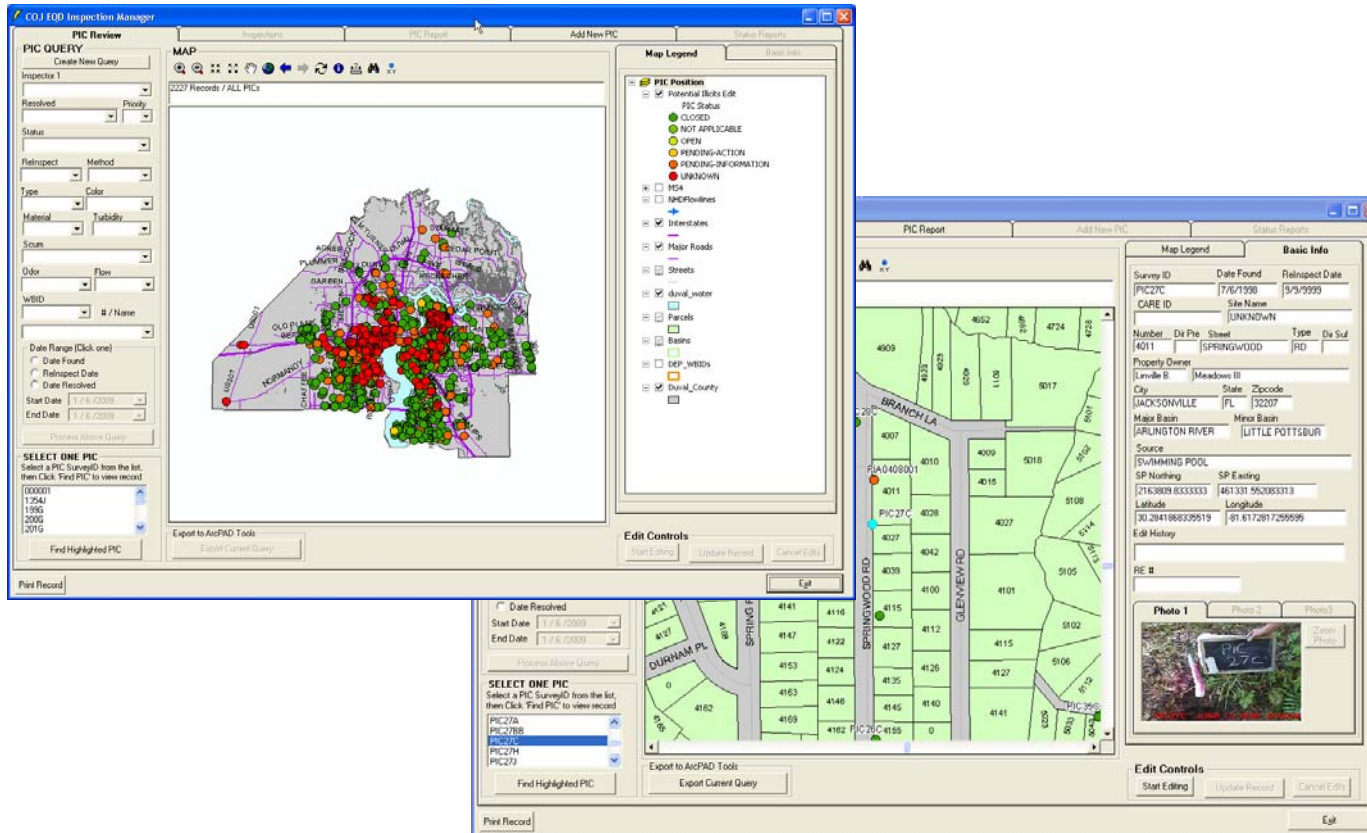


# City of Jacksonville GIS Based Illicit Connection Inspection System



Mike Hines, GISP  
ESRI SERUG  
2009



**England-Thimys & Miller, Inc.**  
Engineers ▪ Planners ▪ GIS ▪ Surveyors ▪ Landscape Architects  
1775 Old St. Augustine Road ▪ Jacksonville, Florida 32258  
904.642.8990 ▪ Fax: 904.646.9485 ▪ www.etm-inc.com

# England-Thims & Miller, Inc.

The City of Jacksonville hired England, Thims & Miller, Inc. (ETM) in June of 1991.

## ETM's Role:

- Research existing infrastructure
- Provide water quality sampling
- Dry weather field screening
- Insure adequate legal authority
- Assist in other issues related to obtaining an NPDES Permit

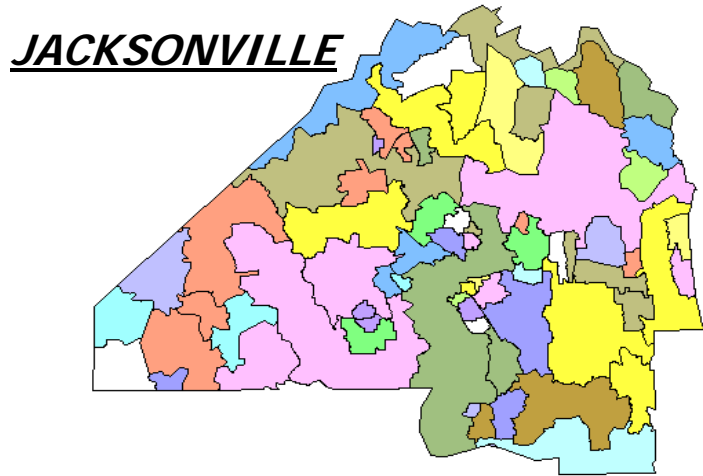
# GIS Meets NPDES

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- 1996 – Contract for pilot NPDES GIS Mapping Stage 1 program
- ETM inventoried three representative sections of Duval County
  - Grove Park – Suburban area
  - Newtown – Urban area
  - White House – Rural area
- ETM develops GPS data collection standards based on information obtained through the pilot project
- 1998 – Contract is amended to extend services thru Nov. 2002
- Main tasks for new contract:
  - Collection of entire stormwater drainage system for all Duval county
  - Development of a GIS application
  - Additional NPDES related tasks (priority industry, illicit connections)

# NPDES Structures Collected

as of February, 2009



- Over 70 Watersheds
- Largest Municipal Area in lower 48

- 9,997 Manholes
- 26,848 Endwalls
- 58,012 Inlets
- 1,848 Control Structures
- 1,285 Miles of Pipes
- 2,156 Potential Illicit Connections (PIC's)

# Innovative Approaches

- Since the beginning the City, FDOT and ETM have worked closely to incorporate innovative approaches.
- ETM began using sub-meter GPS to map the location and collect data in the field in 1997.
- In 2001 access to the NPDES by authorized City and FDOT staff was provided via ArcIMS.
- In 2005 ETM incorporated ESRI's ArcPad to investigate and map potential illicit connections.
- In 2008
- ETM was tasked with developing the GIS Based Illicit Connection Inspection System.

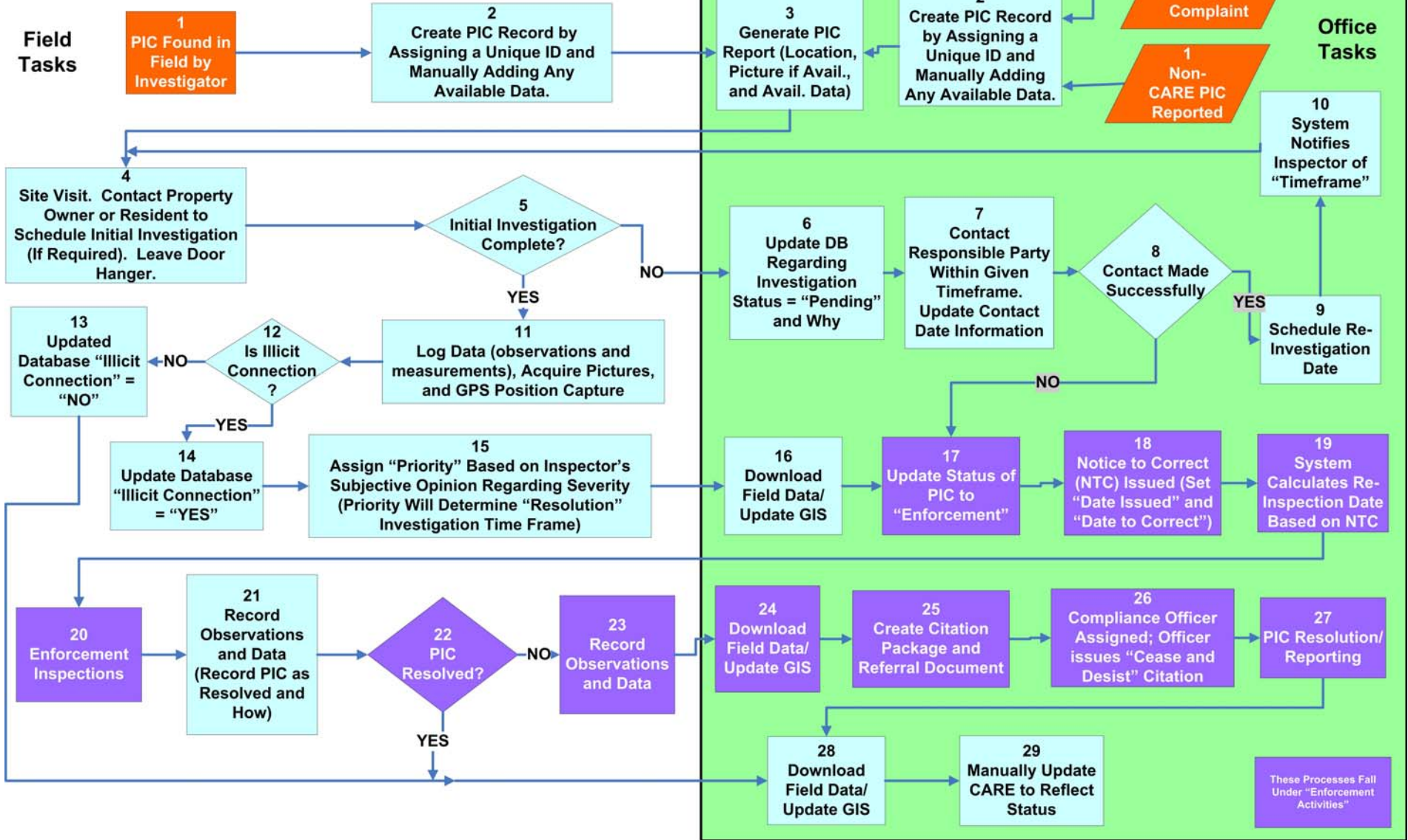
# Success

- The MS4 spatial database, coupled with field screening, illicit connection, priority industry, parcel, land use, hydrologic and wetland coverages has been instrumental in the City's ability to pass every annual inspection since receiving its NPDES permit in 1997.

# **GIS Based Illicit Connection Inspection System Design Process**

- User / Inspector Interviews
- Needs Assessment
- Logical Flow Diagram Developed
- System Programming
- Beta Testing
- System Adjustment
- More Beta Testing
- Software / Hardware System Training
- System Implementation

# Potential Illicit Connection Collection Process







# System General Overview

File folder tabs – change page view

The screenshot displays the 'COJ EQD Inspection Manager' application. The interface is divided into several sections:

- Top Navigation:** A series of tabs including 'PIC Review' (selected), 'Inspections', 'PIC Report', 'Add New PIC', and 'Status Reports'.
- Left Panel (PIC QUERY):** Contains various search and filter options such as 'Inspector 1', 'Resolved', 'Priority', 'Status', 'Reinspect', 'Method', 'Type', 'Color', 'Material', 'Turbidity', 'Scum', 'Odor', 'Flow', 'WBID', and 'Date Range' (with radio buttons for Date Found, Reinspect Date, and Date Resolved). It also includes a 'SELECT ONE PIC' list and a 'Find Highlighted PIC' button.
- Map Area:** A central map showing a geographic region with numerous colored circular markers representing PICs. The map includes labels for various areas like 'ACREE', 'PLUMMER', 'GARDEN', 'OLD PLANK', 'NORMANDY', 'CHAFFEE', 'IMMORON', 'DUMM', 'HECKSCHER', 'STARBUCK', 'CEDAR POINT', 'ISLAND', 'ATLAN', 'BEAUFORT', 'SANTA', 'PILGRIMS', 'ROCK', 'CHOC', 'SANTA', 'PILGRIMS', 'NORMANDY', 'CHAFFEE', 'IMMORON', 'DUMM', 'HECKSCHER', 'STARBUCK', 'CEDAR POINT', 'ISLAND', 'ATLAN', 'BEAUFORT', 'SANTA', 'PILGRIMS', 'ROCK', 'CHOC', 'SANTA', 'PILGRIMS'.
- Right Panel (PIC Position):** A legend for the map layers, including 'Potential Illicits Edit', 'PIC Status' (CLOSED, NOT APPLICABLE, OPEN, PENDING-ACTION, PENDING-INFORMATION, UNKNOWN), 'M54', 'NHDFlowlines', 'Interstates', 'Major Roads', 'Streets', 'duval\_water', 'Parcels', 'Basins', 'DEP\_WBIDs', and 'Duval\_County'.
- Bottom Panel:** Contains 'Edit Controls' (Start Editing, Update Record, Cancel Edits) and a 'Print Record' button.

# System General Overview

PIC Review and Query – Ability to analyze all PICS and report on them

The screenshot displays the COLEOD Inspection Manager software interface. The main window is titled "COLEOD Inspection Manager" and features a menu bar with "Inspections", "PIC Report", "Add New PIC", and "Status Reports". The central area is a map of Duval County, Florida, showing various locations and roads. The map is populated with numerous colored circles representing PIC (Potential Illicit Catchment) locations. The colors correspond to the PIC Status legend on the right: CLOSED (green), NOT APPLICABLE (light green), OPEN (yellow), PENDING-ACTION (orange), and UNKNOWN (red). The map also shows major roads like US 90, US 301, and various interstates. The left sidebar contains a "PIC REVIEW" section with a "PIC QUERY" form. This form includes fields for "Inspector 1", "Resolved", "Priority", "Status", "Reinspect", "Method", "Type", "Color", "Material", "Turbidity", "Scum", "Odor", "Flow", "WBID", and "# / Name". There are also radio buttons for "Date Range (Click one)" with options for "Date Found", "Reinspect Date", and "Date Resolved". Below the form are "Start Date" and "End Date" dropdown menus, both set to "1 / 6 / 2009". A "Process Above Query" button is located below the form. Below the query form is a "SELECT ONE PIC" section with a list of PIC Survey IDs (000001, 1354J, 199G, 200G, 201G) and a "Find Highlighted PIC" button. The right sidebar contains a "Map Legend" section with a "PIC Position" legend and a "Basic Info" section. The "PIC Position" legend includes checkboxes for "Potential Illicits Edit" and "PIC Status" (CLOSED, NOT APPLICABLE, OPEN, PENDING-ACTION, UNKNOWN). Other legend items include MS4, NHDFlowlines, Interstates, Major Roads, Streets, duval\_water, Parcels, Basins, DEP\_WBIDs, and Duval\_County. The bottom of the interface has an "Edit Controls" section with buttons for "Start Editing", "Update Record", and "Cancel Edits". A "Print Record" button is located at the bottom left, and an "Exit" button is at the bottom right.

