 <u>Containers</u>

N-8a <u>Standards for containers</u>

The RCRA Subpart CC standards for containers apply to all containers which contain a hazardous waste with a concentration of 500 ppmv or greater. Per 40 CFR 264.1086, there are three levels of emissions controls for containers apply to all volatile organic (i.e., Level 1, 2 or 3), depending on the following criteria:

A. The design capacity of the container;
B. Whether or not the container is being used "in light material service". The term "in light material service" means that the waste contains at least 20% (by weight) organic constituent(s) that have (in pure form) a vapor pressure equal to or greater than 0.3 kilopascals (0.044 psia); and
C. The use of the container for stabilization treatment processes.

Per 40 CFR 264.1086(c), Level 1 container standards apply to:

A. Containers with a design capacity between 26 and 119 gallons; or

B. Containers with a design capacity greater than 119 gallons and containing a hazardous waste that is not "in light material service". For a non-DOT container with a capacity greater than 119 gallons, the facility must maintain a copy of the procedure used to determine that the container is not "in light material service".

Per 40 CFR 264.1086(d), Level 2 container standards apply to containers with a design capacity exceeding 119 gallons and containing a waste that is "in light material service".

Per 40 CFR 264.1086(e), Level 3 container standards apply to containers with a design capacity greater than 26 gallons which are used in a stabilization treatment process.

The specific management and air emission control requirement for the three levels of controls are described in following sections.

N-8b <u>Level 1 Emission Control Standards for Containers</u>

Level 1 container emission control standards require the use of one of the following types of containers:

A. A container that meets U.S. DOT packaging regulations specified in 49 CFR 178 and 179; or
B. A container that is equipped with a cover and closure devices that form a continuous barrier over the container openings such that when secured, there are no visible holes, gaps, or other open spaces into the interior of the container. The cover may be a separate cover (e.g., lid on a drum, tarp on a rolloff) or may be an integral part of the container structural design (e.g., a portable tank) *i* or
C. An open-top container in which an organic-vapor suppressing barrier is placed on or over the hazardous waste such that no hazardous waste is exposed to the atmosphere (e.g., a vapor suppressing foam).

Under Level 1 controls, all covers and closure devices must be composed of materials that are suitable to minimize waste exposure to the atmosphere and maintain equipment integrity for as long as it is in service. In addition, covers and closure devices must be secured and closed at all times, except in the following cases:

A) Adding waste or other material is allowed, provided:

(1) For continuous filling to the final level, closure devices and covers must be secured upon conclusion of the filling operation.

(2)For intermittent filling to final level, closure devices covers must be re-secured/re-closed when:

A. Final volume is reached
B. Completion of batch with no material additions within 15 minutes
C. Person loading the container leaves the immediate vicinity, or
D. Process generating the waste is shutdown.

(B)Removing waste is allowed, provided:

(1) RCRA-empty containers (per 261.7(b)) do not require a secured/closed cover or closure device
(2) For intermittent removal operations, the closure and covers must be re-secured/re-closed when:
   a. Removal operation is complete but container is not RCRA-empty
   b. Completion of batch with no material removals within 15 minutes, or
   c. Person unloading the container leaves the immediate vicinity.

C) Pressure-relief, conservation vents, and similar devices which vent to the atmosphere are allowed during normal operating conditions for the purpose of maintaining container internal pressure in accordance with the design specifications of the container. The device must be designed to operate with no detectable emissions when the device is secured in the closed position. The setting of the device must be established based on manufacturer recommendations, fire protection codes, standard engineering practices, etc

D) Opening of a closure device or cover is allowed when access to the inside of the container is needed to perform routine activities other than transfer operations. Examples include opening ports or manholes to sample the waste or access equipment in the container. Following completion of the activity, the cover or closure device must be secured/closed.

All "DOT containers" that are used to comply with Level 1 (or Level 2) container controls must

meet the following DOT regulations on packaging of hazardous materials:

All "DOT containers" that are used to comply with Level 1 (or Level 2) container controls must meet the following DOT regulations on packaging of hazardous materials:

(A) The container must comply with:

(1) 49 CFR 178 Specifications for Packaging, or

(2) 49 CFR 179 - Specifications for Tank Cars.

