Government and Industry

Maryland Fire and Rescue Institute, University of Maryland

Questions?
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specialprog@mfri.org

Government and Industry

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Hazardous Materials Awareness
HM-101
Old Course Code: HMA

Instructional Hours: 8

ACE Code: HMA

The one-day program is for individuals whose position may require them to report a hazardous materials incident. Emphasis is placed on the identification of hazardous materials and effective reporting systems. The program is also designed to provide an overview of the standard for supervisors responsible for employees or contractors who may be exposed to, or handle, hazardous materials.

Contact the MFRI Webmaster

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UNIVERSITY OF MARYLAND

Maryland Transit Administration
Dept. of Materials and Stores
HAZARDOUS MATERIALS TRAINING

NO.	CLASS CLASS	PR #	L NAME	F NAME	DEPT	Hazmat Training Class	Hazmat Training Class	Hazmat Training Class
1	#1300	00970	ALLEN	STEVEN	C369			10/04/05
3	#1300	10430	BURKETT	DONALD	C367			10/04/05
4	#1300	10700	BURRESS	THOMAS	C367		07/22/03	10/05/05
5	MGT.	11687	CALDWELL	CAROLYN	C367	03/29/01	07/22/03	10/05/05
8	#1300	13087	CHAMBERS	CECILIA	C368			10/05/05
9	#1300	13375	CHILCOAT	NORMAN	C368	03/29/01	07/22/03	10/05/05
10	#1300	14135	CLAYTON	JAMES	C367	03/29/01	07/22/03	10/04/05
11	#1300	22325	EMERY, JR	BERNIE	C367	03/29/01	07/22/03	10/04/05
12	#1300	23230	FARMER	MARVIN	C368	03/29/01	07/22/03	10/04/05
13	MGT.	24600	FLURIE	JEAN	C367			10/05/05
14	MGT.		GARRETTSON	GORDON	C365			10/04/05
15	#1300	28325	GILBERT	KARL	C367	03/29/01	07/22/03	10/05/05
16	#1300	28450	GILLS, JR	KENNETH	C369	03/29/01	07/22/03	10/05/05
17	#1300	29500	GRAMS	JOHN	C367	03/29/01	07/22/03	10/04/05
18	MGT.	33305	HAWKINS	SYLVESTER	C367			10/05/05
19	#1300	33625	HECKSCHER	ROBERT	C369	03/29/01	07/22/03	10/05/05
21	#1300	43065	KLEIN	JOHN	C367	03/29/01	07/22/03	10/04/05
22	#1300	44100	KRAMER	WAYNE	C367	03/29/01	07/22/03	10/05/05
23	#1300	44590	KUHL, SR.	GARY	C367	03/29/01	07/22/03	10/04/05
24	MGT.	45320	LANGE,	JOSEPH	C366			10/04/05
25	#1300	46855	LEWIS	DEMETRIUS	C367			10/04/05
26	#2	50750	MAYO	KAREN	C367	03/29/01	07/22/03	
27	#1300	54010	MITCHELL	WILLIAM	C367	03/29/01	07/22/03	10/05/05
28	#1300	56260	NEAL	FRANK	C369			10/04/05
30	#1300	56390	NELSON	ALEAN	C368		07/22/03	10/04/05
31	#1300	57690	O'BRIEN	JAMES	C367	03/29/01	07/22/03	10/05/05
32	#1300	61910	POOLE	CARL	C368	03/29/01	07/22/03	10/05/05
33	#1300	66450	ROBINSON	WILLIAM	C368	03/29/01	07/22/03	10/05/05
34	#1300	68625	SAPPINGTON	GARRY	C368	03/29/01	07/22/03	10/05/05

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Dept. of Materials and Stores
HAZARDOUS MATERIALS TRAINING

NO.	CLASS CLASS	PR #	L NAME	F NAME	DEPT	Hazmat Training Class	Hazmat Training Class	Hazmat Training Class
35	#1300	69005	SCARBATH	DONALD	C369		07/22/03	10/04/05
36	MGT.	69830	SCHOTTLER	HERBERT	C368	03/29/01	07/22/03	10/04/05
37	#1300	72750	SINKLER	WILLIAM	C369	03/29/01	07/22/03	10/04/05
38	#1300	80335	TURC	RICHARD	C367	03/29/01	07/22/03	10/05/05
39	MGT.	14800	WILSON	ROYCE	C367		07/22/03	10/04/05
41	#1300	88830	ZAICKO	RICHARD	C367	03/29/01	07/22/03	10/05/05

2005 HAZMAT CLASSES
TUESDAY, OCTOBER 4, 2005

(Held in Conference Room – Monroe Street - 1st Floor)

MORNING CLASS – Four (4) Hours (8:00 a.m.-12:00 Noon)		
Bus Local #1300	**Rail Local #1300**	**Light Rail Local #1300**
Burket, Donald	Farmer, Marvin	Scarbath, Donald
Clayton, James	Sinkler, William	Neal, Frank
Emery, Bernard		Allen, Steven
Grams, John		
Klein, John		
Kuhl, Gary	**Management Employees**	
Lewis, Demetrius	Schottler, Herbert	
Nelson, Alean	Garrettson, Gordon	
New S/R Attendant	Lange, Joseph	
New S/R Attendant	Wilson, Royce	
		Employees: 19

