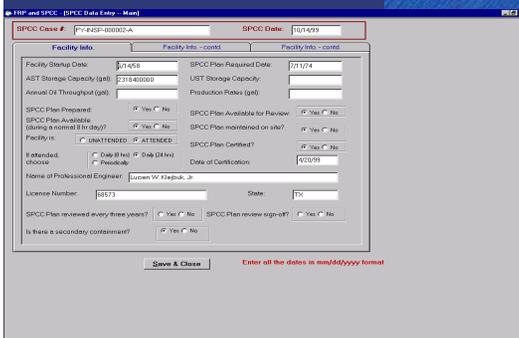
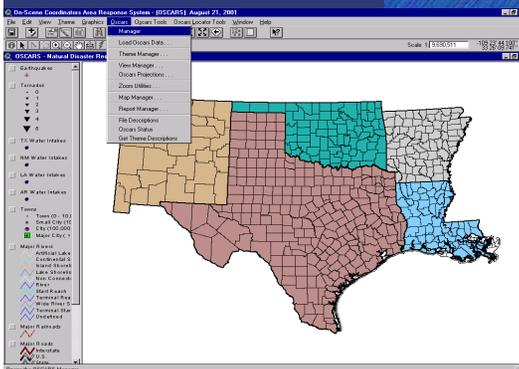


US EPA ARCHIVE DOCUMENT



Integrating Information Technology into the Spill Prevention and Response Environment

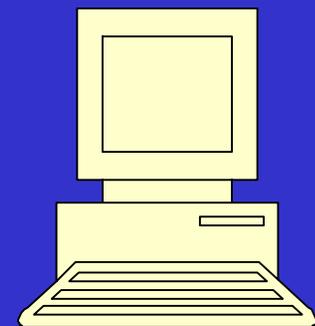
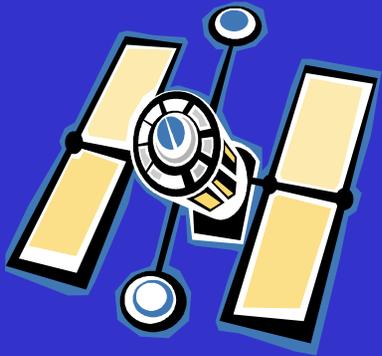
Donald P. Smith

US Environmental Protection Agency
Fresh Water Spill Symposium
March 2002



Presentation Outline

- Developing A Mobile Solution for a Mobile Workforce
- S.W. Arkansas Environmental Improvement Project
- Electronic FRP Management System
- E-Plan Hazmat Site
- Lake Oologah Remediation Site.
- Presentation Summary



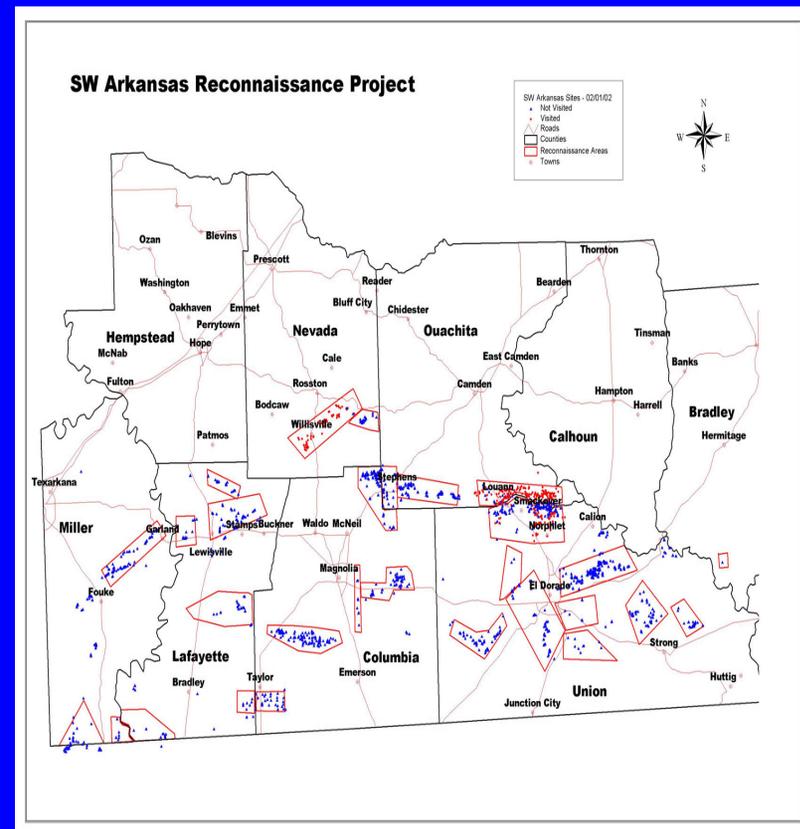
Mobile Strategy

- Identify activities & programs which can benefit from a mobile environment.
- Identify productivity issues.
- Identify areas for increased efficiencies.
- Cost effectiveness.
- Identify the supply/demand factors and the potential user base.

South West Arkansas Environmental Improvement Project

Background

- Six hundred square miles
- Twenty nine identified recon areas covering nine counties in SW Arkansas
- Project Parameters
 - Photographic Analysis
 - Site Assessment/Characterization
 - Responsible Party Identification
 - Site Prioritization
 - Inventory Tracking
 - Site Decision Matrixes



Implementation Breakout

- Project Management
 - Site Assessment Database
 - Hazard Analysis & Evaluation
 - Prioritization
 - Decision Matrix
 - Scheduling & Logistics
 - Geographical Mapping
 - Communications

Aerial Photography/Videography

- Geographical area flown utilizing Digital Video/Still Imagery and Global Positioning Systems.
- Data merged into Relational Data Base Management System (RDBMS).
- Site Assessment data collected and merged into RDBMS.
- More than 1900 sites located and classified.
- Data layers created for geographical mapping.

Relational Database Management System

Microsoft Access - [frmMain : Form]

File Edit View Insert Format Records Tools Window Help

EPA United States Environmental Protection Agency

REGION 6
Arkansas Louisiana
New Mexico
Oklahoma Texas

Southwest Arkansas Recon Tracking System

Site ID **3000**

Input/Update Information

- Site Information
- Social/Environmental
- Site Spill Information
- Site Activity Records
- Site Photo Records

View Reports

- Site Information
- Demography
- Environmental
- Site Spill Information
- Site Spill Source
- Spill Pathway
- Site Score
- Site Activity Records

Utility

- Print All Reports
- Print Hard Copies
- Add/Delete Site

Close

Record: 1 of 1

Form View

Start SQL Server ... Exploring - D: ... Microsoft ... C:\WINNT\P... TempScreen... Inbox - Micro... 2:05 PM

Relational Database Management System

Microsoft Access - [Geographical Consideration]

File Edit View Insert Format Records Tools Window Help

Arial 9 B I U

Site ID 3000 Close

Land Type Forest Land Land Category Public-Federal

City Name hoo loo loo
Urban Or Rural Rural Population Center Impact No
City Category No Threat of Impact to Population Center Medium
Resident Category Light Distance 1 Mile

Demographics
Caucasian Hispanic
African American Other Income Level Medium/High

Environmental Considerations
Wetland Yes Archeological Yes Native Land Yes Grassland Yes
Park Federal Wildlife Refuge Federal Conservation Area State Preserve State

Wildlife Considerations
Evidence of Wildlife Present/Mortality Evidence of Water Foul Present/Mortality
Wildlife Habitat Present/Mortality

