SPILL PREVENTION, CONTROL AND COUNTERMEASURE (SPCC) PLAN

Miami-Dade Transit Facilities

William Lehman Center
Northeast
Central
Coral Way

MAY 20, 2010

Objectives:

- Regulatory Background
- Rule Overview
- Applicability
- Site Evaluation
  - Potential for Discharge
  - Prediction of Flow and Impact
- Spill Prevention
  - Engineering Controls
  - Procedures
- Spill Response
  - Discovery and Notifications
  - Spill Response, Supplies and Deployment
- Security

Regulatory Background

- In 1972, Clean Water Act -> 1973 - SPCC Rule Promulgated
  -> 40 CFR Part 112 – Oil Pollution Prevention.
- In 1990, the Oil Pollution Act amended the Clean Water Act to require some oil storage facilities to prepare Facility Response Plans.
- On July 1, 1994, EPA finalized the revisions that direct facility owners or operators to prepare and submit plans for responding to a worst-case discharge of oil (Subpart D).
- In 2002 EPA amended the OPA requiring specific facilities to prepare, amend, and implement an SPCC plan. Final rule became effective on August 16, 2002.
- Mission Statement: 40 CFR 112.1(a)(1)
  - ✓ Establishes procedures, methods, equipment, and other requirements to prevent the discharge of oil from non-transportation-related onshore and offshore facilities into or upon the navigable waters of the United States or adjoining shorelines, or into or upon the waters of the contiguous zone.

Regulatory Background

- SPCC Mission Statement – quick version:
  - To prevent discharge of oil to the environment.
  - To provide response so that oil does not spill into U.S. waterways.

BP-Deepwater Spill Response (oil spill on fire)

BP-Deepwater Spill Response (boom set up)

Rule Overview?

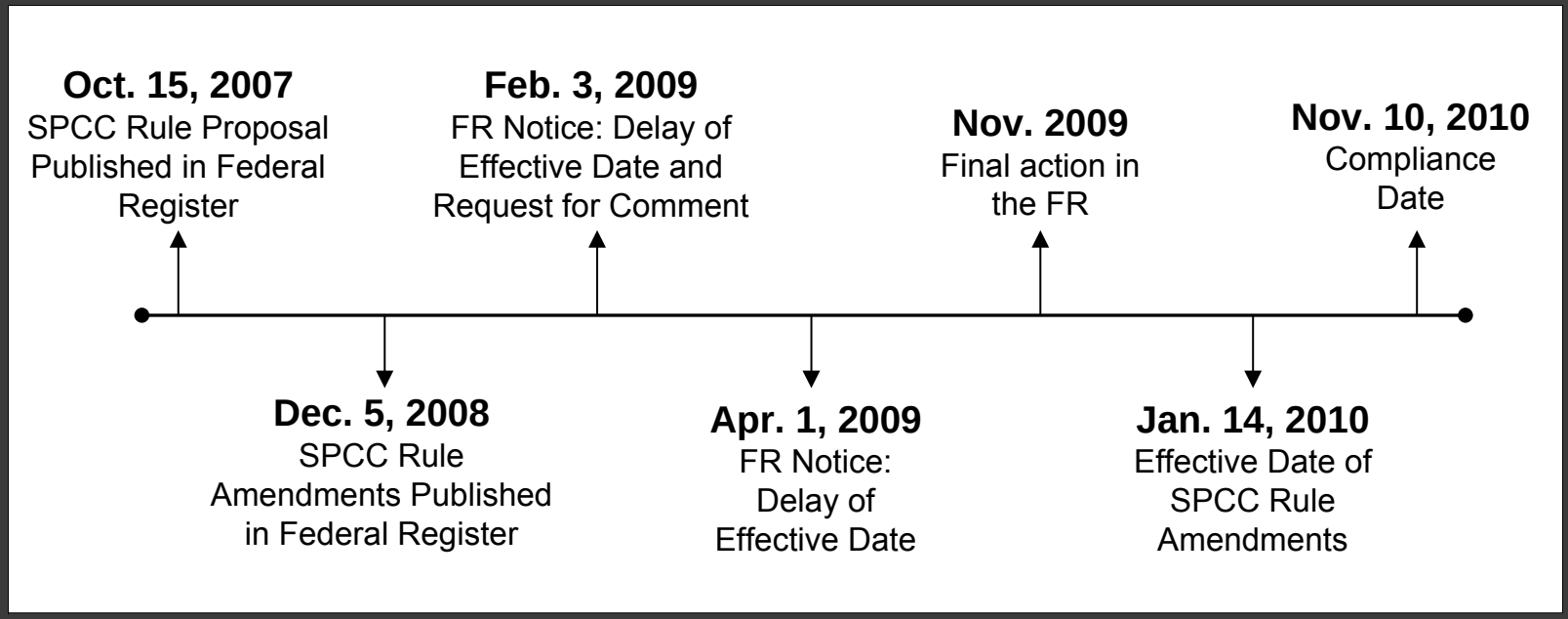
- Oil Pollution Prevention Regulation (40 CFR Part 112)
  - ❑ Specifies requirements for prevention of, preparedness for, and response to oil discharges
  - ❑ Includes requirements for Facility Response Plans (FRPs) – MDT does not meet the substantial harm criteria[1] and is therefore not required to have an FRP.

- Requirements help prevent oil discharges from reaching navigable waters or adjoining shorelines.

- Certain facilities are required to develop SPCC Plans that describe equipment, workforce, procedures, and training to prevent, control, and provide adequate countermeasures to a discharge of oil.

(1) - Facilities required to develop a FRP are non-transportation-related facilities with a total oil storage capacity of greater than or equal to 42,000 gallons where operations include over-water transfers of oil, and facilities with a total oil storage capacity of greater than or equal to 1 million gallons in close proximity to public drinking water intakes.

Compliance Date Timeline Overview



Compliance Dates for Facilities

A facility starting operation…	Must…
On or before August 16, 2002	• Maintain its existing SPCC Plan • Amend and implement the SPCC Plan no later than **Nov. 10, 2010**
After August 16, 2002 through **Nov. 10, 2010**	• Prepare and implement the SPCC Plan no later than **Nov. 10, 2010**
After **Nov. 10, 2010**	• Prepare and implement a SPCC Plan **before beginning operations** * * Owners or operators of new oil production facilities must prepare and implement an SPCC Plan six months after the start of operations.

Applicability?

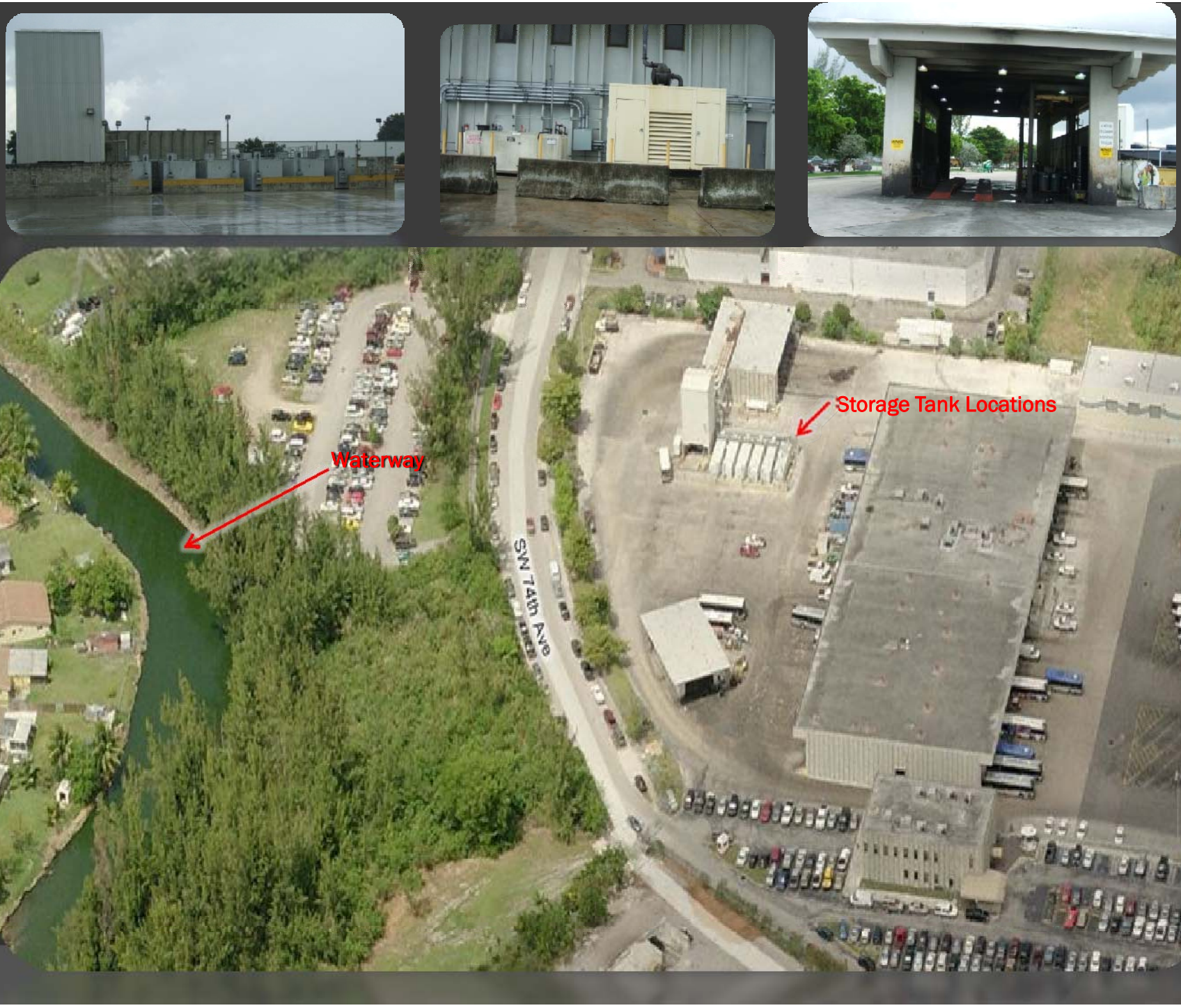
- Who is required to have an SPCC Plan? – Quick answer: YOUR facilities.