# System General Overview

Map Viewer – displays results of the PIC Review Query, and individual PIC location

The screenshot displays the 'COJ EQD Inspection Manager' software interface. The main window is titled 'COJ EQD Inspection Manager' and contains several panels:

- PIC Review Panel:** Located on the left, it includes a 'PIC QUERY' section with a 'Create New Query' button and various filters for Inspector 1, Resolved, Priority, Status, Reinspect, Method, Type, Color, Material, Turbidity, Scum, Odor, Flow, and WBID. Below this is a 'Date Range' section with radio buttons for 'Date Found', 'Reinspect Date', and 'Date Resolved', and date pickers for 'Start Date' and 'End Date' (both set to 1/6/2009). A 'Process Above Query' button is also present.
- MAP Panel:** The central area, highlighted with a red border, shows a map of Duval County with 2227 records. The map is populated with colored circles representing PIC locations, color-coded by status: CLOSED (green), NOT APPLICABLE (light green), OPEN (yellow), PENDING-ACTION (orange), PENDING-INFORMATION (red), and UNKNOWN (dark red). Major roads and basins are also visible on the map.
- Map Legend Panel:** Located on the right, it lists various map features with checkboxes: 'PIC Position' (checked), 'Potential Illicits Edit' (checked), 'PIC Status' (CLOSED, NOT APPLICABLE, OPEN, PENDING-ACTION, PENDING-INFORMATION, UNKNOWN), 'MS4' (unchecked), 'NHDFlowlines' (unchecked), 'Interstates' (checked), 'Major Roads' (checked), 'Streets' (checked), 'duval\_water' (checked), 'Parcels' (checked), 'Basins' (checked), 'DEP\_WBIDs' (unchecked), 'Duval County' (checked), and 'Duval County' (unchecked).
- SELECT ONE PIC Panel:** Located at the bottom left, it prompts the user to 'Select a PIC SurveyID from the list, then Click 'Find PIC' to view record'. A list of SurveyIDs is shown: 000001, 1354J, 199G, 200G, and 201G. A 'Find Highlighted PIC' button is below the list.
- Edit Controls Panel:** Located at the bottom right, it includes buttons for 'Start Editing', 'Update Record', and 'Cancel Edits'.
- Export and Print Panels:** At the bottom, there are buttons for 'Export to ArcPAD Tools', 'Export Current Query', and 'Print Record'.

# System General Overview

Map Viewer Tools – allow user to zoom in and zoom out of map viewer

The screenshot displays the COJ EQD Inspection Manager software interface. The main window is titled "COJ EQD Inspection Manager" and features a blue header bar with navigation tabs: "PIC Review", "Inspections", "PIC Report", "Add New PIC", and "Status Reports". The "PIC Review" tab is active, showing a "PIC QUERY" section with various filters and a "MAP" section. The "MAP" section is highlighted with a red box and contains a toolbar with icons for zooming in, zooming out, panning, and other map navigation functions. The map itself shows a geographical area with various locations labeled, including "ACREE", "PLUMMER", "GARDEN", "NORMANDY", "CHAFFEE", "OLD PLANK", "IMMORIN", "DUNN", "HECKSCHER", "STARBUCK", "CEDAR POINT", "ISLAND", "ATLAN", "STRINE", "DILLIPS", "US301", "US90", "US17", "US19", "US29", "US30", "US31", "US32", "US33", "US34", "US35", "US36", "US37", "US38", "US39", "US40", "US41", "US42", "US43", "US44", "US45", "US46", "US47", "US48", "US49", "US50". The map is populated with numerous colored circles representing PIC positions, with colors corresponding to their status as defined in the legend. The legend, titled "Map Legend", is located on the right side of the interface and includes a "PIC Position" section with the following items: "Potential Illicits Edit" (checked), "PIC Status" (with sub-items: "CLOSED" (green circle), "NOT APPLICABLE" (light green circle), "OPEN" (yellow circle), "PENDING-ACTION" (orange circle), "PENDING-INFORMATION" (red circle), "UNKNOWN" (dark red circle)), "MS4" (unchecked), "NHDFlowlines" (unchecked), "Interstates" (checked), "Major Roads" (checked), "Streets" (checked), "duval\_water" (checked), "Parcels" (checked), "Basins" (checked), "DEP\_WBIDs" (unchecked), "Duval\_County" (checked). Below the legend is an "Edit Controls" section with buttons for "Start Editing", "Update Record", and "Cancel Edits". At the bottom of the interface, there are buttons for "Print Record" and "Export Current Query".

# System General Overview

## Map Legend – Explains available Data and Map Viewer Symbols

**COJ EQD Inspection Manager**

**PIC Review**

**PIC QUERY**  
Create New Query

Inspector 1  
Resolved  
Priority  
Status  
Reinspect  
Method  
Type  
Color  
Material  
Turbidity  
Scum  
Odor  
Flow  
WBID  
# / Name

Date Range (Click one)  
 Date Found  
 Reinspect Date  
 Date Resolved  
Start Date: 1 / 6 / 2009  
End Date: 1 / 6 / 2009  
Process Above Query

**SELECT ONE PIC**  
Select a PIC SurveyID from the list, then Click 'Find PIC' to view record

- 000001
- 1354J
- 199G
- 200G
- 201G

Find Highlighted PIC

**MAP**  
2227 Records / ALL PICs

**Map Legend** Basic Info

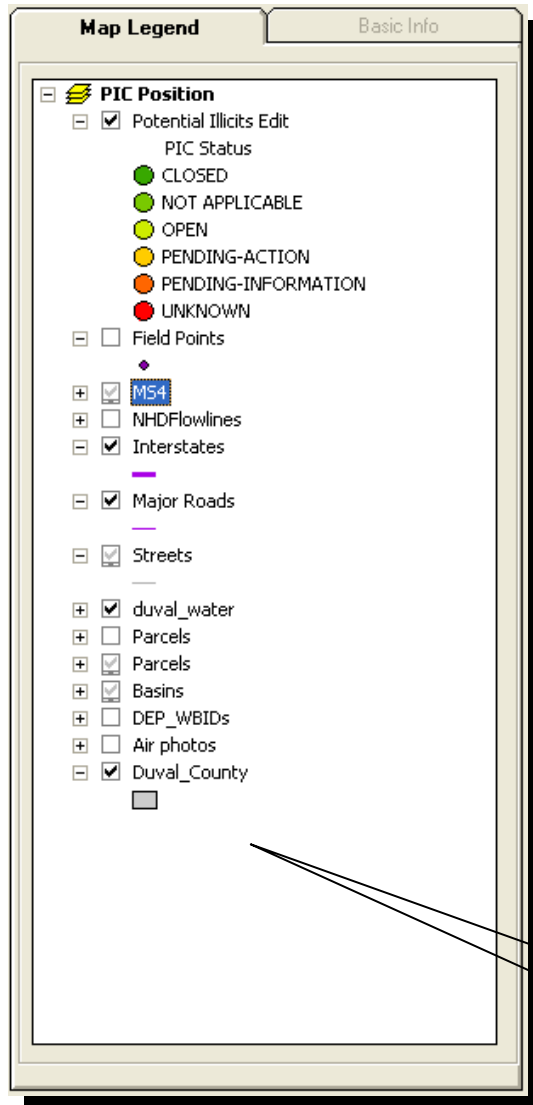
- PIC Position**
  - Potential Illicits Edit
    - PIC Status
      - CLOSED
      - NOT APPLICABLE
      - OPEN
      - PENDING-ACTION
      - PENDING-INFORMATION
      - UNKNOWN
- MS4
- NHDFlowlines
- Interstates
- Major Roads
- Streets
- duval\_water
- Parcels
- Basins
- DEP\_WBIDs
- Duval\_County

**Edit Controls**  
Start Editing Update Record Cancel Edits

Print Record Export to ArcPAD Tools Export Current Query Exit

# System General Overview

## Map Legend – Available Data



- Potential Illicits
- Field points
- MS4
- Control Structures
- Inlets
- Endwalls
- Manholes
- Major Outfalls
- Ponds
- Closed Conveyances (pipes)
- Open Conveyances (ditches)
- NHD FlowLines
- Interstates
- Major Roads
- Streets
- Duval Water (major water features)
- Parcels
- Basins
- WBIDS
- Aerial Photos
- Duval County Boundary

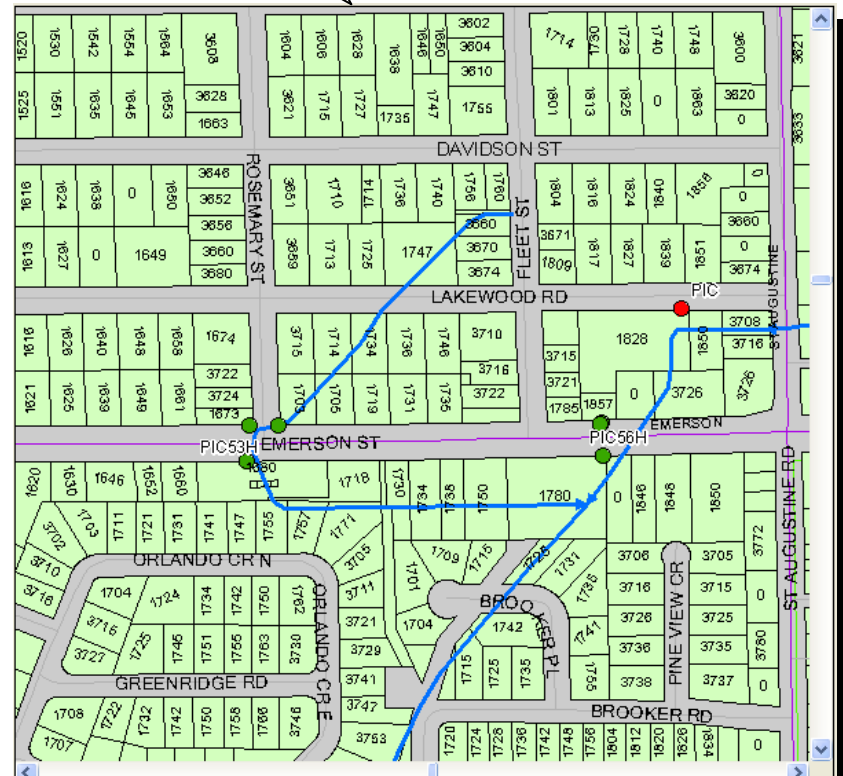
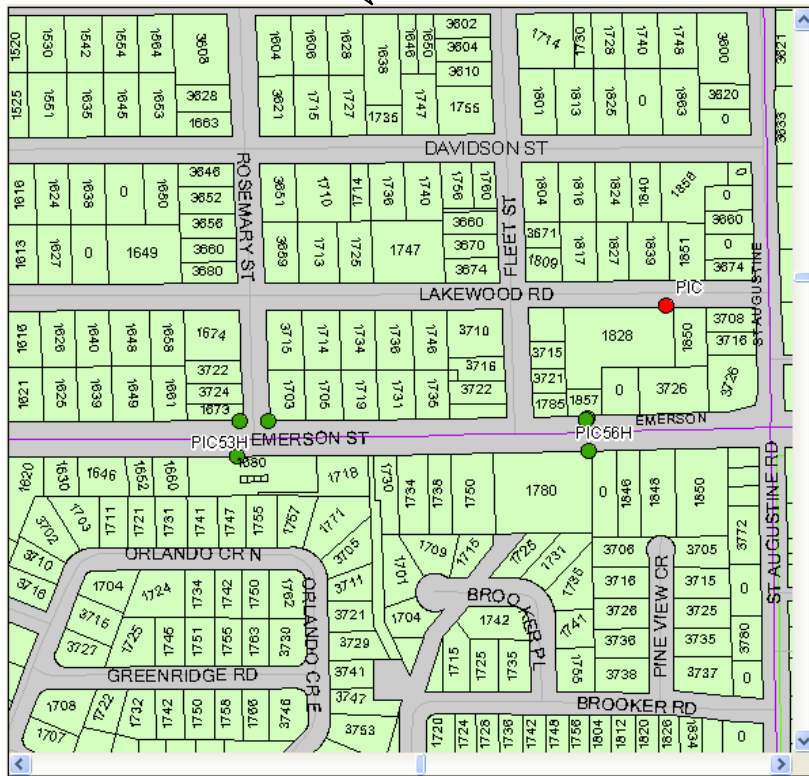
Layers draw in order  
from bottom to top

# System General Overview

## Map Legend - Turning on Layers

Un-Adjusted Base Map

NHD Flowlines Checked on



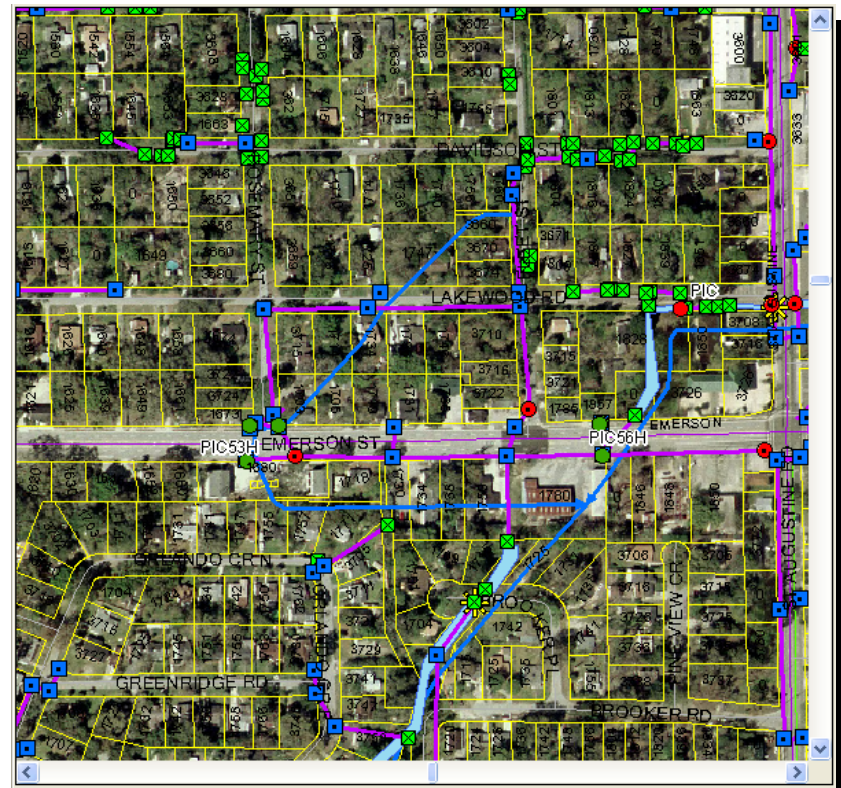
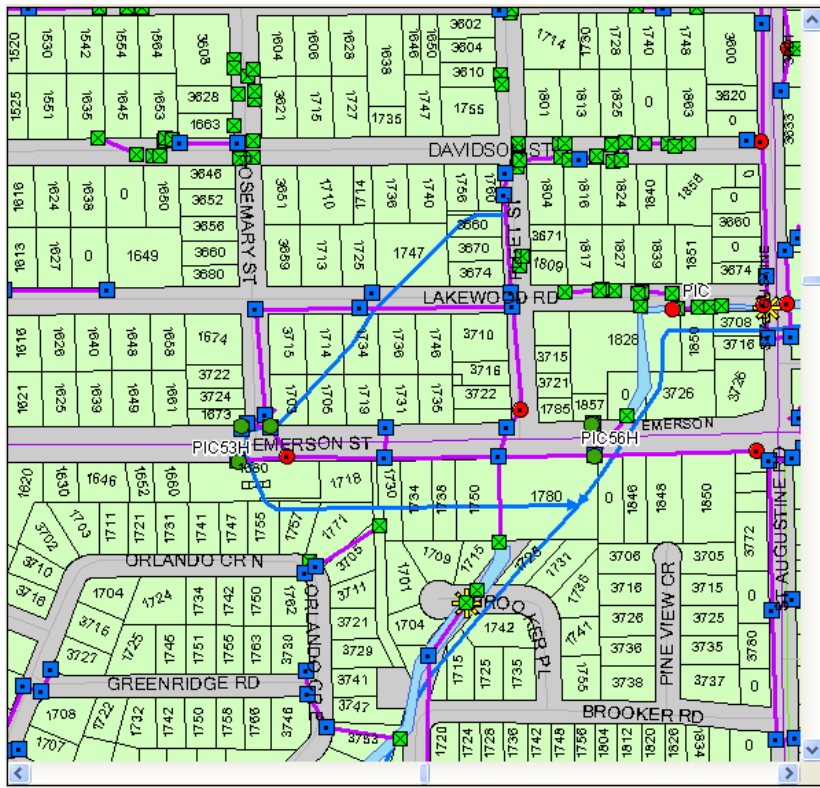


# System General Overview

## Map Legend – Explains available Data and Map Viewer Symbols

MS4 checked on

Aerial Photos Checked on



## Importance of using NHD with MS4



# System General Overview

SELECT ONE PIC – Zooms in on the detailed record of a single PIC

The screenshot displays the COJ EQD Inspection Manager software interface. The main window is titled "COJ EQD Inspection Manager" and features a menu bar with "Inspections", "PIC Report", "Add New PIC", and "Status Reports". The interface is divided into several panels:

- PIC QUERY:** Contains various filters and search options, including "Inspector 1", "Resolved", "Priority", "Status", "Reinspect", "Method", "Type", "Color", "Material", "Turbidity", "Scum", "Odor", "Flow", "WBID", and "Date Range (Click one)" with radio buttons for "Date Found", "Reinspect Date", and "Date Resolved".
- MAP:** Displays a map of Duval County with 2227 records. The map shows various locations such as "ACREE", "PLUMMER", "GARDEN", "OLD PLANK", "NORMANDY", "CHAFFEE", "TURNER", "DUVAL", "STARBUCK", "CEDAR POINT", "HEATHER", "ATLAN", "PILGRIMS", and "PILGRIMS". The map is populated with colored circles representing PIC locations, with a legend on the right defining the colors: CLOSED (green), NOT APPLICABLE (yellow), OPEN (orange), PENDING-ACTION (red), and UNKNOWN (dark red).
- Map Legend:** Lists various map features and their visibility status, including "PIC Position", "Potential Illicits Edit", "PIC Status", "M54", "NHDFlowlines", "Interstates", "Major Roads", "Streets", "duval\_water", "Parcels", "Basins", "DEP\_WBIDs", and "Duval\_County".
- SELECT ONE PIC:** A section highlighted with a red box, containing a list of Survey IDs (000001, 1354J, 199G, 200G, 201G) and a "Find Highlighted PIC" button.
- Edit Controls:** Includes buttons for "Start Editing", "Update Record", and "Cancel Edits".
- Print Record:** A button located at the bottom left.
- Export to ArcPAD Tools:** A button located at the bottom center.
- Export Current Query:** A button located at the bottom center.
- Exit:** A button located at the bottom right.

