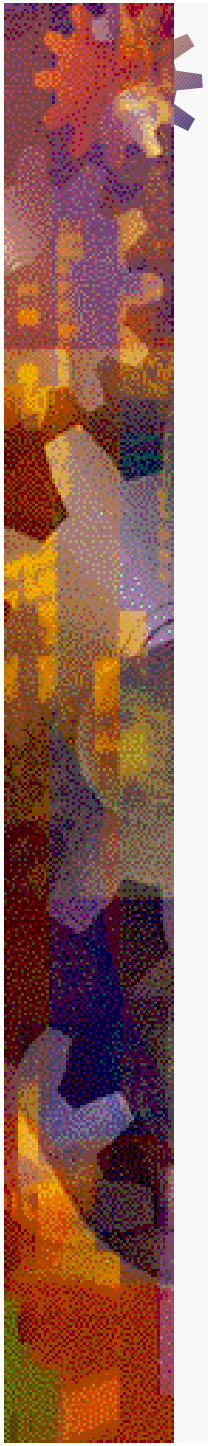
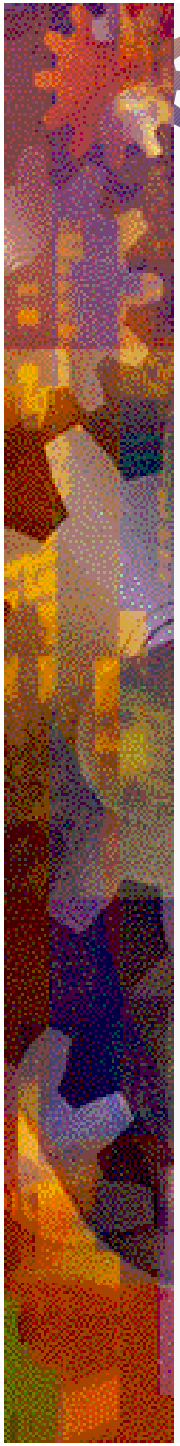


ops*Environmental*™ Implementation

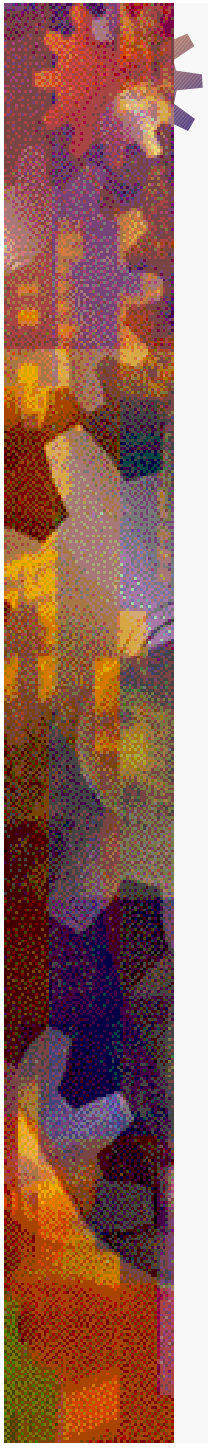
Presented by:
Kevin Adams
ATOFINA Chemicals, Inc.

NAEM 5th Annual EMIS Workshop
March 24, 2004



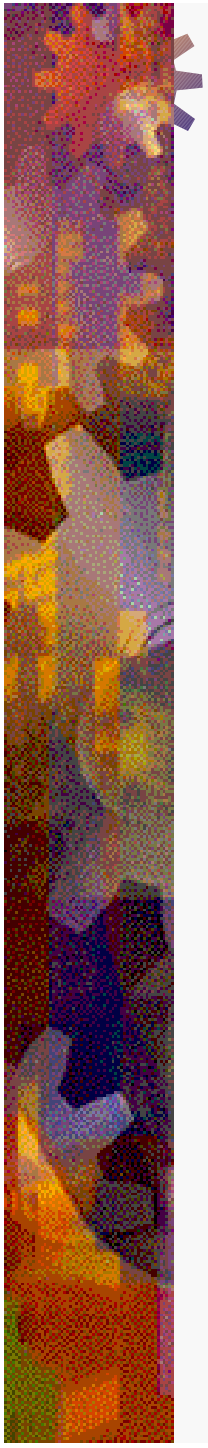
Outline

- ATOFINA Business Needs Summary
- ATOFINA opsEnvironmental Implementation Scope
- opsEnvironmental Implementation Approach
- opsEnvironmental Overview
- Corporate Rollup Reporting
- Beaumont Experience
- Handheld Integration
- Questions