Who and Where?

- Any facility with more than 1,320 gallons of oil aboveground (or 42,000-gallons below ground) and could reasonably be expected to discharge oil to navigable waters or adjoining shorelines
- EPA's definition of "oil" includes lots of things – like petroleum, fuel oil, lube oil, ATF, fats, grease, sludge,...
- EPA's definition of a waterway and reasonable potential to spill oil into it... very broad too

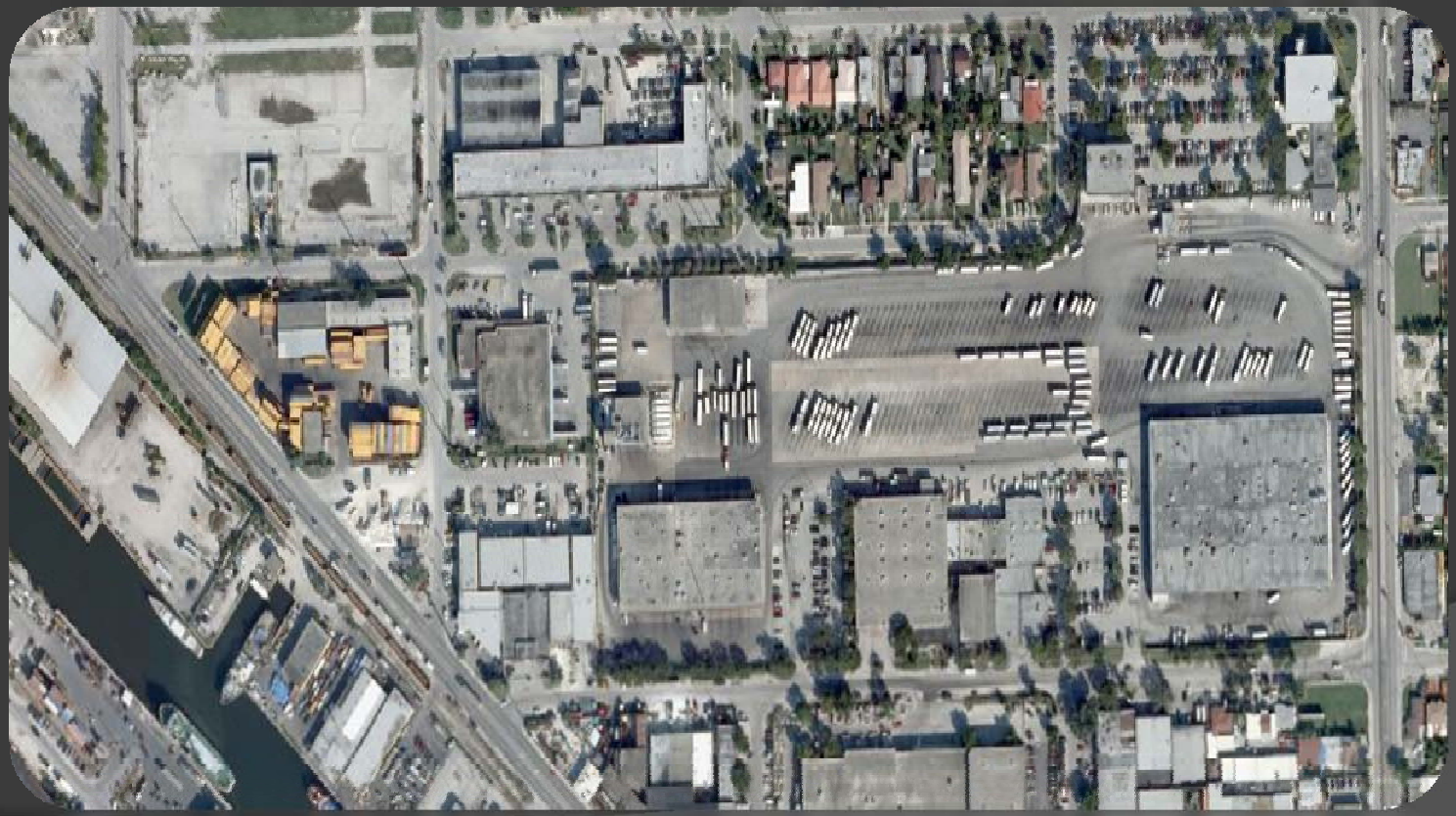
Why applicable to MDT? – Coral Way Bus Facility

- **Facility Use**
  - Non-transportation-related facility (a bus maintenance and fueling facility).
- **Navigable Water**
  - Major water body nearest the facility is the South Florida Water Management District (SFWMD) C-3 Canal, also known as the Coral Gables Canal (approx. 500 feet away).
- **Oil Storage Capacity**
  - The aboveground oil storage capacity of Coral Way is 76,080 gallons. Only in-use containers of oil with a capacity of 55 gallons or greater are included in considering the 1,320-gallon minimum threshold.


Storage Tank Locations
Waterway
SW 74th Ave

Why applicable to MDT? – Central Bus Facility

- **Facility Use**
  - Non-transportation-related facility (a bus maintenance and fueling facility).
- **Navigable Water**
  - Major water body nearest the facility is the South Florida Water Management District (SFWMD) Canal C-6, also known as the Miami River or the Miami Canal. From storm sewer manhole cover MS4-3, the northeast bank of the Miami River is about 750 feet to the southwest.
- **Oil Storage Capacity**
  - The aboveground oil storage capacity of Central is 98,955 gallons. Only in-use containers of oil with a capacity of 55 gallons or greater are included in considering the 1,320-gallon minimum threshold.



Why applicable to MDT? – Northeast Bus Facility

- **Facility Use**
  - Non-transportation-related facility (a bus maintenance and fueling facility).
- **Navigable Water**
  - Major water body nearest the facility include:
    - Snake Creek Canal East; from the intersection of NE 185th Street and NE 4th Court, the Snake Creek Canal is about 2,100 feet to the northeast;
    - an open water owned by Pinnacle Lake Apartments, located about 900 feet north of the intersection of NE 185th Street and NE 4th Court; and,
    - Drainage pond associated with the Interstate 95/NE 183rd Street interchange, located about 1,750 feet east of the intersection of NE 183rd Street and NE 4th Court.
- **Oil Storage Capacity**
  - The aboveground oil storage capacity of Northeast is 78,300 gallons. Only in-use containers of oil with a capacity of 55 gallons or greater are included in considering the 1,320-gallon minimum threshold.

185TH
BUS ENTRANCE
4TH
FACILITY EMPLOYEE ENTRANCE
MAINTENANCE BUILDING
183RD
10
2ND
15
20
25
30
MIAMI GARDENS
Storage Tank Locations

Why applicable to MDT? – William Lehman Center

- **Facility Use**
  - Non-transportation-related facility (a rail maintenance and fueling facility).
- **Navigable Water**
  - Major water body nearest the facility is the South Florida Water Management District (SFWMD) C-3 Canal, also known as the Coral Gables Canal (approx. 500 feet away).
- **Oil Storage Capacity**
  - The aboveground oil storage capacity of William Lehman is 25,925 gallons. Only in-use containers of oil with a capacity of 55 gallons or greater are included in considering the 1,320-gallon minimum threshold.

Who and Where?