2005 HAZMAT CLASSES
WEDNESDAY, OCTOBER 5, 2005

(Held in Conference Room – Monroe Street - 1st Floor)

MORNING CLASS – Four (4) Hours (8:00 a.m.-12:00 Noon)		
Bus Local #1300	**Rail Local #1300**	**Light Rail Local #1300**
Burress, Thomas	Chilcoat, Norman	Heckscher, Robert
Gilbert, Karl	Chambers, Cecilia	Gills, Kenneth
Kramer, Wayne	Robinson, William	
Mitchell, William		
O'Brien, James		
Poole, Carl	**Management Employees**	
Sappington, Garry	Flurie, Jean	
Turc, Richard	Caldwell, Carolyn	
Zaicko, Richard	Hawkins, Sylvester	
	Etzel, Ron	
		Employees: 19

CLASS: **Hazardous Materials**

DATE: **Tuesday, October 4, 2005**

TIME: **8:00 a.m.**

Attendees Sign-In Sheet

NAME	LOCATION
1. DEMETRIUS LEWIS	MONROE ST.
2. Alean Nelson	Monroe
3. Donald Burket	Monroe
4. STEVE ALLEN	LRS
5. Bernie Emery	Kirk Ave
6. FRANK A NEAL	CROMWELL
7. DAVID W. Hett	Bus H
8. MARVIN FARMER	
9. Jim CLAYTON	Monroe st.
10. Gary Kuhl	NW
11. John G Klein	Monroe ST
12. Don Scarbath	Light RAIL

NAME	LOCATION
13. William Sinkler	
14. Joyce Wilson	Monroe
15. Joyce Lange	Monroe
16. HERB SCHOTTLER	WABASH
17. Gordon Garrettson	Monroe
18.	
19.	
20.	
21.	
22.	
23.	
24.	
25.	
26.	
27.	
28.	

CLASS: **Hazardous Materials**

DATE: **Wednesday, October 5, 2005**

TIME: **8:00 a.m.**

Attendees Sign-In Sheet

NAME	LOCATION
1. Wm Mitchell	EASTERN AVE
2. J.M. O'BRIEN	1331 S. MONROE ST. BALTO. MD. 21230 STOREROOM
3. THOMAS BURRESS	"
4. SYLVESTER HAWKINS	" "
5. CARL POOLE	1331 S. MONROE ST.
6. Richard TURC	1331 S. Monroe St.
7. WAYNE KRAMER	1331 S. MONROE ST.
8. NORMAN E. CHilcoat	5801 WABASH AVE.
9. Richard ZAICKO	1331 S. MONROE ST.
10. KARL GILBERT	1331 S. MONROE ST.
11. RON ETZEL	1331 S. MONROE ST.
12. Jean Flinn	1331 S. Monroe St., Inventory

NAME	LOCATION
13. G. Chambers	5801 Wabash Ave.
14. G. Caldwell	1331 Monroe St.
15. [illegible] Robinson	5801 Wabash Ave.
16. [illegible]	NORTH AVE
17. Kenneth Hill Jr	North Ave
18. GARY SAPPINGTON	BUSH ST
19.	
20.	
21.	
22.	
23.	
24.	
25.	
26.	
27.	
28.	

MTA UST LEAK DETECTION TRAINING COURSE

Why Do Leak Detection?

- Federal and State Regulations.
- Safety (Fire and Explosions, Toxic Substances).
- Economic (Cost of Fuel and Remediation).
- Operational (Fuel Availability and Vehicle Performance/Maintenance).

Regulations

- FEDERAL:
  - 40 CFR 280.41 through 45
  - http://www.epa.gov/oust/fedlaws
- STATE:
  - COMAR 26.10.05.01 through 06
  - www.dsd.state.md.us

Regulations - Federal

40 CFR 280

- Any facility violating RCRA UST regulations can be fined up to $11,000 per day for each tank in civil penalties and up to $27,500 per day for violating a Federal order.

- 4 Tanks x $11,000/day x 365 days/year = $16,060,000 in potential penalties.

UST Violations

- EPA has fined a fuel company for the third time for failing to take required measures to detect and prevent fuel leaks from underground storage tanks at eight Maryland gas stations that are owned or operated by the company.
  Penalty: $101,000 fine

Regulations - State

COMAR 26.10.04.01.E

- The owner or operator shall ensure the liquid level of metered storage systems is measured using a stick or electronic method each day of operation, and shall reconcile the results with pump meter readings and receipt of product. These records shall be kept for 5 years at the facility or a location under the control of and designated by the owner or operator and shall be made available to the Department for inspection.

Safety

- Loss of Life or Injury due to Fires and Explosions.
- Exposure to Toxic Substances in Fuel.

Economic Costs

- Cost of Fuel Continues to Rise.
- Subsurface Spill Cleanup can Cost $100,000 or more.

Operational Impacts

- Lack of Fuel due to Leaks may Impact Normal Bus Operations.
- Water Intrusion into Storage Tanks may Contaminate Fuel Causing Vehicle Breakdowns and Increased Maintenance.

How To Do Leak Detection

Follow MTA Procedure Number BUS.01.07.06.

Daily Inventory Control Worksheet:

- Daily Consumption from Totalizer Readings.
- Tank Measurements with Veeder Root System.
- Daily Measurements Before and After Deliveries.
- Total Storage, Consumption and Deliveries Calculated Daily.