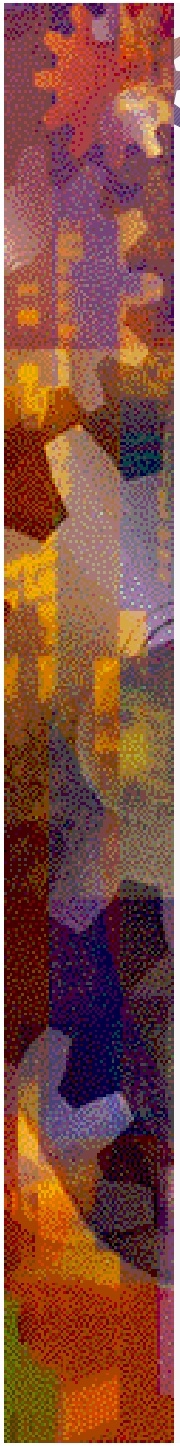
ATOFINA Business Process Needs

- Emissions Inventories/TRI Reporting
  - More efficient data collection
  - Complex calculation engine
  - Demonstrate compliance with permit limits
  - Store historical data
  - Date and time stamping of parameters
- Compliance Tracking
  - Generate action items and ticklers
  - Produce required reports
  - Generate compliance action checklists
  - Compliance information records



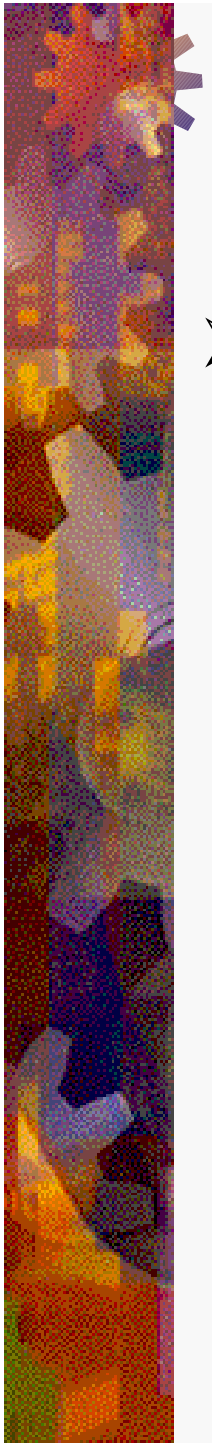
ATOFINA Business Process Needs

- Plant level Reporting
  - ✓ Standard formatted internal and external reports
  - ✓ Generation of electronic reports
  - ✓ More efficient data collection/minimize data entry
  - ✓ Minimize data entry/paper documentation
- Corporate Rollup Reporting
  - ✓ Produce standard and custom roll-up reports
  - ✓ Web-based data entry forms
  - ✓ More efficient data collection
  - ✓ Calculation engine for roll-up of data



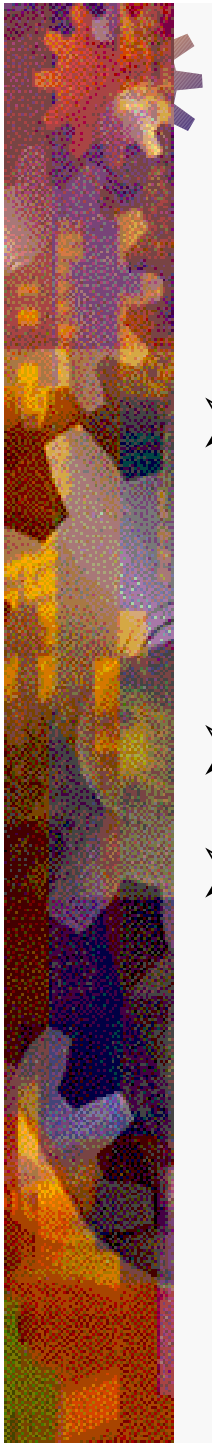
ATOFINA Business Process Needs

- Title V permits require significant task planning, data collection,and manipulation to meet compliance monitoring requirements (and associated certifications). 13 of our 19 facilities are subject to Title V permitting.
- Current and anticipated MACT standards such as HON, MON, RCRA, HCl, PAI, etc. have significant compliance monitoring requirements. 8 facilities are affected with another 4 potentially affected.
- The individual software packages used at some plants were either ineffective; designed to address a very specific need and/or are difficult to support (too many systems).
- State (Texas) permit requirements for monthly EI calculations with annual tpy limits demonstrated on 12-month rolling totals.