- Designated Person Accountable for Oil Spill Prevention at Each Facility (Keeper of the SPCC Plan)
  - Metromover: Genaro “Steve” Alvarez
  - William Lehman Center: James White
  - Northeast: William A. Campbell
  - Central: Guido Valdez
  - Coral Way: William Attias

Note – Akbar Sharifi, P.E., MDT’s Sr. Professional Engineer will be responsible for maintenance of all SPCC plans.

Site Evaluation – Potential for Discharges

- Petroleum discharges are most likely to occur during fuel transfer activities. Each area where petroleum products are stored is generally flat. Petroleum storage locations include:

  - Major Overhaul Garage
  - Operation and Inspection (O & I) Garage
  - Fuel and Cleaning Islands
  - Bus Wash Building
  - Transportation Building
  - Administration Building
  - Maintenance Division Buildings

Site Evaluation – Discharge Flow Direction

Potential Event	Maximum Volume Released (gallons)	Maximum Discharge Rate	Primary Direction(s) of Flow	Secondary Containment/ Diversionary Structure
Major Overhaul Garage				
Catastrophic failure of Tank #s 1, 2, or 3	2,000	Instantaneous	West to storm drain CB15 or south to CB13	Tank's outer wall
Failure of tanker truck hold while filling Tank # 1	9,000 (3)	Instantaneous	West or south to storm drains CB15 or CB13	None
Fuel and Cleaning Islands				
Catastrophic failure of Tank #s 19, 20, 21, 22, or 23	12,000	Instantaneous	All	Tank's outer wall

Discharge Flow Direction

Why?

- "One drop of oil can contaminate a million gallons of water".

  (Or a football field of water 7 feet deep.)

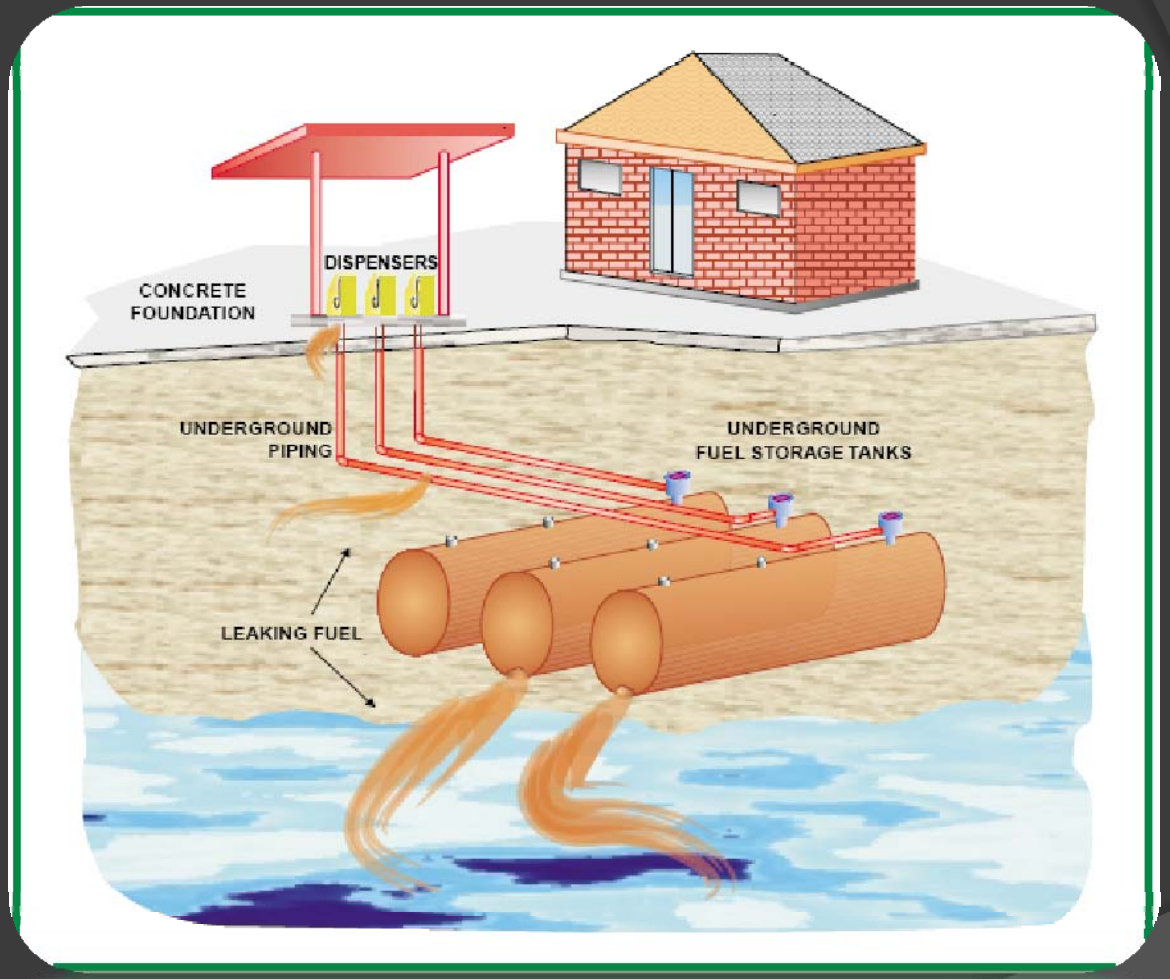
- That could well be true... as one of the most basic components of fuel (benzene) is dangerous to human health above <u>**1** part per **BILLION**</u>.

Why?

- It could be a spill on the ground...

Why?

- ...Which usually leads directly to a spill IN the ground...



Why?

- ...And the oil in the dirt can seep out into the groundwater or navigable U.S. waterways.

Why?

- All YOU need to know:
  - Oil spills are BAD
    - Very expensive
  - Oil spills to waterways are WORSE
    - Unbelievably expensive
    - Very bad press

- Focus of today: a little bit of spill Prevention… and a whole lot of spill Response

Spill Prevention

- Spill prevention is mostly tied to your...

A. Procedures, equipment, and personnel

B. Storage tank system operation and maintenance (O & M)

Spill Prevention

Storage tank system Operation and Maintenance -

Monthly Operation and Maintenance (O&M) activities

With the implementation of these SPCC Plans, the inspection and testing will expand.

Spill Prevention

When you have a really apparent problem with your petroleum-handling equipment....

Coral Way

Maintenance Bldg.

Bay # 1

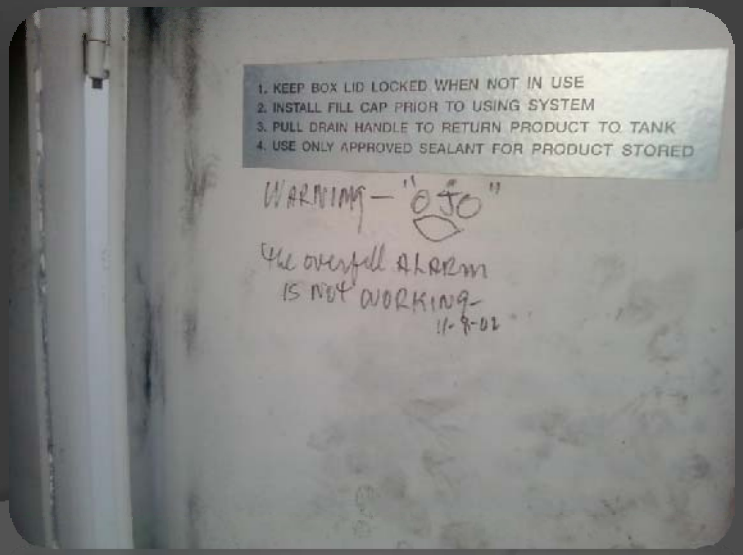
ATF Hose Reel

(Sept. 2, 2009)

Spill Prevention

Central O & I Garage - Bay # 5 / 6
Hydraulic Lift Reservoir (August 19, 2009)

Coral Way
Maintenance Bldg.
Bay # 8 / 10
Waste Oil AST
(Sept. 2, 2009)



Spill Prevention

... Contact maintenance contractors...

