

Columbus Chemical

Region 5 RRT Meeting
October 20, 2009

Dino Tsoris & Kathy Clayton



Presentation Overview

- Event Overview
- Air Monitoring
- Additional Environmental Sampling
- Response Challenges
- Fire Aftermath
- Site Stabilization and Clean-Up
- Waste Disposal & Disposition
- Current Status
- Successes
- Lessons Learned

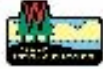


Event Overview

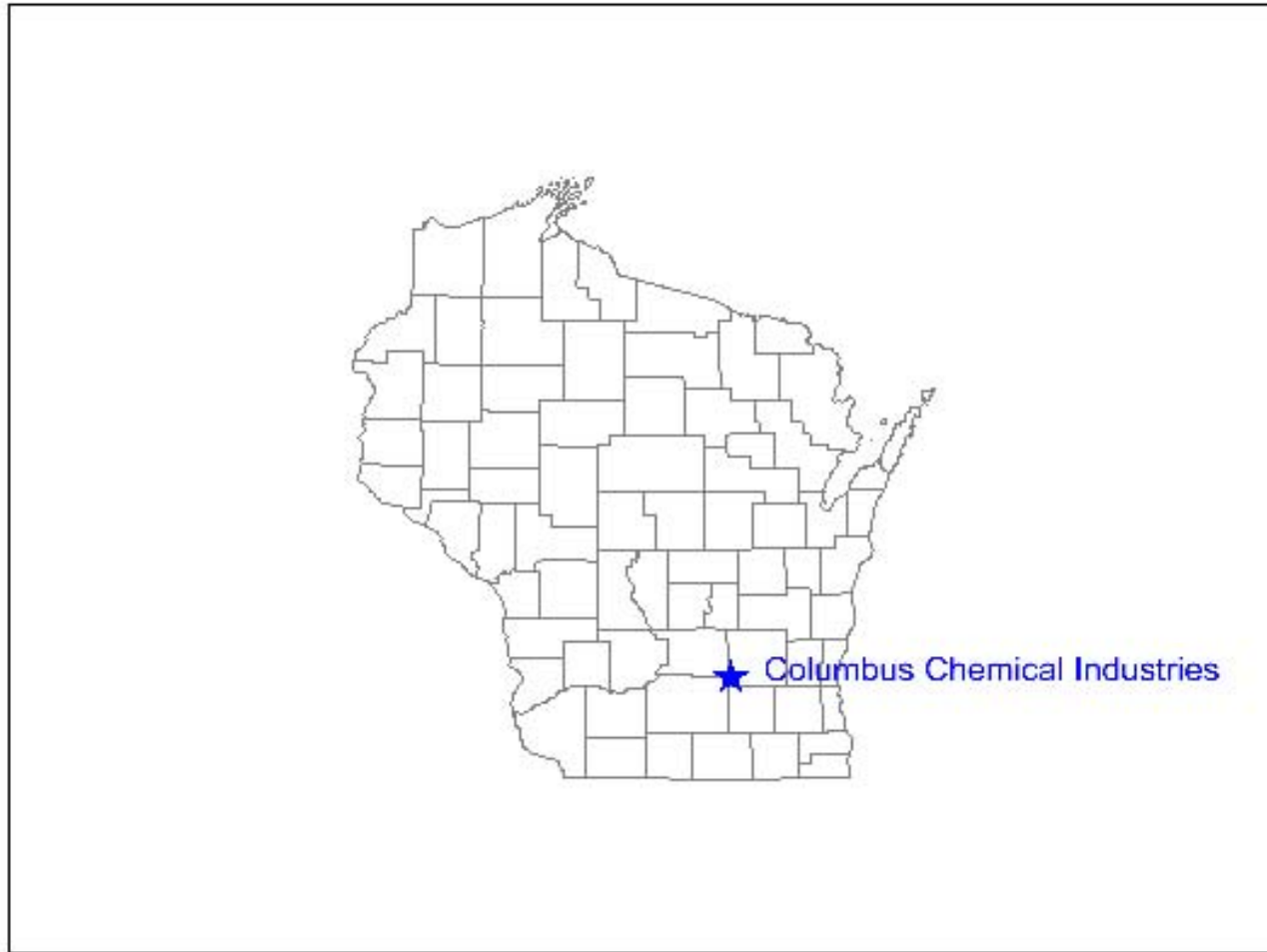
Columbus Chemical Industries

- Chemical distribution company for
 - Pharmaceutical industry
 - Semi-conductor/electrical manufacturing
 - Analytical labs
 - Educational institutions
- Common products include:
 - high purity acids and salts
 - analytical quality solutions/blends
 - custom private-label packaging





