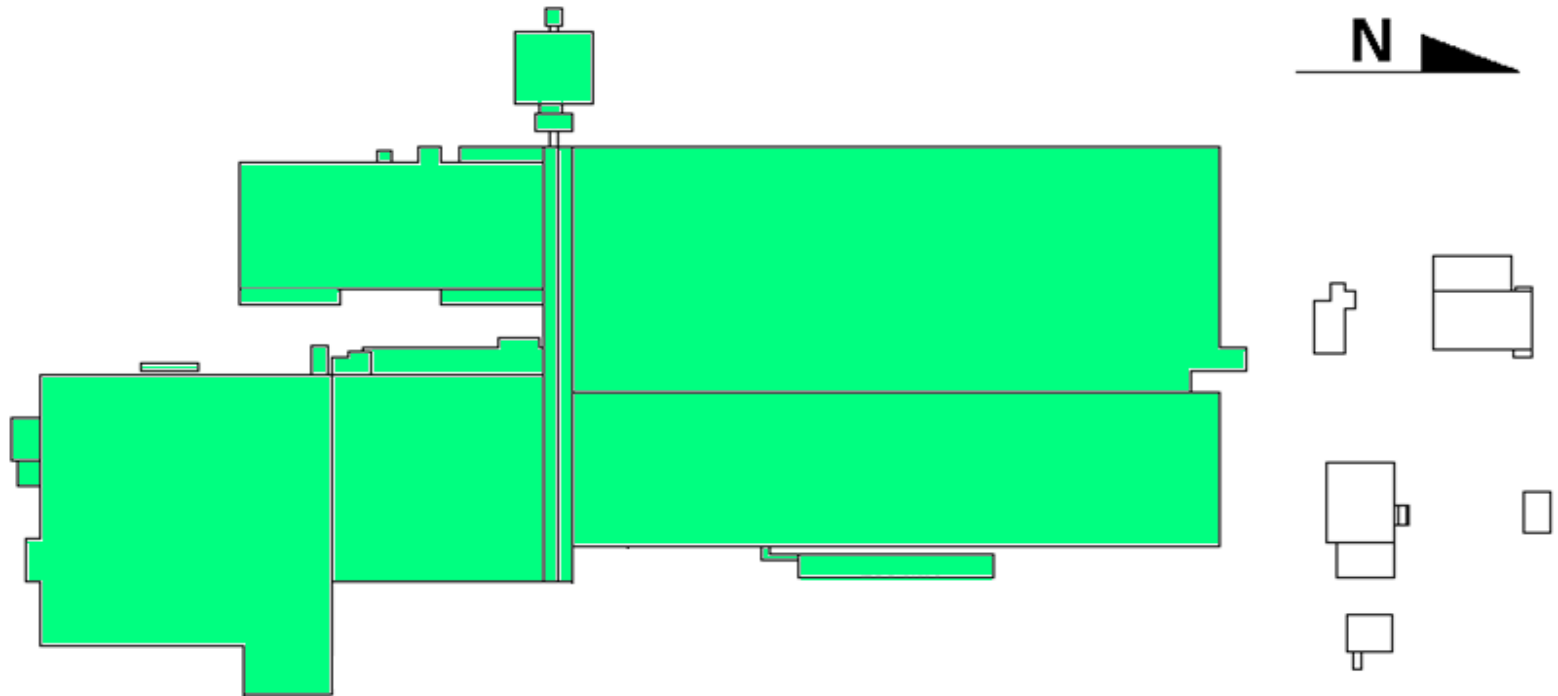




IDEM Partners for Pollution Prevention

April 16, 2015

TMMI Plant Layout



West Plant (1999)

TMMI Plant Layout



West Plant



East Plant



Total Capacity = 375,000/year

West Plant



East Plant



Total Capacity = 398,000/year

TMMI – Environmental Affairs

Bill Harper
Assistant Manager



Kevin Miles
Specialist



Areas:



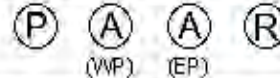
Key Function:

1. WWPT Management
 - a. Discharge Permit Compliance
 - b. Operator Competency Certification
 - c. Secondary Auditing
2. Stormwater Management
3. ICP / SPCC / Spills Management
4. PDA Management
5. Paper Pulper Management
6. Waste Data Management
7. Household Hazardous Waste Days

Paul Delor
Specialist



Areas:



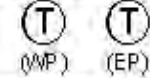
Key Function:

1. RCRA Compliance Management
 - a. Secondary Regulated Container Auditing
 - b. 90-Day Accumulation Area Management
 - c. Waste Profiling
 - d. Manifest Recordkeeping
 - e. Waste Shipment Scheduling
2. ISO 14001 / EEMS Coordinator
3. Tank / Sump Integrity Testing
4. Waste Cost Management / Oversight
5. World Water Monitoring Day
 - a. 5th Grade Drawing Contest (Spring)
 - b. 6th Grade Water Monitoring (Fall)

Margaret Weinzapfel
Specialist



Areas:



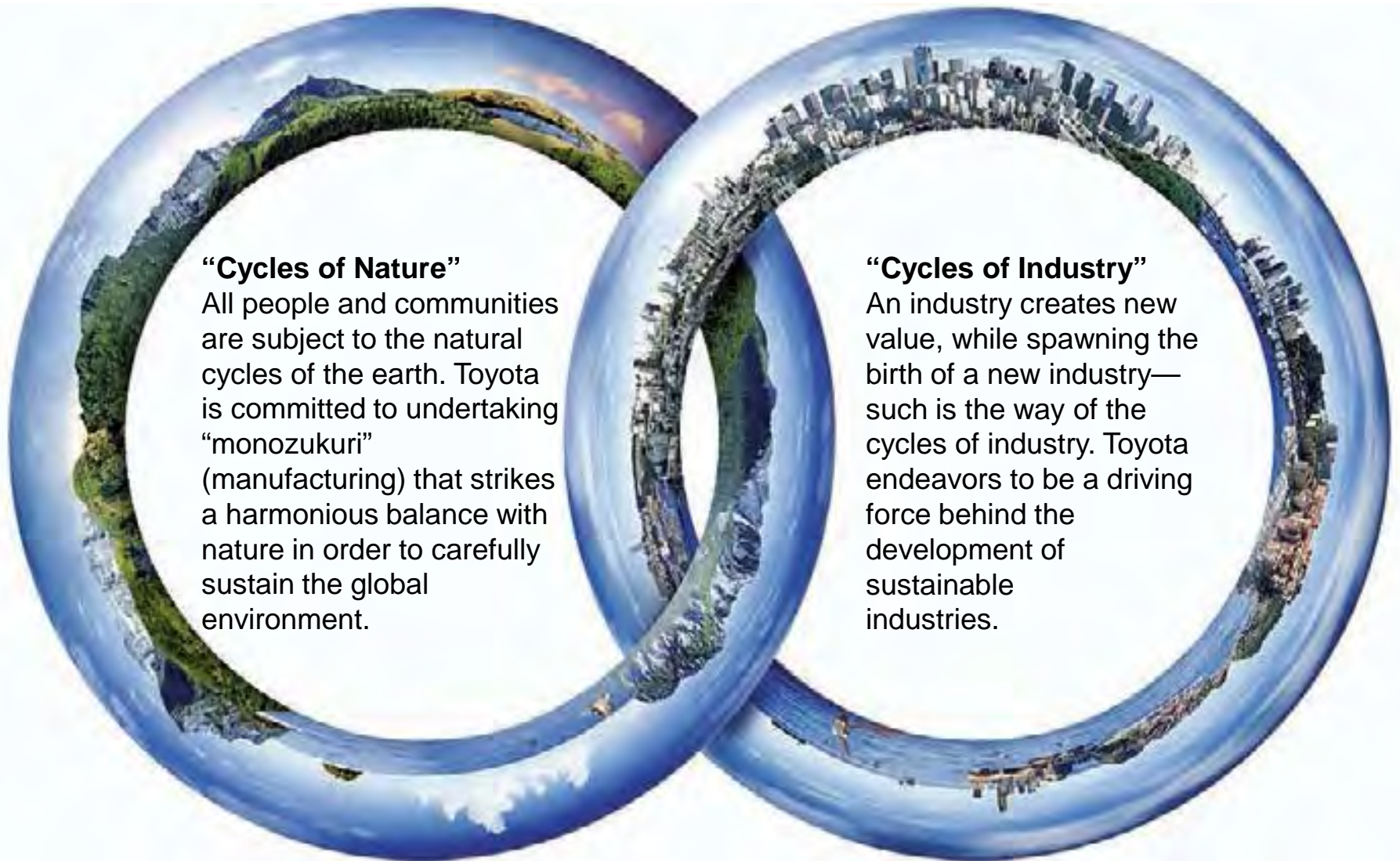
Key Function:

1. Title V Compliance Management
 - a. Compliance Demonstration Testing
 - b. Compliance Data Recordkeeping
 - Paint / Solvent Usage
 - Control Equipment Temperature Data
 - c. Secondary Compliance Auditing
 - d. Work Practice Plan Audits
 - d. Permit Modifications
2. MSDS / Raw Material Approval
3. Refrigerant System Management
 - a. Recordkeeping
 - b. Auditing

Sustainable Plant Concept



Toyota Global Vision 2020



“Cycles of Nature”

All people and communities are subject to the natural cycles of the earth. Toyota is committed to undertaking “monozukuri” (manufacturing) that strikes a harmonious balance with nature in order to carefully sustain the global environment.

“Cycles of Industry”

An industry creates new value, while spawning the birth of a new industry—such is the way of the cycles of industry. Toyota endeavors to be a driving force behind the development of sustainable industries.

Toyota Global Vision 2020

Concept of Sustainability

Area #1 – Research & Development

- o Sustainable Mobility

Area #2 – Production

- o Sustainable Plant Initiative

Area #3 – Social Contribution

- o Activities contributing to sustainable development of people & society

Sustainable Plant

Implementation

1. Environmental Management

- o Compliance & Complaints
- o Risk Minimization
- o Energy / Resources / Recycling

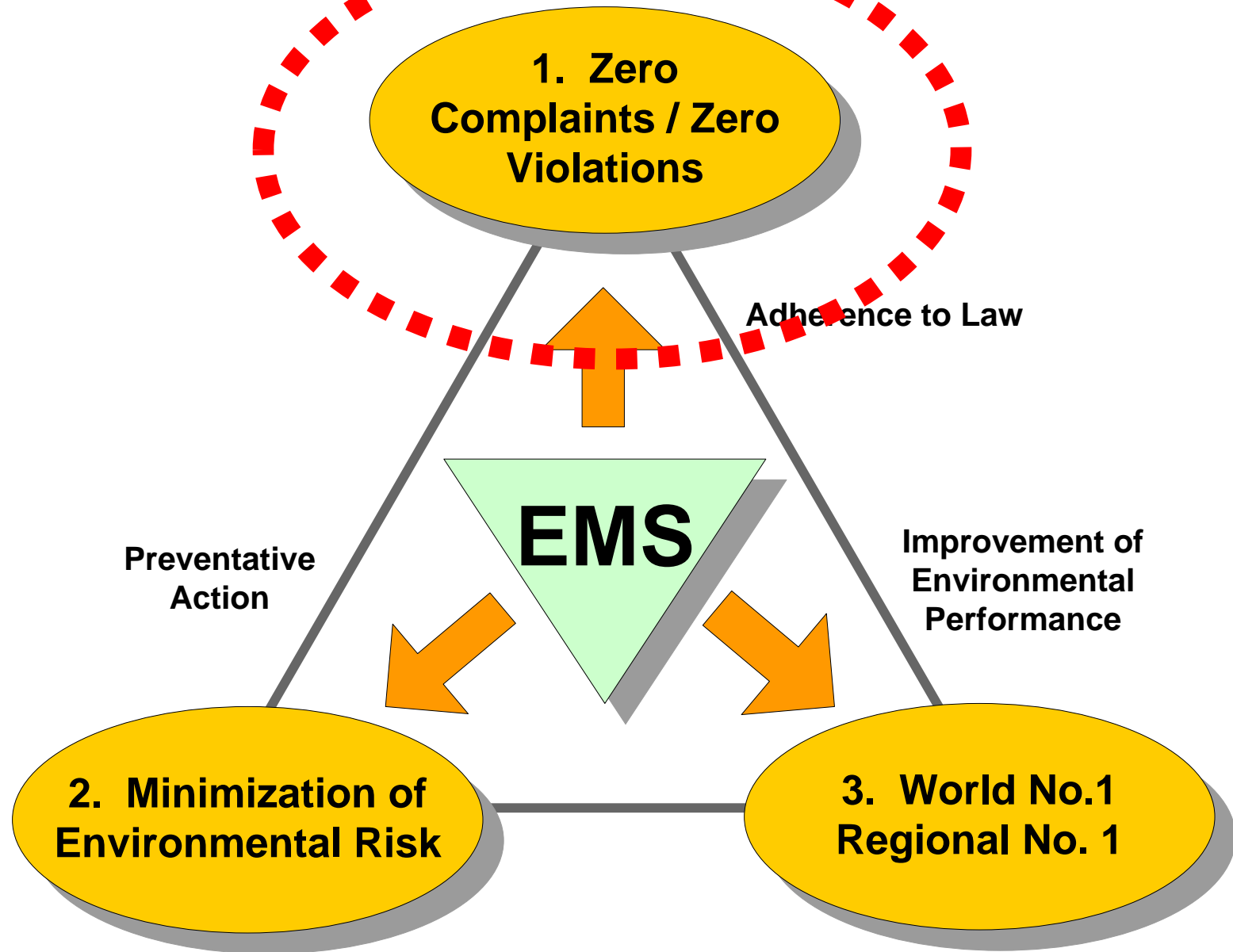
2. Renewable Energy

- o Wind, Photovoltaic, etc.