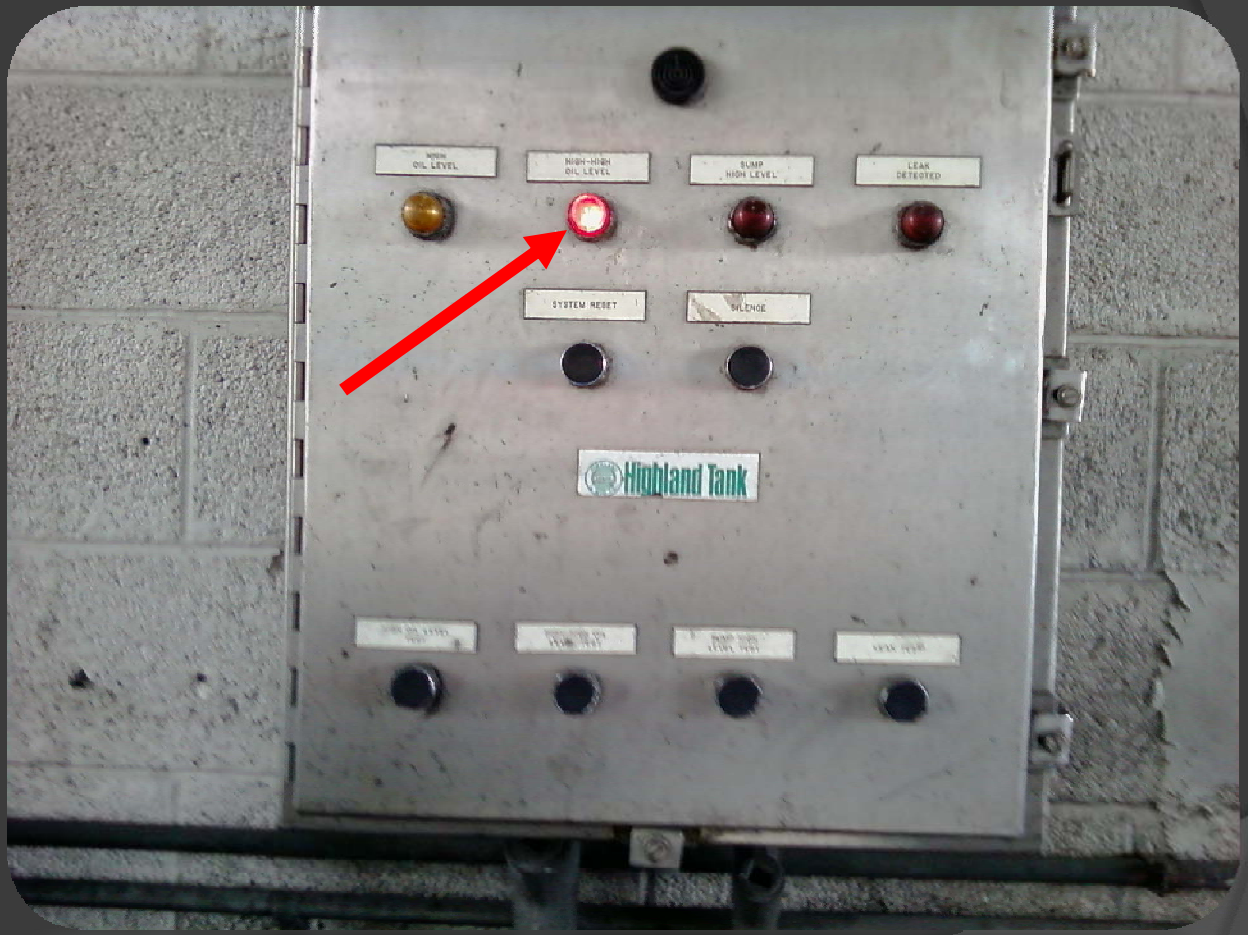
OR

at least Tell Someone

Spill Prevention

…

Just don't leave it unattended for hours...



Coral Way Steam Cleaning OWS Status Panel – High Oil Level Alarm - Sept. 2, 2009

Spill Prevention

...

Or do things like this

Various Fuel & Cleaning Islands, Various times...

Spill Prevention

…

FYI:

An Emco-Wheaton

Posi-Lock Nozzle Costs

$1,400

not counting

labor....

Spill Prevention

...

Don't do this either

Central
Major Overhaul Garage
Bay # 28
Oil change outside berm
Aug. 18, 2009

And fix things like this.

Central Transportation Bldg.
Generator System
Rusted day tank barely bolted down to anything
Aug. 18, 2009

Spill Prevention - Structures

- Drainage Control
- Double-Walled Piping/Storage Tanks
- Spill Containment Devices
- Barriers
- Outdoor Drum Enclosures
- Polyethylene Spill Pallets
- Secondarily-Contained Buildings

Spill Prevention - Equipment

- High-Level Alarms
- Fill Limiters
- Tight Fill Connections / Dry Breaks
- Return Lines
- Pump Control Panel
- Status/Alarm Panels
- Remote Level Inventory/Leak Detection
- Mechanical Level Gauges
- Mechanical and Manual Leak Detection
- Dispenser Equipment and Card Readers
- E-Stops
- Manual Valves (General)
- OWS System Automatic Pump Shut-Off

Spill Prevention - Procedures

- Best Management Practices (i.e., Oil Transfer BMPs)
- Housekeeping
- Inspection and Maintenance
  - Monthly Checks (i.e., tanks, piping, spill containment devices)
  - Annual Checks (i.e., testing operations of leak sensors, alarms, metering devices, etc.)
- Testing
- Training

Spill Response

- Discovery of discharges of petroleum product requires certain notification and reporting procedures will be followed:

Spill Notification Procedures – On-Site Personnel			
	Spill Criteria/Quantity	Contact Agency/Officials	Telephone
1	Any Spill	Bus Maintenance Chief William Attias	(305) 302-7927
2	Any Spill	MDT Environmental Department Senior Professional Engineer (Akbar Sharifi)	(786) 469-5269 (office) (305) 794-4327 (cell)
3	Any Spill[1]	- Fire Station No. 40 ()	(786) 331-5000 9 – 1 – 1
4	>=25 gallons	DERM Compliance Complaint Desk	(305) 275-1186
5	>100 gallons on impervious surface	FDEP Southeast District Emergency Response Office	(954) 958-5575
		FDEP 24 hour State Warning Point	(800) 320-0519
	>500 gallons in secondary containment	Emergency Response Contractors (Currently World Petroleum, Inc.)	(954) 327-0724
6	Spill into waterway[2]		(800) 424-8802
		Environmental Protection Agency, Region IV	(404) 562-8700

Notes to Tables:

1. Applicable only to spills which present flammable hazards or otherwise pose a danger to health and safety.

2. Applicable to spills greater than 1,000 gallons in a single event, or greater than 42 gallons in each of two events within a 12 month period.

Spill Response

- When small spills happen (i.e., < 25 gallons)...
  - Immediately notify the Bus Maintenance Chief and the Environmental Department Senior Engineer.
  - Eliminate potential spark sources.
  - Identify and shut down the source of the discharge to stop flow, if possible and safe to do so.
  - Contain the discharge with sorbents, berms, and other basic response materials.
  - Place all affected debris and cleanup materials in properly labeled containers for disposal according to applicable regulations.

Spill Response

- At least throw some absorbent pads or a scoop of dry sweep on it....

- … which doesn't take much time at all.

Spill Response

- Bigger spills...
  - MDT facility personnel should not attempt to stop or clean up major discharges, must observe applicable Department emergency and evacuation policies, and follow the directions of local authorities responding to the scene. In the event of major discharges of oil, MDT's Environmental Department will contact a state-certified and licensed cleanup contractor to mobilize to the site to respond to the spill.

Spill Response

- Quick lesson on PPE:
  - Four levels: Level A, B, C, and D

- Level A: selected when greatest level of respiratory, eye and skin protection required – think FULLY ENCAPSULATED SUIT

- PPE - Level B: selected when greatest level of respiratory protection required; lesser level for skin – SUPPLIED AIR – TANK OUTSIDE SUIT

- PPE - Level C: selected when concentration and type of airborne substance is known – RESPIRATOR

- **PPE – Modified Level D: selected when minimal protection required (primarily includes coveralls, safety boots and gloves)**

Spill Response

- For pretty much **ANY** spill you are likely to encounter– just go grab some **Level D**

Spill Response

- Now go grab some of this stuff...

we recommend having one of these always stocked up at certain places (e.g., Fuel and Cleaning Islands)