POSTING DATE: _____ INITIAL: _____

Note: Consumption figures (totalizer readings) in the "End of the Day" column of the collected sheet must be copied to the "Start of the Day" column during the swap.
"End of the Day" column in Delivery section must be filled out before collection.

DAILY INVENTORY CONTROL WORKSHEET (DIESEL FUEL)

CONSUMPTION	Reading During Posting (Start of the Day, 7 A.M.)	Reading During Collection (End of the Day, 7 A.M.)	Fuel Sheet Total
Totalizer #1			
Totalizer #2			
Totalizer #3			
Totalizer #4			
Totalizer #5			
Totalizer #6			
TOTAL			

NOTES: _____

DELIVERY			End of the Day		Before the Delivery		After the Delivery	
TIME			Inches	Gallons	Inches	Gallons	Inches	Gallons
	TANK___	Veeder Root						
		Clock Gauge						
	TANK___	Veeder Root						
		Clock Gauge						
	TANK___	Veeder Root						
		Clock Gauge						
	TANK___	Veeder Root						
		Clock Gauge						
	TOTAL							

NOTES: _____

COLLECTION DATE: _____ DIVISION: _____

YOUR NAME: _____ PAYROLL NUMBER: _____ SIGNATURE: _____

SUPERINTENDENT NAME: _____ SIGNATURE: _____

How To Do Leak Detection

Monthly Inventory Record

- Daily Inventory, Deliveries and Consumption.
- Daily Inventory Calculated.
- Monthly Reconciliation Performed.
- Allowable Variance is 1% of Throughput Plus 130 Gallons.

Month: _____

Monthly Inventory Record

DATE	START INVENTORY (GALLONS)	GALLONS DELIVERED	GALLONS PUMPED	BOOK INVENTORY (GALLONS)	END INVENTORY (INCHES)	END INVENTORY (GALLONS)	DAILY OVER (+) OR SHORT (-) ["Book"]	INITIALS
1	(+)	(-)	(=)					
2	(+)	(-)	(=)					
3	(+)	(-)	(=)					
4	(+)	(-)	(=)					
5	(+)	(-)	(=)					
6	(+)	(-)	(=)					
7	(+)	(-)	(=)					
8	(+)	(-)	(=)					
9	(+)	(-)	(=)					
10	(+)	(-)	(=)					
11	(+)	(-)	(=)					
12	(+)	(-)	(=)					
13	(+)	(-)	(=)					
14	(+)	(-)	(=)					
15	(+)	(-)	(=)					
16	(+)	(-)	(=)					
17	(+)	(-)	(=)					
18	(+)	(-)	(=)					
19	(+)	(-)	(=)					
20	(+)	(-)	(=)					
21	(+)	(-)	(=)					
22	(+)	(-)	(=)					
23	(+)	(-)	(=)					
24	(+)	(-)	(=)					
25	(+)	(-)	(=)					
26	(+)	(-)	(=)					
27	(+)	(-)	(=)					
28	(+)	(-)	(=)					
29	(+)	(-)	(=)					
30	(+)	(-)	(=)					
31	(+)	(-)	(=)					

TOTAL GALLONS PUMPED > _____ TOTAL GALLONS OVER OR SHORT > _____

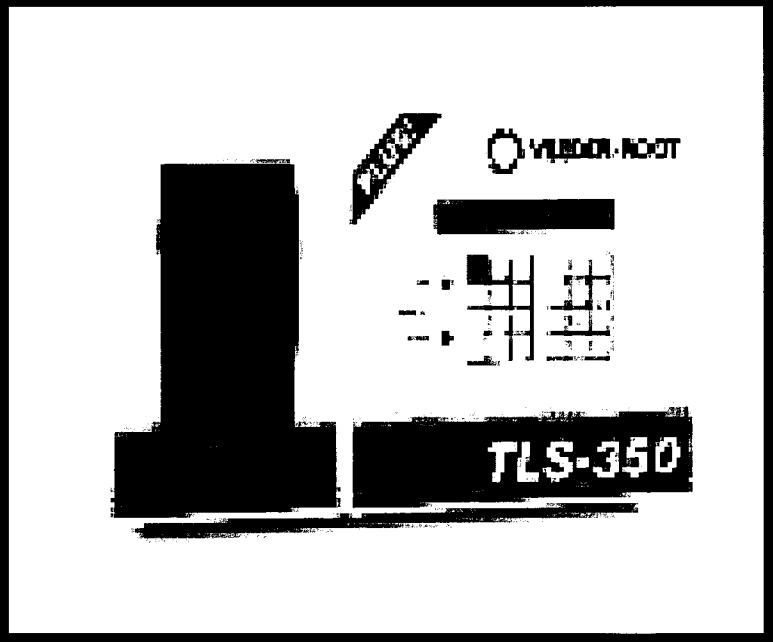
COMPILATON DATE: _____ DIVISION: _____

YOUR NAME: _____ PAYROLL NUMBER: _____ SIGNATURE: _____

SUPERINTENDENT NAME: _____ SIGNATURE: _____

Veeder Root Operation

- Electronic Tank Monitoring System
- Automatically Converts Readings to Gallons.
- Corrects for Fuel Temperature.
- Measures Water in Tanks.
- Performs Leak Tests on Tanks.