3. On-Site Afforestation

- o On-site tree planting

Environmental Management



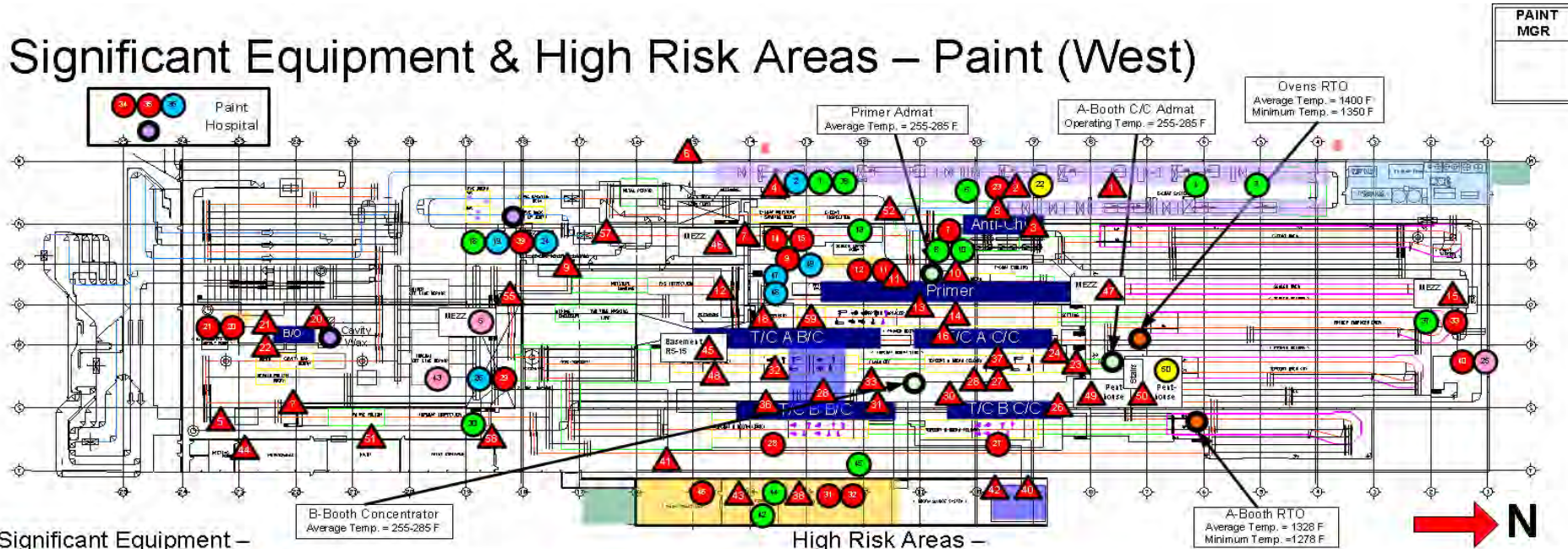
1. Compliance / Complaints

Key Management Items

- Carbon Adsorption Units
- RTO's / Incinerators
- Paint Booth PM Scrubbers
- PM Filters
- Wastewater Treatment
- Satellite Hazardous Waste Containers
- Universal Waste Containers

















Visualize Requirements

Significant Equipment & High Risk Areas – Paint (West)



Significant Equipment –

High Risk Areas –

 Hazardous Waste Containers	 RTO's	 Admats / Concentrators	 Mix Room & Paint Storage Areas	 Phosphate / ED Raw Material Storage	 Sludge Pools											
 Used Oil Containers	<p>Management Standard –</p> <ol style="list-style-type: none">1. Operating at all times during production2. Maintain minimum 3-hour operating temp3. System interlocks for minimum temperature4. Maintain temperature data <p>Visual Management Standard –</p> <ol style="list-style-type: none">1. Post air permit requirements at each location2. Identify with "Leaf Car" sticker <p>Inspection Standard –</p> <ol style="list-style-type: none">1. Inspect equipment each shift (record required)	<p>Management Standard –</p> <ol style="list-style-type: none">1. Operating at all times during production2. Average operating temperature3. System interlocks for minimum temperature4. Maintain temperature data <p>Visual Management Standard –</p> <ol style="list-style-type: none">1. Post air permit requirements at each location2. Identify with "Leaf Car" sticker <p>Inspection Standard –</p> <ol style="list-style-type: none">1. Inspect equipment each shift (record required)	<p>Management Standard –</p> <ol style="list-style-type: none">1. Maintain free of spilled paint and solvent <p>Inspection Standard –</p> <ol style="list-style-type: none">1. Weekly inspection of trenches & sumps (record required)2. Annual sump integrity check (record required) <p>Engineering Standard –</p> <ol style="list-style-type: none">1. Chemical resistant coating for trenches2. Stainless steel liners for sumps	<p>Management Standard –</p> <ol style="list-style-type: none">1. Maintain free of spilled chemicals <p>Inspection Standard –</p> <ol style="list-style-type: none">1. Monthly inspection (EA) (record required)2. Annual sump integrity check (record required) <p>Engineering Standard –</p> <ol style="list-style-type: none">1. Chemical resistant coating for containments	<p>Management Standard –</p> <ol style="list-style-type: none">1. None (trenches & sumps have liquids at all times) <p>Inspection Standard –</p> <ol style="list-style-type: none">1. None <p>Engineering Standard –</p> <ol style="list-style-type: none">1. Coat trenches & sump with chemical resistant material2. Sludge pools constructed on steel											
 Universal Waste Containers																
 Non-Hazardous Waste Containers																
 Recyclable Waste Containers																
 Hazardous Waste Pedal Bin	 Dry Filters	 Wet Scrubbers	 Phosphate / ED Trenches & Sumps	 Chemical Load / Unload Areas	 IW-2 Sumps (Metal Containing Wastewater)*											
<p>Management Standard –</p> <ol style="list-style-type: none">1. Containers must be in good condition2. Containers must be closed except when adding waste3. Containers must be properly labeled4. No more than one hazardous waste container at each location <p>Visual Management Standard –</p> <ol style="list-style-type: none">1. Post requirements at each container location2. Identify with "Leaf Car" sticker <p>Inspection Standard –</p> <ol style="list-style-type: none">1. Inspect containers daily (no record required)	<p>Management Standard –</p> <ol style="list-style-type: none">1. Operating at all times during production2. Verify placement, integrity, and particle loading <p>Visual Management Standard –</p> <ol style="list-style-type: none">1. Post air permit requirements at each location2. Identify with "Leaf Car" sticker <p>Inspection Standard –</p> <ol style="list-style-type: none">1. Inspect equipment each shift (record required)	<p>Management Standard –</p> <ol style="list-style-type: none">1. Operating at all times during production2. Ensure good coverage of flood pan, water flowing, draft present, and free of excess paint solids <p>Visual Management Standard –</p> <ol style="list-style-type: none">1. Post air permit requirements at each location2. Identify with "Leaf Car" sticker <p>Inspection Standard –</p> <ol style="list-style-type: none">1. Inspect equipment each shift (record required)	<p>Management Standard –</p> <ol style="list-style-type: none">1. None (trenches & sumps have liquids at all times) <p>Inspection Standard –</p> <ol style="list-style-type: none">1. None <p>Engineering Standard –</p> <ol style="list-style-type: none">1. Coat trenches & sump with chemical resistant material	<p>Management Standard –</p> <ol style="list-style-type: none">1. Maintain free of spilled chemicals2. Empty after rain events <p>Inspection Standard –</p> <ol style="list-style-type: none">1. Inspect prior to discharge to stormwater <p>Engineering Standard –</p> <ol style="list-style-type: none">1. Containment to prevent potential stormwater contamination	<p>Inspection Standard –</p> <ol style="list-style-type: none">1. Annual integrity inspection (record required) <p>Engineering Standard –</p> <ol style="list-style-type: none">1. Double walled with steel liners2. Equipped with leak detection											
				<table><tr><td>Document No.:</td><td>SEHRA-TW-001</td><td>Issue Date:</td><td>4/01/05</td></tr><tr><td>Revision No.:</td><td>11</td><td>Revision Date:</td><td>9-3-13</td></tr><tr><td>Retain Until:</td><td></td><td></td><td>Revised</td></tr></table>	Document No.:	SEHRA-TW-001	Issue Date:	4/01/05	Revision No.:	11	Revision Date:	9-3-13	Retain Until:			Revised
Document No.:	SEHRA-TW-001	Issue Date:	4/01/05													
Revision No.:	11	Revision Date:	9-3-13													
Retain Until:			Revised													

Document No.:	SEHRA-TVY-001		Issue Date:	4/01/05	
Revision No.:	11	Revision Date:	9-3-13	Retain Until:	Revised

1. Compliance / Complaints

Visual Controls



Satellite Hazardous
Waste Container



Regenerative Thermal
Oxidizer

1. Compliance / Complaints

Visual Checks



BP1 Primer Booth Daily Check

- RCRA Tank System
- Title V Air Permit requires control equipment to be checked daily
 - Over 700 checks required
- T/M record data on checksheets
 - T/L or G/L reviews checks weekly
 - EA reviews checks monthly
- Missed checks must be reported to IDEM & EPA Region 5

PDA Check System



- Complete checks with PDA's
 - Barcode at each check location
 - Actual operating values entered
 - Immediate notification for checks that are out of compliance

Focus on Ensuring Checks are Completed Every Single Day

BP1 - Prime
Booth
(1 of 3)

Observation Log

BP1 Prime Booth

Check Source

Is the Sludge Water

Time 5/21/2005 11:17:14 A

☐ Yes ☐ No

First < > Last

CANCEL COMMIT 1 OF 3

[illegible]

- Confirmation page when complete
- Checks are saved electronically
- C/M's are tracked in database

Title V Air Permit Check System

1. Compliance / Complaints

Parametric Monitoring



- Maintain minimum operating temperature
- Must record data to demonstrate compliance

Regenerative Thermal Oxidizer

Graphs

Graphs

Recorder

Realtime

Import

Help

Trash

Batch

System

Servers

Graphs

Folders

Add New Graph

EP Primer

EP TC A Booth

EP TC-B Booth

GRAPH001

TC B Concentrator ...