High-Visibility Oil-Only Mobile Container Kit

MDT's Spill Response Kit

Non-Sparking Scoop

Non-Sparking Shovel

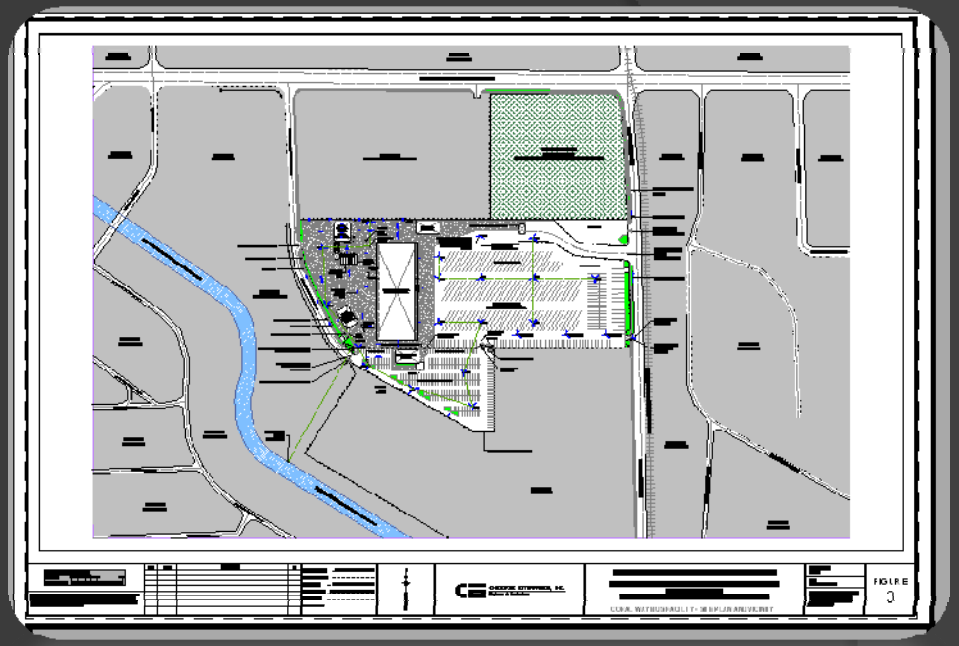
PVC Double Bladed Squeegee

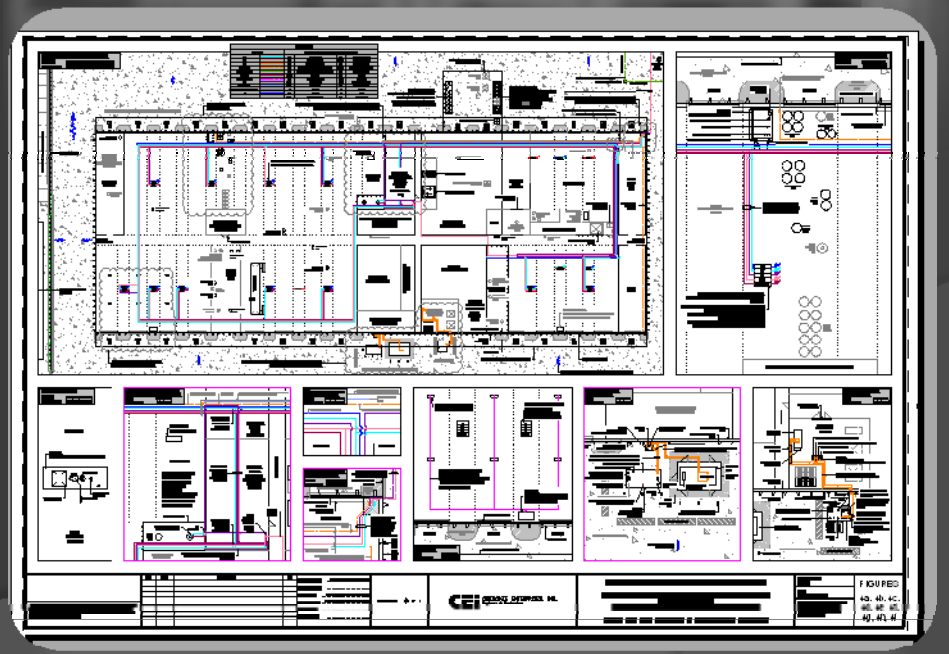
Spill Barriers

Drain Covers and Plugs

Spill Response

- The SPCC: it's got painstakingly-prepared **<u>maps</u>** which usually take most of the guesswork out of things like fuel piping, important manhole covers, connections between storm drains....



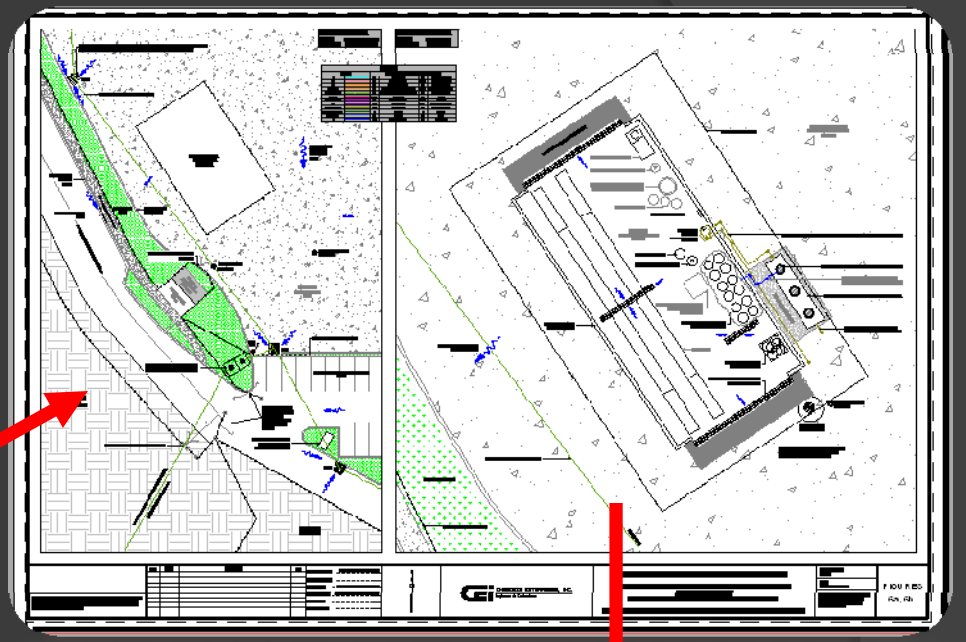


Spill Response

- Back to storm drains
- Since none of your facilities have tanks or operations right on the banks of a water body… the next quickest way a spill can go off-site (or at least into the ground) is through a storm drain.

Spill Response

- Maps, maps, maps – the SPCC's MAPS will help point these guys into sucking out the right storm drains and manholes.
- *More on this later*



Spill Response

- The goal is to control the spill before it turns into this...

OR

this

$300K Remediation Project

Storm Drains

- As mentioned earlier – one of the most likely and quickest ways for your oil spill to get into the ground and possibly off-site (and into the canal) is through your storm drain system.
- So, these things are important.

Drain Covers and Plugs

Storm Drains

- At the locations where you have a lot of fuel or oil – always keep in mind their proximity to storm drains.
- In a spill response, nearby drains are the first thing that should grab your attention.