Veeder Root Operation

TLS-350 UST MONITORING SYSTEM – OPERATING PROCEDURES GUIDE

OPERATING MODE

- **In-Tank Inventory Data (by Tank)**
  - Fuel Volume
  - Fuel Height
  - Water Height
  - Fuel Temperature
  - Ullage
  - Temperature-Compensated Fuel Volume
  - Last Inventory Increase Amount
  - Last In-Tank Leak Test Result
- **Last-Shift Inventory (by Tank)**
  - Beginning Inventory
  - Ending Inventory
  - Gross Change
- **Liquid Sensor Status (by Sensor)**
  - Sensor Status
    - Normal
    - Liquid Alarm
    - Sensor Out
- **Vapor Sensor Status (by Sensor)**
  - Sensor Status
    - Normal
    - Vapor Alarm
    - Water Alarm
    - Sensor Short
    - Sensor Open
- **Start In-Tank Leak Test**
  - Test Method
    - All Tanks
    - Single Tank
  - Test Control
    - All Tanks
      - Timed
      - Manual Stop
    - Single Tank
      - Tank #
      - Timed
      - Manual Stop
  - Test Duration(s)
    - All Tanks
    - Single Tank
  - Start Leak Test
- **Stop In-Tank Leak Test**
  - Stop Method
    - All Tanks
    - Single Tank
      - Tank #'s
  - Stop Leak Tests
- **Test Output Relays (by Relay)**
  - Activate Relay Output
  - De-Activate Relay Output

LEGEND

- F = FUNCTION
- S = STEP
- M = MODE
- A = ALARM / TEST

TLS-350 BUTTON FUNCTIONS

OPERATING BUTTONS

MODE–Press to select operating modes: Normal Mode, Setup Mode, Diagnostic Mode.

FUNCTION–Press to select functions within a MODE.

STEP–Press to advance through steps within a FUNCTION.

TANK, SENSOR–Press to advance by tank or sensor through setup procedures or displayed data.

CHANGE–Press to start an entry, revise existing data or change an entry.

ENTER–Press to complete a selection or enter data into a function. It is also used to start certain functions such as leak tests.

BACKUP–Press to move back through STEPS, FUNCTIONS, and MODES to access data or entries you have already passed in the normal progression.

PRINT–Press to generate inventory, delivery, leak test, status, setup, diagnostic and alarm history reports.

ALARM, TEST–Press to shut off audible alarm. Press to activate and de-activate output relays when OUTPUT RELAY TEST function is used.

ALPHANUMERIC BUTTONS

Buttons 0 through 9 provide both alpha and numeric capability by activating each character shown on the button with successive pushes of the button. If only a numeric character may be entered, the buttons have only a numeric function.

When either an alpha or numeric character may be entered, as in a station header, press the button once to enter an "A". Push the button again to change the character to a "B", again to enter a "C", and again to enter a "2". When the correct selection is displayed, press the right-arrow (→) button.

The period (.) is on button 1.

The zero button has a comma (,) plus two special characters: ␣=Space (no character) -=Dash

SPECIAL-FUNCTION BUTTONS

The Right Arrow (→) button advances the cursor to the right when making alphanumeric entries and when selecting certain parameters such as module configurations. The decimal (.) is used in numeric entries as required.

The Left Arrow (←) button has the same function as the right arrow button. The +/- is used to identify a positive or negative Tank Tilt value.

Veeder Root Operation

elect In-Tank Inventory:

s **FUNCTION** until the following message is displayed:

TANK INVENTORY

ESS <STEP> TO CONTINUE

Press **STEP** to view the tank inventory for the first tank:

T1: (PRODUCT NAME)

VOLUME = XX,XXX (UNITS)

The system displays the fuel volume in gallons

Veeder Root Operation

- View how much inventory is in the next tank:
- Press **TANK**
- Print an Inventory Report for all tanks in a system:
- Press **PRINT** while the monitor is displaying the status message:

DATE TIME

ALL FUNCTIONS NORMAL

Veeder Root Operation

You may also print an Inventory Report while viewing the inventory information.

1: (PRODUCT NAME)
VOLUME = XX,XXX (UNITS)

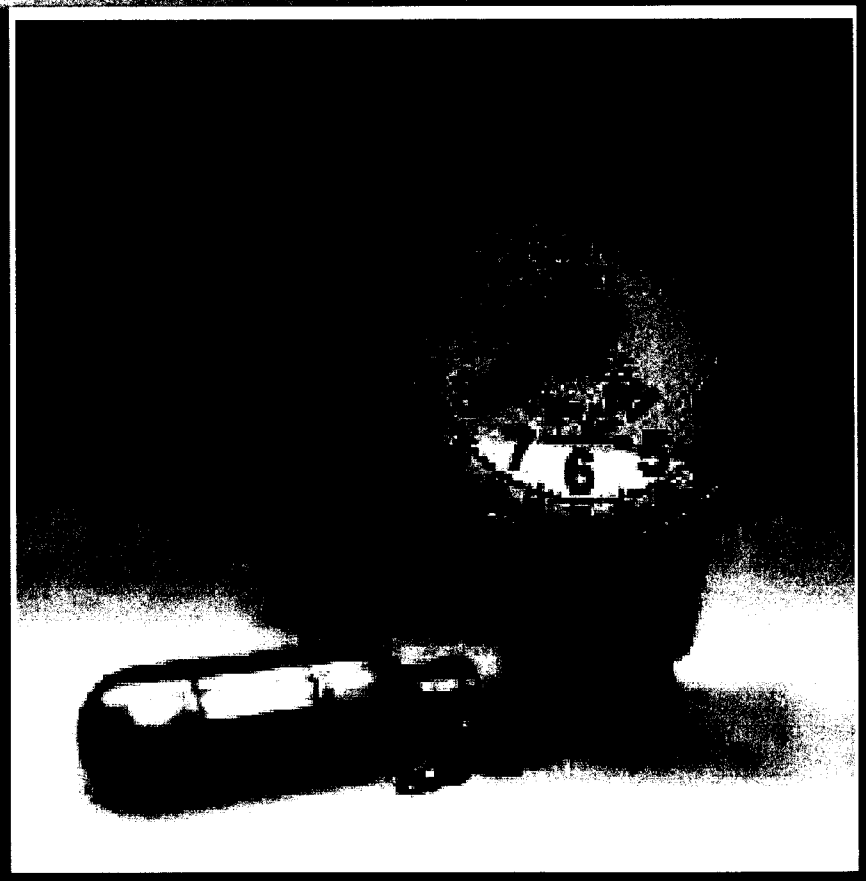
Press **PRINT** to begin printing the Inventory Report