Record: 1 of 1

Form View NUM

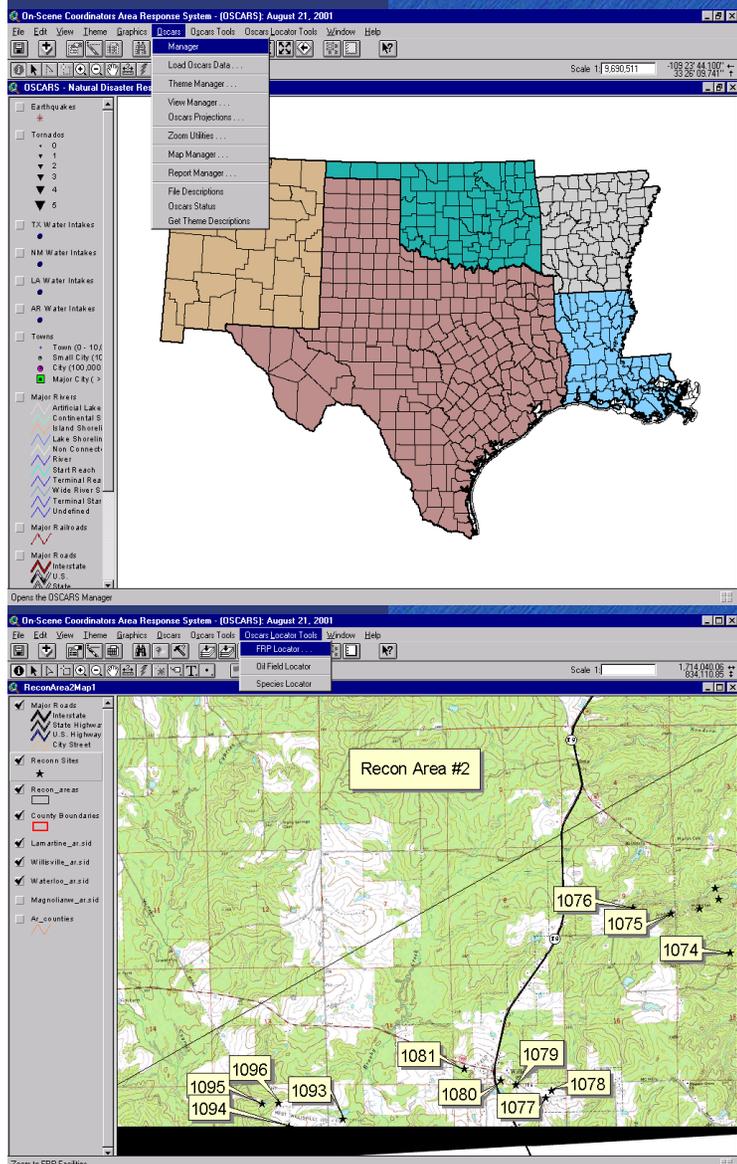
Start SQL Server ... Exploring - D: ... Microsoft ... C:\WINNT\P... TempScreen... Inbox - Micro... 2:05 PM

Relational Database Management System

- RDBMS – SQL Server D.B. with access front end/local version.
- Designed to hold site information both pre-inspection and post – inspection.
- Designed to prioritize sites based on different criteria.
- Computes statistics, and pre-formatted reports.
- Determined those sites with most severe contamination.

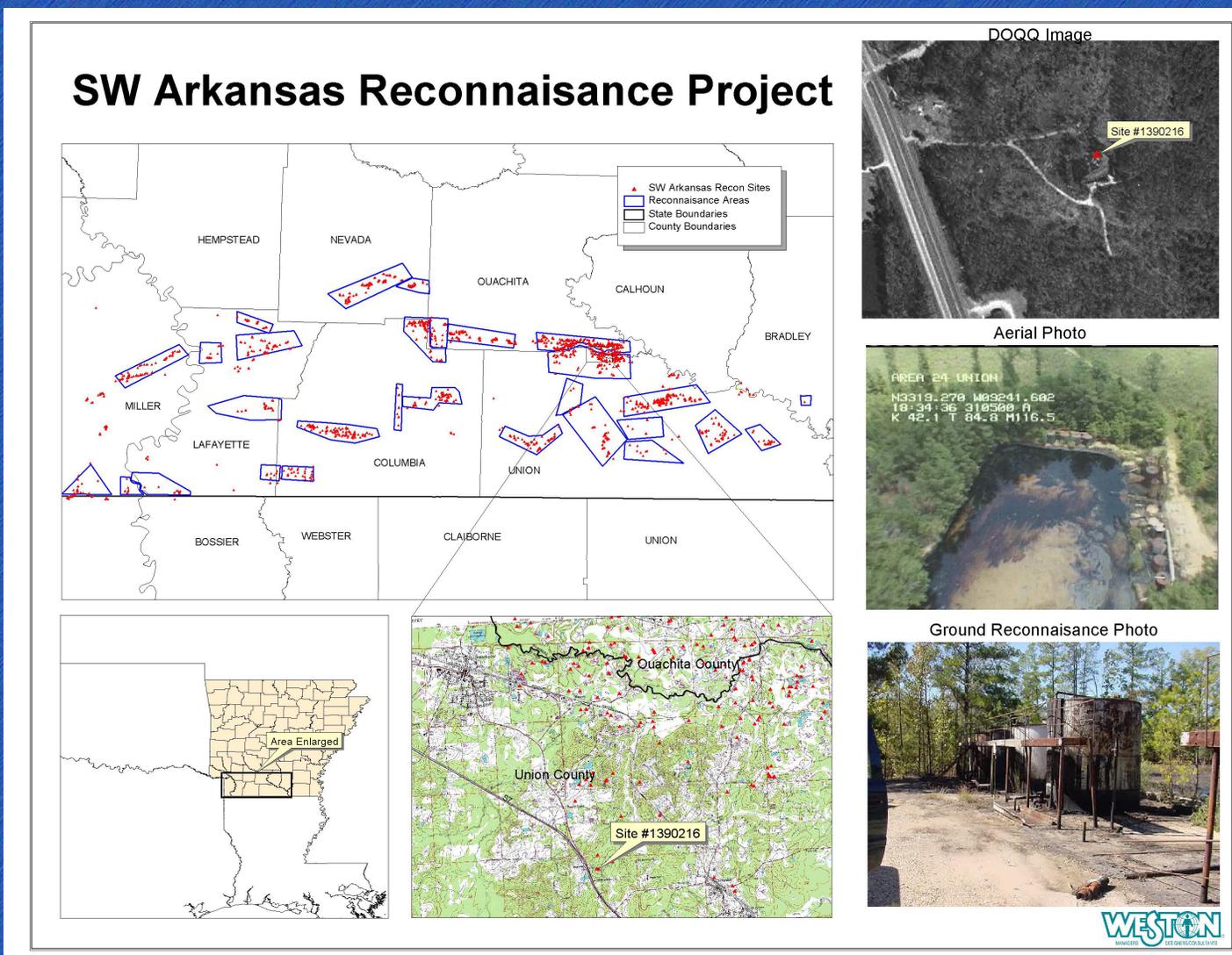
GIS Development

- GIS data layers included sites, roads, TIGER data, and USGS topos in Mr. SID format.
- EPA On-Scene Coordinator Area Response System (OSCARS) GIS application used, with an extension that added special tools.
- Sites were brought into GIS using GPS Coordinates.



GIS Development

- GIS Overview Maps
- Field Teams used to locate sites
- GIS application allowed easy retrieval of information



Field Data Collection Solution

The screenshot shows a Pocket PC application window titled "Pocket_PC2" with a menu bar containing "File", "Zoom", "Tools", and "Help". The application title bar reads "SWAR Main Entry" and the time is "12:34p". The main content area is titled "Edit Site Data" and features a dropdown menu for "ID". Below this are eight buttons arranged in a 4x2 grid: "Basic Site Info", "Environment", "Owner/Operator", "Demographics", "Spill Info", "Site Photo", "Activity Record", and "Site Visited Recent". At the bottom, there is a section titled "Add New Site" with an empty text input field and an "Add ..." button. A keyboard icon is visible in the bottom right corner of the window.

- Compaq Ipaq's, with Windows CE as the operating system were used.
- Using Embedded visual tools 3.0, and application was created to support data field data entry
- Active Sync 3.1 used for field synchronization/backup issues.

Field Data Collection Solution

Pocket_PC2
File Zoom Tools Help

Site Basic Infomator 12:35p (ok)

Site ID

Lease / Site Name

Latitude North

Longitude West

ADEQ_CCSN#

OnG_Comm#

ADEQ_SWD_Permit#

NRC# FPN#

TDD# DCN#

Recommended Action

RCRA Removal

SUFWS Spill Response

Compliance Inspection

Pocket_PC2
File Zoom Tools Help

Spill Source Definition 12:36p (ok)

Site ID

Notes

Corrosion Drips Weeps Stain

Oil Stain Leak Joins Valves

Dead Vegetation Capacity Not Adequ.