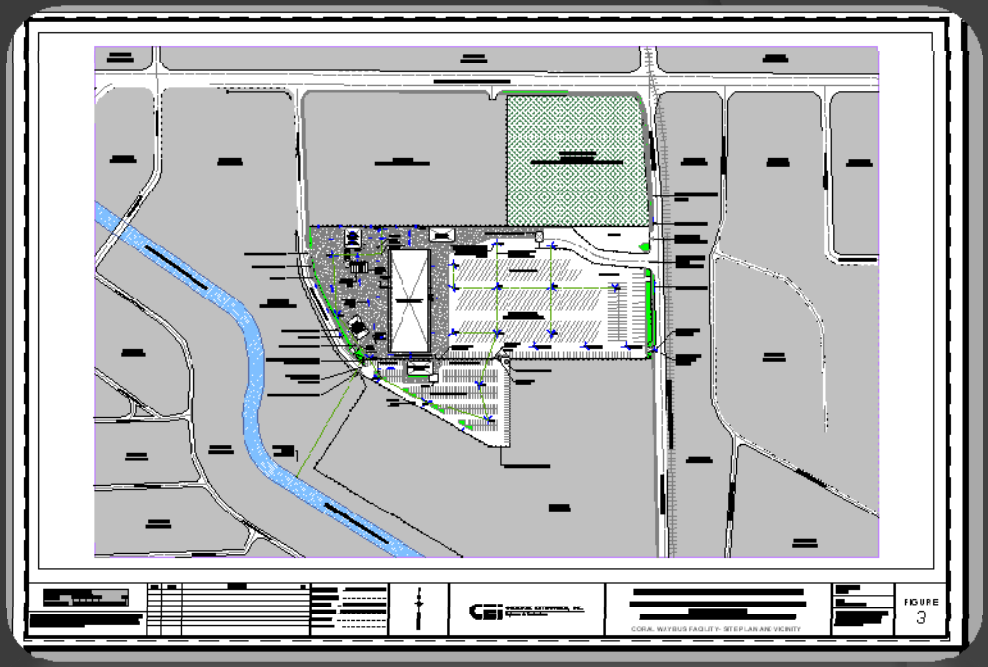
Storm Drains

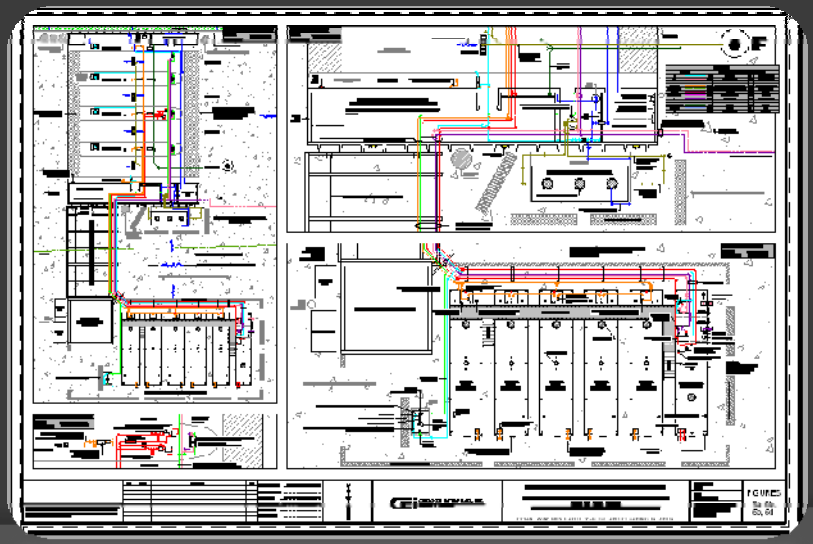
- Nearby drains – block ‘em, cover ‘em, or vac ‘em out.

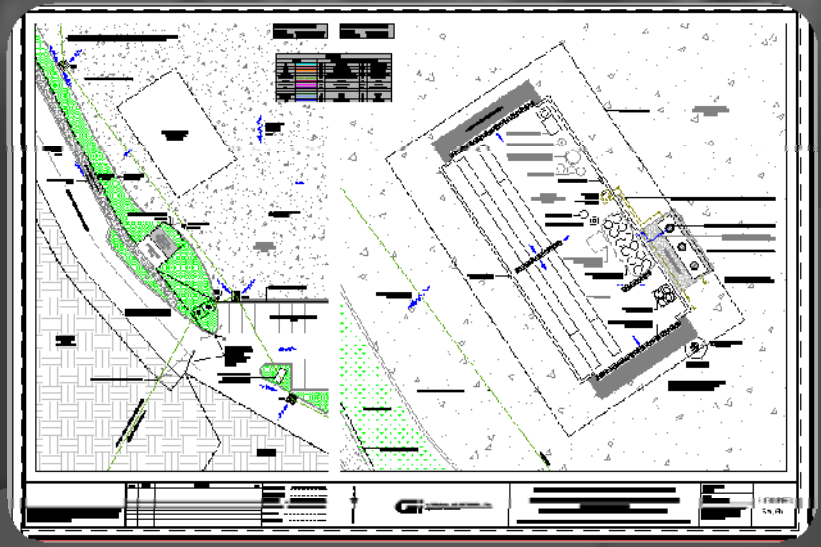
Spill Barriers Drain Covers and Plugs

Storm Drains

- And of course you can fall back on the SPCC's maps



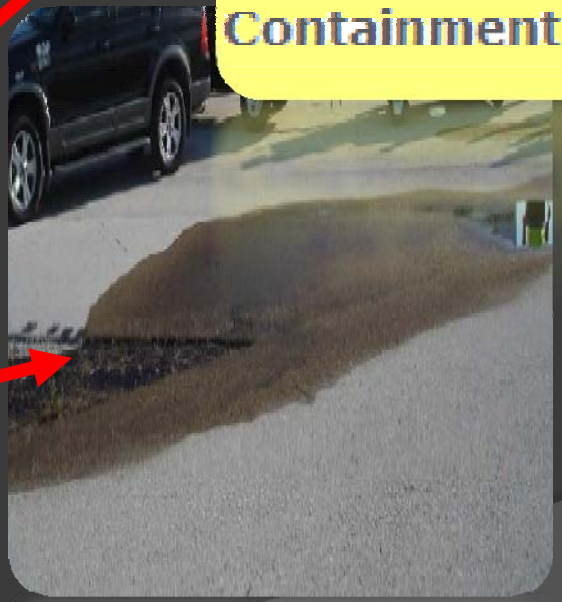




Storm Drains

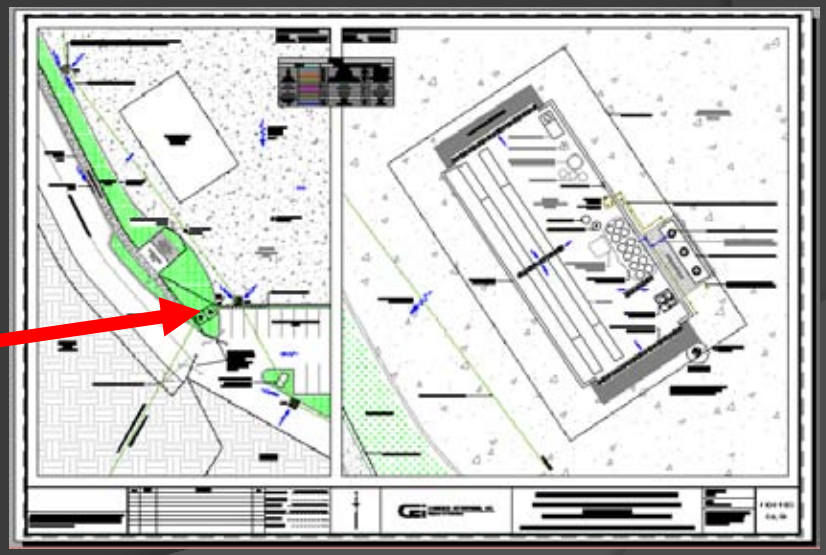
- IMPORTANT!
- Coral Way and Central directly drain to a major water body
- In a major spill...
- ...Your last line of defense before you need this...

Oil & Debris Containment Boom



Storm Drains

- ...Is your Interceptor/Overflow Structure ("IOS"). They overflow into the nearby canal.
- Don't know where it is? Check the **maps**

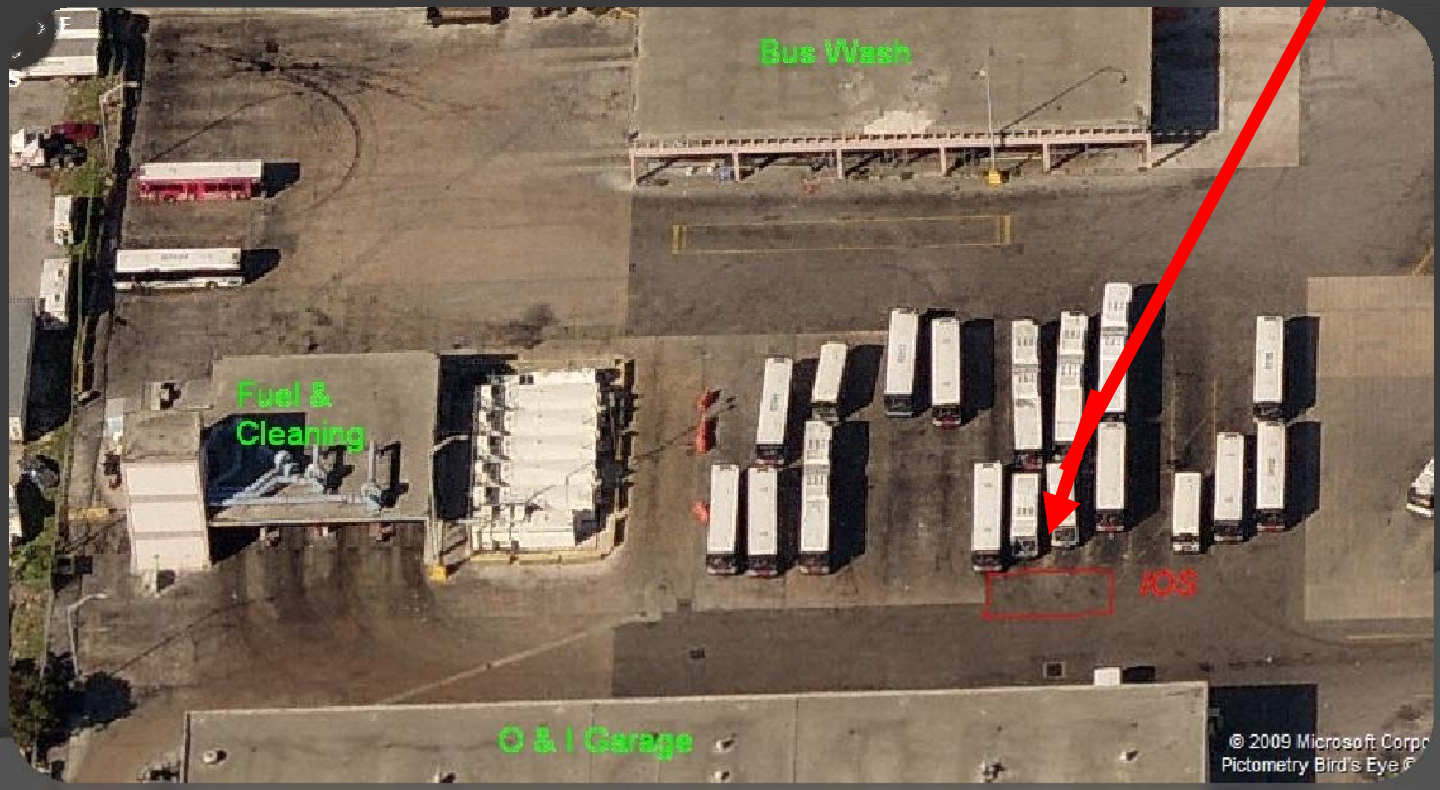


Coral Way IOS

Storm Drains

Get REAL familiar with the location of your IOS

Central IOS



Fuel Deliveries

- Bulk fuel or oil deliveries have some of the highest pumping rates out of any process at the facility
- High pumping rate (60+ gallons per minute) = BIG spill

So when these guys show up, someone should pay attention....