Veeder Root Operation

```
MMM DD, YYYY HH:MM XM

INVENTORY REPORT

T 1: UNLEADED GASOLINE
VOLUME        =  8518 GALS
ULLAGE        =  1482 GALS
90% ULLAGE    =   482 GALS
TC VOLUME     =  8492 GALS
HEIGHT        =76.26 INCHES
WATER VOL     =     0 GALS
WATER         =  0.00 INCHES
TEMP          =  64.6 DEG F

T 2: SUPER UNLEADED
VOLUME        =  7545 GALS
ULLAGE        =  2455 GALS
90% ULLAGE    =  1455 GALS
TC VOLUME     =  7569 GALS
HEIGHT        =67.76 INCHES
WATER VOL     =     0 GALS
WATER         =  0.00 INCHES
TEMP          =  64.4 DEG F
```

Clock Gauge

- Used to Measure Fuel in ASTs.
- Small hand represents feet and the large hand inches within 1/8″.
- Must be used with tank gauge chart to convert to gallons.



Tank Gauge Chart

- Provided by Tank Manufacturer for each Tank.
- Each Reading must be Converted to Gallons.
- Volume per 1/8" Changes with Depth for Round Tanks.

DIPSTICK	GALLONS	DIPSTICK	GALLONS
1/8	1	6 1/8	269
1/4	2	6 1/4	277
3/8	4	6 3/8	286
1/2	6	6 1/2	294
5/8	9	6 5/8	302
3/4	12	6 3/4	311
7/8	15	6 7/8	319
1	18	7	328
1 1/8	22	7 1/8	337
1 1/4	25	7 1/4	345
1 3/8	29	7 3/8	354
1 1/2	33	7 1/2	363
1 5/8	37	7 5/8	372
1 3/4	42	7 3/4	381
1 7/8	46	7 7/8	390

Practice Exercise

- Follow MTA Procedure Number BUS.01.07.06.
- Use "Daily Inventory Control Worksheet" to Collect Information.
- Each Sheet Covers a 24 Hour Period from 7:00 a.m. on Day 1 to 7:00 a.m. the Following Day.
- Record readings to 0.10 of a gallon.

Totalizer Readings

- Readings During Posting (Start of Day, 7:00 a.m.) Recorded for each Totalizer.
- Readings During Collection (End of Day, 7:00 a.m.) Recorded for each Totalizer 24 Hours later.
- Reading During Collection minus Reading During Posting equals Amount of Fuel Dispensed for Each Totalizer.
- All Totalizer Readings Added Together for Total Fuel Consumed During the Day.
- Totalizer Reading During Collection (End of Day 1) is also Reading During Posting for next Day (Start of Day 2).

Totalizer Readings

DAILY INVENTORY CONTROL WORKSHEET (DIESEL FUEL)

CONSUMPTION

	Reading During Posting (Start of the Day, 7 A.M.)	Reading During Collection (End of the Day, 7 A.M.)	Fuel Sheet Total
Totalizer #1	943968	945963	1995
Totalizer #2	107100	109360	2260
Totalizer #3	127404	129437	2033
Totalizer #4	943508	945369	1861
Totalizer #5			
Totalizer #6			
TOTAL	–	–	8149

Fuel Deliveries

- Tank Level Measurements shall be taken before and after each delivery.
- Record before and after delivery measurements on the Daily Inventory Control Worksheet.
- Each delivery shall be monitored by designee of the Division Superintendent.
- Inspect Spill Buckets after each delivery for spilled fuel, they must be kept free of product.

Deliveries

DELIVERY			End of the Day		Before the Delivery		After the Delivery	
TIME			Inches	Gallons	Inches	Gallons	Inches	Gallons
7:00 AM	TANK W 52 DIESEL	Veeder Root						
		Clock Gauge			12 1/2	772	72	8117
	TANK	Veeder Root						
		Clock Gauge						
	TANK	Veeder Root						
		Clock Gauge						
	TANK	Veeder Root						
		Clock Gauge						
	TOTAL					772		8117

NOTES: Delivery = 8117 - 772 = 7345

Multiple Deliveries

- Use Additional lines as necessary, use additional Daily Inventory Control Worksheets if necessary.
- Add up gallons Before Delivery and After Delivery.
- Total each column, the Total Deliveries for the day is the Total After Delivery minus the Total before Delivery.