Pooling Oil Not Sufficient Stored

Leaking Material w. Dike-Bern

Overflow Debris w. Dike-Bern

Breach Errosion Dike-Bern

Standing w. Dike-Bern

Data Synchronization Issues

- To solve these issues we set up 2 different Windows CE applications.
- Data is synchronized 1 of two ways.
- RDBMS is SQL Server, access version used as a staging cleaning area.
- Field personnel used access version of D.B. to synchronize their data twice a day. This served as a data backup in the field.
- SQL version of application used to synchronize through the web.

Data Validation

- Data synchronized to local access version and validated in office.
- Then the DBA validates data and synchronizes to the SQL RDBMS

The screenshot shows the SQL Server Enterprise Manager interface. The left pane displays a tree view of the server hierarchy, with the 'SWArkReconn' database selected. The right pane shows a list of tables in the 'SWArkReconn' database, including system tables and user-defined tables.

Name	Owner	Type	Create Date
sysfilegroups	dbo	System	8/6/2000 1:29:12 AM
sysfiles	dbo	System	8/6/2000 1:29:12 AM
sysfiles1	dbo	System	8/6/2000 1:29:12 AM
sysforeignkeys	dbo	System	8/6/2000 1:29:12 AM
sysfulltextcatalogs	dbo	System	8/6/2000 1:29:12 AM
sysfulltextnotify	dbo	System	8/6/2000 1:29:12 AM
sysindexes	dbo	System	8/6/2000 1:29:12 AM
sysindexkeys	dbo	System	8/6/2000 1:29:12 AM
sysmembers	dbo	System	8/6/2000 1:29:12 AM
sysobjects	dbo	System	8/6/2000 1:29:12 AM
syspermissions	dbo	System	8/6/2000 1:29:12 AM
sysproperties	dbo	System	8/6/2000 1:29:12 AM
sysprotects	dbo	System	8/6/2000 1:29:12 AM
sysreferences	dbo	System	8/6/2000 1:29:12 AM
systypes	dbo	System	8/6/2000 1:29:12 AM
sysusers	dbo	System	8/6/2000 1:29:12 AM
tblLogs	dbo	User	10/22/2001 10:54:20 PM
tblScore	dbo	User	10/16/2001 2:54:37 PM
tblSiteBasic	dbo	User	10/16/2001 2:54:37 PM
tblSiteBasicState	dbo	User	10/16/2001 2:54:37 PM
tblSiteGeography	dbo	User	10/16/2001 2:54:37 PM
tblSiteGeographyDemo	dbo	User	10/16/2001 2:54:37 PM
tblSiteGeographyEnv	dbo	User	10/16/2001 2:54:37 PM
tblSiteGeographyLandType	dbo	User	10/16/2001 2:54:37 PM
tblSiteInspection	dbo	User	10/17/2001 11:11:25 AM
tblSiteInspectionStage	dbo	User	10/16/2001 2:54:38 PM
tblSiteOperators	dbo	User	10/16/2001 2:54:38 PM
tblSitePhoto	dbo	User	11/3/2001 12:41:30 PM
tblSiteSpill	dbo	User	10/16/2001 2:54:38 PM
tblSiteSpillInfo	dbo	User	10/16/2001 2:54:38 PM
tblSiteSpillSource	dbo	User	10/16/2001 2:54:38 PM
tblSiteSpillSourceInfo	dbo	User	10/16/2001 2:54:38 PM
tblSiteSpillWay	dbo	User	10/17/2001 11:18:54 AM
tblSiteSpillWayInfo	dbo	User	10/16/2001 2:54:38 PM
tblUsers	dbo	User	10/8/2001 3:24:48 PM

Web Access

- Web page created to inform agencies/facilities involved with initiative.
- Also served as an alternate means of submitting data to the RDBMS.
- Other agencies/organizations could view data, and submit data.
- Once data is synchronized through the web, it goes to a staging area to be validated by DBA.
- Web site includes interactive mapping GIS page. This allows users to find sites through database or via the interactive map.

Web Access

- Web-site includes overview of project.
- Calendar of recon's and access to site data if the user is allowed access to that portion.

The screenshot shows a Microsoft Internet Explorer browser window with the title "Reconn Tracking Site Introduction - Microsoft Internet Explorer". The address bar contains the URL "http://www.weston-austin.com/SWA_WEB/intro.asp". The main content of the page is titled "Southwest Arkansas Recon Tracking" in a large, bold, teal font. Below this, the sub-heading "South Arkansas Environmental Improvement Project" is displayed in a smaller, bold, black font. The text describes a partnership between the U.S. Environmental Protection Agency (EPA), U.S. Fish and Wildlife Service (USFWS), Arkansas Oil and Gas Commission (AOGC), Arkansas Department of Environmental Quality (ADEQ), Arkansas Game and Fish Commission (AGFC), and the Oil Producers of Arkansas. The goals of the partnership are listed as follows: 1) address current spill prevention practices, 2) address waste management practices regarding oil pits, 3) cleanup past and present spills and 4) finally, attempt to reduce the likelihood of future reoccurrences of such incidences. The text further explains that environmental issues in southern Arkansas are a result of past industry practices and that the partnership aims to improve environmental conditions through community outreach, inspections, and cleanup efforts. A "Continue" link is visible at the bottom of the page. The browser's status bar at the bottom indicates "Internet".

Reconn Tracking Site Introduction - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Refresh Home Search Favorites History Links Southwest Airlines

Address http://www.weston-austin.com/SWA_WEB/intro.asp Go

Southwest Arkansas Recon Tracking

South Arkansas Environmental Improvement Project

The U.S. Environmental Protection Agency (EPA), U.S. Fish and Wildlife Service (USFWS), Arkansas Oil and Gas Commission (AOGC), Arkansas Department of Environmental Quality (ADEQ), Arkansas Game and Fish Commission (AGFC), and the Oil Producers of Arkansas have formed a partnership that would attempt to address oil exploration and production activities in Southern Arkansas. Specifically, activities concerning both active and inactive oil facilities (i.e. pits, production batteries and wells) in southern Arkansas. Many of the facilities have active spills, historical spills and issues of non-compliance with applicable spill prevention regulations. Many of these sites pose a threat to the environment, surface waters, public health and wildlife. The goals and objectives of the partnership are as follows; 1) address current spill prevention practices, 2) address waste management practices regarding oil pits, 3) cleanup past and present spills and 4) finally, attempt to reduce the likelihood of future reoccurrences of such incidences.

It is clearly recognized that the environmental issues resulting from oil production activities in southern Arkansas occurred over a long period of time. Many of these problems are a direct result of past and present industry practices, economics and failure to comply with existing environmental regulations. It is hoped that through the combined efforts of industry, the public, local, state, and federal agencies that these issues can be addressed. It will take time as well as a commitment of resources and due diligence to succeed in improving the environmental conditions in southern Arkansas.

It is felt that a combination of community outreach, combined state and federal inspections, voluntary cleanup initiatives and agency led cleanup efforts could best achieve the partnership goals. To this end, the participating agencies will pursue further site discovery activities, identify responsible parties, conduct federal/state cleanups where appropriate, and provide compliance assistance through combined inspection efforts.

This web site is provided, for all interested, to monitor the past and future activities of the partnership.