# System General Overview

Edit Controls – starts Edit mode to allow changes and updates to a PIC

The screenshot displays the COJ EQD Inspection Manager application. The interface is divided into several sections:

- PIC QUERY:** A panel on the left containing various filters and search options. It includes fields for Inspector 1, Resolved, Priority, Status, Reinspect, Method, Type, Color, Material, Turbidity, Scum, Odor, Flow, and WBID. It also features a 'Date Range' section with radio buttons for Date Found, Reinspect Date, and Date Resolved, along with Start and End Date pickers. A 'Process Above Query' button is located below these filters.
- MAP:** A central map showing the geographic distribution of 2227 records across Duval County. The map is overlaid with various geographic features like roads and water bodies. Numerous colored circles represent individual PIC locations, with colors corresponding to their status as defined in the legend.
- Map Legend:** A panel on the right titled 'Map Legend' with a 'Basic Info' sub-tab. It lists various map features and their corresponding symbols or colors. Under the 'PIC Position' section, it defines the status colors: CLOSED (green), NOT APPLICABLE (light green), OPEN (yellow), PENDING-ACTION (orange), PENDING-INFORMATION (red), and UNKNOWN (dark red). Other features include M54, NHDFlowlines, Interstates, Major Roads, Streets, duval\_water, Parcels, Basins, DEP\_WBIDs, and Duval\_County.
- Edit Controls:** A red-bordered box at the bottom right of the interface contains three buttons: 'Start Editing', 'Update Record', and 'Cancel Edits'. These buttons are used to manage the data shown on the map.
- Other UI Elements:** At the top, there are tabs for 'Inspections', 'PIC Report', 'Add New PIC', and 'Status Reports'. At the bottom left, there is a 'Print Record' button, and at the bottom right, there is an 'Exit' button.

# System General Overview

Export to ArcPad – tool prepares data for the handheld GeoXT GPS unit

The screenshot displays the COJ EQD Inspection Manager software interface. The main window is titled "COJ EQD Inspection Manager" and features a menu bar with "Inspections", "PIC Report", "Add New PIC", and "Status Reports". The interface is divided into several panels:

- PIC QUERY:** Contains filters for Inspector 1, Resolved, Priority, Status, Reinspect, Method, Type, Color, Material, Turbidity, Scum, Odor, Flow, and WBID. It also includes a "Date Range" section with radio buttons for "Date Found", "Reinspect Date", and "Date Resolved", along with "Start Date" and "End Date" dropdowns. A "Process Above Query" button is located below these filters.
- MAP:** Displays a map of Duval County with 2227 records. The map shows various locations and roads, with inspection points marked by colored circles. A red box highlights the "Export to ArcPAD Tools" button at the bottom of the map area.
- Map Legend:** Lists various map features and their corresponding symbols. The "PIC Position" section includes:
  - Potential Illicits Edit
    - PIC Status
      - CLOSED (Green circle)
      - NOT APPLICABLE (Yellow circle)
      - OPEN (Light Green circle)
      - PENDING-ACTION (Orange circle)
      - PENDING-INFORMATION (Red circle)
      - UNKNOWN (Dark Red circle)
  - M54
  - NHDFlowlines
  - Interstates
  - Major Roads
  - Streets
  - duval\_water
  - Parcels
  - Basins
  - DEP\_WBIDs
  - Duval\_County

- SELECT ONE PIC:** A list of PIC SurveyIDs (000001, 1354J, 199G, 200G, 201G) with a "Find Highlighted PIC" button.
- Edit Controls:** Includes buttons for "Start Editing", "Update Record", and "Cancel Edits".
- Print Record:** A button at the bottom left.
- Exit:** A button at the bottom right.

# Detailed Overview

## PIC QUERY

The screenshot displays the COLEOD Inspection Manager application. The interface is divided into several sections:

- PIC Review (Left Panel):** Contains a "PIC QUERY" section with a "Create New Query" button and various filters for Inspector 1, Resolved, Priority, Status, Reinspect, Method, Type, Color, Material, Turbidity, Scum, Odor, Flow, and WBID. It also includes a "Date Range (Click one)" section with radio buttons for Date Found, Reinspect Date, and Date Resolved, and date pickers for Start Date and End Date (both set to 1/6/2009). Below this is a "SELECT ONE PIC" section with a list of SurveyID values (000001, 1354J, 199G, 200G, 201G) and a "Find Highlighted PIC" button.
- MAP (Center):** Shows a map of Duval County with 2227 records of All PICs. The map is populated with colored circular markers representing different PIC statuses: CLOSED (green), NOT APPLICABLE (light green), OPEN (yellow), PENDING-ACTION (orange), PENDING-INFORMATION (red), and UNKNOWN (dark red). Major roads and streets are visible on the map.
- Map Legend (Right Panel):** Lists various map layers and their status. The "PIC Position" section is expanded, showing the following legend:
  - Potential Illicits Edit
    - PIC Status
      - CLOSED (green circle)
      - NOT APPLICABLE (light green circle)
      - OPEN (yellow circle)
      - PENDING-ACTION (orange circle)
      - PENDING-INFORMATION (red circle)
      - UNKNOWN (dark red circle)
    - MS4
    - NHDFlowlines
    - Interstates
    - Major Roads
    - Streets
    - duval\_water
    - Parcels
    - Basins
    - DEP\_WBIDs
    - Duval\_County

- Edit Controls (Bottom Right):** Includes buttons for "Start Editing", "Update Record", "Cancel Edits", and "Exit".

# Detailed Overview

## PIC QUERY

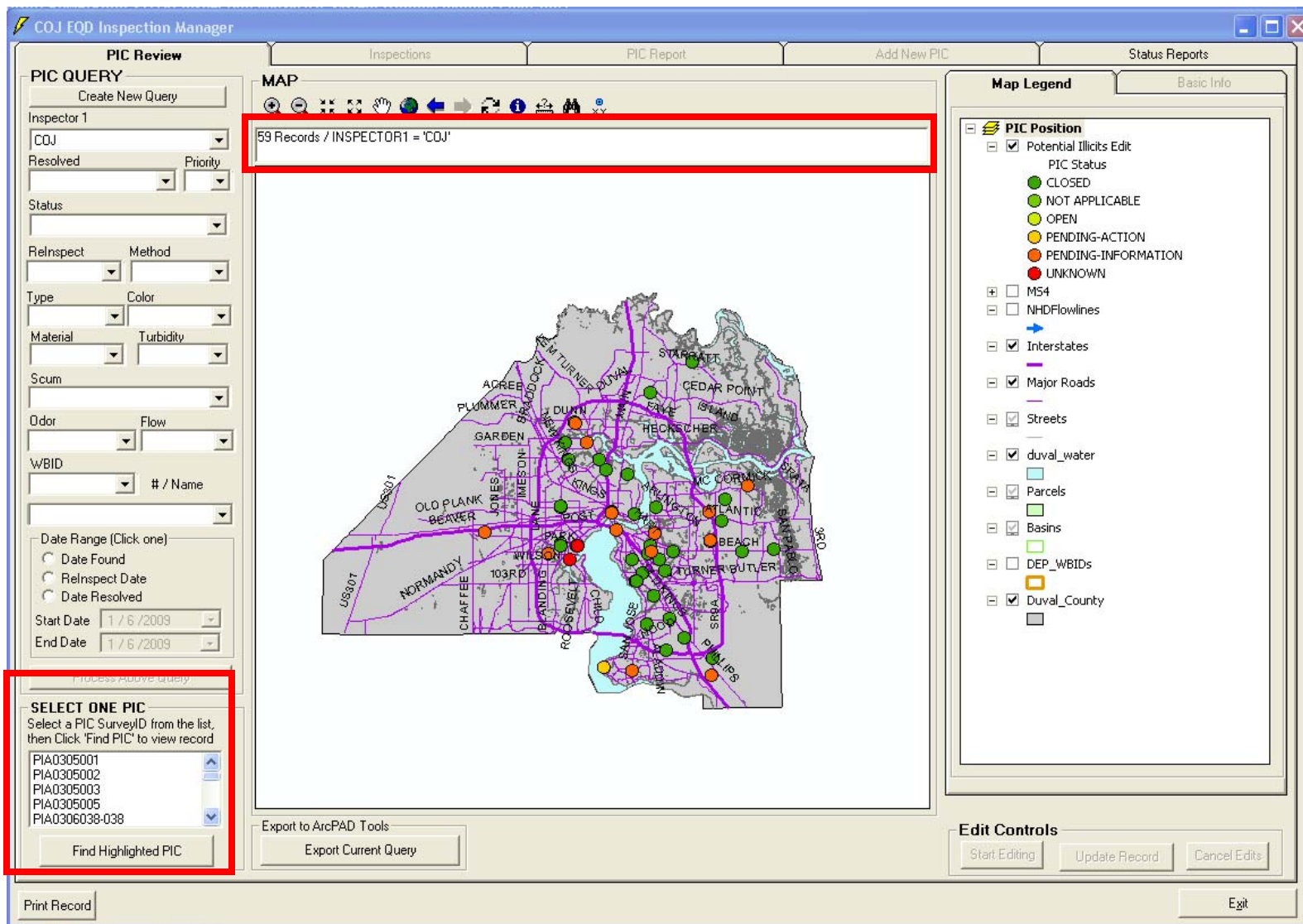
Provides the ability to create queries and reports from the PIC data. Make a choice from the pull-down boxes, then click on the Process Query Button.

One or all of the pull-down boxes can be used for the query, and unlimited versions of the date ranges can be selected (e.g. by months, by years) in order to create the desired report

The screenshot shows the 'PIC Review' software interface. At the top, there is a 'PIC QUERY' section with a 'Create New Query' button. Below this, a red box highlights the 'Inspector 1' section, which contains a list of inspectors: Mike Hines, ETM, COJ (highlighted in blue), Albert Smith, and UNK. Below the list are two pull-down menus labeled 'Reinspect' and 'method'. Further down, there are several other pull-down menus for 'Type', 'Color', 'Material', 'Turbidity', 'Scum', 'Odor', 'Flow', and 'WBID'. At the bottom, there is a 'Date Range (Click one)' section with three radio buttons: 'Date Found', 'Reinspect Date', and 'Date Resolved'. Below the radio buttons are 'Start Date' and 'End Date' fields, both set to '1 / 6 / 2009'. A red box highlights the 'Process Above Query' button at the bottom of the form.

# Detailed Overview

PIC QUERY After the Process Query button is clicked, the results found (59 records) are mapped, the query is listed, and the SurveyID numbers for the PICs are listed in the SELECT ONE PIC List.





# Detailed Overview

Select a single PIC in the SELECT ONE PIC Frame and Click Find Highlighted PIC

The screenshot displays the COJ EQD Inspection Manager software interface. The main window is titled "COJ EQD Inspection Manager" and contains several panels:

- PIC Review:** A panel on the left with a "Create New Query" button and various filters for Inspector 1 (ETM), Resolved (YES), Priority (4), Status (CLOSED), Reinspect (UNKNOWN), Method (SURVEY), Type (CLOSED), Color (NONE), Material (PLASTIC), Turbidity (UNKNOWN), Scum (NONE), Odor (NONE), Flow (NO), and WBID (2284). It also includes a "Date Range" section with radio buttons for Date Found, Reinspect Date, and Date Resolved, and date pickers for Start Date (1/6/2009) and End Date (1/6/2009).
- MAP:** A central map showing a residential area with streets like BRANCH LA, MAXIE DR, SPRINGWOOD RD, GLENVIEW RD, SPRING PARK CR, YATES PL, and DURNAM PL. Several PIC locations are marked with colored dots: PIC25C (green), PIC27C (blue), PIC28C (green), PIC30C (green), PIC26C (green), and PIC35C (green). The map shows 2151 records for INSPECTOR1 = 'ETM'.
- SELECT ONE PIC:** A dropdown menu at the bottom left of the map area, containing a list of PIC IDs: PIC27A, PIC27BB, PIC27C (highlighted in blue), PIC27D, and PIC27J (highlighted with a red box). Below the list are buttons for "Export to ArcPAD Tools" and "Export Current Query".
- Basic Info:** A panel on the right containing a "Map Legend" and "Basic Info" section. The "Basic Info" section includes fields for Survey ID (PIC27C), Date Found (7/6/1998), Reinspect Date (9/9/9999), CARE ID, Site Name (UNKNOWN), Number (4011), Dir Pre (SPRINGWOOD), Street (RD), Type (RD), Dir Suf, Property Owner (Linville B. Meadows III), City (JACKSONVILLE), State (FL), Zipcode (32207), Major Basin (ARLINGTON RIVER), Minor Basin (LITTLE POTTSBUR), Source (SWIMMING POOL), SP Northing (2163809.8333333), SP Easting (461331.552083313), Latitude (30.2841868335519), and Longitude (-81.6172817255595). It also has an "Edit History" section and a "RE #" field.
- Photo 1:** A photo showing a person holding a sign that says "PIC 27C" in front of a swimming pool. The photo is dated "2009C JUN 12 10:08 AM".
- Edit Controls:** A panel at the bottom right with buttons for "Start Editing", "Update Record", and "Cancel Edits".

# Detailed Overview

Under the 'Inspections' Tab there is room for the recording of 3 separate inspections and The PIC Resolution Outcome.

The screenshot displays the 'COJ EOD Inspection Manager' application window. The 'Inspections' tab is active, showing a form with five main sections: 'First Inspection', 'Second Inspection', 'Third Inspection', and 'Resolution'. Each inspection section includes fields for 'Inspector', 'Date', 'Illicit?' (for the first), and 'Reinspection Date', along with a text area for 'Inspector Comments'. The 'Resolution' section includes fields for 'Resolved?', 'Resolved Method', and 'Date Resolved', along with a text area for 'Resolved Comments'. Navigation buttons for 'PIC Review', 'PIC Report', 'Add New PIC', and 'Status Reports' are visible at the top. 'Print Record' and 'Exit' buttons are at the bottom.