(B) The hazardous waste is managed in the container in accordance with:

(1) 49 CFR 107, Subpart B - Exemptions

(2) 49 CFR 172 - HMT, Special Provisions, Communication, Emergency Response, & Training

(3) 49 CFR 173 General Requirements for Shippers and Packages

(4) 49 CFR 180 - Continuing Qualification and Maintenance of Packaging

DOT exception packaging allowed in 49 CFR Part 178 & 179 are not considered to be "DOT containers" that are exempt from Subpart CC air controls/monitoring, and must be managed under Level 2 controls (i.e. operate with no detectable emission, or as a "vapor-tight'. container). However, lab packs that are packed in accordance with 49 CFR 173.12(b) and managed in accordance with 49 CFR 178 are considered to be "DOT containers" for the purposes of complying with Subpart CC.

N-8c <u>Level 2 Emission Control Standards for Containers</u>

Level 2 container emission control standards require the use of one of the following types of containers:

A. A container that meets U.S. DOT packaging regulations; or

B. A container that operates with "no detectable organic emissions" as determined through the monitoring of all closures using a PID, FID, or similar instrument in accordance with 40 CFR 264.1086(g); or
C. A container that has been demonstrated within the preceding 12 months to be vapor-tight using Method 27 in 40 CFR 60 Appendix A in accordance with 40 CFR 264.1086(h).

Transfers in/out of a Level 2 container must manner that minimizes exposure of hazardous waste .

The procedure specified in 265.1084(d) must be used to demonstrate that a container is operating with no detectable organic emissions. Under that procedure, each potential leak interface on the container, cover, and associated closure devices must be checked. Interfaces include, but are not limited to, the interface of the cover rim and the container wall, the periphery of any opening on the container, and the sealing seat interface on a spring-loaded pressure-relief valve. The test must be conducted when the container is filled with a material having a VO concentration representative of the VO concentrations for the hazardous waste expected to managed in the container. The cover and all closure devices must remain closed during the test.

The procedure specified in 40 CFR 60 Appendix A, Method 27, must be used to demonstrate that a container is vapor-tight. The test must be performed in accordance with Method 27 requirements using a pressure measurement device that has a precision of +/- 2.5 mm water and that is capable of pressure measurements above the pressure at which the container is to be tested. The container is considered vapor-tight when it sustains a pressure change of less than or equal to 750 Pascals within 5 minutes after it is pressurized to a minimum of 4,500 Pascals.

N-8d <u>Level 3 Emission Control Standards for Containers</u>

Level 3 container emission control standards require the use of one of the following types of containers:

A. A container that is vented directly through a closed-vent system to a control device operating in accordance with 40 CFR 264. 1086 (e) (2) (i i); or
B. A container that is vented into an enclosure which is exhausted through a closed-vent system to a control device in accordance with 40 CFR 264.1086 (e)(2)(i) and (e)(2) ii) .

A Level 3 closed-vent system and control device must be designed and operated in accordance with 40 CFR 265.1088. A Level 3 container enclosure must be designed and operated in accordance with the permanent total enclosure criteria in 40 CFR 52.741, Appendix B (i.e., "Procedure T"). The Procedure T verification procedures must be conducted when the enclosure is first installed, and annually thereafter.

Level 3 container controls must be inspected and monitored in accordance with 40 CFR 265.1088. In addition, owners/operators of Level 3 container controls must prepare and maintain the records specified in 40 CFR 265.1090.

WICHITA does not currently operate any containers subject to Level 3 control requirements at this time. Only wastes containing less than 500 ppmw will be stabilized on-site.

N-8e <u>DOT Packaging Greater Than 119 Gallons</u>

Containers of hazardous waste that have a design capacity of greater than 119 gallons, that operate "in light material service", and that meet a DOT design specification in 49 CFR 178/179 are subject to the Level l inspection, filling/emptying, and opening/closing

requirements described above. In addition, the following requirements apply:

a. Waste transfer operations involving containers requiring Level 2 controls must be conducted to minimize exposure of hazardous waste to the environment. Acceptable loading procedures include, but are not limited to, the use of submerged fill, vapor balancing, or vapor recovery techniques.

b. If a container is downgraded to Level 1 controls because it is not operating "in light material service", the facility must keep a copy of the procedure that was used to determine that the container is not in light material service. For the purposes of complying with this requirement, such determinations shall be made during the initial waste prequalification process based on information provided by the generator.