Columbus Chemical Industries, Site Location



Legend

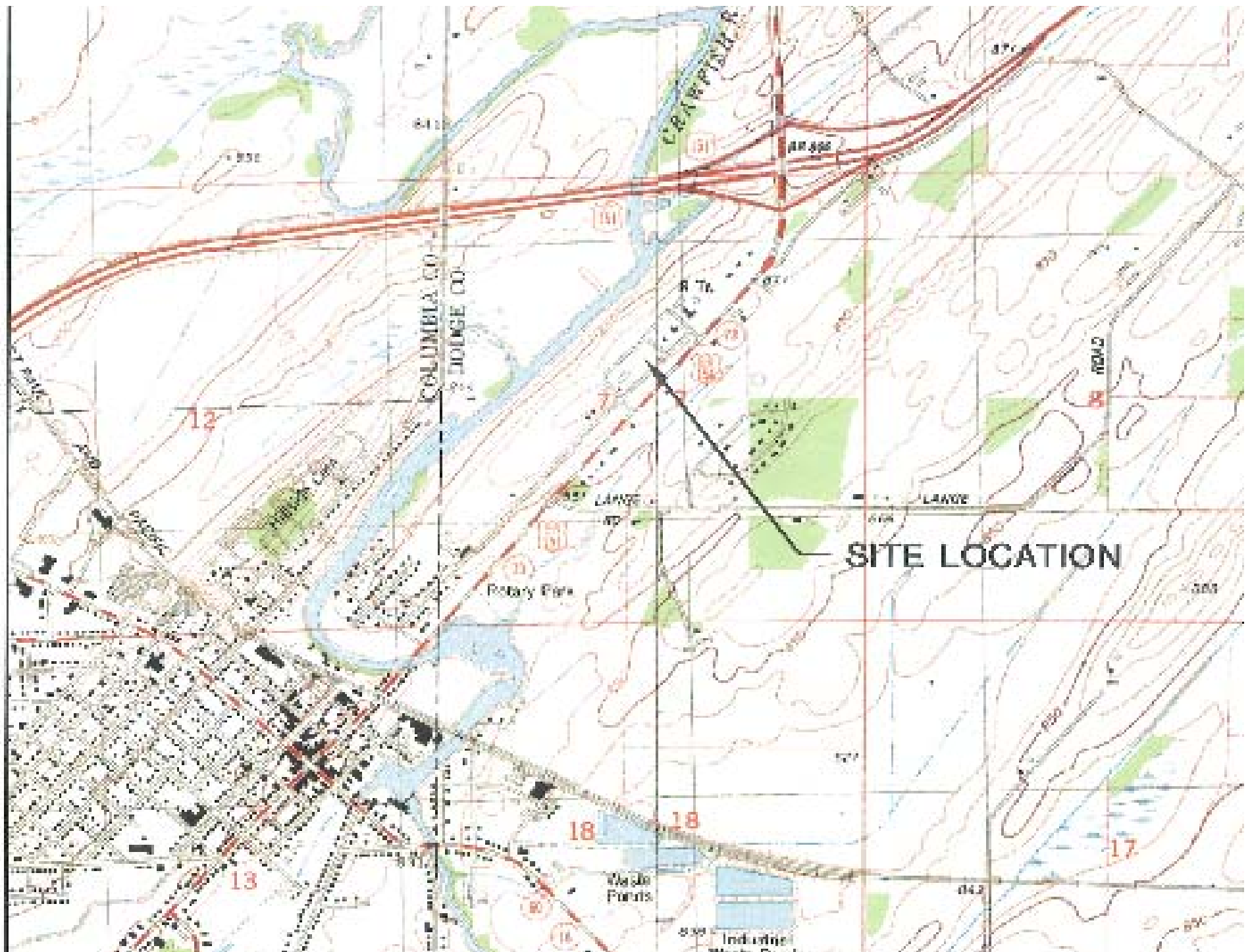
- 24K County Boundaries

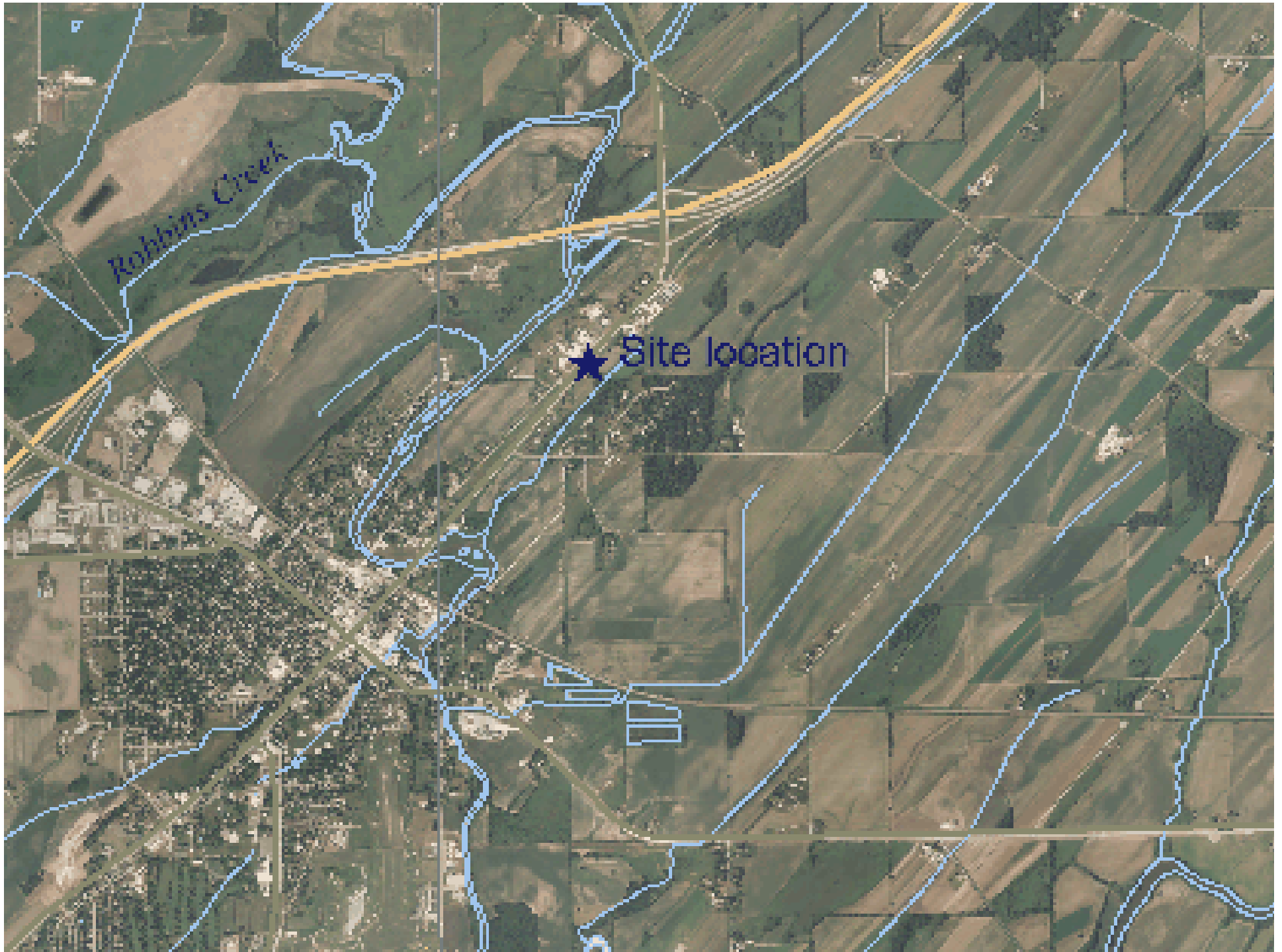
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Scale: 1:5,607,518

This map is a user generated static output from an internet mapping site and is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. THIS MAP IS NOT TO BE USED FOR NAVIGATION.