Section	Inspector	Date	Illicit?	Reinspection Date	Comments
First Inspection	ETM	9/9/9999	YES		NONE
Second Inspection		9/9/9999			
Third Inspection		9/9/9999			NONE
Resolution					

# Downloading to the GeoXT

When you have developed a Query that you want Field Crews to Investigate, click on the 'Export Current Query' Button under the 'Export to ArcPad' Frame

COJ EQD Inspection Manager

PIC REVIEW

PIC QUERY

Create New Query

Inspector 1

Resolved Priority

Status

Relinspect Method

Type Color

Material Turbidity

Scum

Odor Flow

WBID # / Name

Date Range (Click one)

Date Found

Relinspect Date

Date Resolved

Start Date 1 / 1 / 2002

End Date 3 / 31 / 2002

Process Above Query

SELECT ONE PIC

Select a PIC SurveyID from the list, then Click 'Find PIC' to view record

PIC169BK

PIC243BD

PIC597BK

PIC6255AL

PIC898BW

Find Highlighted PIC

Export to ArcPAD Tools

Export Current Query

Print Record

Exit

MAP

5 Records / MATERIAL = 'PLASTIC' AND DateFound >= #1/1/2002 9:40:10 AM# AND DateFound <= #3/31/2002 9:40:10 AM#

Map Legend

PIC Position

Potential Illicits Edit

PIC Status

CLOSED

NOT APPLICABLE

OPEN

PENDING-ACTION

PENDING-INFORMATION

UNKNOWN

M54

NHDFlowlines

Interstates

Major Roads

Streets

duval\_water

Parcels

Basins

DEP\_WBIDs

Duval\_County

Edit Controls

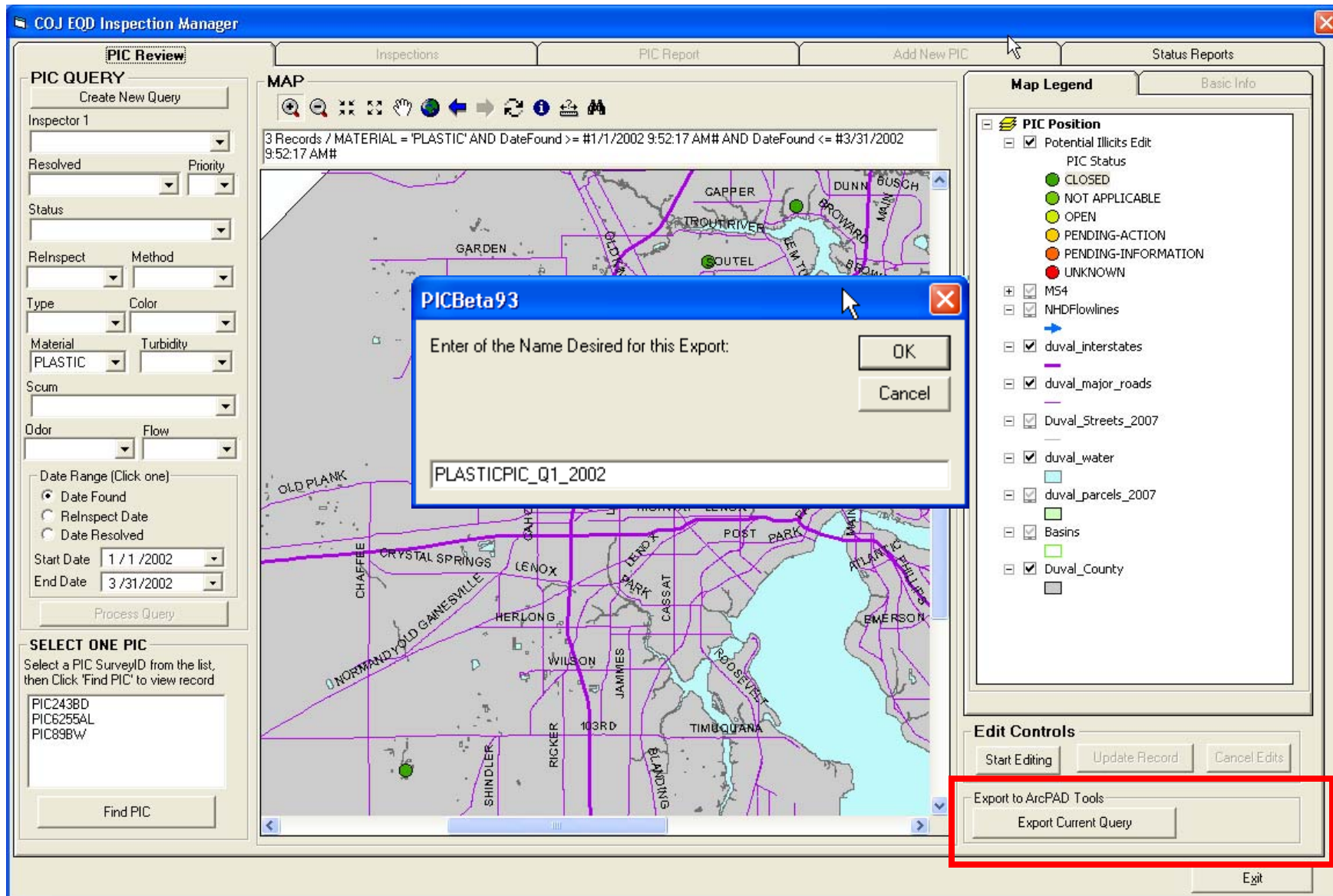
Start Editing

Update Record

Cancel Edits

# Downloading to the GeoXT

A Window will open asking you to name this file. Type a meaningful name and click OK. This file can then be copied to the GeoXT. (See Field Guide)



# Trimble GeoXT Handheld GPS Receiver

The GeoXT is an integrated sub-meter GPS/Data Collector that can accommodate your choice of appropriate Field Software. By combining the GPS and Data Collector, it allows all components to be carried together in one compact handheld unit. There are no cables, extra batteries, or backpacks. Other features include: Windows Mobile 5.0: Secure data and built-in productivity tools 512 MB on-board memory 64MB RAM Removable SD card slot: For customized memory expansion TFT Screen: A crisp touch screen that's visible outdoors Bluetooth®: Wireless connection to peripheral devices Wi-Fi (802.11b): Wireless connection to the Internet, network, or supported camera EVEREST® multi-path rejection for better accuracy results in harsh GPS environments Built-in WAAS for sub-meter accurate navigation One-year Hardware Warranty



**Number of Channels:** 12

**Operating System:** Windows Mobile 2003

**Processor:** 206 MHz Intel StrongARM

**Display:** Color

**Battery:** Internal Li-Ion

**Memory:** 64 MB Ram, 512 MB Internal Flash

**Extra Card Slots:** None

**Post Processed Accuracy:** Submeter

**Communication with PC:** USB Cable

**Wireless Communication:** Bluetooth

**Water Resistant:** Wind Driven Rain

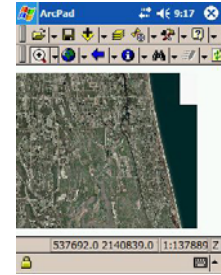
**Handheld Software:** Trimble TerraSync

**WAAS:** Yes





## Introduction to ArcPad Software (Mobile GIS)



- **ArcPad** is software for mobile GIS and field mapping applications using handheld and mobile devices.
- ArcPad provides field-based personnel with the ability to capture, analyze, and display geographic information, without the use of costly and outdated paper map books.

# Putting it all Together:

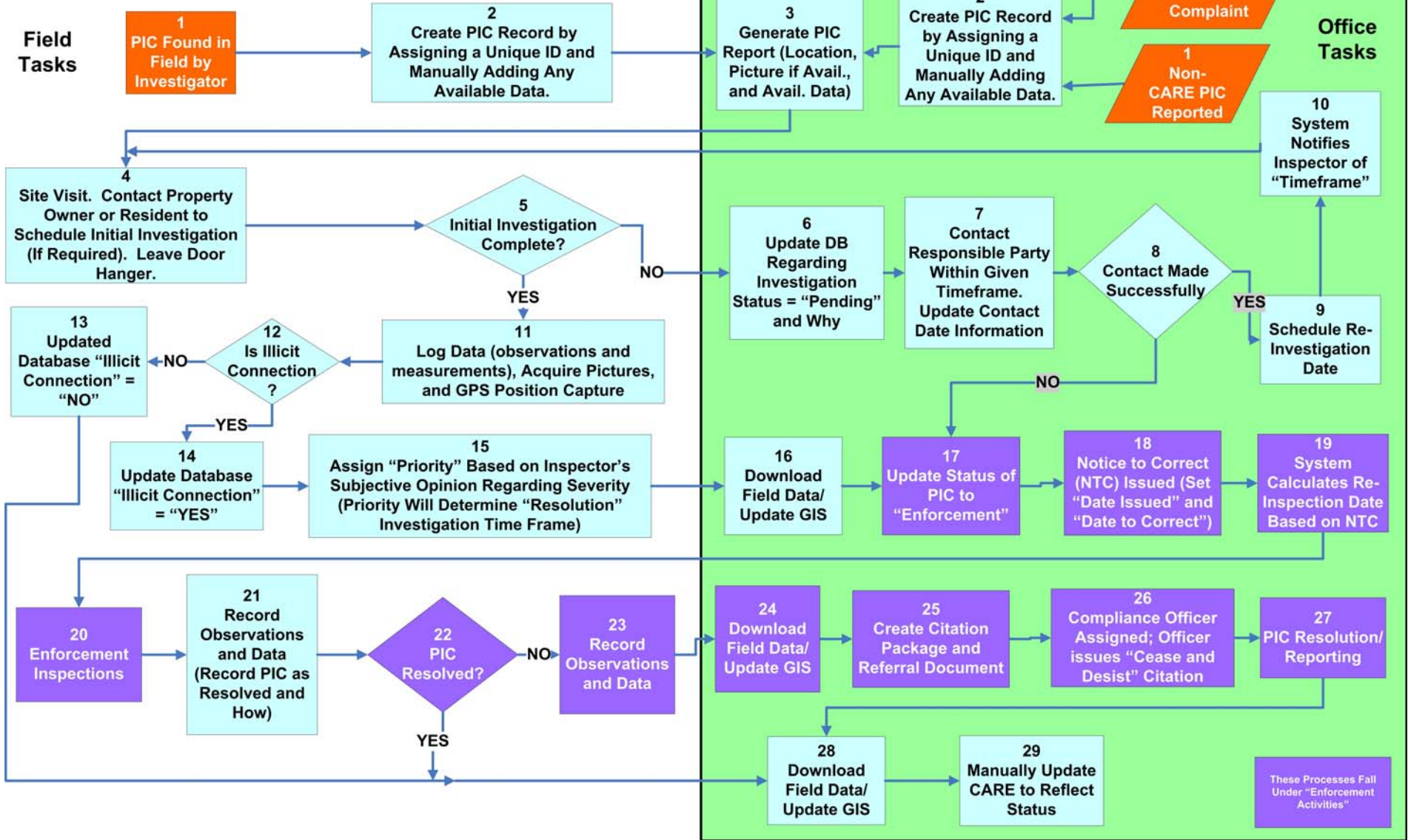
Using the COJ EQD Inspection Manager  
System to Enhance the PIC Collection  
Process using Case Examples

# Adding a PIC From CARE





# Potential Illicit Connection Collection Process



# Adding a New PIC from CARE

Select the 'Add New PIC' Tab

The screenshot displays the 'COJ EQD Inspection Manager' application window. The interface is divided into several sections:

- Top Navigation:** A horizontal bar contains five tabs: 'PIC Review', 'Inspections', 'PIC Report', 'Add New PIC' (highlighted with a red box), and 'Status Reports'.
- Left Panel:**
  - A search field with the text 'Type Street Name and Click Find Street' and a 'Find Street' button below it.
  - A section titled 'LOCATE BY:' with two sub-sections: 'Address Range' (selected) and 'Intersection'. Below 'Address Range' is a large empty text area with the instruction 'Double Click on Address Range'.
- Center Map:** A map of a coastal area with numerous colored markers (red, green, orange) representing PIC locations. Street names like 'NORMANDY', 'CHAFFEE', 'GARDEN', 'DUMFRIES', 'PLUMMER', 'ACREE', 'BODDOCK', 'SEMI TURNER DUVAL', 'STARBUCK', 'CEDAR POINT', 'ISLAND', 'BECKSCHER', 'MC BORNICK', 'ATLANTIC', 'TURNER BUTLER', 'PHILLIPS', 'OLD PLANK BEACH', 'WILMINGTON', 'CHINA', 'SUNSHINE', and 'US301' are visible.
- Right Panel:**
  - A date selector with a dropdown menu showing '1 / 6 / 2009' and the label 'Select the day that the PIC was identified'.
  - Form fields for 'New PIC Number There were:' and 'PICs previously located on:'.
  - A field for 'New PIC SurveyID #'.
  - A 'Select PIC Photo:' section with a 'Browse' button.
  - An 'Add NEW PIC on Map' button.
  - An 'Edit Controls' section with 'Undo Edit' and 'Stop Editing' buttons.
- Bottom Bar:** Contains a 'Print Record' button on the left and an 'Exit' button on the right.

# Adding a New PIC from CARE

Type Street name into Textbox

Type Street Name and Click Find Street

LOCATE BY:

Address Range    Intersection

Double Click on Address Range

- 1000-1099 BEACH AV
- 1000-1099 BEACH BV
- 100-199 BEACH AV
- 100-199 BEACH BV
- 10201-10398 BEACH BV
- 10401-10598 BEACH BV
- 10601-10698 BEACH BV
- 10701-10798 BEACH BV
- 10801-10898 BEACH BV
- 10901-10998 BEACH BV
- 11001-11098 BEACH BV
- 1100-1119 BEACH BV
- 1100-1199 BEACH AV
- 11101-11140 BEACH BV
- 11143-11198 BEACH BV
- 11201-11298 BEACH BV
- 1120-1399 BEACH BV
- 11301-11398 BEACH BV
- 11401-11478 BEACH BV
- 11481-11488 BEACH BV
- 11491-11498 BEACH BV
- 11501-11508 BEACH BV
- 11511-11698 BEACH BV
- 11701-11798 BEACH BV
- 11801-11898 BEACH BV
- 11901-11948 BEACH BV
- 11951-11998 BEACH BV
- 12001-12028 BEACH BV
- 1200-1299 BEACH AV
- 12031-12098 BEACH BV
- 12101-12398 BEACH BV

LOCATE BY:

Address Range    Intersection

Double Click on Intersection

- BEACH BV E / EMERSON XY N RP...
- 10TH ST N-->11TH ST N
- 10TH ST-->11TH ST
- 11990-1 BEACH AP-->MEADOWBRO
- 11TH ST N-->12TH ST S
- 11TH ST-->12TH ST
- 12TH ST S-->PENMAN RD**
- 12TH ST-->13TH ST
- 13TH ST-->14TH ST
- 14TH ST-->15TH ST
- 15TH ST-->16TH ST
- 16TH ST-->DEWEES AV
- 17TH ST-->18TH ST
- 18TH ST N-->19TH ST N
- 18TH ST-->19TH ST
- 19TH ST N-->20TH ST N
- 19TH ST-->20TH ST
- 1ST ST N-->2ND ST N
- 1ST ST-->2ND ST
- 20TH ST N-->HOPSON RD
- 20TH ST-->DEAD END
- 2ND ST N-->3RD ST N
- 2ND ST-->3RD ST
- 3RD ST N-->4TH ST N
- 3RD ST-->4TH ST
- 4TH ST N-->5TH ST N
- 4TH ST-->5TH ST
- 5751-4 BEACH AP-->UNIVERSITY BV
- 5TH ST N-->6TH ST N
- 5TH ST-->6TH ST
- 6TH ST N-->7TH ST N
- 6TH ST-->7TH ST

# Adding a New PIC from CARE

Screen will redraw to that location

**COJ EQD Inspection Manager**

PIC Review    Inspections    PIC Report    **Add New PIC**    Status Reports

Type Street Name and Click Find Street

BEACH

Find Street

**LOCATE BY:**

Address Range    **Intersection**

Double Click on Intersection

- BEACH BV E / EMERSON XY N RP...
- 10TH ST N -> 11TH ST N
- 10TH ST -> 11TH ST
- 11990-1 BEACH AP -> MEADOWBROOK
- 11TH ST N -> 12TH ST S
- 11TH ST -> 12TH ST
- 12TH ST S -> PENMAN RD**
- 12TH ST -> 13TH ST
- 13TH ST -> 14TH ST
- 14TH ST -> 15TH ST
- 15TH ST -> 16TH ST
- 16TH ST -> DEWEES AV
- 17TH ST -> 18TH ST
- 18TH ST N -> 19TH ST N
- 18TH ST -> 19TH ST
- 19TH ST N -> 20TH ST N
- 19TH ST -> 20TH ST
- 1ST ST N -> 2ND ST N
- 1ST ST -> 2ND ST
- 20TH ST N -> HOPSON RD
- 20TH ST -> DEAD END
- 2ND ST N -> 3RD ST N
- 2ND ST -> 3RD ST
- 3RD ST N -> 4TH ST N
- 3RD ST -> 4TH ST
- 4TH ST N -> 5TH ST N
- 4TH ST -> 5TH ST
- 5751-4 BEACH AP -> UNIVERSITY BV
- 5TH ST N -> 6TH ST N
- 5TH ST -> 6TH ST
- 6TH ST N -> 7TH ST N
- 6TH ST -> 7TH ST