WP Oven RTO 4-2...

WP Primer Admat ...

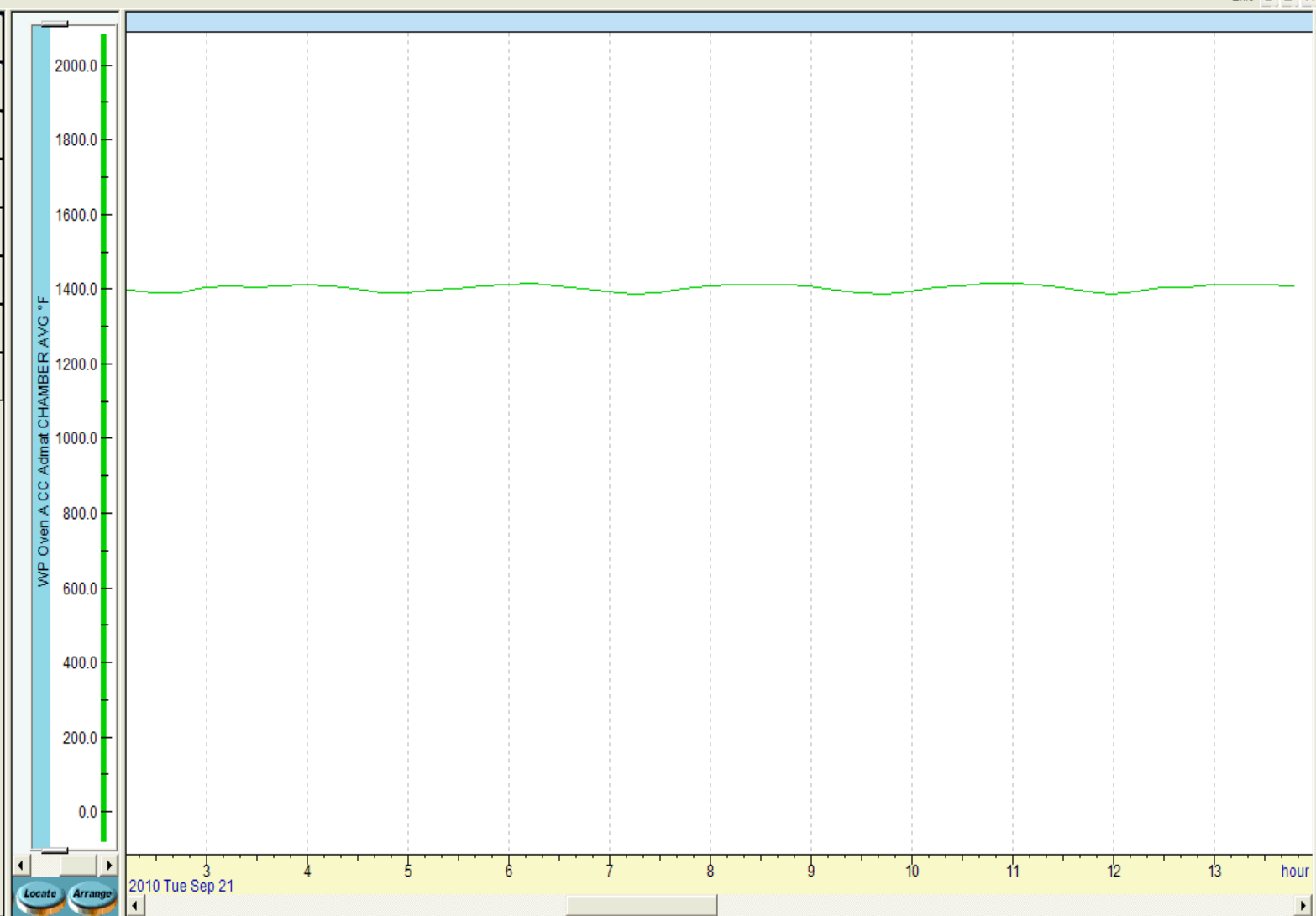
WP Primer Admat ...

WP RTO CC

WP TC A Admat

WP TC A CC Admat

WP TC-B Concentr...



Welcome to TrendServer Pro

Local Database Server connected OK

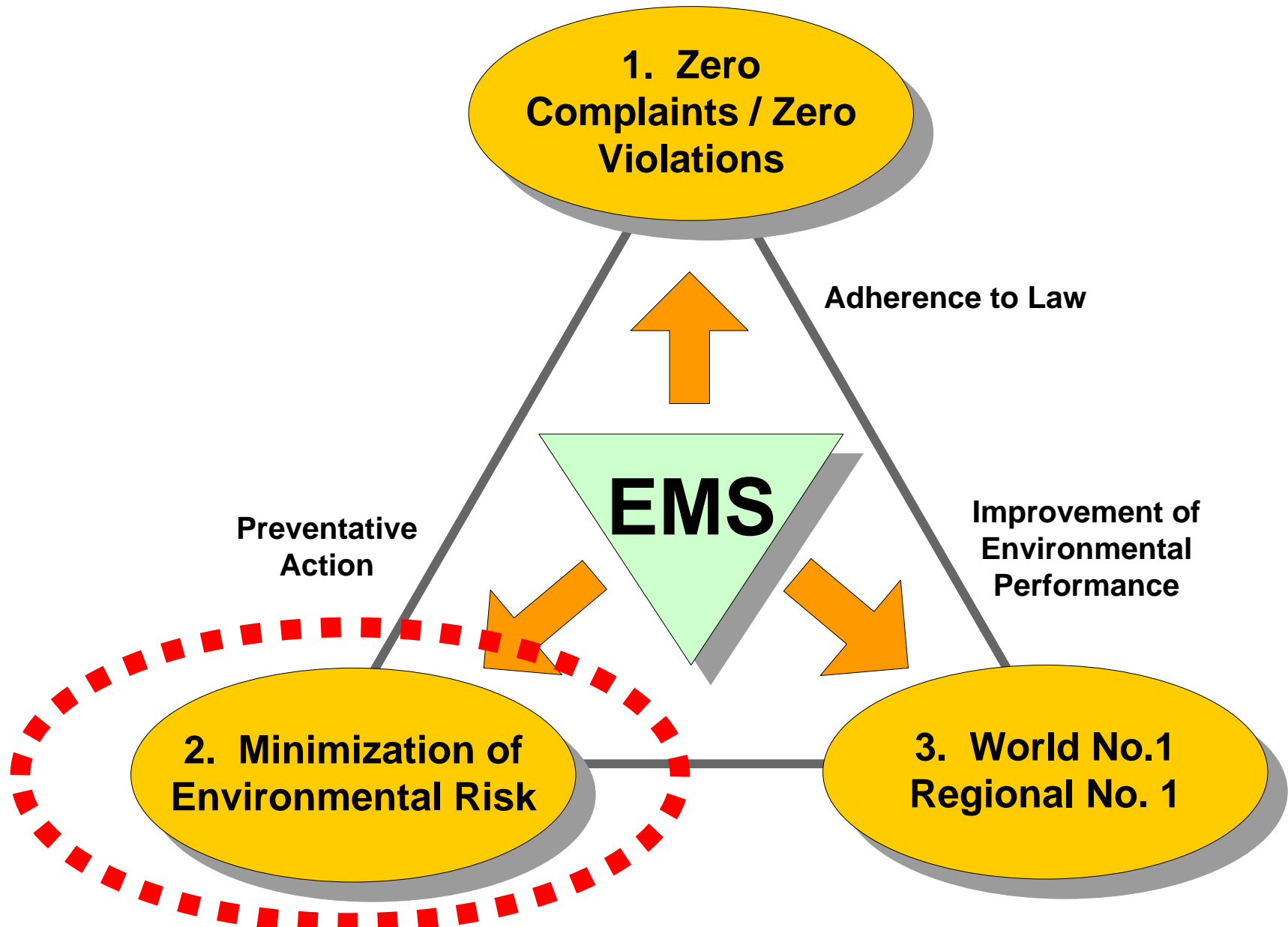
Could not establish connection to Remote Database Server (150.45.229.115).