Fire Location - Building 4

Event Overview

Monday May 11, 2009

- 20:04 First call from ADT (alarm service)
- 20:11 Fire units on scene
- 20:20 WDNR notified
- 20:29 UC established
- 20:31 STH 73 closed
- 20:38 Explosion
- 20:53 Fire suppression ceased



Event Overview

Monday May 11, 2009

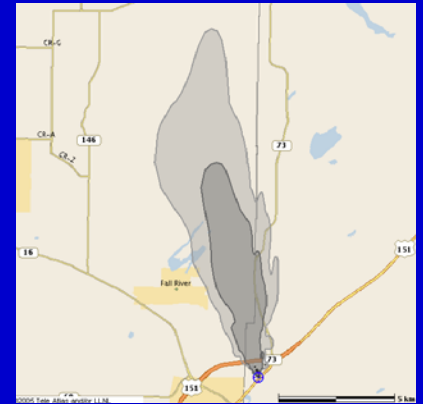
- 21:15 54th WMD Civil Support Team mobilized
- 21:18 Local radio announcements
- 21:20 Dane Co. Level A Hazmat Team mobilized
- 21:36 Code Red (“Reverse 911”) launched
 - 7,879 calls (shelter in place)
- 23:16 STH 151 closed



Event Overview

Tuesday May 12, 2009 (Day 2)

- 01:05 EPA Call-out
- 05:00 Air monitoring initiated
- 11:39 STH 151 opened
- 15:30 Shelter-In-Place lifted
- 16:00 Runoff sampling conducted
- 18:30 Air recon by 147th AV
- 20:00 Containment berms constructed



Event Overview

Wednesday May 13, 2009 (Day 3)

- Wind changed & limited Shelter-In-Place reinstated
- Wipe samples collected
- DOJ & ATF conducted investigation
- Bottled water supplied
- BT² assumed air monitoring from EPA

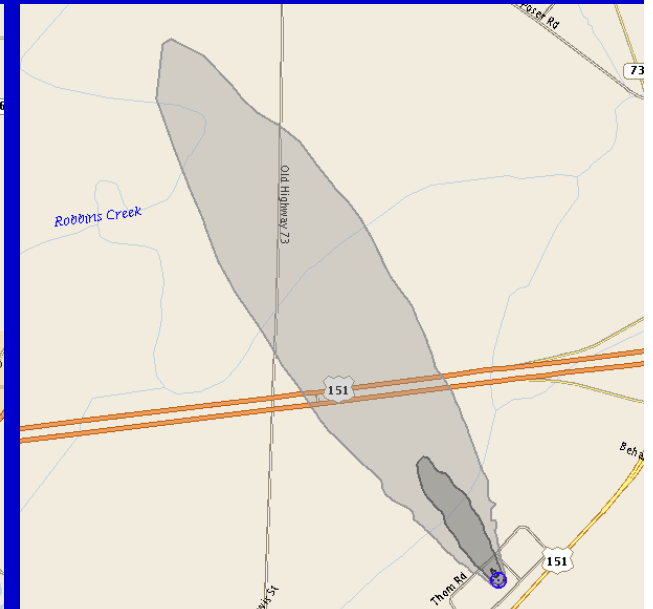
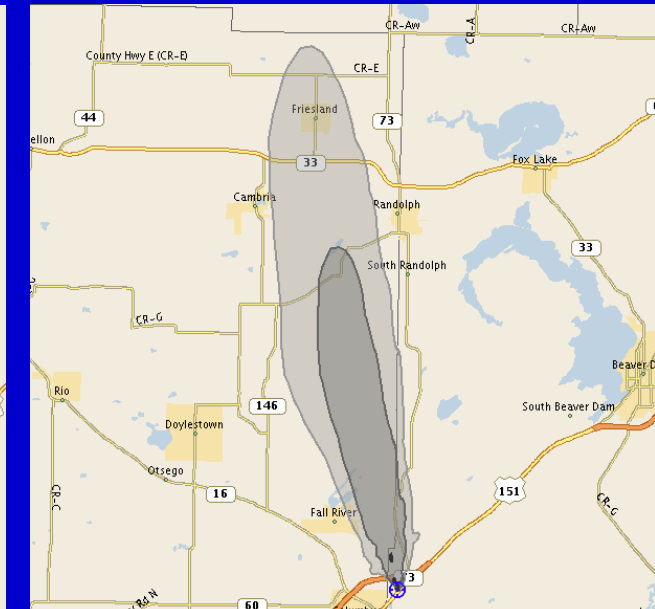
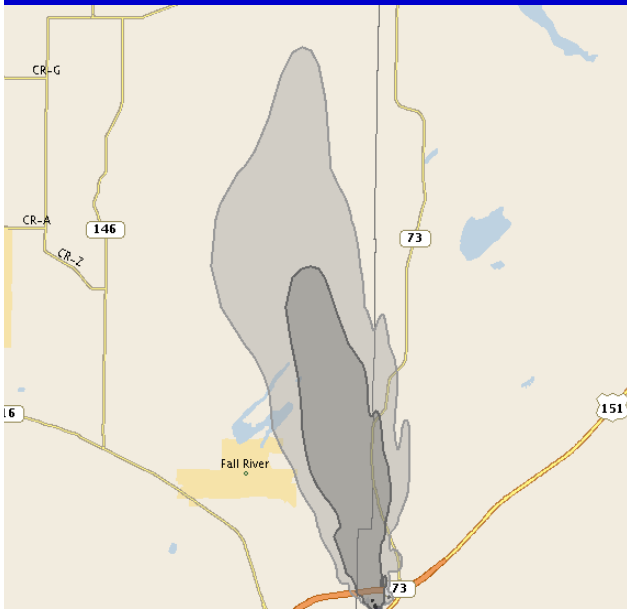
Thursday May 14, 2009 (Day 4)