2ND AV N

11TH ST N

1344 1330 1306 1304 1302 1236 1228 1202 1178 1156 1144 1120 0 1104

1345 1337 1327 1319 1311 0 1257 1235 1223 121 1181 1163 1153 1147 1139 1137 1133 1107 1105

1ST AV N

1248 1334 1314 1304 1236 1224 1214 1205 1183 1188 1181 1153 1101

1401 1325 1313 1281 1251 1171 1181 1141 1121

0 0 0 0 0 0 0 0

1404 1330 1200 1120 119

PENMAN RD

12TH ST S

BEACH BV

BEACH

SHEPHER AV

1200 1200

Select the day that the PIC was identified

8 / 1 / 2008

New PIC Number

There were:

PICs previously located on:

New PIC SurveyID # =

Select PIC Photo:

Browse

Add NEW PIC on Map

Edit Controls

Undo Edit    Stop Editing

Exit

# Adding a New PIC from CARE

Select the date that the PIC was found. The computer will assign a unique ID, then click Select Photo

Select the day that the PIC was identified

8 / 1 /2008

August 2008						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
27	28	29	30	31	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31	1	2	3	4	5	6

Today: 8/1/2008

Select PIC Photo:

Browse

Add NEW PIC on Map

Edit Controls

Undo Edit Stop Editing

Select the day that the PIC was identified

7 /30/2008

New PIC Number

There were:

0

PICs previously located on:

7/30/2008

New PIC SurveyID # =

PIC20080730001

Select PIC Photo:

Browse

Add NEW PIC on Map

Edit Controls

Undo Edit Stop Editing

# Adding a New PIC from CARE

If necessary navigate to photo folder or camera and select photo

The screenshot displays the 'COJ EQD Inspection Manager' application. The main window is titled 'Add New PIC' and features a map interface with street names such as '2ND AV N', '11TH ST N', and '12TH ST S'. A 'Select PIC Photo' dialog box is open, showing a grid of photos from the 'ASH Powerpoint' folder. The photos are labeled with filenames: 'AescuFl.jpg', 'driveway3.jpg', 'DrivewayBefore.jpg', 'Fachern-White-Pine-18', 'fence07.jpg', and 'Norway\_mangle.jpg'. The 'Add New PIC' panel on the right includes a dropdown menu for 'Select the day that the PIC was identified' (7/30/2008), a 'New PIC Number' field (0), a 'PICs previously located on:' field (7/30/2008), and a 'New PIC SurveyID #' field (PIC20080730001). There are also 'Browse', 'Add NEW PIC on Map', 'Undo Edit', and 'Stop Editing' buttons.

# Adding a New PIC from CARE

Selected Photo will have PIC number imprinted upon it, Now Click Add New PIC on Map

The screenshot displays the 'COJ EQD Inspection Manager' application window. The interface is divided into several sections:

- PIC Review:** Includes a search box with 'BEACH' entered and a 'Find Street' button.
- LOCATE BY:** Features a list of street intersections, with '12TH ST S-->PENMAN RD' selected.
- Map:** A central map showing a grid of streets including Penman Rd, 11th St N, 12th St S, and Shetter Av. A photo of a backyard with a wooden fence and trees is overlaid on the map, with the PIC number 'PIC20080730001' printed in orange at the top left of the photo.
- Add New PIC:** This section is highlighted with a red box and contains:
  - A dropdown menu for 'Select the day that the PIC was identified' set to '7/30/2008'.
  - Input fields for 'New PIC Number' (value: 0) and 'New PIC SurveyID #' (value: PIC20080730001).
  - A 'Browse' button for 'Select PIC Photo:'.
  - A prominent 'Add NEW PIC on Map' button, which is the focus of the instruction.
  - 'Edit Controls' including 'Undo Edit' and 'Stop Editing' buttons.
- Status Reports:** A section on the right side of the interface.

An 'Exit' button is located at the bottom right of the application window.

# Adding a New PIC from CARE

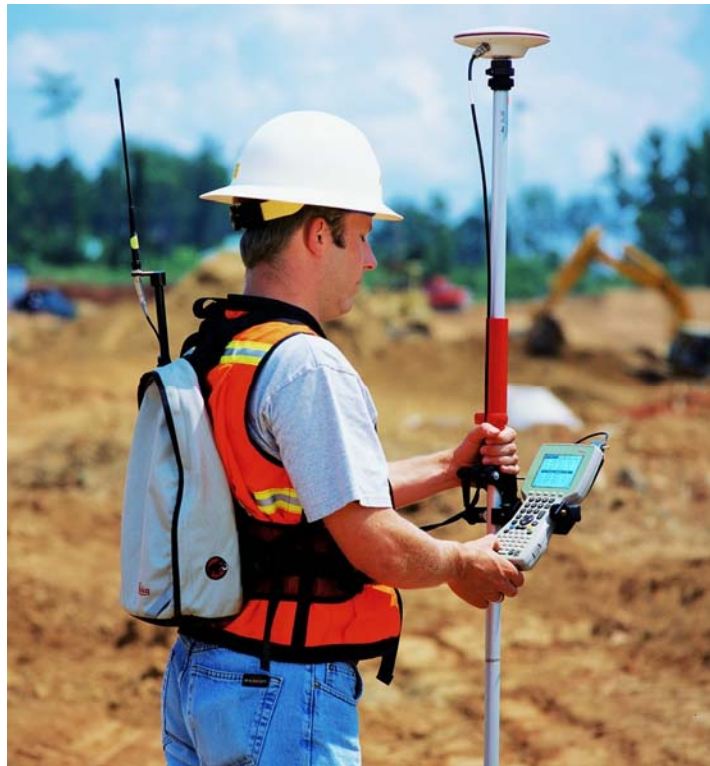
Click on the map and the PIC is added and ready for Editing. Note that the Address, Property Owner, Basins and State Plane Coordinates were automatically populated, and the other fields received 'default' values.

The screenshot displays the COJ EOD Inspection Manager interface. The main window is divided into several sections:

- PIC Review:** Contains fields for Inspector 1 (UNKNOWN), Resolved (PENDING), Priority (1), Status (UNKNOWN), Reinspect (UNKNOWN), Method (SURVEY), Type (UNKNOWN), Color (UNKNOWN), Material (UNKNOWN), Turbidity (UNKNOWN), Scum (UNKNOWN), Odor (UNKNOWN), and Flow (UNKNOWN). It also includes a Date Range selector (Date Found, Reinspect Date, Date Resolved) and a Start/End Date range (8/1/2008).
- MAP:** Shows a street map with a grid of lot numbers. A specific lot, 1251, is highlighted in blue and labeled with the PIC ID 'PIC20080730001'. The map shows streets including 2ND AV N, 1ST AV N, BEACH BV, BEAGH, and PENMAN RD.
- Basic Info:** A form on the right side of the map, highlighted with a red box, containing the following data:
  - Survey ID: PIC20080730001
  - Date Found: 7/30/2008
  - Reinspect Date: (empty)
  - CARE ID: 0
  - Site Name: UNKNOWN
  - Number: 1251
  - Dir: (empty)
  - Pre: (empty)
  - Street: BEACH BV
  - Type: (empty)
  - Dir Sur: (empty)
  - Property Owner: DOUBLE SAM INC
  - City: JACKSONVILLE BEA
  - State: FL
  - Zipcode: 32250
  - Major Basin: INTRACOASTAL WAT
  - Minor Basin: HOPKINS CREEK
  - Source: UNKNOWN
  - Northing: 2165045.2083333
  - Easting: 528841.999999981
- Edit Controls:** Includes buttons for 'Start Editing', 'Update Record', and 'Cancel Edits'.
- Photo 1:** A thumbnail image of a computer monitor displaying a software interface.
- Export to ArcPAD Tools:** Includes a button for 'Export Current Query'.

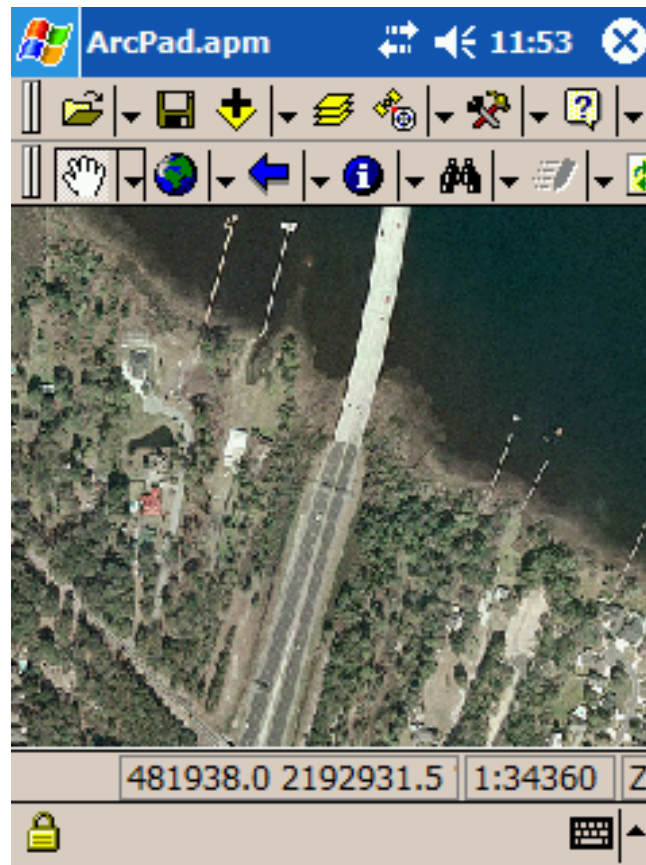


# Finding a New PIC during Field Operations



# Start ArcPad

- Tap START then PROGRAMS then ARCPAD



# Start GPS Data Flow

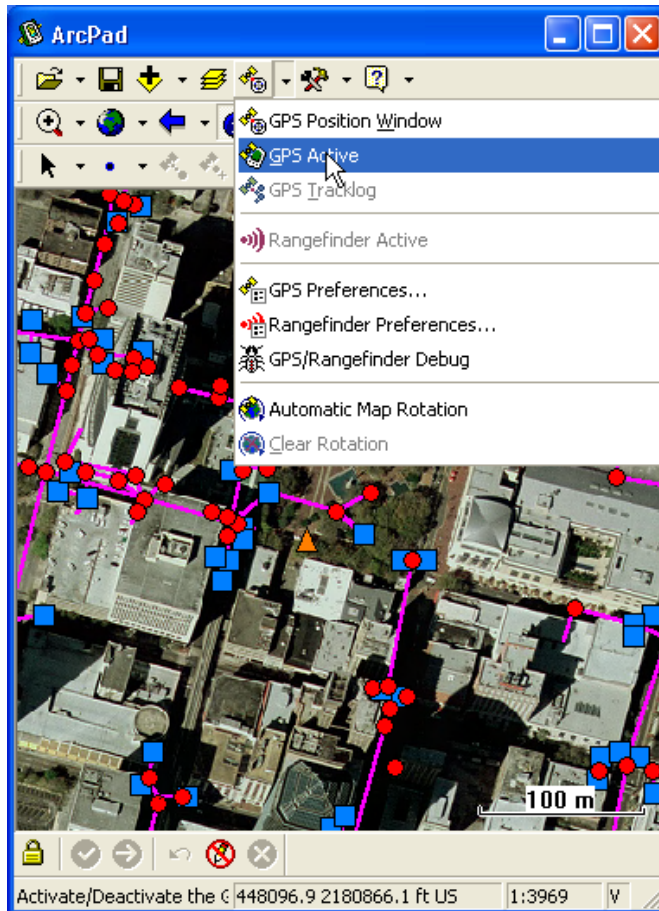
- Start GPS Data Flow in ArcPad by tapping the Satellite and Crosshair Icon



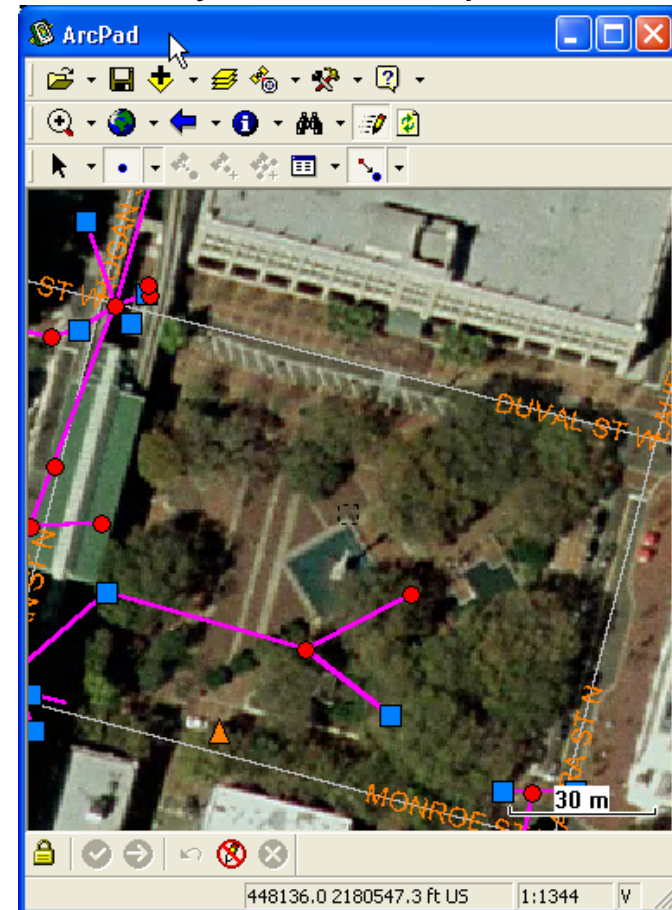
- Your current position will appear on the moving map

# Start GPS Data Flow

- Then click GPS Active



- Map Automatically zooms to your current position



# Take photo of PIC

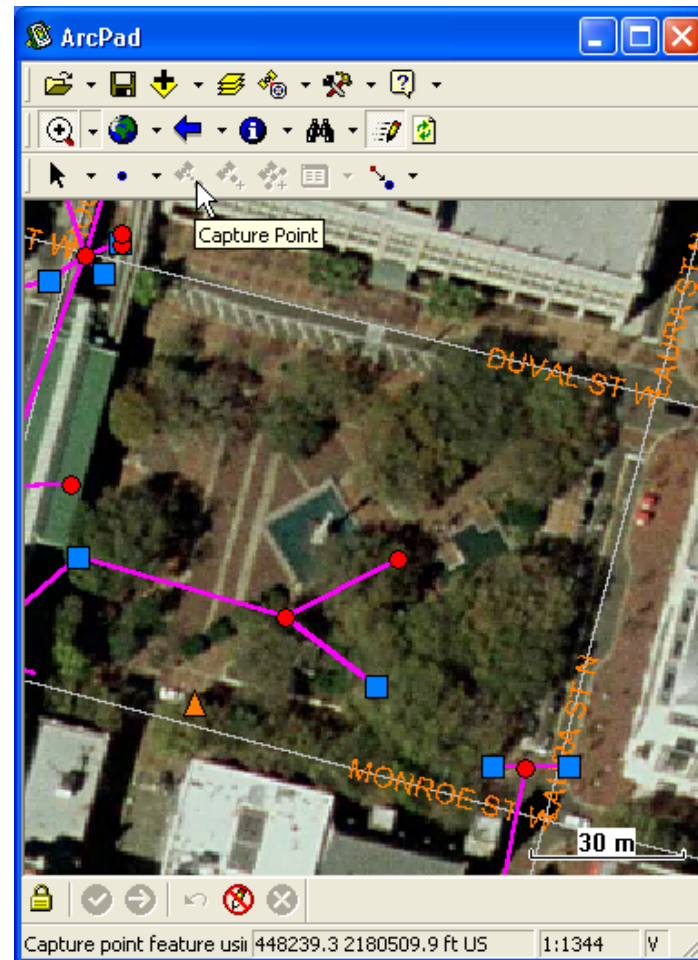
**When you see the PIC take a photo of it with the digital camera and note the file name.**