And get these ready

In Case of This

Buttons, Switches, and Alarms

- But in a spill scenario, it's worth the on-scene personnel knowing some of the right buttons to push.

Buttons, Switches, and Alarms

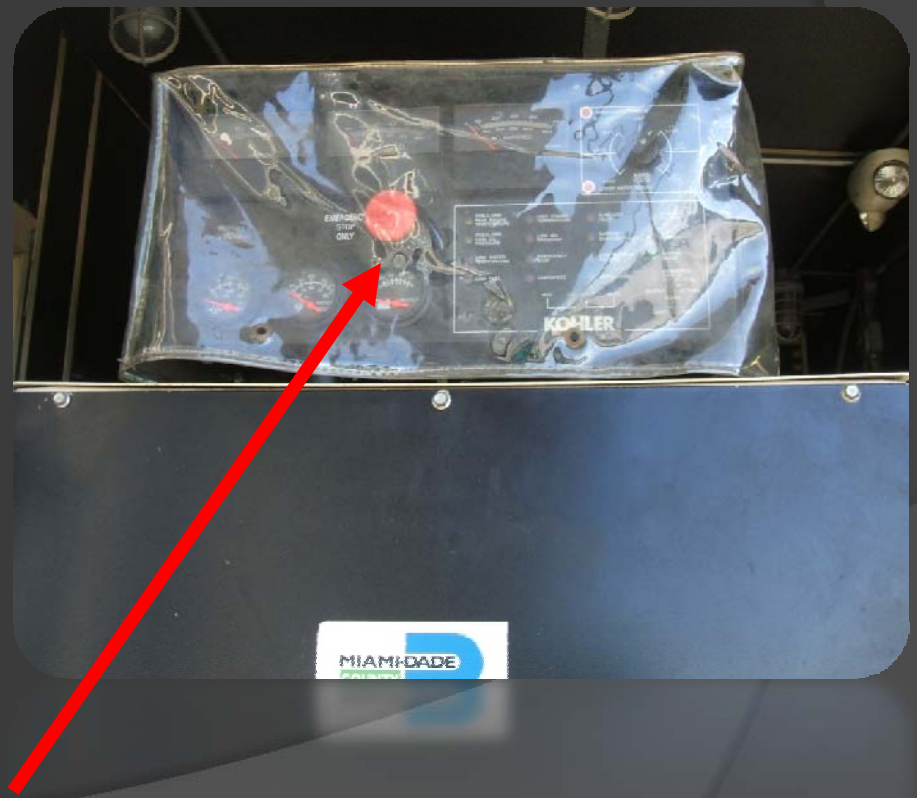
- E-stops
  - You have ‘em at every fuel island.
  - Northeast, Central, and Coral Way have **2** (one on either side of the Fuel and Cleaning Islands bus lanes)
  - The William Lehman Center has one in front of the tanks, on the control panel

Buttons, Switches, and Alarms

- Control Panels
  - Shown here is a day tank.
  - Hitting the Pump Off button should stop the Day Tank from drawing fuel from the Supply Tank.

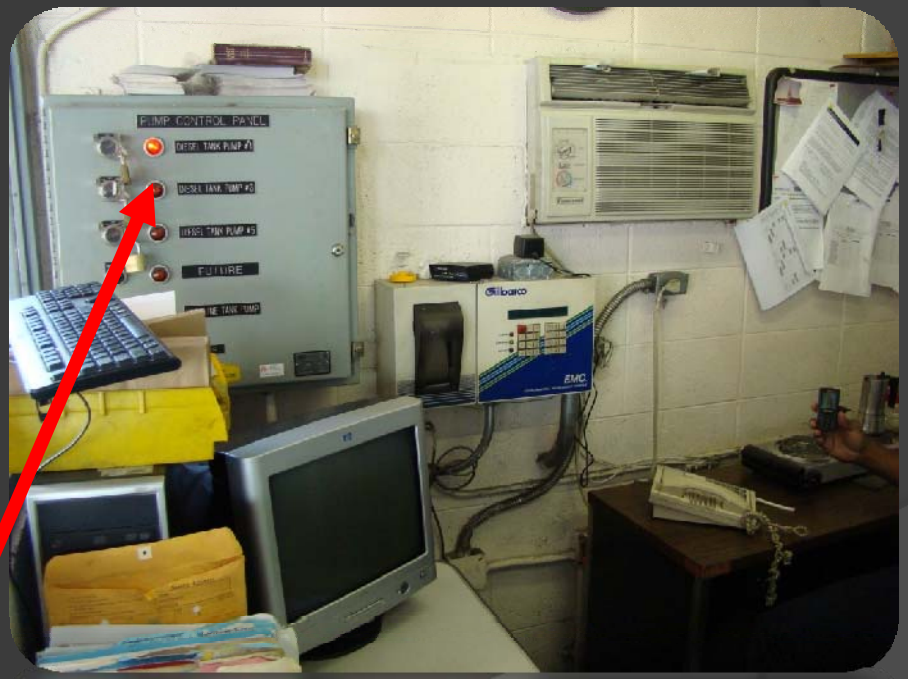
Buttons, Switches, and Alarms

- Control Panels
  - Shown here is a generator engine control panel.
  - Pulling the master cut off should turn the engine off and stop fuel being drawn from the Day Tank to the Generator.



Buttons, Switches, and Alarms

- Control Panels
  - The Fuel and Cleaning Islands at Northeast, Central, and Coral Way each have control panels like this in the Attendant's Room.
  - Turning the switches to the OFF position also remotely turns off the fuel pumps.



Buttons, Switches, and Alarms

- Air Manifolds
  - If your tank is air-pressurized, and there is a geyser of lube oil, ATF, or grease shooting out of your damaged hose reel – cut off the air supply at the tank's air manifold.

Buttons, Switches, and Alarms

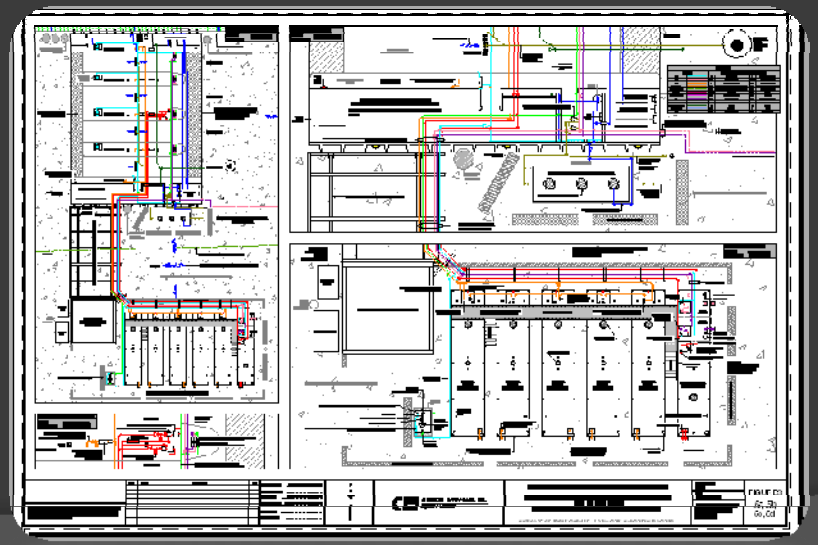
- Alarms
  - When one of your personnel notices one of these flashing or sounding off....