- Heavy rain extinguished fire
 - 50+ hours after fire started
- Final Unified Command meeting



Air Monitoring

- NARAC (National Atmospheric Release Advisory Center) models initially developed for general chemical fire
- Models revised throughout response based on chemical inventory information and field data
- Models also used to prepare for weather changes



Air Monitoring


- Downwind area divided into two sectors
 - CST/Hazmat – Incrementally clear evacuated area
 - Area Raes (PID, HCN, LEL, O₂, CO)
 - Summa Canister
 - US EPA – Neighborhood monitoring
 - Multi-Rae
 - HCN ToxiRae
 - Data Ram
 - Draegers
- Results: HCN, Acid, and Particulates detected above background, but below health action levels



Imagery Source:
ESRI Imagery World_2D



Legend

 Columbus Chemical Industries

Air Monitoring Locations

-  Round 1
-  Round 2
-  Round 3



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 Prepared For:
U.S. EPA REGION V
Contract No.: EP-S5-08-04
TDD: S05-0001-0905-008
DCN: 641-2A-AEAO


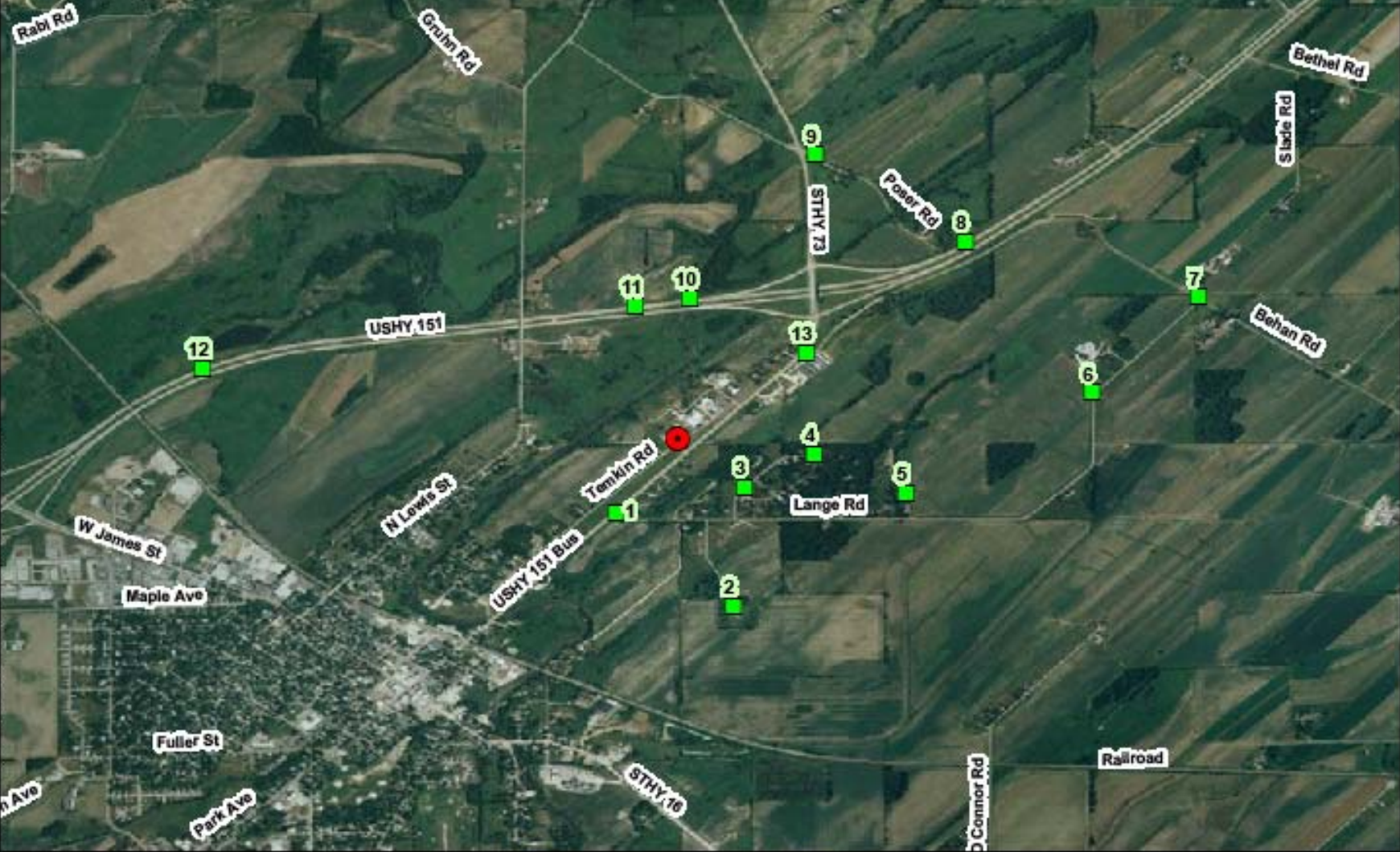
 Prepared By:
WESTON SOLUTIONS
750 East Bunker Court
Suite 500
Vernon Hills, Illinois 60061

Figure 1
CST Air Monitoring Locations
Columbus Chemical Industries
Emergency Response
Columbus, Dodge County, Wisconsin

Imagery Source:
ESRI Imagery World 2D



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Legend

- Columbus Chemical Industries
- Monitoring Location

0 2,500 Feet

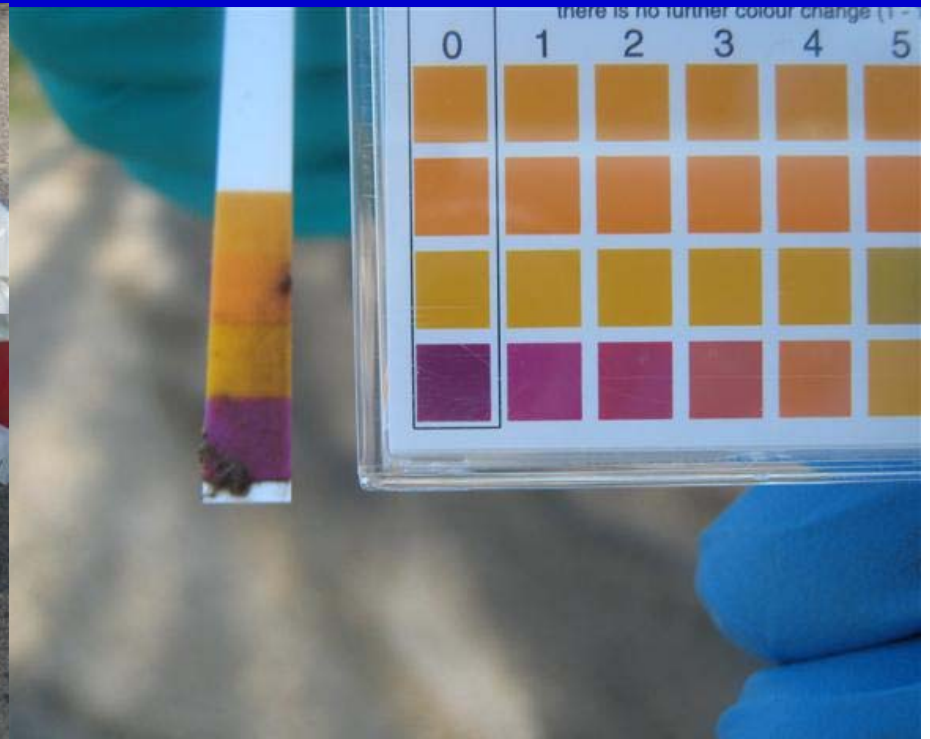
Prepared For:
U.S. EPA REGION V
Contract No.: EP-S5-06-04
TDD: S05-0001-0905-006
DCN: 641-4D-ADZL