Multiple Deliveries

DELIVERY	TIME			End of the Day		Before the Delivery		After the Delivery	
				Inches	Gallons	Inches	Gallons	Inches	Gallons
	7:00 AM	W 52 TANK___ DIESEL	Veeder Root						
			Clock Gauge			12½	772	72	8117
		W 52 TANK___ DIESEL	Veeder Root				+		+
			Clock Gauge			72	8117	82	9178
		TANK___	Veeder Root						
			Clock Gauge						
		TANK___	Veeder Root						
			Clock Gauge						
		TOTAL					8889		17295

NOTES: Delivery = 17295 - 8889 = 8406

Tank Measurement

- Veeder Root Printout or Clock Gauge Measurement (must be converted to gallons with tank chart).
- Tank Measurement made each day at 7:00 a.m.
- Tank Measurement is the "End of Day" for the prior 24 hours and "Start of Day" for the next 24 hours.
- Tank Measurement must be made at the same time as Totalizer Readings on the Dispensers.

Tank Measurement

DELIVERY	TIME			End of the Day Inches	End of the Day Gallons
	7:00 Am	W 52 TANK DIESEL	Veeder Root		
			Clock Gauge	12 1/2	772
		TANK____	Veeder Root		
			Clock Gauge		
		TANK____	Veeder Root		
			Clock Gauge		
		TANK____	Veeder Root		
			Clock Gauge		
		TOTAL			772

Complete the Worksheet

- Enter the Collection Date, Division, Print your Name, Enter your Payroll Number and Sign the Worksheet.
- Turn in the Completed Worksheet to the Division Clerk by 8:00 a.m. on the Collection date.
- Replace the Worksheet with a new Worksheet for the next day recording the Start of Day Totalizer Readings.

Monthly Reconciliation

- Division superintendent compiles a monthly reconciliation showing all deliveries and consumption.
- Inform Office of Safety and Risk Management of 7 Consecutive Days of Shortage or Overage of 80 gallons or more.
- Allowable Monthly variance is 1% of Consumption plus 130 Gallons.

Monthly Inventory Record

Month: July 2006

Monthly Inventory Record

DATE	START INVENTORY (GALLONS)		GALLONS DELIVERED		GALLONS PUMPED		BOOK INVENTORY (GALLONS)	END INVENTORY (INCHES)	END INVENTORY (GALLONS)	DAILY OVER (+) OR SHORT (-) ["End" - "Book"]	INITIALS
1		(+)		(-)		(=)					
2		(+)		(-)		(=)					
3		(+)		(-)		(=)					
4		(+)		(-)		(=)					
5		(+)		(-)		(=)					
6		(+)		(-)		(=)					
7		(+)		(-)		(=)					
8		(+)		(-)		(=)					
9		(+)		(-)		(=)					
10		(+)		(-)		(=)			524		
11	524	(+)	8406	(-)	8149	(=)	781	12½	772	- 9	
12	772	(+)		(-)		(=)					
13		(+)		(-)		(=)					
14		(+)		(-)		(=)					
15		(+)		(-)		(=)					

Monthly Inventory Record

22	5639	(+)	4177	(−)	403	(−)	9413	86½	9423	+10	2D
23	9423	(+)	—	(−)	87	(−)	9336	85½	9343	+7	2D
24	9343	(+)	—	(−)	311	(−)	9032	82	9036	+4	2D
25	9036	(+)	—	(−)	239	(−)	8797	79½	8757	−40	2D
26	8757	(+)	—	(−)	256	(−)	8501	76½	8526	+25	2D
27	8526	(+)	—	(−)	264	(−)	8262	74½	8270	+8	2D
28	8270	(+)	—	(−)	263	(−)	8007	72	7991	−16	2D
29	7991	(+)	—	(−)	185	(−)	7806	69	7811	+5	2D
30	7811	(+)	—	(−)	116	(−)	7695	68	7690	−5	2D
31		(+)		(−)		(−)					

W TOTAL GALLONS PUMPED > 6594 TOTAL GALLONS OVER OR SHORT > −74 X

DROP THE LAST 2 DIGITS from the PUMPED number and enter on the TOTAL GALLONS line below

Compare these numbers

Y LEAK CHECK: 65 + 130 = 195 gallons

Is "TOTAL GALLONS OVER OR SHORT" LARGER than "LEAK CHECK" result? YES NO (circle one) Z

If answer is "YES" for 2 MONTHS IN A ROW, notify regulatory agency as soon as possible.

KEEP THIS PIECE OF PAPER ON FILE FOR AT LEAST 1 YEAR

Suspected Leaks

- Any Suspected Leak or Spill shall be Reported to the MTA Safety Department Immediately.
- Call the MTA Safety Hotline at **410-454-7150.**
- The Safety Department shall notify the Maryland Department of the Environment.

Questions?

5. **Hazardous Waste:** MTA has instituted new policies designed to track hazardous waste manifests, and has addressed other hazardous waste compliance issues.

MTA now tracks hazardous manifests through a computer based tracking system. MTA tracks all of the manifest copies signed by MTA (generator), its transporters, and the disposal facility. MTA has also established a policy of refusing to pay any transporter or facility that has refused to provide the designated MTA Industrial Safety Officer, Dennis Rafferty, a signed manifest and supporting information. Additionally, MTA has taken steps to more broadly institutionalize compliance in the hazardous waste management area. For instance, as a result of agency-wide written communications all personnel are aware that all manifests are to be forwarded to the OSRM Industrial Safety Officer.