Class not registered

Local Comms Server connected OK

Press F1 for Help

Environmental Management



2. Risk Minimization

Focus Areas

- Paint Mix Rooms
- Paint Sludge Room Areas
- Phosphate / ED Areas
- Tank Farm
- Stamping Basement
- Hazardous Waste Accumulation Areas
- WWPT Chemical Storage

2. Risk Minimization

Focus Area Inspection

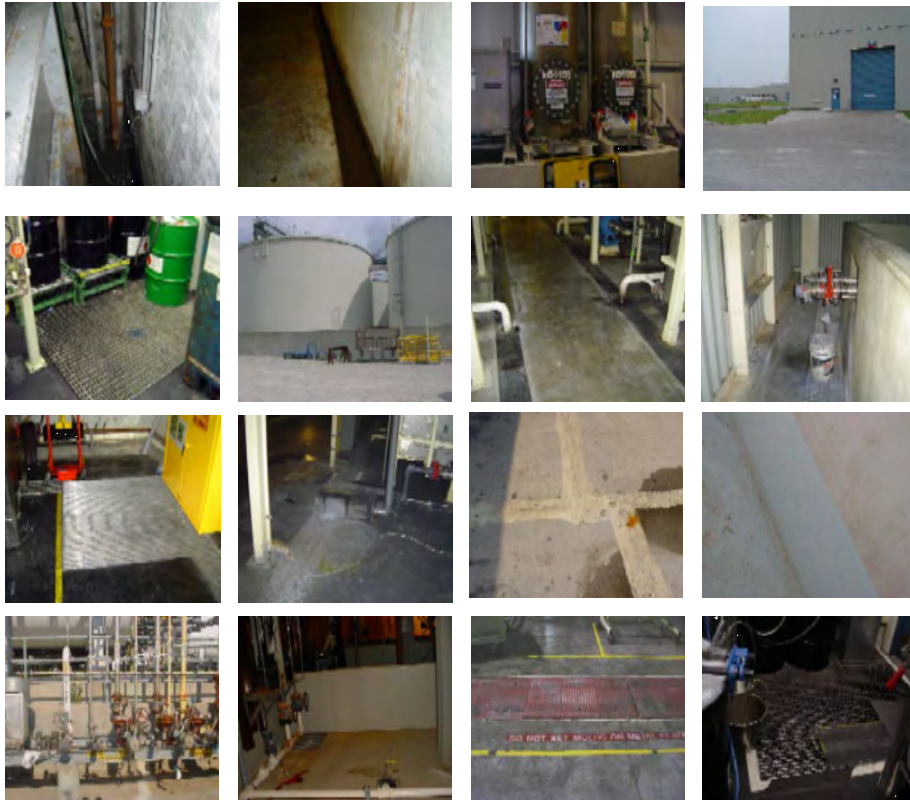
WEEKLY TRENCH CHECKSHEET -- BASEMENT OF STAMPING

[illegible]

2. Risk Minimization

Plan Implementation

Previous Condition:



Potential Sources of Groundwater Contamination

Issues Identified

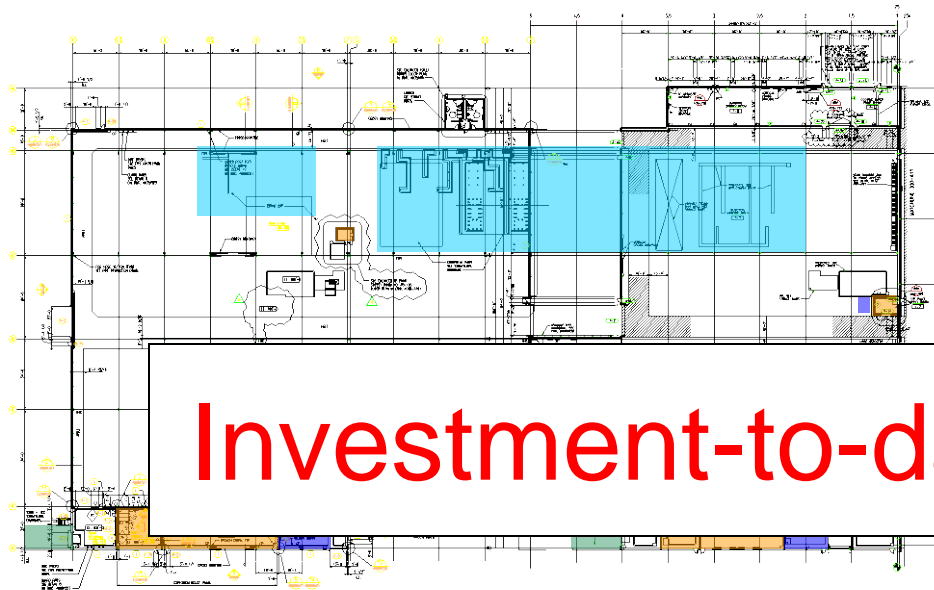
- No system to assess risk for groundwater contamination
- Risk reduction activities were selected based on:
 - Previous contamination issues
 - Auditor opinion
- No metric to measure reduction of risk

**Focus Activities & Resources
on Largest Potential Risks**

2. Risk Minimization

Plan Implementation

Current Condition:



Investment-to-date = \$672,000

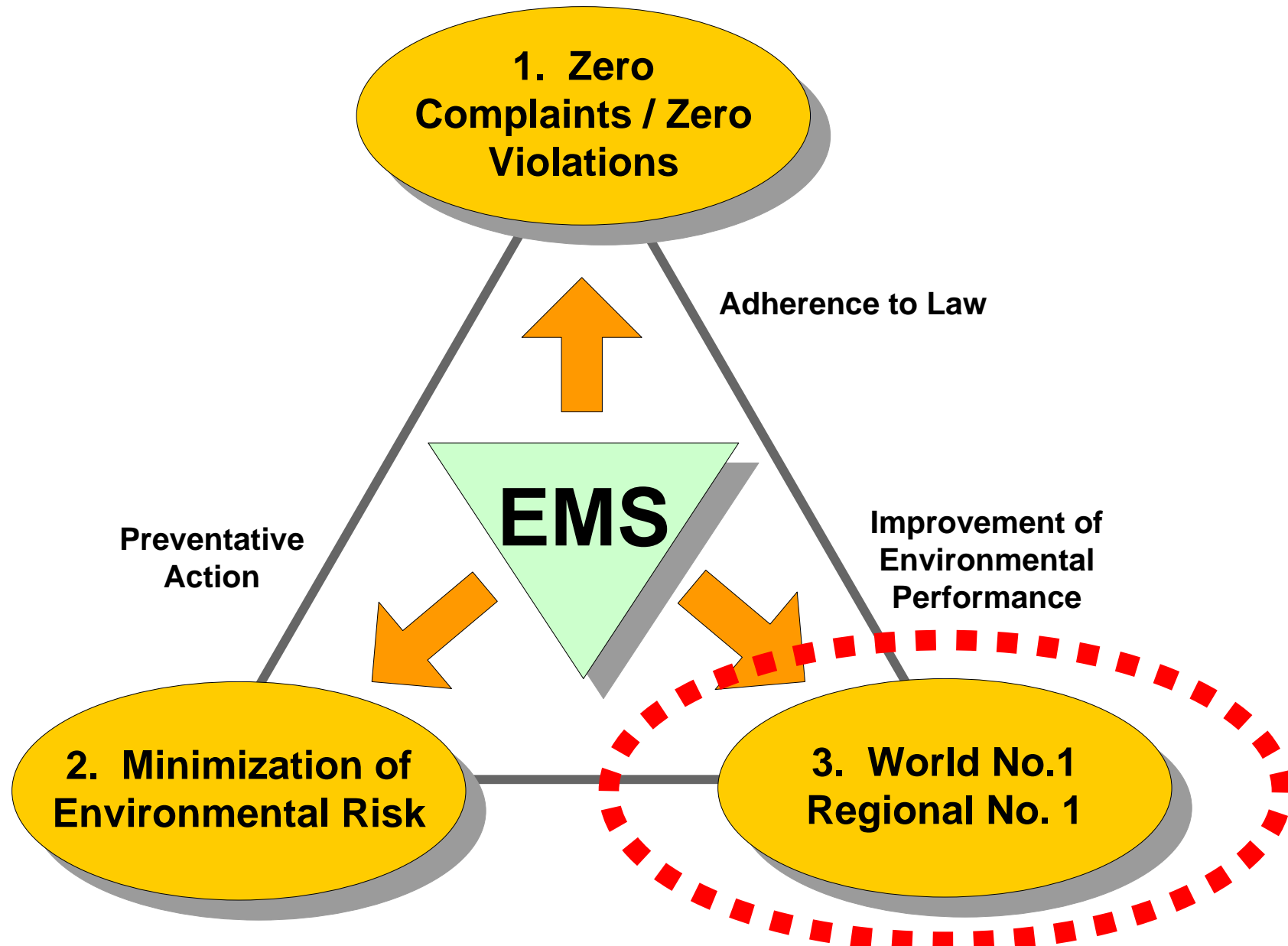
Countermeasures Implemented

- Developed system to quantify risk exposure
 - Similar to ISO 14001 aspect significance evaluation

- Projects are scheduled based on score

Plastics (400) – High Risk Areas

Environmental Management



3. Performance

Key Performance Indicators

Utilities -

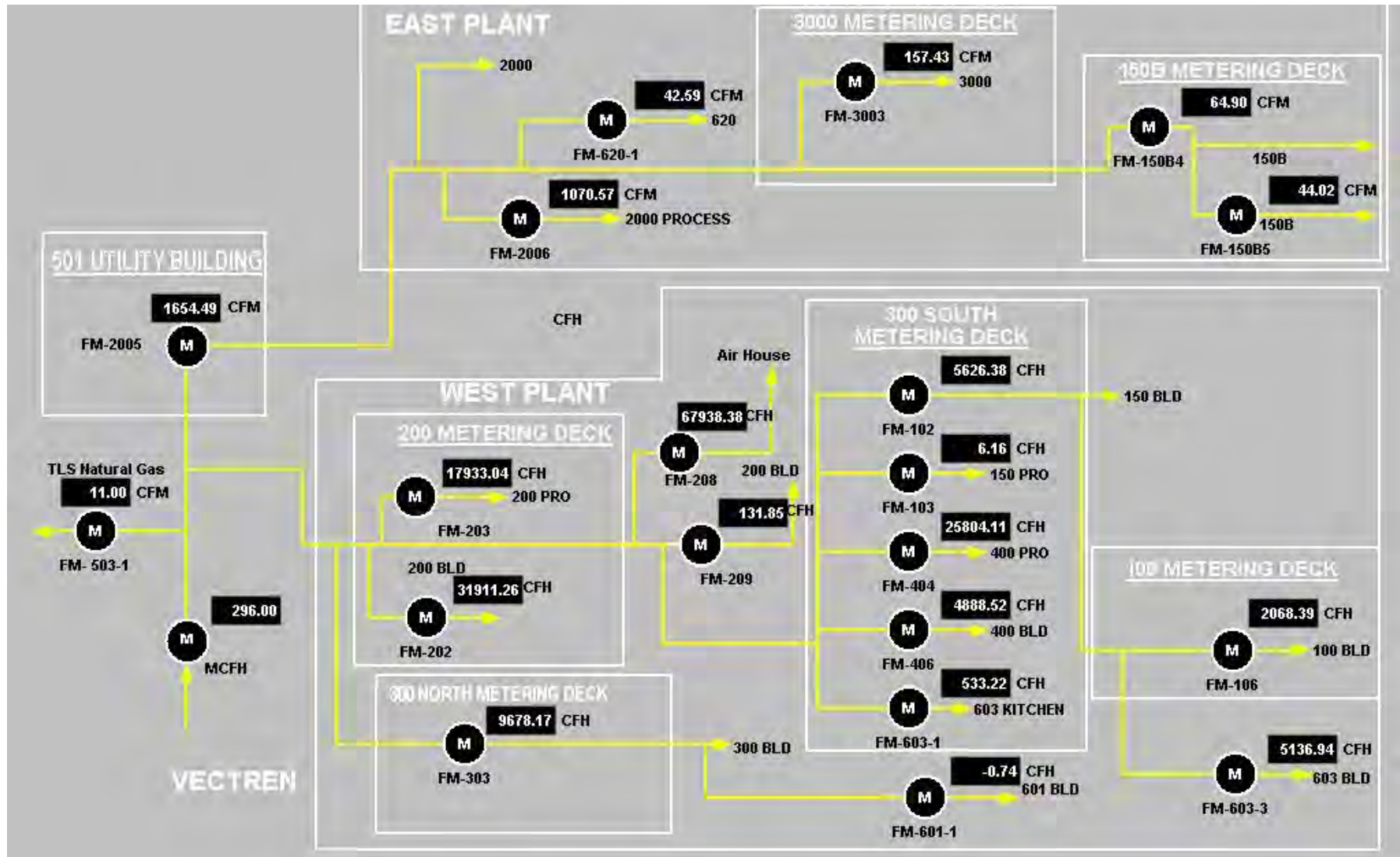
- Electricity
- Compressed Air
- Chilled Water
- Steam
- Natural Gas
- Water

Environmental -

- Waste
- VOC Emissions
 - Body
 - Bumper

3. Performance

Utility Metering



- 5000 Mainline 2000
- West Assembly Electrical Demand
- West Point Electrical Demand
- 8100, 8200, 8300
- Liquid Tank Farm
- Natural Gas
 - 501-NG-M
 - East Point Phosphate Boiler 1 Natural Gas
 - East Point Phosphate Boiler 2 Natural Gas
 - FM-102, 100+150+603 Bld Natural Gas
 - FM-103, 150 Pro Natural Gas
 - FM-106, 100 Bld Natural Gas
 - FM-110, 100+150+400 Natural Gas
 - FM-150B4, 150B Natural Gas
 - FM-150B5, 150B Pro Natural Gas
 - FM-2005, East Plant Natural Gas
 - FM-2005A, East Plant Natural Gas (Redundant)
 - FM-2006, 2000 Pro Natural Gas
 - FM-202, West Point HVAC Natural Gas
 - FM-203, West Point Oven Deck Natural Gas
 - FM-208, West Point Air House Natural Gas
 - FM-209, West Point Bld Natural Gas
 - FM-3003, 3000 Bld Natural Gas
 - FM-303, 300 Bld Natural Gas
 - FM-303A, 300 Natural Gas (Redundant)
 - FM-404, 400 Pro Natural Gas
 - FM-404A, 400 Natural Gas (Redundant)
 - FM-406, 400 Bld Natural Gas
 - FM-501-2, West Plant Natural Gas
 - FM-503-1 TLS Natural Gas
 - FM-601-1, 601 Bld Natural Gas
 - FM-603-1, 603 Kitchen Natural Gas
 - FM-603-3, 603 Bld Natural Gas
 - FM-620-1, 620 Bld Natural Gas
 - RTD-501-1, Outside Air Temperature
 - Vectren, Plant Natural Gas
- Steam
- Wastewater
- Water
- Personal Groups
- Rockwell
- Weekend Alarms