**(i.e 00004.JPG)**



# Record Point

- Click on the Capture point button



# Record Point (continued)

- A window will open Called Potential Illicits Edit Page 1
- Type in the SurveyID
- Click on Date Found

Potential Illicits Edit

Page 1 Page 2

OBJECTID 0

SurveyID PIC20080818001

Date Found  8/18/200 ▾

Observer COJ[[

Northing 0

Easting 0

Owner

Basin Major

ok cancel

# Record Point (continued)

- Page 4 categorizes the PIC

Potential Illicits Edit

Page 3 Page 4

PIC Status: PENDING-AC

System Type: CLOSED

Material: PLASTIC

Flow: YES

Odor: YES (selected), NO, UNKNOWN, N/A

Scum:

Color:

Turbidity:

ok cancel



# Record Point (continued)

- Page 5 Holds Observer Comments

Potential Illicits Edit

Page 4 Page 5

Source

Observer Comments This PIC was f

Investigator

Date Invest 8/18/200

Invest Comments

Illicit Connect PENDING

Resolved PENDING

Resolve Method PENDING

ok cancel

# Record Point (continued)

- Page 8 stores the photo Name
- When Finished, Click ok

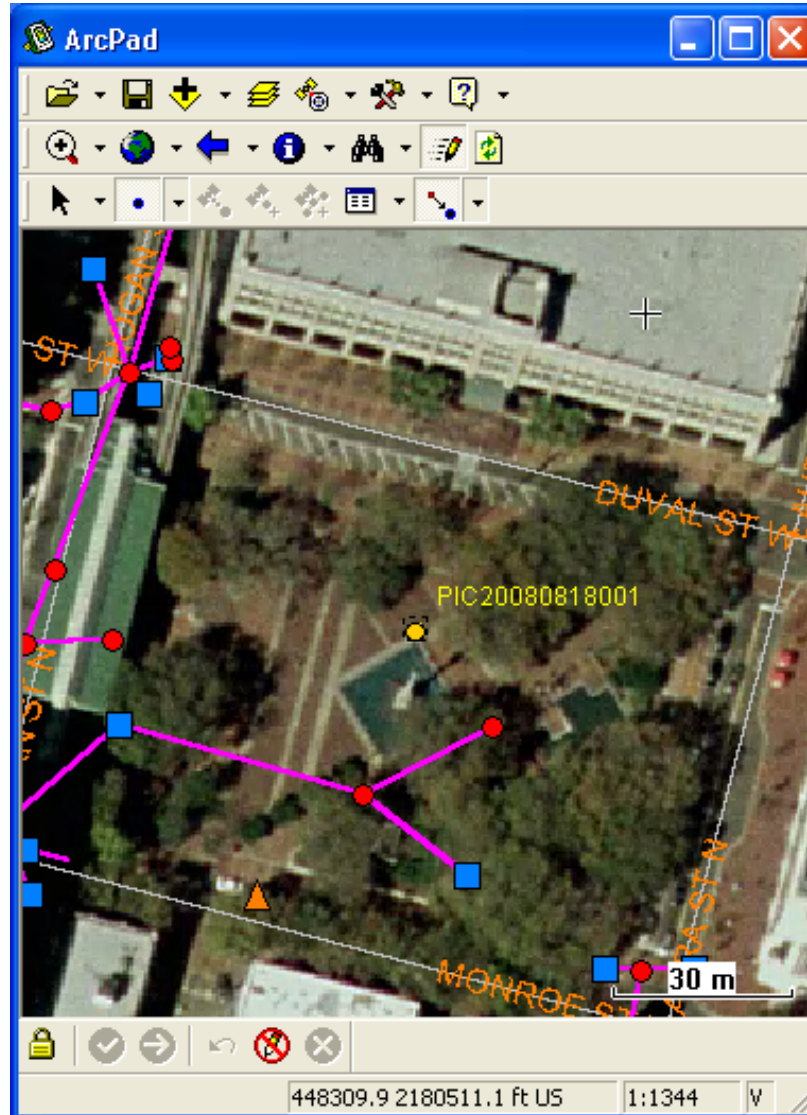
The screenshot shows a dialog box titled "Potential Illicits Edit" with a blue title bar and a red close button. The dialog has two tabs: "Page 7" and "Page 8", with "Page 8" selected. The dialog contains several input fields:

North	0
East	0
RENUMBER	
Photo1	0005.jpg
Photo2	
Photo3	
Priority	2
Inspector3	

At the bottom left of the dialog, there are two buttons: a green "ok" button and a red "X" button.

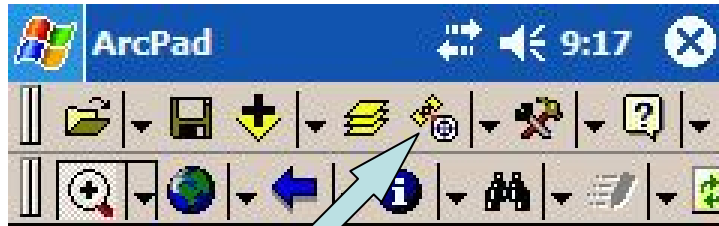
# Record Point (continued)

- PIC Added
- Repeat as necessary



# Follow Up Inspections

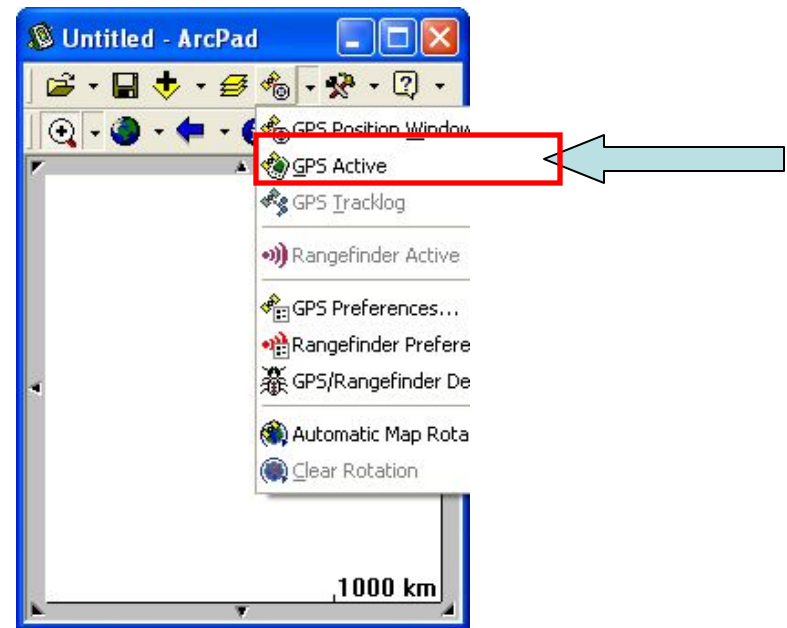
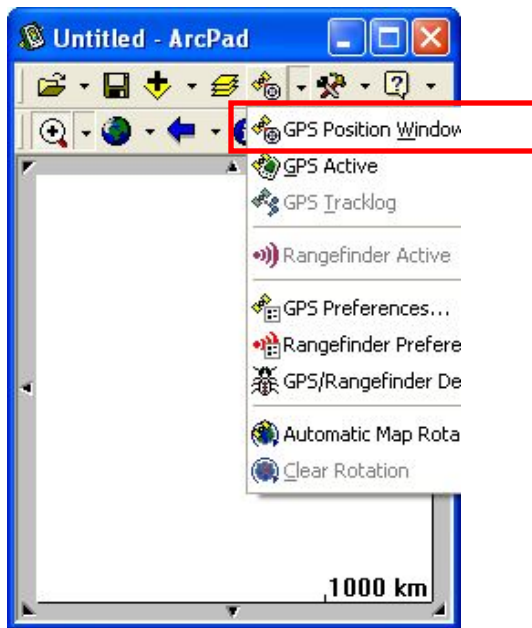




Main Toolbar

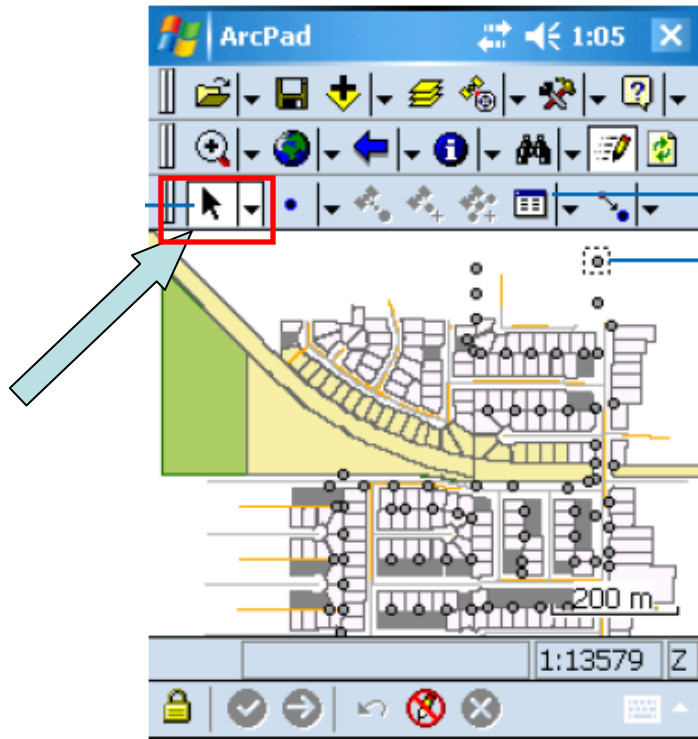
Tap **GPS Position Window**

Tap **GPS Active**



Navigate to PIC

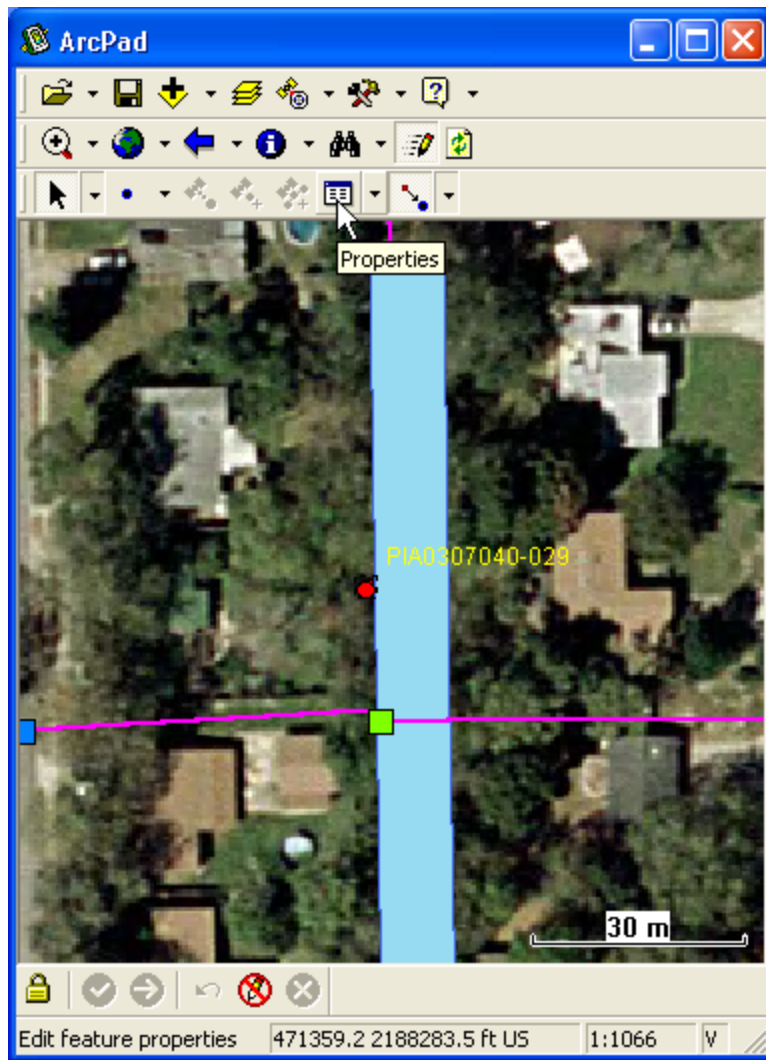
# Tap Select



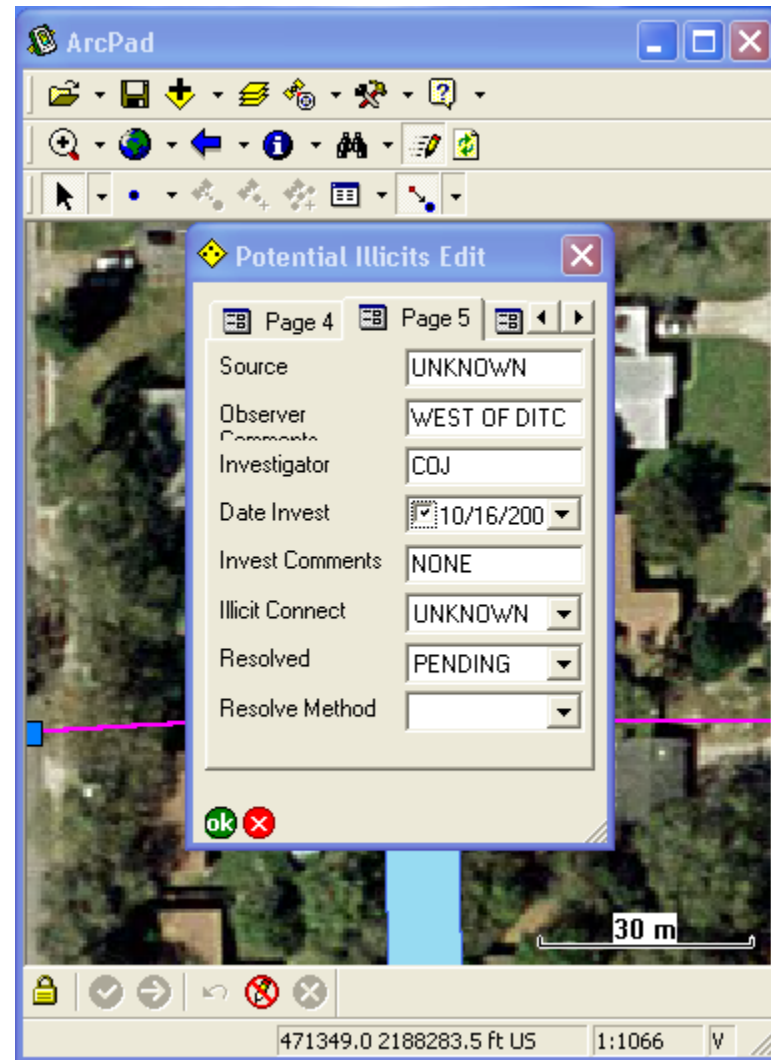
## SELECT DROP-DOWN LIST

	<b>Select</b>	Activate the Select tool.
	<b>Select and Vertex Editing</b>	Activate the Select and Vertex Editing tool.
	<b>Select at GPS Position</b>	Select the feature at the current GPS position.
	<b>Center on Selected Feature</b>	Center the map on the selected feature without changing the current map scale.
	<b>Zoom to Selected Feature</b>	Zoom to the selected feature.
	<b>Go To Selected Feature</b>	Set the selected feature to be the current destination for navigation.
	<b>Clear Selected Feature</b>	Unselect the selected feature.