[Continue](#)

Powered by
WESTON

Internet

Web-based RDBMS

- Roll-based security insures only specific users can edit data.
- Web-site tracks who has logged on, and what functions were performed

General Site Information - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites History Links Southwest Airlines

Address http://www.weston-austin.com/SWA_WEB/info/general.asp

Southwest Arkansas Reconn Tracking

Site Information

General Information

View Map

Site ID: 0990118	Site Name: Nacatoch Unit Tank Battery No. 2		
FPN No: NA	TDD No: NA	NRC No: NA	DCN No: NA
ADEQ SWD Permit No: NA	ADEQ CCSN No: NA	OnG Comm No: NA	
Site Status: Active	Action Recomendated: <ul style="list-style-type: none"> • Compliance Inspection: Yes • Spill Response: No • USFWS: No • RCRA: No • Removal: No 		

Legal Description

Legal Description	State: AR	County/Parish: nevada
Section: NA	Township: NA	Range: NA
Latitude: 33.515	Longitude: -93.29721	

Facility

Facility Address: NA		
City: NA	State: AR	Zip: NA

Home
View Calendar
View Map

Input/Update
Site Information
Site Operators
Site Photos
Social/Environmental
Spills
Spill Pathways
Site Activity
Update Calendar

View Information
Site Information
Site Photos
Demography
Environmental
Spill Information
Spill Sources
Spill Pathway
Site Score
Site Activity

Utilities
Add Site
Add User
Manage Users

Internet

Web-based calendar

- Events are listed by date. With a description.
- Site visits can be linked to site information in the RDBMS

Calendar - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites History Links Southwest Airlines

Address http://www.weston-austin.com/SWA_WEB/info/calendar.asp Go

Southwest Arkansas Reconn Tracking

[Home](#)
[View Calendar](#)
[View Map](#)

Input/Update
[Site Information](#)
[Site Operators](#)
[Site Photos](#)
[Social/Environmental](#)
[Spills](#)
[Spill Pathways](#)
[Site Activity](#)
[Update Calendar](#)

View Information
[Site Information](#)
[Site Photos](#)
[Demography](#)
[Environmental](#)
[Spill Information](#)
[Spill Sources](#)
[Spill Pathway](#)
[Site Score](#)
[Site Activity](#)

Utilities
[Add Site](#)
[Add User](#)
[Manage Users](#)

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[W](#)
[M](#)
[Y](#)
[Next Month>>](#)

Jump to Month: [Sep](#) [Oct](#) [Nov](#) [Dec](#) [Jan](#) [Feb](#) [Mar](#) [Apr](#) [May](#) [Jun](#) [Jul](#) [Aug](#) [Sep](#)

March 2002						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
24	25 10:00 PM • Congressman Ross Briefing (postponed) • Event Info	26	27	28	1	2
3	4	5	6	7	8	9
10	11	12	13	14 01:00 PM • SW AR Reconn Db training • Event Info	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31	1	2	3	4	5	6

Internet

Web-based Photo Management System

- Photos are listed complete with description and ID.
- Includes Aerial Videography Still Shot.

Site Photos - Microsoft Internet Explorer

Address: http://www.weston-austin.com/SWA_WEB/info/photos.asp

Southwest Arkansas Reconn Tracking

Information for site: 1390617 | Fagg Farm | [Change Site](#)

Site Photos

View	Date	Direction	Who	Description	Id
View	11/18/2001	E	Charles Alderman	OWNER/OPERATOR	1390617-9990004a01
View	11/18/2001	E	Charles Alderman	OVERVIEW	1390617-9990004a02
View	11/18/2001	N	Charles Alderman	SPILL INTO CONTAINMENT	1390617-9990004a03
View	11/18/2001	S	Charles Alderman	CONTAINMENT	1390617-9990004a04

< << >> >

1 / 1

View Photo - Microsoft Internet Explorer

Address: http://www.weston-austin.com/SWA_WEB/info/photoview.asp?_method=goToRecord&pcount=1&p0=10726

Southwest Arkansas Reconn Tracking

Information for site: 1390617 | Fagg Farm | [Change Site](#)

Site Photo

Date:	11/18/2001
ID:	1390617-9990004a03
Direction:	N
Who:	Charles Alderman
Description:	SPILL INTO CONTAINMENT
TimeStamp:	1444

Done

Web-based Interactive Mapping System

- Interactive Mapping system includes GIS layers you can turn on and off
- Site also includes Topos, and site information button

Southwest Arkansas Recon Tracking

Map: 1734044.03, 812498.12 -- Image: 542, 261 -- ScaleFactor: 34.661731276597784

Southwest Arkansas Recon Tracking

Map: 1729531.7, 816358.17 -- Image: 519, 142 -- ScaleFactor: 12.604265918772318

Reconnaissance Sites

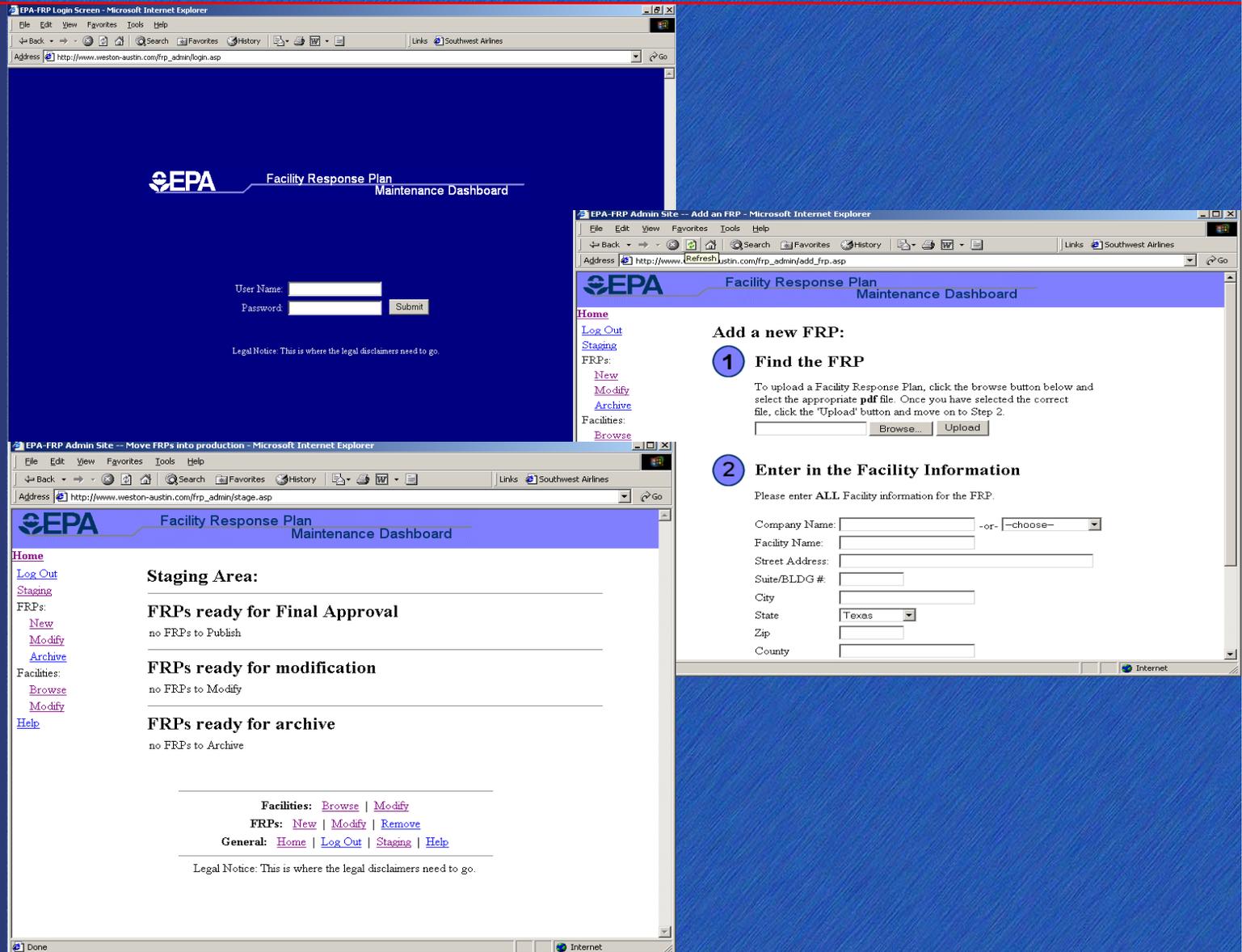
Rec	SITEID	SITENAME	LATITUDE_N	LONGITUDE_W	RECONN_ARE	ACTIVE	LEGALSTATE	LEGALCOUNT	LEGALSECTI	LEGALTOWN	LEGALRANGE	FACILITYAI
1	0990082	Unknown	33.51067	-93.29712	16	Active	AR	Nevada	NA	NA	NA	NA