Prepared By:
WESTON SOLUTIONS
750 East Bunker Court
Suite 500
Vernon Hills, Illinois 60061

Figure 1
Original Monitoring Locations
Columbus Chemical Industries
Emergency Response
Columbus, Dodge County, Wisconsin

Additional Environmental Sampling

- Runoff sample
 - Field screening conducted by EPA indicated pH=0
 - Laboratory analysis confirmed corrosivity



Additional Environmental Sampling

- Particulate wipe tests
 - Locations selected by WI Department of Health Services
 - Field screening conducted by EPA indicated acidic deposition in Fall River
 - Samples sent to WI SLH for analysis



Response Challenges

- Huge command staff
- Duration of fire
- Public information
- Incomplete (and changing) chemical inventory
- Proximity of neighboring properties
- Highly acidic runoff
 - Public areas impacted
- Clearing the downwind area for reuse



Fire Aftermath

- Scene turned over to CCI on Thursday May 14, 2009 after the morning command meeting
- WDNR sole remaining regulatory agency
- The site was deemed too unstable to conduct the initial clean-up.
- First entry/assessment on Sunday May 17, 2009
- Competing priorities
 - Ongoing health, safety, environmental concerns
 - Preserving evidence for fire investigation
 - Owners desire to re-start business operations ASAP



First Entry – Sunday May 17, 2009



Fire Aftermath

- Non-existent consultant chain of command created confusion and a lack of progress
 - Columbus Chemical Environmental Consultants
 - BT²
 - North Shore
 - Insurance Companies
 - AIG (environmental)
 - Liberty Mutual (property)
 - Insurance Companies' Consultants
 - Meagher & Associates
 - CTEH
 - EQ



Site Stabilization and Clean-Up

- On Tuesday, May 19, 2009, WDNR asked for US EPA assistance to address imminent risks posed by site conditions
- US EPA and WDNR requested work plan from RP and consultant team
 - Simultaneous site clean-up and fire investigation
 - Emergency contingency plan
 - Consultant chain of command and accountability
 - Schedule



Site Stabilization and Clean-up

- Work plan submitted to US EPA & WDNR on Friday, May 22, 2009
 - Established successful implementation of site unified command, site hazard stabilization, cleanup actions, fire investigation activities.
- CCI also re-occupies and operates out of Building 3 on May 22, 2009 overnight shifts.

SITE ACTION PLAN:

Columbus Chemical Industries, Inc.
Columbus, WI

May 22, 2009

Prepared by:
EQ - The Environmental Quality Company
36255 Midglen Ave
Wayne, MI 48181

Project Management	
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Center for Toxicology and Environmental Health (CHEHS)	Cory Davis (501) 233-7881
Center for Toxicology and Environmental Health	Chip Day (317) 845-5312
Project Manager	
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Project Manager:	(308) 399-8875, (850) 433-8076
NewE Solutions	Freddie Ringle
Project Manager:	(434) 516-6516
(1) ²	Mark Tisdler (360) 224-2830

Columbus Chemical Industries, Inc. Page 1 05220903
8th Floor 7th Fl.





Fire Location - Building 4

Resumed Operations - Building 3



Site Stabilization and Clean-Up

- Fire investigation completed on Friday, May 29, 2009.
 - Suspected cause: electrical
- Chemical debris containerization completed on Sunday, May 31, 2009.
 - Initial attempt to containerize compatible materials failed due to continuing reactions in overpacks
 - In-situ neutralization with lime; resulting material bulk packaged in rollofs.