Mr. Rafferty, the Industrial Safety Officer, also initiated waste determination for drums of previously uncharacterized materials identified by EPA. After the waste was identified and properly disposed of, Mr. Rafferty notified and forwarded supporting documentation to George Houghton at EPA. MTA subsequently developed an SOP related to Hazardous Waste Determination, Storage and Labeling to institutionalize this practice. (See Tab 8.C.)

Additionally, MTA has made a concerted effort to ensure that hazardous waste has been properly labeled with, for example, accumulation start dates, the type of waste, and "Hazardous Waste." Satellite accumulation of hazardous waste is also properly labeled. MTA now conducts weekly inspections to ensure ongoing compliance with labeling requirements, and keeps a log of these inspections. (See Tab A for example.) Furthermore, MTA developed and is currently implementing an SOP on Hazardous Waste Recordkeeping (see Tab 8.B), and will include training on this component as part of its global environmental training.

Finally, as previously noted in Section 4 on training, eligible employees attend biannual HAZMAT training at MFRI. MTA plans to conduct in-house HAZMAT training that will include training on its HAZMAT SOPs.

A/C SHOP
HAZARDOUS WASTE INSPECTION
R-22 WASTE OIL

DATE:	INSPECTOR:	REMARKS:
7-3-06	RK	
7-10-06	RK	
7-17-06	RK	

A/C SHOP
HAZARDOUS WASTE INSPECTION
R-22 WASTE OIL

DATE:	INSPECTOR:	REMARKS:
10-20-5	CMS	
10-24-5	CMS	
11-3-5	CMS	
11-14-5	CMS	
11-18-5	CMS	
11-25-5	CMS	
12-2-5	CMS	
12-9-5	CMS	
12-16-5	CMS	
12-23-5	CMS	
1-6-6	CMS	
1-13-6	CMS	
1-20-6	CMS	
1-27-6	CMS	
2-3-6	CMS	
2-10-6	CMS	
2-17-6	CMS	
2-124-6	CMS	
3--3-6	CMS	
3-10-6	CMS	
3-17-6	CMS	
3-24-6	CMS	
3-31-6	CMS	
4-7-6	CK	
4-14-6	CK	
4-21-6	CK	
28-6	CK	
5-5-6	CK	
5-12 6	CK	
5-19 6	CK	
5-26 6	CK	
6-2 6	CK	
6-9 6	CK	
6-16 6	CK	
6-23 6	CMS	
6-30 6	CMS	
7-19-06	RJK	Extend exhaust fan trap rust remover (Leaking)

BODY SHOP
HAZARDOUS WASTE INSPECTION

DATE	PRODUCT	INSPECTOR
3-27-06	DUMP 7 CANS of YELLOW PAINT IN WASTE, 1 DRUM of LACQUER THINNER, 1 DRUM of WASTE THINNER	
3-27-06	CHECK ON ALL DRUMS & CAGE	H. FASSELL
LABLE 2	DRUMS IN CAGE 4-3-06	H. FASSELL
4-3-06	PAINT & LACQUER THINNER	H. FASSELL
4-3-06	CHECK ON ALL DRUMS & CAGE	H. FASSELL
4-10-06	REPL. A DRUM of LACQUER THINNER, WASTE DRUM	
4-10-06	CHECK ALL DRUMS & CAGE	H. FASSELL
4-17-06	TWO NEW DRUMS of LACQUER THINNER, ONE WASTE DRUM	
4-17-06	CHECK ALL DRUMS & CAGE	H. FASSELL
5-22-06	CHECK ALL DRUMS & CAGE	H. FASSELL
5-30-06	CHECK ALL DRUMS & CAGE	H. FASSELL
6-5-06	CHECK ALL DRUMS & CAGE	H. FASSELL
6-12-06	CHECK ALL DRUMS & CAGE	H. FASSELL
6-13-06	REMOVE ONE DRUM	H. FASSELL
6-19-06	CHECK ALL DRUMS & CAGE	H. FASSELL
6-26-06	CHECK ALL DRUMS AND CAGE	C. CUSICK
7-5-06	CHECK ALL DRUMS & CAGE	H. FASSELL
7-10-06	CHECK ALL DRUMS & CAGE	H. FASSELL
7-24-06	CHECK ALL DRUMS & CAGE	H. FASSELL

NOTE:

BODY SHOP
HAZARDOUS WASTE INSPECTION

DATE	PRODUCT	INSPECTOR
11-9-05	LACQUER THINNER	H. FASSELL
11-9-05	LACQUER THINNER	H. FASSELL
11-9-05	LACQUER THINNER	H. FASSELL
11-9-05	LACQUER THINNER	H. FASSELL
11-9-05	LACQUER THINNER	H. FASSELL
11-9-05	LACQUER THINNER	H. FASSELL
11-9-05	LACQUER THINNER	H. FASSELL
11-9-05	WASH V 120	H. FASSELL
11-9-05	WASH V 120	H. FASSELL
11-9-05	WASH V 120	H. FASSELL
11-9-05	ACID LIGHTING CHENNEX	H. FASSELL
11-14-05	WASTE LACQUER THINNER	H. FASSELL
12-7-05	WASTE LACQUER THINNER	H. FASSELL
12-19-05	CHECK ON WASTE THINNER	H. FASSELL
12-27-05	TWO DRUM REMOVE	H. FASSELL
12-27-05	CHECK ON ALL DRUM	H. FASSELL
1-3-06	STARTED TWO DRUMS OF WASTE	H. FASSELL
1-3-06	CHECK ON ALL DRUMS	H. FASSELL
1-9-06	STARTER A DRUM OF WASTE	H. FASSELL
1-17-06	CHECK ON ALL DRUMS	H. FASSELL
1-23-06	CHECK CAGE & ALL DRUMS	H. FASSELL
2-6-06	PUT ONE DRUM IN CAGE	H. FASSELL
2-6-06	CHECK CAGE & ALL DRUMS	H. FASSELL
2-13-06	PUT TWO DRUM IN CAGE	H. FASSELL
2-13-06	CHECK ON ALL DRUMS & CAGE	H. FASSELL
2-20-06	CHECK ON ALL DRUMS & CAGE	H. FASSELL
2-27-06	CHECK ON ALL DRUMS & CAGE	H. FASSELL
3-6-06	CHECK ON ALL DRUMS & CAGE	H. FASSELL
3-13-06	CHECK ON ALL DRUMS & CAGE	H. FASSELL
3-23-06	CHECK ON ALL DRUMS & CAGE	H. FASSELL

NOTE:

6. **Tank Management:** MTA has conducted tank tightness testing on all but two USTs MTA-wide, and is actively addressing completion of testing. Results have been acted upon immediately. MTA also conducts daily visual inspections of all ASTs.

Beginning in late March, 2006, at the direction of EPA, MTA commenced tank and tank systems tightness testing, including but not limited to the tanks and the product lines. (See Tab A.) MTA's response included implementation of a schedule for prompt testing of not only the Washington Boulevard and Wabash Avenue facilities, but of all USTs MTA-wide. All USTs at Washington Boulevard and Wabash have been tested.

In addition to the tank and line testing done at Washington Boulevard and Wabash Avenue, MTA has completed tank and line tightness testing for all USTs at the Kirk facility (five tanks) and the Eastern facility (seven tanks), and has successfully completed testing of four out of six tanks at the Northwest facility. MTA is actively addressing completion of testing for the two remaining USTs.

Currently, all ASTs are visually inspected on a daily basis with the utilization of a checklist developed using the Steel Tank Institute (STI) Guidelines recommended by MDE. This daily visual inspection exceeds the monthly visual inspection recommended by the STI and National Fire Protection Association (NFPA).

Estabrook EZY Chek Systems (formerly Horner EZY Chek)

EZY 3 Locator Plus

Non-Volumetric Tank Tightness Test Method (Vacuum)

Certification: Leak rate of 0.1 ghp with P_D = 100% and P_{FA} = 1.6%.

Leak Threshold: A tank system should not be declared tight when the acoustic signal detected is different from the baseline signal before a vacuum is placed on the tank, or when water ingress is detected by the water sensor.

Applicability: Gasoline, diesel, aviation fuel, fuel oils #4, waste oil.
Other liquids may be tested after consultation with the manufacturer.

Tank Capacity: Maximum of 30,000 gallons. Ullage volume must be greater of 1% of tank volume or 50 gallons.
Maximum of 30,000 gallons per tank for manifolded tank systems with microphone, water sensor and pressure monitoring gauges in each tank.

Waiting Time: None between delivery and testing.

Test Period: When groundwater level in tank excavation backfill is below bottom of tank: A few minutes to determine background noise and about 2 minutes to run the test after desired vacuum is reached.
When groundwater leveling tank excavation backfill is above bottom of tank: The time it takes for water ingress to increase the water level in the tank to allow the water sensor to detect the "minimum detectable change in water level" (see "Water Sensor" section below). Test period based on water ingress is dependent on tank size. For example, the test period is 36 minutes for a 10,000 gallon (96' dia x 324" lg) tank.
Before starting test, water sensor must be calibrated to "minimum detectable water level" (See "Water Sensor" section below) according to manufacturer's instructions.

Temperature: Acoustic signal is independent of product temperature.

Water Sensor: Conductivity water sensor must be used to detect water ingress and must be calibrated for every test when groundwater level in tank excavation backfill is above bottom of tank.
Minimum detectable water level is 0.014 inch.
Minimum detectable change in water level is 0.0095 inch.
Minimum water level in tank must be adjusted to at least 0.014 inch (sensor's minimum detectable water level) befor calibrating sensor and starting test.

Groundwater: If groundwater level in tank excavation backfill is above bottom of tank, water sensor must be used and test time extended to ensure water ingress detection during test.
Groundwater level in tank excavation backfill must be determined by observation well or soil probe in tank excavatio backfill.

Comments: Microphone was 25' away from leak source during evaluation.
Although not tested on empty tanks, a third party acoustic specialist has certified the device is equally effective whe tanks are empty as when tanks contain product.
Test may be inconclusive if there is high background noise.
Vacuum test method may not be effective in some tank excavation backfill (such as clay) because it may plug holes in tank.
If free product is present in tank excavation backfill, a leak in the free product zone may not be detected by a vacuu test method.
Manufacturers must certify operator at least every 2 years.
More than 4 psi pressure differential across the tank wall at any location in the tank could damage tank.

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