- Click the Properties Button



- The PIC's Database will display - edit data as necessary



## Editing a PIC after Follow-up Inspections





# Editing a PIC after Follow-up Inspections

Select a single PIC and Click Start Editing under Edit Controls

The screenshot displays the COJ EQD Inspection Manager software interface. The main window is titled "COJ EQD Inspection Manager" and features a menu bar with "Inspections", "PIC Report", "Add New PIC", and "Status Reports". The interface is divided into several sections:

- PIC Description:** Contains fields for Inspector 1 (ETM), Resolved (YES), Priority (4), Status (CLOSED), Reinspect (UNKNOWN), Method (SURVEY), Type (CLOSED), Color (NONE), Material (PLASTIC), Turbidity (UNKNOWN), Scum (NONE), Odor (NONE), Flow (NO), WBID (2284), and a Date Range selector (Date Found, Reinspect Date, Date Resolved) with Start and End dates set to 1/6/2009.
- MAP:** A central map showing a residential street grid with property boundaries and lot numbers. Several PIC markers are visible, including PIC25C, PIC27C, PIC28C, PIC30C, PIC26C, and PIC35C. The map includes a toolbar with navigation icons and a status bar indicating "2151 Records / INSPECTOR1 = 'ETM'".
- Map Legend:** A section for defining map symbols.
- Basic Info:** A detailed data panel for the selected PIC (PIC27C). It includes fields for Survey ID (PIC27C), Date Found (7/6/1998), Reinspect Date (9/9/9999), CARE ID, Site Name (UNKNOWN), Number (4011), Dir Pre (SPRINGWOOD), Street (RD), Type (RD), Dir Suf, Property Owner (Linville B. Meadows III), City (JACKSONVILLE), State (FL), Zipcode (32207), Major Basin (ARLINGTON RIVER), Minor Basin (LITTLE POTTSBUR), Source (SWIMMING POOL), SP Northing (2163809.8333333), SP Easting (461331.552083313), Latitude (30.2841868335519), and Longitude (-81.6172817255595). It also includes an Edit History section and a RE # field.
- Photo:** A section for displaying photos, with Photo 1 showing a person holding a sign that reads "PIC 27C".
- Edit Controls:** A section containing buttons for "Start Editing", "Update Record", and "Cancel Edits". This section is highlighted with a red box.

At the bottom of the interface, there are buttons for "Print Record" and "Exit".

# Editing a PIC (cont.)

Under Edit Controls: 'Update Record' and 'Cancel Edits' buttons are enabled, and all fields that are populated with a 'domain' of values, change to dropdowns. Also, the 'EDITING MODE ON' warning label lights up.

The screenshot displays the COJ EOD Inspection Manager software interface. The window title is "COJ EOD Inspection Manager". The interface is divided into several sections:

- PIC Review (Left Panel):** A red box highlights this section, which contains a "PIC Description" form with various dropdown menus for Inspector 1, Resolved, Priority, Status, Reinspect, Method, Type, Color, Material, Turbidity, Scum, Odor, Flow, WBID, and Date Range. It also includes a "SELECT ONE PIC" list and "Process Above Query" and "Find Highlighted PIC" buttons.
- MAP (Center):** A map showing a residential area with streets like KATES PL, SPRING PARK CR, DURNAM PL, SPRINGWOOD RD, GLENVIEW RD, and BRANCH LA. Several PIC locations are marked with colored dots and labels like PIC27C, PIC30C, PIC28C, PIC26C, and PIC35C. A red box highlights the text "EDITING MODE ON" in the top right corner of the map area.
- PIC Report (Right Panel):** A "Basic Info" section containing a table of survey data and a photo gallery. The table includes columns for Survey ID, Date Found, Reinspect Date, CARE ID, Site Name, Number, Dir Pre, Street, Type, Dir Suf, Property Owner, City, State, Zipcode, Major Basin, Minor Basin, Source, SP Northing, SP Easting, Latitude, and Longitude. The photo gallery shows a photo of a PIC marker with a label "PIC 27C" and a date stamp "PIC27C - JUNE 12, 2009 8:29:09".
- Edit Control (Bottom Right):** A red box highlights this section, which contains buttons for "Start Editing", "Update Record", and "Cancel Edits".

# Editing a PIC (cont.)

You are now free to change any non-locked values, by changing the pull-down listbox values, or by typing

The screenshot displays the COJ EQD Inspection Manager software interface. The window title is "COJ EQD Inspection Manager". The interface is divided into several sections:

- PIC Review**: Contains a "Create New Query" button and a "PIC Description" section with various pull-down menus for Inspector 1, Resolved, Priority, Status, Reinspect, Method, Type, Color, Material, Turbidity, Scum, Odor, Flow, and WBID.
- MAP**: A central map showing a residential area with streets like Branch La, Springwood Rd, and Glenview Rd. Several PIC locations are marked with colored dots and labels (e.g., PIC27C, PIC30C, PIC26C, PIC35C). A red banner at the top of the map area says "EDITING MODE ON".
- Basic Info**: A form on the right side containing fields for Survey ID, Date Found, Reinspect Date, CARE ID, Site Name, Number, Dir Pre, Street, Type, Dir Suf, Property Owner, City, State, Zipcode, Major Basin, Minor Basin, Source, SP Northing, SP Easting, Latitude, and Longitude. An "Edit History" section is also present.
- Photo 1**: A section showing a photo of a person holding a sign that says "PIC 27C".
- Edit Controls**: Buttons for "Start Editing", "Update Record", and "Cancel Edits".

At the bottom of the window, there are buttons for "Print Record" and "Exit".

# Editing a PIC (cont.)

Under the 'Inspections' Tab there is room for the recording of 3 separate inspections and The PIC Resolution Outcome.

The screenshot shows the 'COJ FOD Inspection Manager' application window. The 'Inspections' tab is active, displaying a form with the following sections:

- First Inspection:** Inspector: ETM; Date First Inspection: 9/9/9999; Illicit?: YES; Reinspection Date: [empty]; Inspector Comments: NONE
- Second Inspection:** Inspector: [empty]; Date Second Inspection: 9/9/9999; Reinspection Date: [empty]; Inspector Comments: [empty]
- Third Inspection:** Inspector: [empty]; Date Third Inspection: 9/9/9999; Reinspection Date: [empty]; Inspector Comments: NONE
- Resolution:** Resolved?: YES; Resolved Method: [dropdown menu]; Date Resolved: 1/14/1999; Resolved Comments: [empty]

Navigation buttons include 'PIC Review', 'PIC Report', 'Add New PIC', and 'Status Reports' at the top. 'Print Record' and 'Exit' buttons are at the bottom.

# Editing a PIC (cont.)

Return to the Front Page and Click 'Update Record' to Save your changes or 'Cancel Edits' to discard changes.

**COJ EQD Inspection Manager**

**PIC Review**

**PIC Description**

Create New Query

Inspector 1  
ETM

Resolved YES Priority 4

Status CLOSED

Reinspect UNKNOWN Method REMOVED

Type CLOSED Color NONE

Material PLASTIC Turbidity UNKNOWN

Scum NONE

Odor NONE Flow NO

WBID 2284 # / Name

Date Range (Click one)  
 Date Found  
 Reinspect Date  
 Date Resolved

Start Date 1 / 6 / 2009  
End Date 1 / 6 / 2009

Process Above Query

**SELECT ONE PIC**  
Select a PIC SurveyID from the list, then Click 'Find PIC' to view record

- PIC27A
- PIC27BB
- PIC27C**
- PIC27H
- PIC27J

Find Highlighted PIC

**MAP**

2151 Records / INSPECTOR1 = 'ETM'

**EDITING MODE ON**

**Map Legend**

**Basic Info**

Survey ID	Date Found	Reinspect Date		
PIC27C	7/6/1998	7/27/1998		
CARE ID	Site Name			
	UNKNOWN			
Number	Dir Pre	Street	Type	Dir Suf
4011		SPRINGWOOD	RD	
Property Owner				
Linville B. Meadows III				
City	State	Zipcode		
JACKSONVILLE	FL	32207		
Major Basin	Minor Basin			
ARLINGTON RIVER	LITTLE POTTSBUR			
Source				
SWIMMING POOL				
SP Northing	SP Easting			
2163809.8333333	461331.552083313			
Latitude	Longitude			
30.2841868335519	-81.6172817255595			
Edit History				
RE #				
Photo 1 Photo 2 Photo 3				
Zoom Photo				
Add Photo				

**Edit Controls**

Start Editing Update Record Cancel Edits

Print Record

Export to ArcPAD Tools

Export Current Query

Exit

# PIC Reporting & Analysis



# Reporting PICs

The PIC QUERY tool allows you great flexibility to Report on PICs, both past and present... Select inspector 1 = 'Albert Smith' then click 'Process Above Query'

The screenshot displays the 'COJ EOD Inspection Manager' software interface. The main window is titled 'PIC Review' and contains several sections:

- PIC QUERY:** A section for creating and refining queries. It includes a 'Create New Query' button, a dropdown for 'Inspector 1' (set to 'Albert Smith'), and various filters for 'Resolved', 'Priority', 'Status', 'Reinspect', 'Method', 'Type', 'Color', 'Material', 'Turbidity', 'Scum', 'Odor', 'Flow', and 'WBID'. It also features a 'Date Range' section with radio buttons for 'Date Found', 'Reinspect Date', and 'Date Resolved', along with 'Start Date' and 'End Date' dropdowns (both set to 3/21/2009). A 'Process Above Query' button is located at the bottom of this section.
- MAP:** A central map area showing a geographic region with numerous colored dots representing PICs. The map includes street names like 'ACREE', 'PLUMMER', 'GARDEN', 'NORMANDY', 'CHAFFEE', 'OLD PLANK', 'NEW TURNER', 'DUVAL', 'SUMMITT', 'CEDAR POINT', 'HECKSCHER', 'ATLANT', 'TURNER', 'PHILIPS', and 'DUNN'. The text '2240 Records / ALL PICs' is displayed above the map.
- Map Legend:** A legend on the right side of the map area, titled 'PIC Position'. It lists various map features and their corresponding symbols or colors:
  - Potential Illicits Edit
    - PIC Status
      - CLOSED (green circle)
      - NOT APPLICABLE (light green circle)
      - OPEN (yellow circle)
      - PENDING-ACTION (orange circle)
      - PENDING-INFORMATION (red circle)
      - UNKNOWN (dark red circle)
  - Field Points (purple diamond)
  - MS4
  - NHDFlowlines
  - Interstates
  - Major Roads
  - Streets
  - duval\_water
  - Parcels
  - Basins
  - DEP\_WBIDs
  - Air photos
  - Duval\_County

- SELECT ONE PIC:** A section at the bottom left of the 'PIC QUERY' area, containing a list of WBIDs (000001, 1354J, 1996G, 2006G, 2016G) and a 'Find Highlighted PIC' button.
- Edit Controls:** A section at the bottom right of the map area, containing buttons for 'Start Editing', 'Update Record', and 'Cancel Edits'.

# Reporting PICs

Only those PICs reported by Albert Appear on Screen, and are listed in the SELECT ONE PIC box... Let's zoom in on a few of these, Now Click on the Status Reports Tab in the Upper Right...

The screenshot displays the COJ EOD Inspection Manager application. The interface is divided into several sections:

- PIC Review:** Contains filters for Inspector 1 (Albert Smith), Resolved, Priority, Status, Reinspect, Method, Type, Color, Material, Turbidity, Scum, Odor, Flow, WBID, and Date Range (Date Found, Reinspect Date, Date Resolved).
- MAP:** Shows a map with 13 records for Inspector 1 = 'Albert Smith'. The map displays several PIC locations marked with colored dots (red, orange, yellow, green) along a blue line representing a creek. Labels include PIC20081215003, PIC20090218003, PIC20090218004, PIC20090218002, PIC20081215001, PIC20090218005, and PIC20090218006. The map also shows streets like RANDOLPH ST and ALPHA AV, and parcel numbers like 1127, 1124, 1137, 1147, 4836, 4830, and 4818.
- Map Legend:** Lists various map features such as PIC Position, Potential Illicits Edit, Field Points, MS4, NHDFlowlines, Interstates, Major Roads, Streets, duval\_water, Parcels, Basins, DEP\_WBIDs, Air photos, and Duval\_County.
- SELECT ONE PIC:** A list box containing the following PIC Survey IDs: PIC20081215001, PIC20081215002, PIC20081215003, PIC20090218001, and PIC200902180010. This list is highlighted with a red box.
- Status Reports:** A tab in the upper right corner, also highlighted with a red box.
- Edit Controls:** Includes buttons for Start Editing, Update Record, and Cancel Edits.



# Reporting PICs

A full report on all of Albert's PICs is shown. You have the options of Print Record, Print-Preview and Print.

COJ EQD Inspection Manager

PIC Review   Inspections   PIC Report   Add New PIC   Status Reports

PIC Report   13 Records  
INSPECTOR1 = 'Albert Smith'

SurveyID	DateFound	Inspector1	Priority	ReinspectDate	StrNumber	StrName	StreetType	StrDirPost
PIC20081215001	12/15/2008	Albert Smith	4	1/5/2009	0	ALPHA AV/Randolph S		
PIC20081215002	12/15/2008	Albert Smith	4	1/5/2009	0	ALPHA AV/Randolph S		
PIC20081215003	12/15/2008	Albert Smith	4	1/5/2009	1137	ALPHA AV/Randolps		
PIC20090218001	2/18/2009	Albert Smith	4	3/11/2009	0	ALPHA AV		
PIC20090218002	2/18/2009	Albert Smith	1	2/19/2009	0	ALPHA AV		
PIC20090218003	2/18/2009	Albert Smith	4	3/11/2009	1137	RANDOLPH ST		
PIC20090218004	2/18/2009	Albert Smith	1	2/19/2009	1137	RANDOLPH ST		
PIC20090218005	2/18/2009	Albert Smith	1	2/19/2009	0	ALPHA AV		
PIC20090218006	2/18/2009	Albert Smith	1	2/19/2009	0	ALPHA AV		
PIC20090218007	2/18/2009	Albert Smith	1	2/19/2009	4641	YERKES ST		
PIC20090218008	2/18/2009	Albert Smith	1	2/19/2009	4636	YERKES ST		
PIC20090218009	2/18/2009	Albert Smith	4	4/11/2009	1435	MURRAY DR		
▶ PIC200902180010	2/18/2009	Albert Smith	4	3/11/2009				

Print Record   Exit

# Reporting PICs

Return back to the PIC Review Tab and Albert's are still listed in the SELECT ONE PIC box. Select 'PIC20090218006' and click 'Find Highlighted PIC'. The record for that PIC and it's Photo will appear. You can 'Print Record' (lower left), or click the PIC Report tab

The screenshot displays the COJ EQD Inspection Manager application. The interface is divided into several sections:

- Top Navigation:** Includes tabs for 'Inspections', 'PIC Report' (highlighted with a red box), 'Add New PIC', and 'Status Reports'.
- PIC Review Panel (Left):** Contains fields for 'Inspector 1' (Albert Smith), 'Resolved' (NO), 'Priority' (1), 'Status' (PENDING-ACTION), 'Reinspect' (YES), 'Method' (SURVEY), 'Type' (OPEN), 'Color' (DARK), 'Material' (CONCRETE), 'Turbidity' (MEDIUM), 'Scum' (SUDS), 'Odor' (NONE), 'Flow' (YES), and 'WBID' (2280). It also features a 'SELECT ONE PIC' dropdown menu with 'PIC20090218006' selected.
- Map (Center):** Shows a street grid with labels for CASSAT AV, RANDOLPH ST, ALPHA AV, WOODRUFF AV, and WYCOFF AV. A blue line represents a creek. Several PIC locations are marked with colored dots and labeled with IDs like PIC20090218003, PIC20090218004, PIC20090218006, and PIC20090218007.
- Basic Info Panel (Right):** Displays details for the selected PIC, including 'Survey ID' (PIC20090218006), 'Date Found' (2/18/2009), 'Reinspect Date' (2/19/2009), 'Site Name' (Murry Hill Village Apartment), 'Property Owner' (Samuel Kred, CITY OF JACKSONVILLE), 'City' (JACKSONVILLE), 'State' (FL), 'Zipcode' (32205), and 'Source' (Line conveying gray water from laundry facility).
- Bottom Navigation:** Includes buttons for 'Find Highlighted PIC' (highlighted with a red box), 'Print Record' (highlighted with a red box), 'Export to ArcPAD Tools', 'Export Current Query', 'Edit Controls' (Start Editing, Update Record, Cancel Edits), and 'Exit'.