Domain/Meter: By Utility/Natural Gas/FM-303, 300 Bld Natural Gas

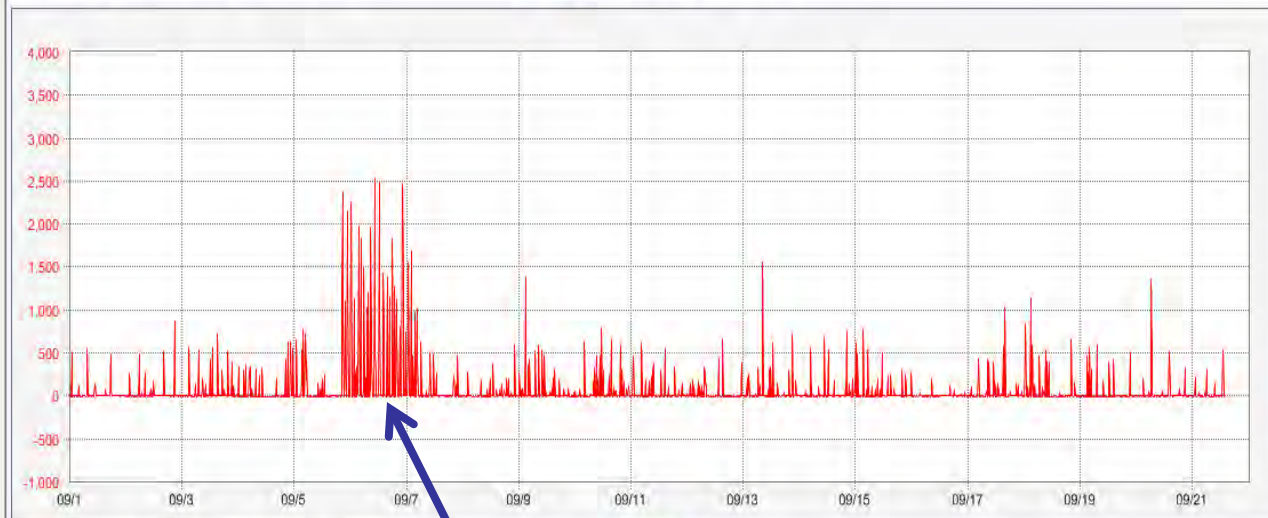
Meter type: Gas Device class: Ethernet Energy Module (SLC)

Meter Data Trend Calendar Trend Meter Setup

Time zone (GMT-06:00) Central Time (US & Canada)

☒ Show grid lines

Export Data



Aug September 2010 Oct

Sun Mon Tue Wed Thu Fri Sat

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

Aug September 2010 Oct

Sun Mon Tue Wed Thu Fri Sat

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

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

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

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

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

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

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

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

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

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

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

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

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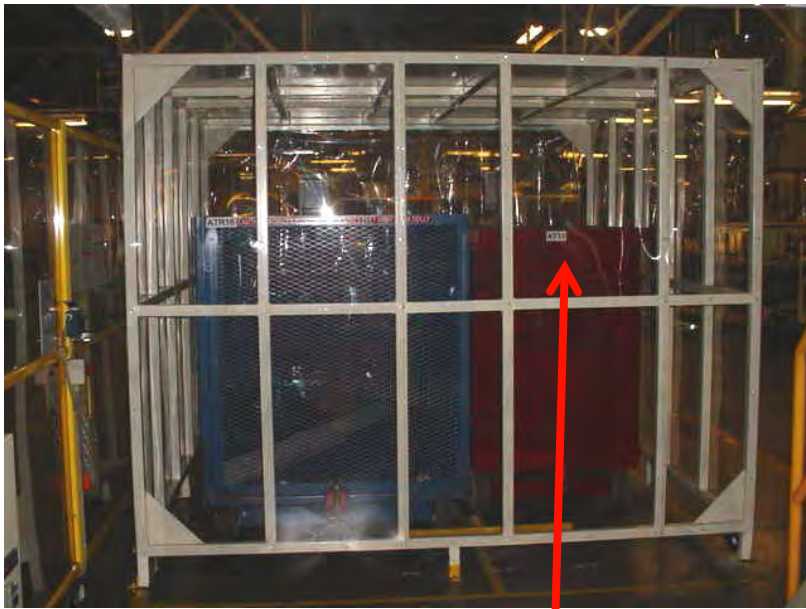
Real Time Data Available
to Decision Makers

3. Performance

Waste Tracking



Each regulated waste container is assigned a tracking ID number



Each general trash gondola is assigned a tracking ID

TRASH ONLY

LOCATION ID#

AU-16 TR

- NO LOOSE TRASH
- NO CARDBOARD
- NO CANS/BOTTLES
- NO PAPER
- NO METAL
- NO PLASTIC
- NO WOOD

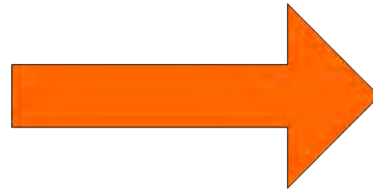
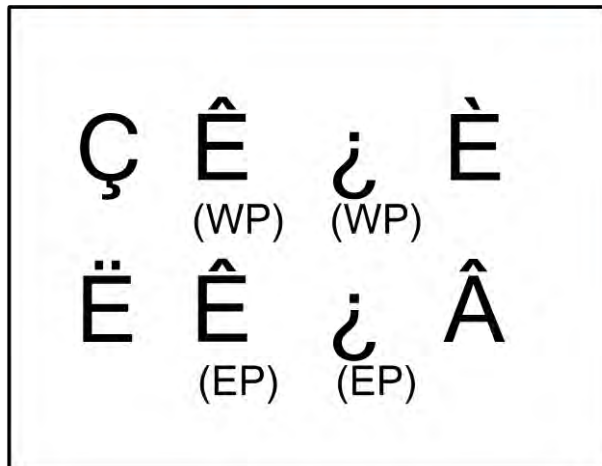


3. Performance

Environmental Action Plans

- Develop Environmental Action Plans (EAP)
 - TMMI
 - Shop Specific
- TMMI EAP based on shop EAP's

Shop EAP's



TMMI's EAP



Sustainable Plant

Implementation

1. Environmental Management

- o Compliance & Complaints
- o Risk Minimization
- o Energy / Resources / Recycling

2. Renewable Energy

- o Wind, Photovoltaic, etc.