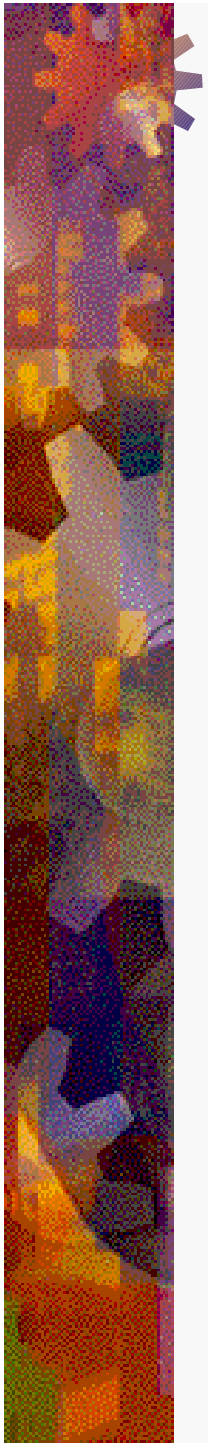
Project Scope

- Implement opsAir, opsCompliance and opsFormR at six plant locations:
  - Beaumont
  - Houston
  - Crosby
  - Blooming Prairie
  - Calvert City
  - Carrollton



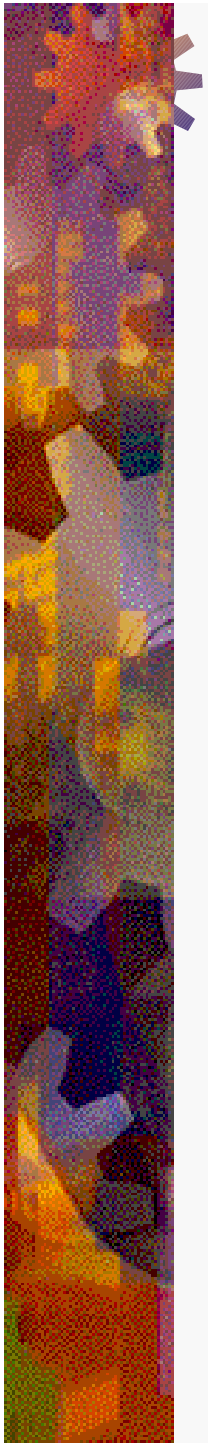
Project Scope

- Implement OpsAir/Compliance/FormR at corporate headquarters for corporate reporting.
- Integrate with SAP and PI systems.
- In addition, Use of hand held devices for data collection in the field at Beaumont and Calvert City



Implementation Approach

- Partner with a Third Party Implementer:
  - ✓ T3, Inc.
- Development of a company template
- Template includes:
  - ✓ Tree Structure Template
  - ✓ Object Classes
  - ✓ Requirement Objects and Models
  - ✓ Data Extraction Templates
  - ✓ Standard Data Ticklers
  - ✓ Standard Action Item Templates
  - ✓ Standard Reports