Site Stabilization and Clean-Up

- Unaccounted for Sodium Metal dispersed during initial explosions
 - Continued threat during clean-up
 - Concern during rain events
 - Sodium Metal 250 lbs - inventory
- Wastewater
 - Runoff contained by berms
 - Runoff water neutralized with lime
 - Septic tanks and process treatment tanks full from fire suppression water
 - Timely mobilization of frac tanks



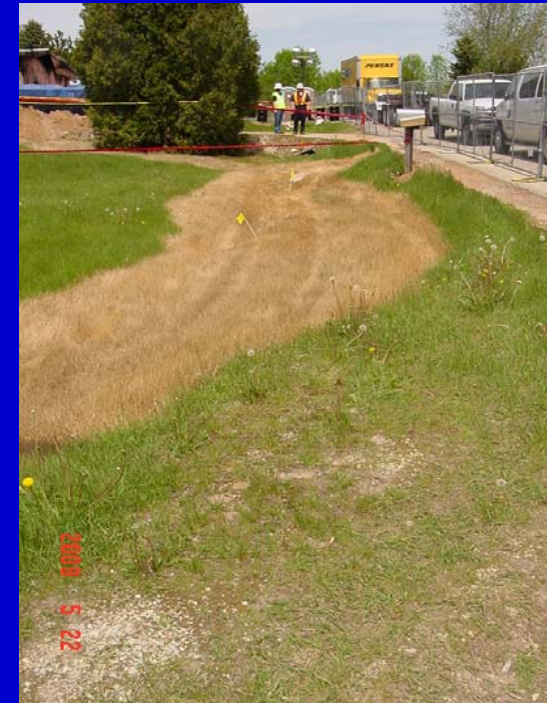
Site Stabilization and Clean-up

Berm Containment, Runoff Water Neutralization and Storage



Site Stabilization and Clean-Up

- Groundwater
 - Bottled water recommendation lifted on May 29, 2009
 - Low-level impacts to groundwater detected in existing on-site monitoring wells
- Soil
 - Extensive soil sampling conducted at varying depths
 - Formaldehyde contaminated soil excavated (~6' bgs)
 - Acid contaminated soil neutralized



Waste Disposal

Waste Totals:

- 15 - rollofs of neutralized chemical debris
- 10 - rollofs of building debris
- 6 - rollofs of concrete
- 12 - rollofs of contaminated soil
- 80,000 gals of runoff wastewater
- 2 drums of elemental sodium
- 40 drums of labpacked residual chemical containers



Waste Disposition

- Neutralized chemical debris material was determined to be non-corrosive, but still considered hazardous because of formaldehyde
 - MDEQ would not allow EQ to accept this waste stream
 - Final disposition Sarnia (Windsor, Canada)
- WDNR “contained out” determination for soil and concrete allowed for disposal in WI landfills
- Sheet metal and steel was recycled
- Wastewater accepted by local POTW



Current Status

- Site investigation report and remedial action plan submitted to WDNR on August 24, 2009.
- WDNR approved plan on September 24, 2009.
- Remediation expected to be completed by Spring, 2010.
- CCI rebuilding production, warehouse, and wastewater treatment facilities.



Successes

- Public health protected
- Unified Command
 - Approximately 20 Local, State, and Federal agencies coordinated well together
- Limited environmental impacts (containment)
- Timely clean-up
- Neighboring areas quickly cleared for reuse



Successes

- CCI's fire walls worked
- CCI had limited lost production
 - days instead of weeks
- CCI suffered minimal economic losses
- CCI avoided layoffs



Successes

- EPA & WDNR Interaction
- WDNR Internal Coordination - several programs contributed to the response via the Regional Spills Coordinator
 - Law enforcement assisted with initial response
 - Haz Waste assisted in characterization and “contained out” determinations
 - Wastewater assisted in disposal of runoff
 - Drinking water assisted with private water well issues
 - Fisheries assisted with potential impacts of runoff to surface water



Lessons Learned

- Improve transition when Unified Command dissolves
- Utilize additional PIOs
 - Sheriff's Office served as sole PIO
 - Multi-agency
 - Multi-jurisdictional
 - Highly technical incident



Lessons Learned

- Need Emergency Contingency Plan for site clean-up phase of incident prior to demobilization of Unified Command
 - Risk of subsequent explosions
 - Notification procedure
 - Response actions
- Establish chain of command for contractor team earlier



Questions?

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