N-8f Non-DOT and DOT-Exemption Packaging Greater Than 119

Containers of hazardous waste that have a design capacity of greater than 119 gallons, that are used "in light material service", and that do not meet a DOT design specification in 49 CFR 178/179 (i.e., "non-DOT containers") or that are designed, manufactured and operated pursuant to a DOT-exemption are subject to the Level 1 inspection, filling/emptying, and opening/closing requirements. In addition, the following requirements apply:

(A) Waste transfer operations involving containers requiring Level 2 controls (i.e., one that is operating "in light material service") must be conducted to minimize exposure of hazardous waste to the environment. Acceptable loading procedures include, but are not limited to, the use of submerged fill, vapor balancing, or vapor recovery techniques;

(B) If a container is downgraded to Level 1 controls because it is not operating "in light material service", the facility must keep a copy of the procedure that was used to determine that the container is not in light material service. For the purposes of

complying with this requirement, such determinations shall be made during the initial waste prequalification process based on information provided by the generator; AND

(C) Level 2 containers must operate with "no detectable organic emissions". Such container must be checked (e.g., by PID, FID, or other instrument) for leaks at all container/closure interfaces. The leak detection test is required at the point of generation. WICHITA need not conduct a leak test when such a container arrives at the facility, but would have to conduct the leak test when generating an outbound load of hazardous waste; OR

(D) Level 2 containers must operate as “vapor-tight” containers. Such container must be tested using EPA Method27. The vapor-tight test is required prior to initial use of

the container. WICHITA need not conduct a "vapor-tight" test when such a container arrives at the facility, but would have to ensure that such a container was tested within the previous 12 months prior to using the container for an outbound load of hazardous waste.

N-8g <u>Recordkeeping</u>

Containers using Level 1 or Level 2 controls do not require any recordkeeping, except in the case where a container is downgraded to Level 1 controls because it is not operating "in light material service". In such cases, WICHITA will keep a copy of the procedure used to determine that the container is not in light material service.

WICHITA does not intend to operate any containers in Level 3 service. Therefore, the recordkeeping requirements that apply to Level 3 are not applicable.

N-9 <u>Reporting Requirements 40 CFR 264.1065</u>

If CHK fails to repair any leaks from valves, pumps, and compressors as required by 264.1057,(d), 264.1052(c) and (d)(6), or 264.1053(g), A Semiannual report will be submitted by CHK to the regional Administrator listing the following information as applicable:

1) CHK's EPA Identification number, name and address
2) For each month during the covered timeframe:

   The equipment id. Number for each valve which was not repaired as required 264.1057,(d)

   The equipment id. Number for each pump which was not repaired as required by 264.1052(c) and (d)(6)

   The equipment id. Number for each compressor which was not repaired as required by 264.1053(g),
3) Date of Hazardous waste management unit shutdowns that occurred within the covered period.

Appendix N-A - Facility and Process Drawings

Drawing Number	Subject
665300-4-W404G	Tank Farm I/V-1, V-2, V-3 & V-4
665300-4-W404H	Tank Farm II/V-5 Thru V-8/N & S Manifolds
665300-4-W511-1	Tank Farm

Appendix N-B - Regional Administrator Letter

Appendix N-C - Monitoring Method and Equipment Documentation

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Appendix N-D - Equipment Lists

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Appendix N-D.1 - Piping Component Data Sheets

~~Appendix N-E - Equipment Designated As No Detectable Emissions~~

Deleted

Appendix N-F - Monitoring Results and Repair Reports

Clean Harbors Kansas, LLC
RCRA Permit Application
Section N
Air Emissions (40 CFR 264 Subparts AA BB, and CC)
Appendix F - G CC monitoring

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List of Acronyms

Clean Harbors Kansas, LLC (SKW)

Y-1 Introduction:

This section referenced Drawings, of the Clean Harbors Kansas, LLC RCRA permit application is provided to facilitate location of information regarding site layout, equipment, and processing unit information. Reduced versions of these drawing are included as figures within the text or appendices of the application where applicable.

List of Drawings

Figure B.1	Site Location Map (Refer to section B for drawing)
Figure B.2	Topographic Map (Refer to section B for drawing)
Figure B.3	Wichita Facility Site Plan
Figure B.3A	Facility Site Plan
Figure B.4	Hazardous waste Management Areas
Figure B.5	Monthly Wind Rose (Refer to section B for drawing)
Figure D.1	Hazardous waste Management Areas
Figure D.2	Wichita Site Plan
Figure D.3	Process Building
Figure D.4	Building C
Figure D.5	Drum Dock
Figure D.6	Building I
Figure E.1	Hazardous waste Management Areas
Figure E.2	Process Building
Figure G.1	Facility Layout
Figure H.1	Emergency Equipment/ Evacuation Routes
Figure J.1	Material Containment Areas
Figures J.2	Tank Locations
Figure J.3	Hazardous waste Management Areas (showing areas to be closed)
Figure L.1	Location of SMWU's
Figure 201	Tanks V1-V4 Piping & Instrument Diagram
Figure 202	Tanks V5-V8 Piping & Instrument Diagram
Figure 3	Groundwater Contour Map of Upper Zone (locations of monitoring wells)