Web-based FRP Management System

- Currently, EPA houses over 1800 Facility Response Plans (FRP's) for qualifying facilities. By law these facilities must send the FRP's to the EPA.
- The Web-based system is designed to allow facilities to submit, update and maintain their FRP's on-line.
- EPA will then review FRP's and publish them, or send them back for further modification.
- System is currently in beta version, and will link to E-Plan hazmat response system

Web-based FRP Management System

- Site is password protected and very secure
- Allows facilities to upload new FRP's & updates
- EPA publishes FRP upon approval



Web-based FRP Management System

- Here is an example of an on-line FRP Table of Contents
- The system links to the table of contents
- User can easily navigate to specific areas

The screenshot shows a Microsoft Internet Explorer browser window. The address bar displays the URL: http://www.weston-austin.com/frp_admin/public/72/72/E&SRP.pdf. The browser's menu bar includes File, Edit, View, Favorites, Tools, and Help. The toolbar contains various navigation and utility icons. On the left side, there is a 'Bookmarks' pane with a tree view showing the following items: Title Page, Table of Contents (highlighted), Section I. Plan Introd, Section II. Core Plan, Section III. Annexes, and Document Revision/C. The main content area displays the following Table of Contents:

I. [PLAN INTRODUCTION ELEMENTS](#)

1. [Purpose and Scope of Plan Coverage](#)..... [I-1](#)
 - 1.a. [Location and Facility Descriptions](#)..... [I-2](#)
2. [Table of Contents](#) [I-6](#)
 - 2.a. [List of Tables](#)..... [I-14](#)
 - 2.b. [List of Figures](#) [I-17](#)
 - 2.c. [List of Exhibits](#) [I-18](#)
3. [Current Revision Date](#)..... [I-20](#)
4. [General Facility Identification Information](#)..... [I-21](#)
 - [Aromatics and Olefins Facility](#) [I-21](#)
 - [C4 Operations](#)..... [I-23](#)
 - [Oxide and Olefins Facility](#)..... [I-25](#)
 - [Propylene Oxide/Methyl-Tert-Butyl Ether Facility](#) [I-27](#)
 - a. Facility Name
 - b. Owner/Operator

The status bar at the bottom indicates 'Done' and 'Internet'. The page number '7 of 324' and dimensions '8.5 x 11 in' are also visible.

E-plan Hazmat Response Web System

- An EPA-sponsored highly secure web-system designed to make industry hazmat information available immediately online.
- It allows hazmat first responders to quickly access important potentially life saving information.
- System is in beta version right now. EPA working with local LEPC's to test the system.
- System designed to be data repository for all important pieces of information. With a Chemical database, interactive GIS map, links to weather, CAMEO, FRP's and other important information.

E-plan Hazmat Response Web System

- Roll-Based Security
- Search by multiple identifiers, with partial match capabilities
- Other web-links included on the main page

HazMat: Home Page - Microsoft Internet Explorer

Address: <https://hazmat.erplan.net/cgi-bin/Hazmat>

Hazardous Material Emergency Response Information

Please Enter User Name and Password:

User Name:

Password:

Important Links:

- Home
- [Contact Us](#)
- [Help](#)
- [Hazmat.erplan.net](#)
- [Hazmat.utdallas.edu](#)
- [Eplan.erplan.net](#)
- [Eplan.utdallas.edu](#)
- [EPA Home](#)
- [Chemical Treatment](#)
- [US Fire Administration](#)
- [US National Response Team](#)
- [US EPA Region 6 Regional Response Team](#)
- [US EPA Chemical Emergency Preparedness & Prevention Office](#)
- [US EPA CAMEQ](#)
- [US EPA Emerofacts](#)
- [US EPA List of](#)

HazMat together with E-PLAN is a web-based integrated contingency handling and planning system. It is intended to simplify the procedure of filing and maintaining regulatory requirement documents by the facilities and to provide rapid access to facility information to emergency responders in the event of an emergency.

HazMat provides confidential and potentially life-saving information about facilities to the people handling emergencies in those facilities. Users must provide a valid Username and Password in order to access the information.

This functionality is very important for Chemical and other industries that store Hazardous Materials. In case of spills or other accidents, responders can find important information using the Internet. Government agencies can monitor emergencies effectively and coordinate faster with industry.

HazMat: Search - Microsoft Internet Explorer

Address: <https://hazmat.erplan.net/cgi-bin/Hazmat>

LOGOUT

To Perform a SEARCH:

1. Enter the full or partial Facility Name or E-Plan ID or Address of the Facility into the Text Box.
2. Click the SUBMIT button to display the required information.
3. Click RESET button to clear the Text Box.

Important Links:

- [Facility Search](#)
- [Contact Us](#)
- [Help](#)
- [Hazmat.erplan.net](#)
- [Hazmat.utdallas.edu](#)
- [Eplan.erplan.net](#)
- [Eplan.utdallas.edu](#)
- [EPA Home](#)
- [Chemical Treatment](#)
- [US Fire Administration](#)
- [US National Response Team](#)
- [US EPA Region 6 Regional Response Team](#)
- [US EPA Chemical Emergency Preparedness & Prevention Office](#)
- [US EPA CAMEQ](#)

E-plan Hazmat Response Web System

- Facility contact information including Emergency Coordinator
- Chemical storage index linked to ERG, MSDS, and profile information

The screenshot displays the HazMat web application interface. It includes a search bar, navigation links, and detailed information for the KOCH PETROLEUM GROUP, L.P.-EAST PLANT. The interface is divided into several sections: facility details, emergency contact information, and a chemical inventory table.

Facility: KOCH PETROLEUM GROUP, L.P.-EAST PLANT

Company Name	KOCH PETROLEUM GROUP, L.P.
Phone Number	
Address	1700 NUECES BAY BLVD.
City/County/State	CORPUS CHRISTI / TX
ZIP Code	78407
E-PLAN ID#	CC0126

Emergency Contact Information (Primary)

Name	WILLIS JERNIGAN
Title	HEALTH & SAFETY MGR
Phone	(361)242-4718
24-Hr Phone	(361)241-4811

Emergency Contact Information (Alternate)

Name	ERIC R. KAYSEN
Title	ENV. COMPL. MGR
Phone	(361)242-5429
24-Hr Phone	(361)241-4811

151 Substances - Toxic (Non-Combustible)

Chemical (Click for ERG link)	Max. Qty.	UNDOT#	NFPA Code & Diamond					MSDS	Profile
			H	F	R	S	IN		
ACTIVATED CARBON	99999	1362 (CAS-7440440)	0	1	0			MSDS	Profile
ALUMINA (ALUMINA CATALYSTS)	999999	##### (CAS-1344281)	1	0	0			MSDS	Profile
SULFONATED COPOLYMER OF STYRENE AND DIVINYLBENZENE (DOWEX M-31)	999999	##### (CAS-69011207)	0	1	0			MSDS	Profile
ALUMINUM SILICATE (ENGELHARD HPN/WALL)	99999	##### (CAS-1344281)	1	0	0			MSDS	Profile
MOLYBDENUM (MON/CO CATALYST)	999999	3288 (CAS-1313275)	2	0	0			MSDS	Profile
ALUMINUM OXIDE (PENTACAT CATALYST ADDITIVE (WZSM-5))	99999	##### (CAS-1344281)	1	0	0			MSDS	Profile
PLATINUM (PLATINUM/RHENIUM CATALYSTS)	99999	3089 (CAS-7440064)	1	0	0			MSDS	Profile
SILICON OXIDE (UOP TYPE ORG-E ABSORBENT)	99999	##### (CAS-7631869)						MSDS	NA
POTASSIUM POLYPHOSPHATE (CALGON CONDUCTOR XLP 250)	99999							NA	NA
SODIUM TOLYTRIAZOLE (CALGON/MS-200)	99999							NA	NA

POTENTIAL HAZARDS

HEALTH

- Highly toxic, may be fatal if inhaled, swallowed or absorbed through skin.
- Avoid any skin contact.
- Effects of contact or inhalation may be delayed.
- Fire may produce irritating, corrosive and/or toxic gases.
- Runoff from fire control or dilution water may be corrosive and/or toxic and cause pollution.