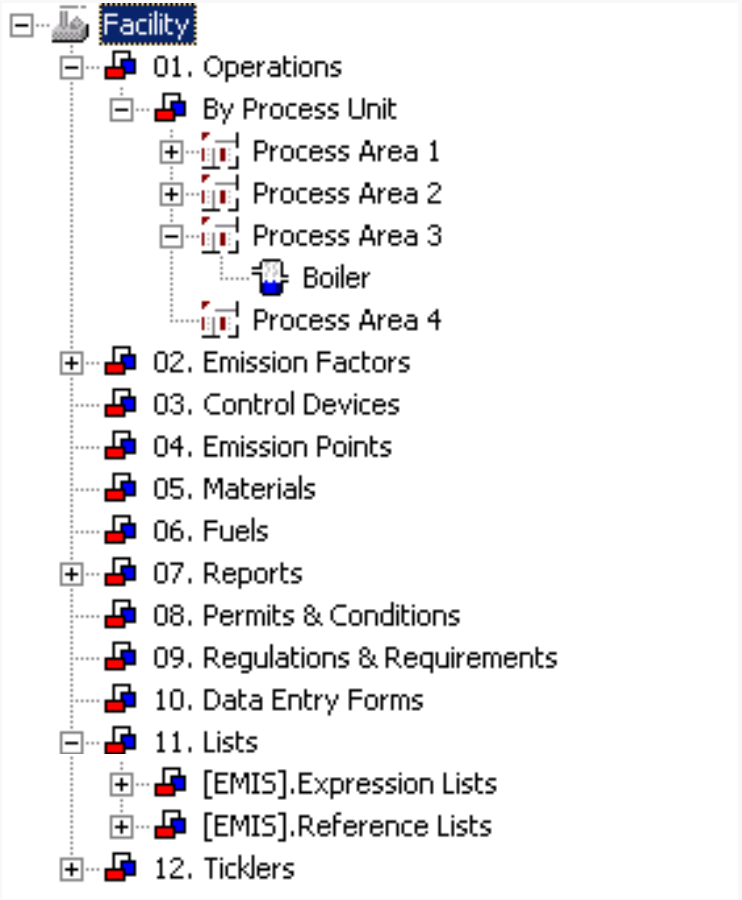


Implementation Approach

- opsEnvironmental implementation divided into three model groups
  - ✓ Facility Models,
  - ✓ Corporate Level Models,
  - ✓ Reference Models