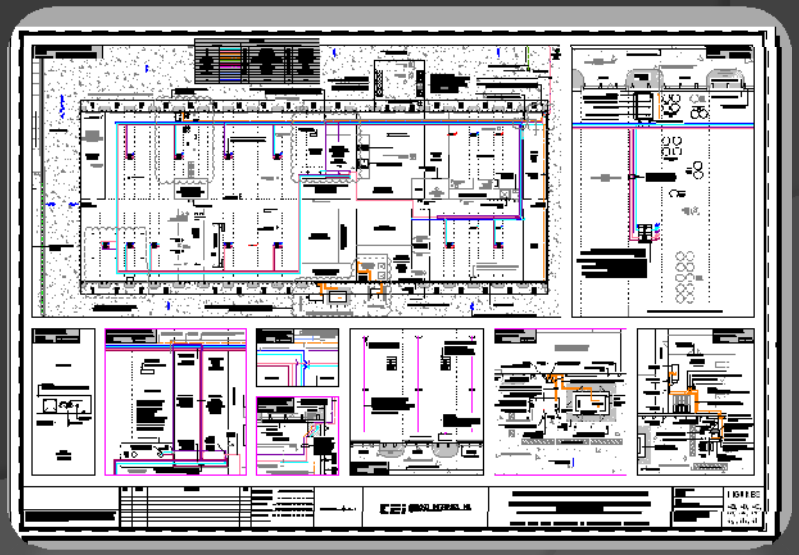
Buttons, Switches, and Alarms

- Alarms
  - ....Make sure they TELL SOMEONE

Buttons, Switches, and Alarms

- Especially for emergencies, it's a no-brainer to refresh yourself with SPCC's **maps.**
- All of these panels, alarms, and Important Buttons are clearly located and labeled for YOUR facility's storage tank systems.





Drums – Do's and Don'ts

- Drums are everywhere at your facility.
- You can't miss 'em... and neither will a regulatory inspector
  - Easy targets during an audit

Drums – Do's and Don'ts

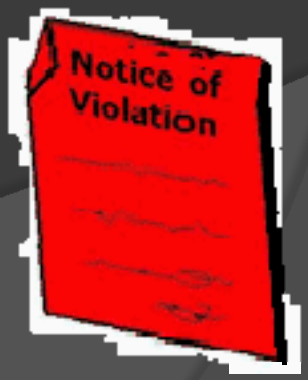
- …

William Lehman Center

April 27, 2009

Drums – Do's and Don'ts

- Even though all of those drums were empty (or contained grape juice?) at time of our inspection...
- It looks horrible to a regulatory inspector and will lead them to probe much deeper at your facility.
- YOUR facility doesn't want that



Drums – Do's and Don'ts

- DON'T move drums like this
- It could easily roll off the forklift and spill
- Not that anything bad has ever happened between a forklift and a drum, right??

Central, O & I Garage

October 3, 2009

Drums – Do's and Don'ts

- SPCC requires drums 55-gallons and up to be "secondarily contained"
- "Secondary containment" for a drum could be this

Spill pallets

Drums – Do's and Don'ts

- Secondary containment could be these things too

Poly drum enclosure

Outdoor drum locker
(William Lehman Center)

Drums – Do's and Don'ts

- DON'T store drums like this
- A wood pallet… in a building without floor berms…. is NOT secondary containment

William Lehman Center

Drums – Do's and Don'ts

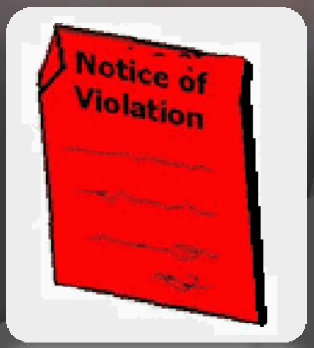
- **In the future, MDT may be working on fully berming certain buildings, so everything inside is secondarily contained…*
- But for the meantime, DO store drums indoors like this

William Lehman Center

Drums – Do's and Don'ts

- And of course, DON'T throw a drum with liquid (and visible vapors) in a dumpster
- A "red flag" for an inspector
- "Red flags" lead to these

Coral Way, Sep. 2, 2009



Protection and Security

- Part of SPCC is storage tank protection and facility security
- The more your facility is protected from outsiders and the more your tanks are protected from vehicles – the less chances you have for tank damage and a spill

Protection and Security

- This sort of thing is bad
- Fix it
- Drive slower and more carefully

Northeast, west side of Maintenance Building

July 2, 2009

Protection and Security

- Check that your buildings are properly locked so unauthorized people aren't where they're supposed to be

Central

Bus Stop Maintenance/ Storage Shop

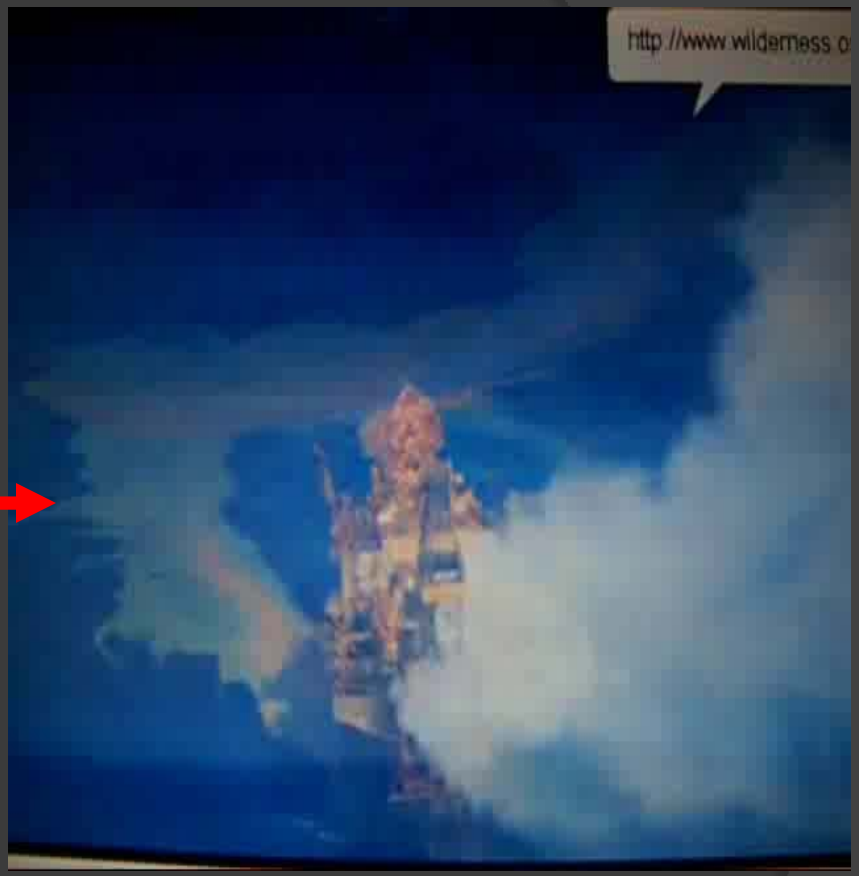
August 19, 2009

Protection and Security

- Serious Example: Central: Materials Management Division Warehouse: August 19, 2009: Early Afternoon
- Mag-lock ped gate to warehouse inside dock open and unattended
- LOCK IT UP

Wrap It Up

- The SPCC Mission is preventing THIS

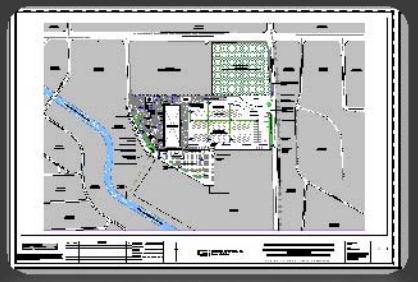


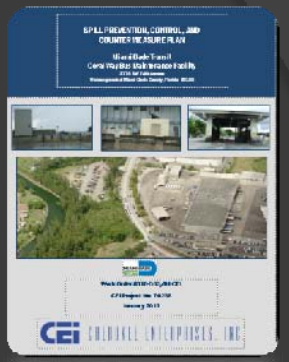
- And MDT wants to avoid THIS

Wrap It Up

- Prevention
  - O&Ms – we got you covered
  - Clean up minor spills
  - TELL SOMEONE about alarms
  - TELL SOMEONE about failing equipment

Wrap It Up





- Response
  1. Emergency COC
  2. PPE
  3. Do Something
     - Drains, Manholes, IOS's – know where they are
     - Bulk Fuel Deliveries
     - The Right Buttons and Switches
  4. Get out the SPCC and its maps

Wrap It Up

- Drums
  - Put ‘em inside (NOT a Bus Wash, though)
  - Secondary Containment
  - Labels

SPILL PREVENTION, CONTROL AND COUNTERMEASURE (SPCC) PLAN

Miami-Dade Transit Facilities

William Lehman Center
Northeast
Central
Coral Way

MAY 20, 2010