FIRE OR EXPLOSION

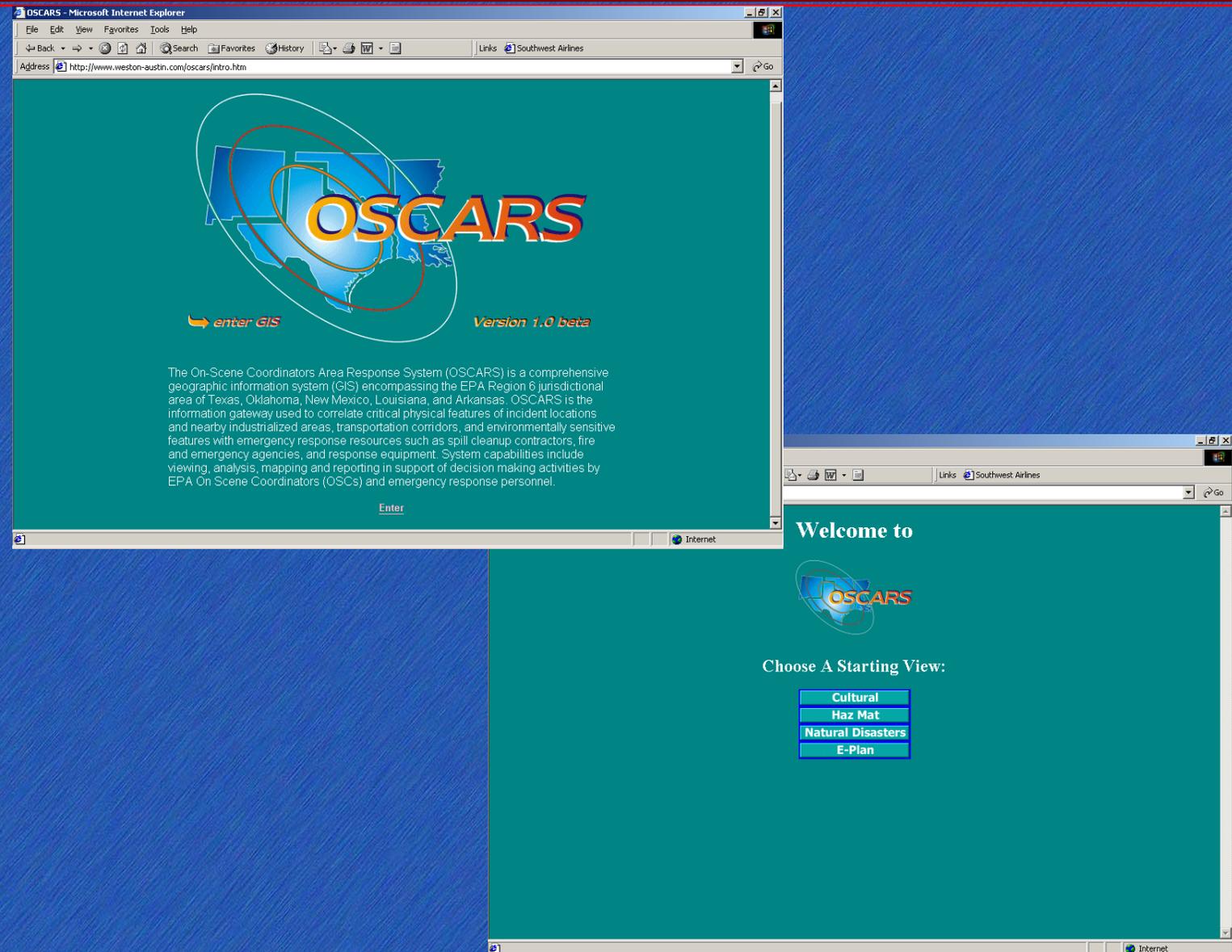
- Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes.
- Containers may explode when heated.
- Runoff may pollute waterways.

PUBLIC SAFETY

- CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.
- Isolate spill or leak area immediately for at least 25 to 50 meters (80 to 160 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Keep out of low areas.

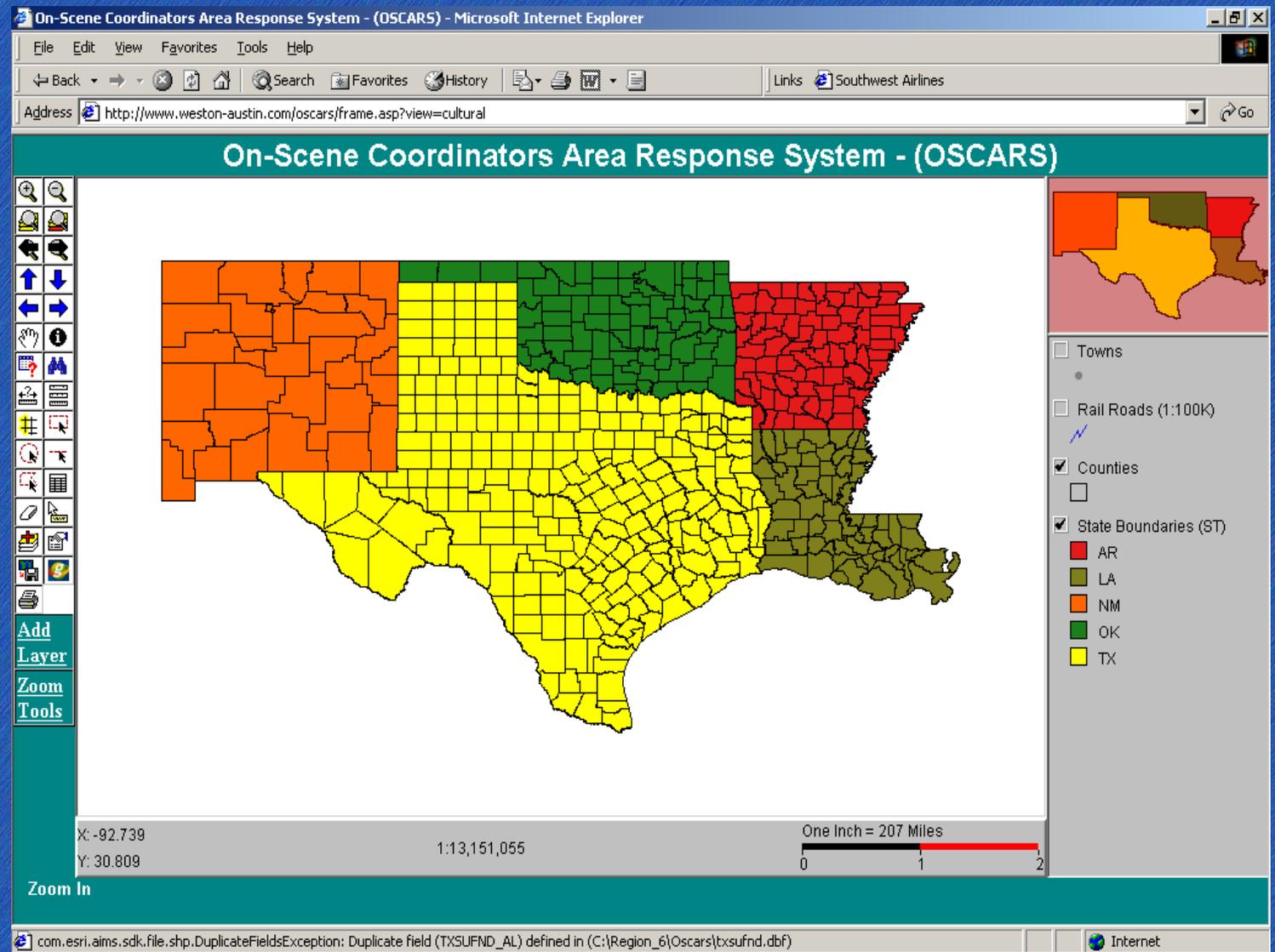
E-plan Interactive Mapping System

- Site is password protected, with roll based security
- Interactive mapping system allows user to choose starting view