# Reporting PICs

The PIC Report Page creates a more formal report that can be Printed or you can 'Print Record'

The screenshot shows the 'COJ EQD Inspection Manager' application window. The title bar includes standard window controls. The menu bar contains 'PIC Review', 'Inspections', 'PIC Report', 'Add New PIC', and 'Status Reports'. The 'PIC Report' menu item is selected. On the left side, a vertical toolbar contains various icons, with a 'Print' button highlighted in a red box. The main content area is titled 'Report for PIC20090218006'. It features a 'Potential Illicit Report' section with a photograph of a wooded area, a text report containing details such as 'Survey ID: 0021101111', 'Date Taken: 311011', and 'Inspector: CJA', and a map of the area. The map is titled 'PIC20090218006' and shows a street grid with various colored markers. At the bottom of the window, a 'Print Record' button is highlighted in a red box, and an 'Exit' button is visible in the bottom right corner.

# Analyzing PICs

These fields are driven by 'domains' of allowed values

**PIC Review**

**PIC QUERY**

Create New Query

Inspector 1  
[ ]

Resolved [ ] Priority [ ]

Status [ ]

Reinspect [ ] Method [ ]

Type [ ] Color [ ]

Material [ ] Turbidity [ ]

Scum [ ]

Odor [ ] Flow [ ]

WBID [ ] # / Name [ ]

Date Range (Click one)

Date Found

Reinspect Date

Date Resolved

Start Date [ 1 / 6 / 2009 ]

End Date [ 1 / 6 / 2009 ]

Process Above Query

Inspector 1

CITY GUY

Mike Hines  
Kim Garbade  
Errol Bos  
CITY GUY  
Inspector A  
Inspector B

Resolved

PENDING

YES  
NO  
PENDING  
UNKNOWN

Status

PENDING-INFORMATION

OPEN  
CLOSED  
PENDING-INFORMATION  
PENDING-ACTION  
NOT APPLICABLE  
UNKNOWN

Reinspect

PENDING

YES  
NO  
PENDING  
UNKNOWN

Priority

1  
2  
3  
4

Method

CARE

CARE  
AS-BUILT  
FIELD  
ASSUMED  
UNKNOWN

Type

OPEN

OPEN  
CLOSED

Material

PLASTIC

BRICK  
CONCRETE  
METAL  
PLASTIC  
OTHER  
UNKNOWN

Color

NONE

NONE  
LIGHT  
DARK  
OTHER  
UNKNOWN

Turbidity

CLEAR

CLEAR  
LOW  
MEDIUM  
HIGH  
UNKNOWN

Scum

NONE

SUDS  
FOAM  
OIL SHEEN  
FLOATING SOLIDS  
NONE  
UNKNOWN

Odor

CHLORINE

NONE  
CHLORINE  
GAS/OIL  
ROTTEN EGG  
SEWAGE  
OTHER  
UNKNOWN

Flow

YES

YES  
NO  
UNKNOWN  
N/A

# Analyzing PICs (cont.)

The 'Date Range' sections adds the 'time' selection.

3 fields – Date Found, Reinspection Date and Date Resolved are included to be searched.

To query a single day, make sure the start date and end date match, for Date Ranges (Week, Month, Year), select the appropriate dates.

Date Range (Click one)

Date Found

Reinspect Date

Date Resolved

Start Date

End Date

Date Range (Click one)

Date Found

Reinspect Date

Date Resolved

Start Date

End Date

September 2008

Sun	Mon	Tue	Wed	Thu	Fri	Sat
31	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

Today: 8/4/2008

September 2008

Sun	Mon	Tue	Wed	Thu	Fri	Sat
31	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

Today: 8/4/2008

**PIC Review**

**PIC QUERY**

Create New Query

Inspector 1

Resolved

Priority

Status

Reinspect

Method

Type

Color

Material

Turbidity

Scum

Odor

Flow

WBID

# / Name

Date Range (Click one)

Date Found

Reinspect Date

Date Resolved

Start Date

End Date

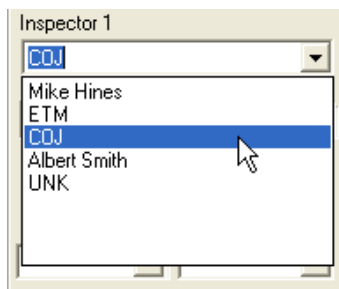
Process Above Query

# Analyzing PICs (cont.)

Let's set up some practice queries to show this tool's power...

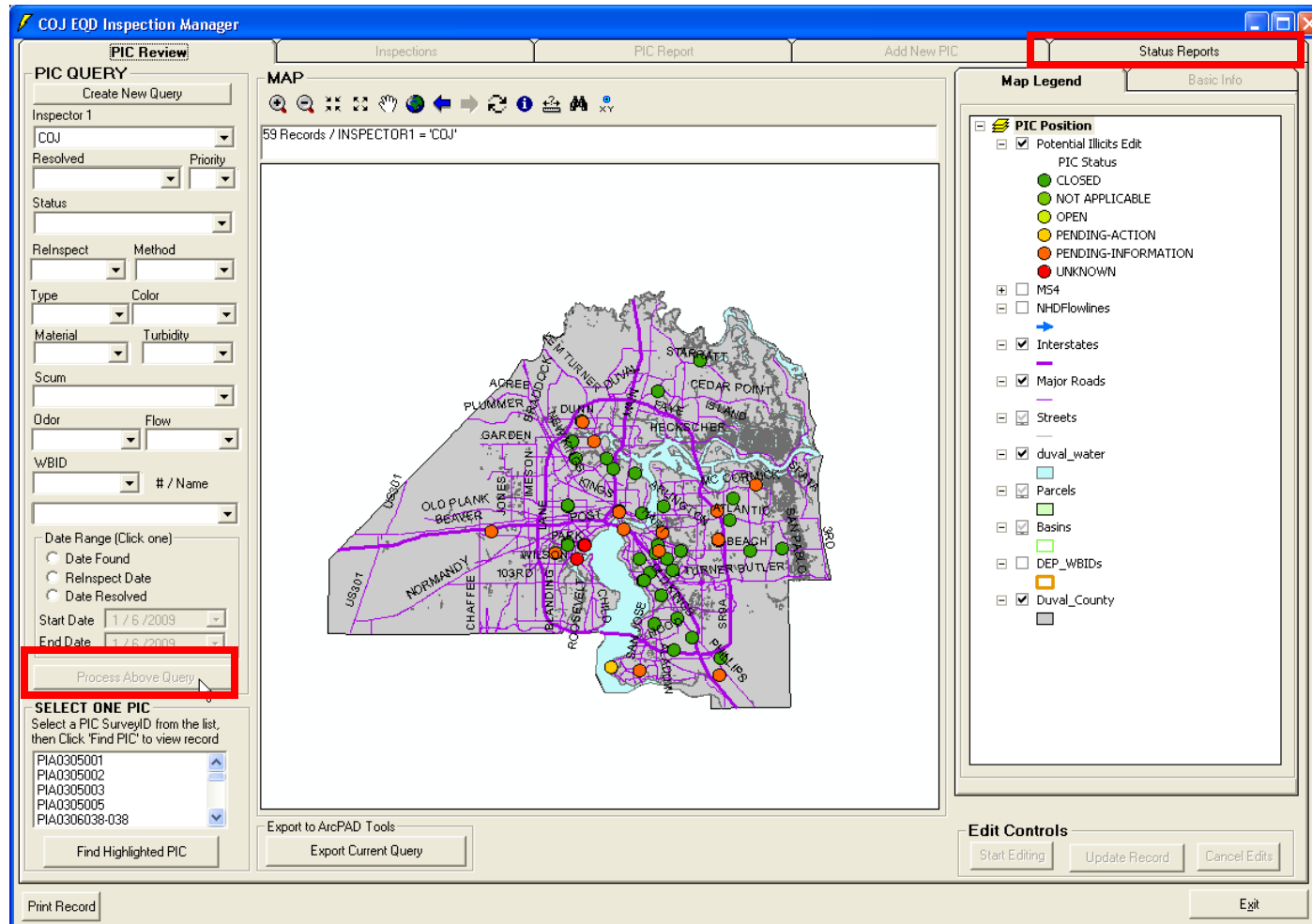
**Question: How many, and which, PICs were located by Inspector 'COJ' (ever)?**

Answer: Select 'COJ' from the Inspector1 combo box



and Click Process Query.

The answer is displayed above the mapped results – **59 PICs**. Now Click on the Status Reports Tab...



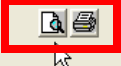
# Analyzing PICs (cont.)

A report of these 59 PICs is displayed and may be Print Previewed and Printed...

COJ EQD Inspection Manager

PIC Review    Inspections    PIC Report    Add New PIC    Status Reports

PIC Report    59 Records  
INSPECTOR1 = 'COJ'

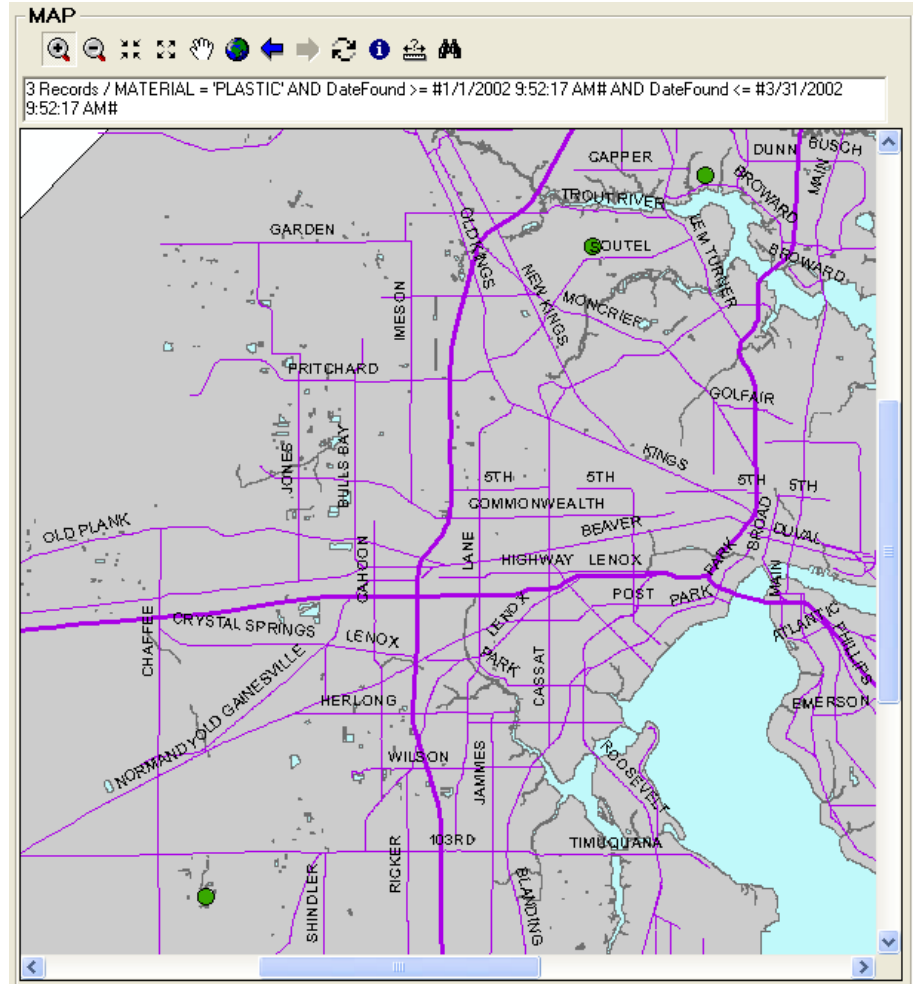


SurveyID	DateFound	Inspector1	Priority	ReInspectDate	StrNumber	StrName	StreetType	StrDirPost
PIA0703006	3/8/2007	COJ	4	9/9/9999	11455	WILLET		
PIA0512003	12/12/2005	COJ	4	9/9/9999	9565	PRIORY	AVE	
PIA0512004	12/12/2005	COJ	4	9/9/9999	1545	CASSAT	AVE	
PIA0510003	10/14/2005	COJ	4	9/9/9999	8030	OLD KINGS	RD	S
PIA0511006	11/17/2005	COJ	4	9/9/9999	2830	ALVARADO	AVE	
PIA0510011	10/28/2005	COJ	4	9/9/9999	9401	OLD KINGS	RD	
PIA0510002	10/14/2005	COJ	4	9/9/9999	4175	SPRING GLEN	RD	
PIA0511007	11/18/2005	COJ	4	9/9/9999	2842	ALVARADO	AVE	
PIA0704014	4/25/2007	COJ	4	9/9/9999	6729	BOWDEN	RD	
PIA0705002	5/17/2007	COJ	4	9/9/9999	2415	PHILLIPS	AVE	
PIA0707005	7/20/2007	COJ	4	9/9/9999	14606	BRACKNELL		
PIA0707002	7/1/2007	COJ	4	9/9/9999		HENDRICKS	AVE	
PIA0709005	9/20/2007	COJ	4	9/9/9999	13822	SPANISH MARSH	TRL	
PIA0708001	8/7/2007	COJ	4	9/9/9999	5738	MILMAR	DR	
PIA0707006	7/1/2007	COJ	4	9/9/9999	12276- 427	SAN JOSE		
PIA0705003	5/17/2007	COJ	4	9/9/9999	311	MONROE	ST	W
PIA0704012	4/30/2007	COJ	4	9/9/9999	10262	ROADWAY	DR	
PIA0704013	4/30/2007	COJ	4	9/9/9999	4014	WINDY GALE	DR	N
PIA0305001	5/1/2003	COJ	4	9/9/9999	1839	GREENWOOD	AVE	
PIA0305002	5/1/2003	COJ	4	9/9/9999	1839	GREENWOOD	AVE	
PIA0305003	5/1/2003	COJ	4	9/9/9999	1839	GREENWOOD	AVE	
PIA0305005	5/1/2003	COJ	4	9/9/9999	1818	MONTGOMERY	AVE	
PIA0711002	11/2/2007	COJ	4	9/9/9999	2388	4TH	AVE	
PIA0711003	11/2/2007	COJ	4	9/9/9999	2388	4TH	AVE	
PIA0711005	11/1/2007	COJ	4	9/9/9999	5502	SHERI	LN	
PIA0711006	11/1/2007	COJ	4	9/9/9999	13110	MANDARIN	RD	
PIC0802003	2/1/2008	COJ	4	9/9/9999	2731	CORTEZ	RD	
PIC0802001	2/1/2008	COJ	4	9/9/9999	2725	CORTEZ	RD	
PIC0802002	2/1/2008	COJ	4	9/9/9999	2735	CORTEZ	RD	
PIA0306038-038	6/1/2003	COJ	4	9/9/9999	4669	ROOSEVELT	BLV	
PIA0711007	11/1/2007	COJ	4	9/9/9999	618	BLAIR	RD	

Print Record    Exit

# Analyzing PICs (cont.)

**Question: How many, and which, PIC of material PLASTIC were located during the first quarter of 2002?**

A screenshot of a search form. The 'Material' dropdown is set to 'PLASTIC'. Below it are fields for 'Scum', 'Odor', and 'Flow'. The 'Date Range (Click one)' section has three radio buttons: 'Date Found' (selected), 'Reinspect Date', and 'Date Resolved'. The 'Start Date' is set to '1 / 1 / 2002' and the 'End Date' is set to '3 / 31 / 2002'. A 'Process Query' button is at the bottom.A screenshot of a section titled 'SELECT ONE PIC'. It contains the instruction: 'Select a PIC SurveyID from the list, then Click 'Find PIC' to view record'. Below this is a list box containing three entries: PIC243BD, PIC6255AL, and PIC89BW. A 'Find PIC' button is at the bottom.

Process:

Select 'Plastic' from the Material list box.

Under Date Range, Select Date Found.

Set Start Date at 1/1/2002 and set end date at 3/31/2002.

Click Process Query.

Answer: 3 PIC's see list above

Remember you can click the Status Report tab to print a report



# Discussion

- Future Directions
  - Lift Station Inspections
  - Priority Industry Inspections
  - Impaired WBIDs
  - TMDL Monitoring
  - Mobile Web Access
  - Linking the GIS to scanned as-built drawings

# Additional Information

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