3. On-Site Afforestation

- o On-site tree planting

Renewable Energy

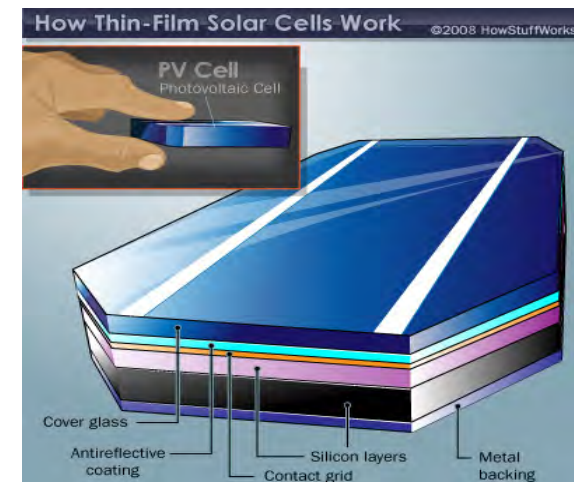
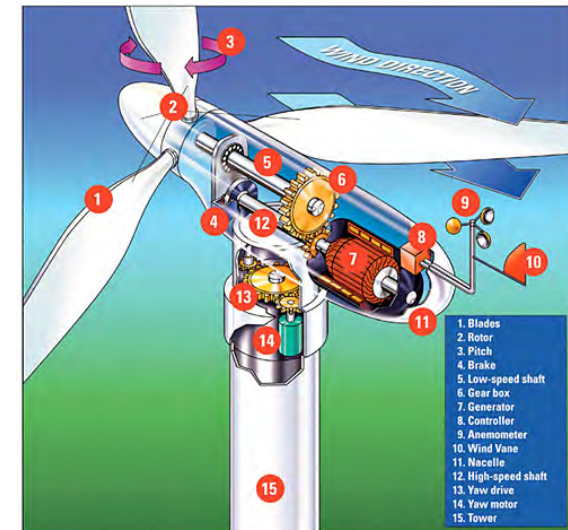
Implementation

- Focus non-production Areas

- o Visitor Center
- o Common Areas
- o Admin. / Prod. Offices

- Trial Multiple Technologies

- o Wind Turbines
- o Photovoltaic
- o Geothermal



Sustainable Plant *Implementation*

1. Environmental Management

- o Compliance & Complaints
- o Risk Minimization
- o Energy / Resources / Recycling

2. Renewable Energy

- o Wind, Photovoltaic, etc.

3. On-Site Afforestation

- o On-site tree planting



Environmental Outreach Activities

Earth Aware Camp

TMCA Camp Carson

- Over 400 3rd grade students
- ½-day program on water protection, recycling & wildlife preservation



ORSANCO Aquarium



Magic Gardener

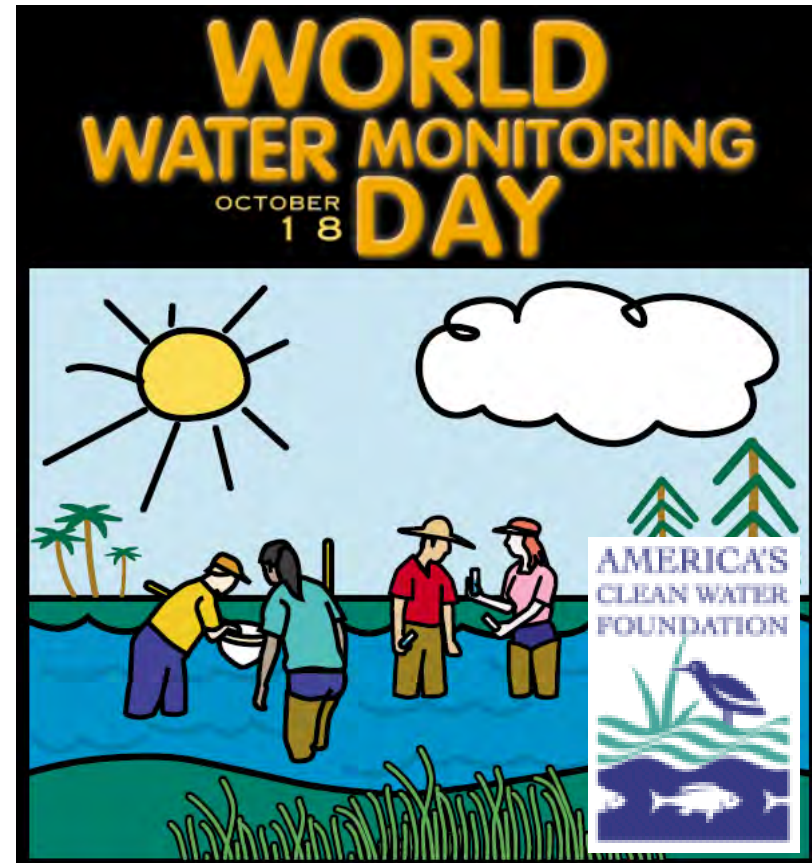


Wild-life
Cleaning

World Water Monitoring Day

Gibson County

- Program started in 2002
- Goal is to raise awareness about water quality
- Simple tests are conducted to test water quality
 - pH
 - Turbidity
 - Dissolved Oxygen
 - Temperature
- Data is entered into an international database



World Water Monitoring Day

Gibson County

- 2,200 6th grade students
- Over 150 T/M's



Ft Branch student Aaron Hiltz, center, tests his group's water sample while Wes Lotz, Chase Daughton and Ken Bowershaw look on. (Photo by Nick Schneider)

Ft. Branch students participate in water test

By Nick Schneider
More and more, Gibson County students are learning to protect their local environment thanks to the educational efforts of Toyota Motor Manufacturing Indiana, Inc.
On Friday afternoon, about 39 sixth grade students from Fort Branch Community School participated in a water testing project, sponsored locally by TMMI, which is part of World Water Monitoring Day.
The students gathered at a picturesque lake along County Road 1101 East, near the TMMI plant, to test four basic indicators of water quality—sampling for dissolved oxygen, acidity (pH), temperature and turbidity. Each is an important, yet basic, indicator of the water's purity, according to Kevin Miller, TMMI environmental specialist.
While engaged in this second annual event, students learn more about the watersheds in which they live, how watersheds work, and how protecting their waters can have beneficial impacts downstream, he said.
"The intention is for them (the students) to learn that water quality is important. We are trying to get (some of) around the world to get an interest in water quality. It is a celebration of the Clean Water Act that was signed into law back in the 1970s. We want to keep it in people's awareness that clean water is important," Miller explained. "The students are learning about water hydrology in class so we thought this fit in very well and was convenient to when they are doing it."
Each student was given rubber gloves, safety glasses, collection cups, data sheets and testing chemicals and supplies to carry out the hands-on field experiments in groups of five students.
Data collected will be entered into a global database maintained by America's Clean Water Foundation.
Students from Hamilton Community School and Owensville Community School, as well as the North Adams and East Gibson school districts are participating in similar events in the next few weeks, Miller said.
Miller was assisted in the testing effort by Bob Doroske, a University of Evansville environmental science major who is interning at TMMI.
Teachers and students use the gathered data in the classroom to discuss impurities in their local watershed and compare their findings with others.
A month-long monitoring period precedes the actual water-testing activities on Oct. 11 to ensure adequate time to collect data from around the world.
America's Clean Water Foundation (ACWF) and the International Water Association (IWA), along with many global partners, including Toyota North America.
Continued on page 2
CA, coordinate this effort across the globe. Last year, 6,327 sites in 60 countries were registered.



Ft. Branch students test the waters

TMMI senior fifth grader demonstrates the testing procedure for Fort Branch Community School students Matthew Kneig, Kyle Kneig, Caleb Davis and Chelsea Crawford. The program, sponsored by Toyota, was part of activities for World Water Monitoring Day. (Photo by Nick Schneider)

Environmental Outreach

Nature Trail

- Nearly 1 mile of finished trails
- 10,000 native species plants installed
- 17 species of Indiana native trees
- 100 plant and tree identification tags





The logo features a blue outline of the state of Indiana. The word "TOYOTA" is written in bold red capital letters across the upper portion of the map. Below it, the word "Indiana" is written in blue lowercase letters. A small red five-pointed star is located in the southwestern corner of the state outline, indicating the location of the Toyota dealership.

TOYOTA
Indiana

Questions / Comments