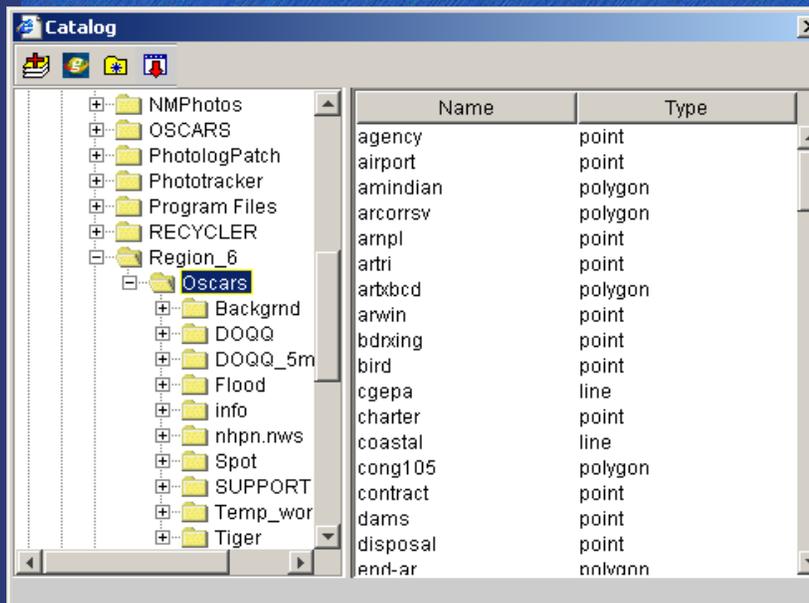
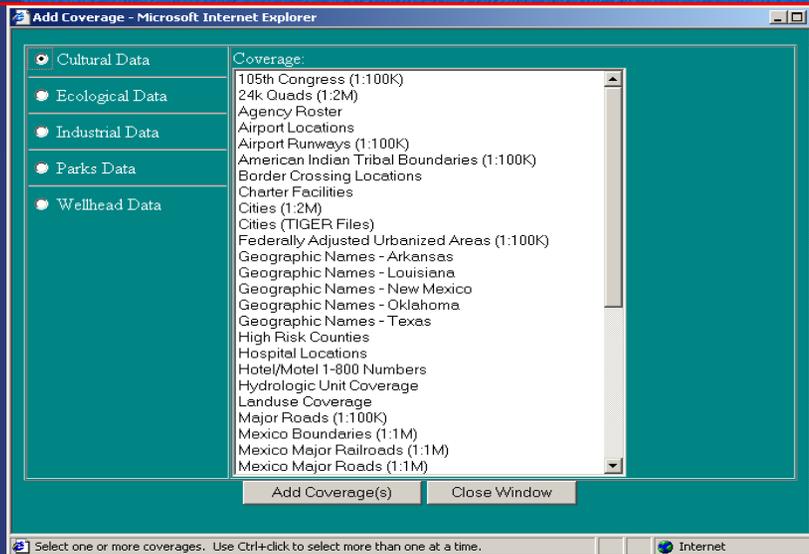
E-plan Interactive Mapping System

- EPA Region 6 wide data sources
- Layers can be added from multiple data sources and removed as necessary
- GIS-based tools built into the site



E-plan Interactive Mapping System

- Add layer dialog allows user to choose data type
- Zoom to county, zip code, and lat. long.
- Add layers from local data sources and other web sources



Lake Oologah Remediation Site

- 45 Square mile area with approximately 10,000 abandoned or little used oil wells
- Wells located adjacent to Lake Oologah Reservoir, major drinking water source for Tulsa, Oklahoma
- Wells need to be located in rough terrain, plugged, and abandoned
- Multiple federal and state agencies involved in clean-up process

Lake Oologah – Technological Solutions

- Site mapped using Aerial Photography and Color Infrared Photos to determine extent of environmental contamination
- RDBMS, GIS, Field Data Collection, GPS, and Web based solution implemented
- RDBMS and GIS connected to show real time status of sites
- Field data collection used to quickly and accurately collect data and synchronize back to RDBMS
- Web site used to communicate between agencies and to show status etc.

Lake Oologah – Technological Solutions

- Wells were located by 2 person recon teams
- Teams were equipped with GPS units and PDA's
- Using specialized PDA application teams located wells and created records for the wells with ID and GPS information
- Upon return to command post information was synchronized with RDBMS and sites were plotted on GIS
- During Plugging and Abandonment the well data was captured using PDA and synchronized back to RDBMS in site command post

Lake Oologah – Technological Solutions

- RDMBS used to maintain site information, and connected to site GIS
- Information maintained on server

The image displays three overlapping Microsoft Access windows. The top window, titled "frmMain - Form", shows the main interface for the "Lake Oologah Oil Well Tracking System". It features the EPA Region 6 logo and a map of the region. The "Well ID" is set to "130001". The interface is divided into three main sections: "Input/Update Information", "View Reports", and "Utilities". The "Input/Update Information" section includes buttons for "Well Information", "Owners/Operators", "Well Photos", and "Scanned Documents". The "View Reports" section includes buttons for "Well Information", "Owners/Operators", and "Well Photos". The "Utilities" section includes buttons for "Print All Reports", "Add/Delete Well", "Photo Use Codes", "Scanned Doc. Codes", "Photographers", and "Owners/Operators". The bottom window, titled "Site_Well Information", shows a form for "Well ID 270077". It includes fields for "Well Inspection Date" (01/31/999), "Location Staked" (checkbox), "Field Investigator 1", "Field Investigator 2", "Field Investigator 3", "Current Well Name" (Wichitosh 10), "Previous Well Name", "Area" (27), "Well Number" (0077), "Well Status" (1), "Well Type" (PU), "Quarter Section" (NE SE NE), "Section" (07), "Township" (24N), and "Range" (17E). The "General Comments" field is empty. The right window, titled "Site Spill Pathway", shows the "Owner/Operator Information" for "Well ID 270077". It includes fields for "Current or Previous" (Current), "Operator or Owner Type" (SurfaceOwner), "Name" (C.G. DELOZIER), "Add New Name", "View Details", and "Owner Percentage".

Lake Oologah – Technological Solutions

- Special Compaq Ipaq Application created to collect the data
- Application synchronized with RDBMS in command post

Pocket_PC
File Zoom Tools Help

Lake Oologah Main 12:59 OK

Add New Well

123457 Add ...

Edit Well Data

ID 123456- New Site

Basic Info Lat / Lon, etc.

Release Info Owner/Operator

Surface Equipment Site Photos

Plugging & Survey

Pocket_PC
File Zoom Tools Help

Well Basic Info 12:59 OK

Well ID 123456 Location Staked

Well Inspection Date 3/13/02 As mm/dd/yy

Field Investigator 1 NA

Field Investigator 2 NA

Field Investigator 3 NA

Current Well Name NA

Previous Well Name NA

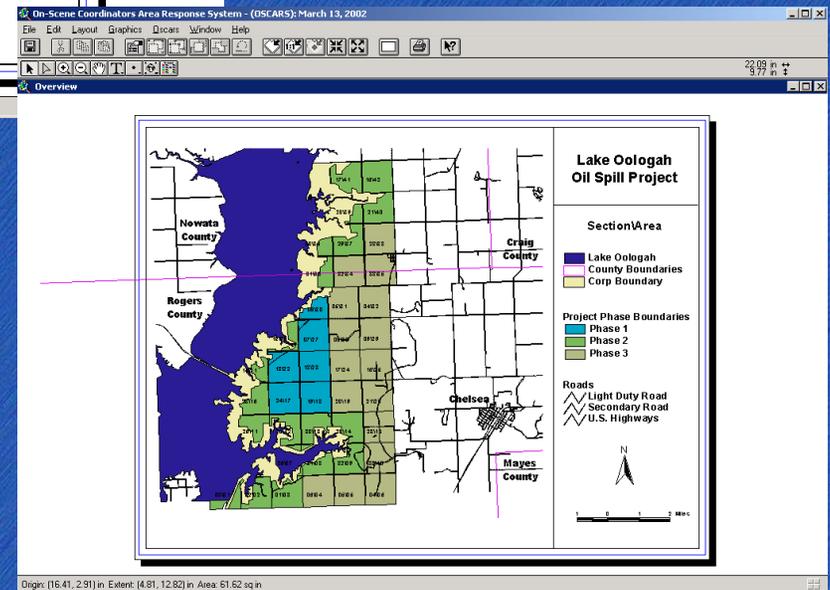
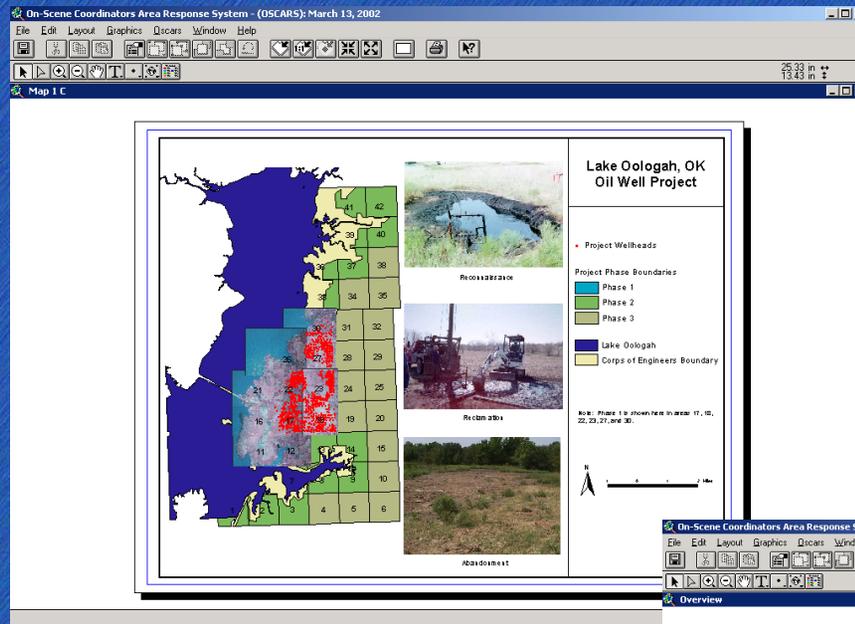
Quarter Section NA

Well Status NA

Well Type NA

Lake Oologah – Technological Solutions

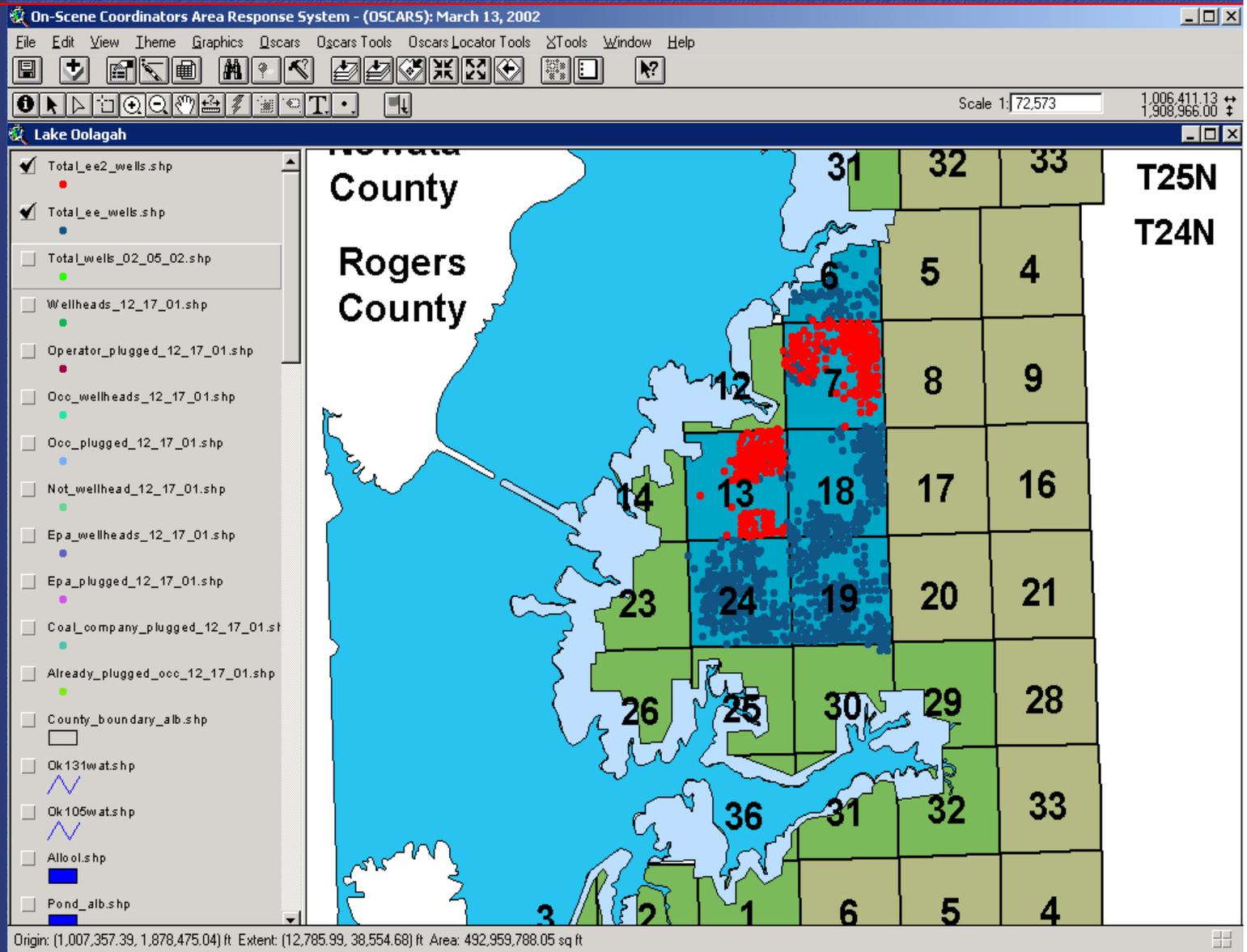
- GIS linked to RDBMS
- Shows well status based on RDBMS
- Ability to make maps on the fly, and make customized maps/reports



Origin: [16.41, 2.91] in Extent: [4.81, 12.82] in Area: 61.62 sq in

Lake Oologah – Technological Solutions

- Map Showing Phase 1 well locations and current status



Presentation Summary

- Integrating Technology:
- Web, RDBMS, GIS, GIS-Web, PDA's, Field Data Collection and GPS

Well Basic Info 12:59

Well ID: Location Staked:

Well Inspection Date: As mm/dd/yy

Field Investigator 1:

Field Investigator 2:

Field Investigator 3:

Current Well Name:

Previous Well Name:

Quarter Section:

Well Status:

Well Type:

Southwest Arkansas Recon Tracking System

Site ID:

Input/Update Information: [Site Information](#), [Demography](#), [Environmental](#), [Site Spill Information](#), [Site Spill Source](#), [Site Spill Pathway](#), [Site Score](#), [Site Activity Records](#), [Site Photo Records](#)

View Reports: [Site Information](#), [Demography](#), [Environmental](#), [Site Spill Information](#), [Site Spill Source](#), [Site Spill Pathway](#), [Site Score](#), [Site Activity Records](#)

Utility: [Print All Reports](#), [Print Hard Copies](#), [Add Create Site](#)

Information for site: 0110001 | [Change Site](#)

Home

Input/Update

- General Site Information
- Site Operators
- Site Photos
- Social/Environmental Information
- Spill Information
- Spill Pathways
- Site Activity Records

View Information

- General Site Information
- Site Photos
- Demography
- Environmental
- Spill Information
- Spill Sources
- Spill Pathway
- Site Score
- Site Activity Records

Utilities

- Add a new Site
- Add a new User
- Manage Users
- View Log
- Change Your Password
- Logout

On-Scene Coordinators Area Response System - (OSCARs)

Map showing state boundaries (AR, LA, NM, OK, TX) and a highlighted region in the southwest.

Recon Area #2

Detailed GIS map of Recon Area #2 showing site locations (1074-1096) and road networks.

SWAR Main Entry 12:34p

Edit Site Data

ID:

[Basic Site Info](#) [Environment](#)

[Owner/Operator](#) [Demographics](#)

[Spill Info](#) [Site Photo](#)

[Activity Record](#) [Site Visited Recent](#)

Add New Site

[Add ...](#)