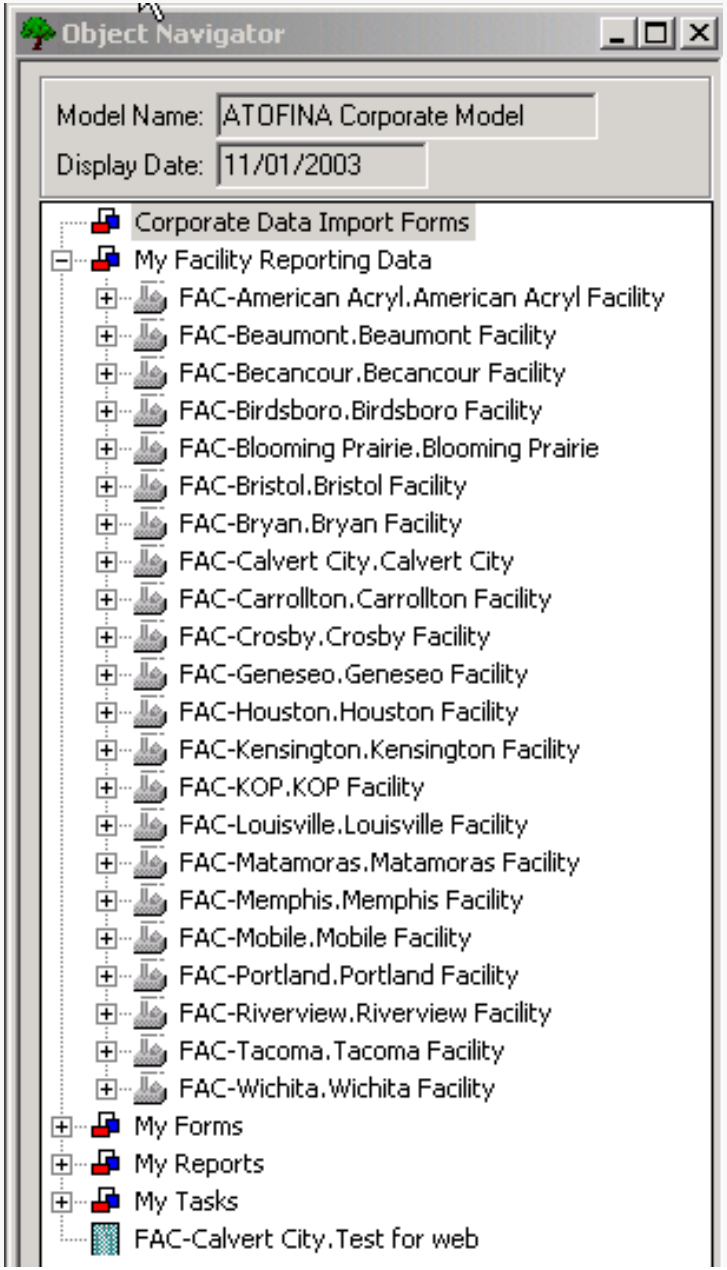
Implementation Approach

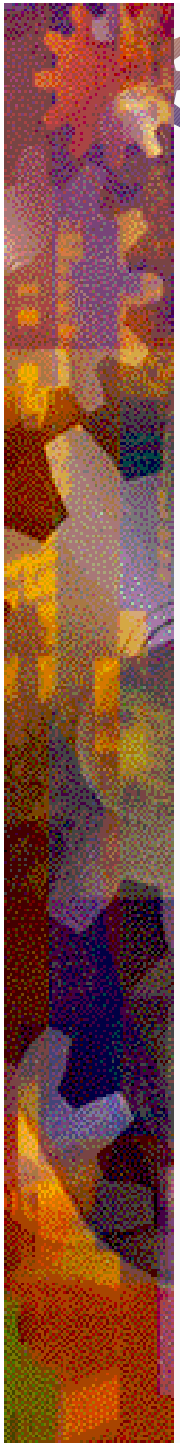
- Facility Model Tree Structure



Implementation Approach

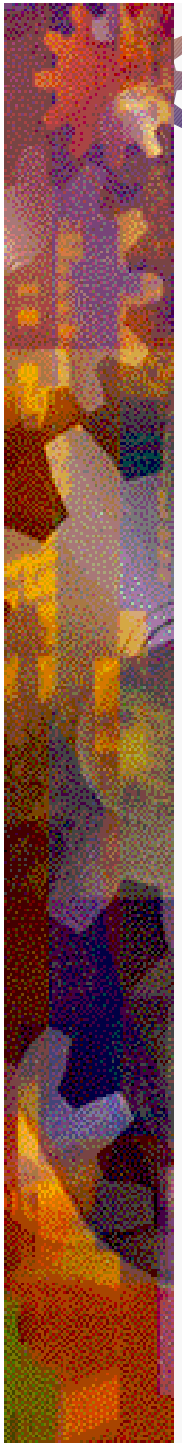
- Corporate Model Tree Structure





Current Status of opsEnvironmental Project

- Completed pilot project in 2003
- Company air template completed at the end of 2002 and data entry of 2002 end of year summaries are complete.
- All six plants have implemented their plant air emissions reporting models based on the company template.
- Beaumont is now able to quickly complete the monthly EI calculations.



Current Status of the opsEnvironmental Project

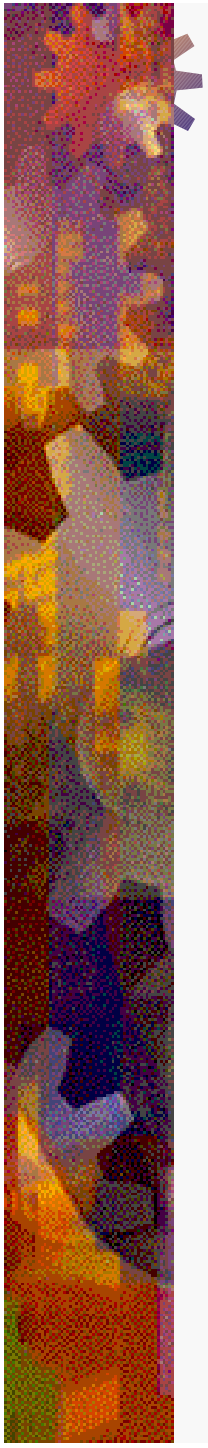
- Preliminary interfaces with SAP and PI complete
- Each plant is working on initial compliance tracking (time and data driven ticklers).
- Completed company template for Form R.

Ops Environmental

- Facility and Enterprise-wide Environmental Information Management/Compliance Reporting solution.

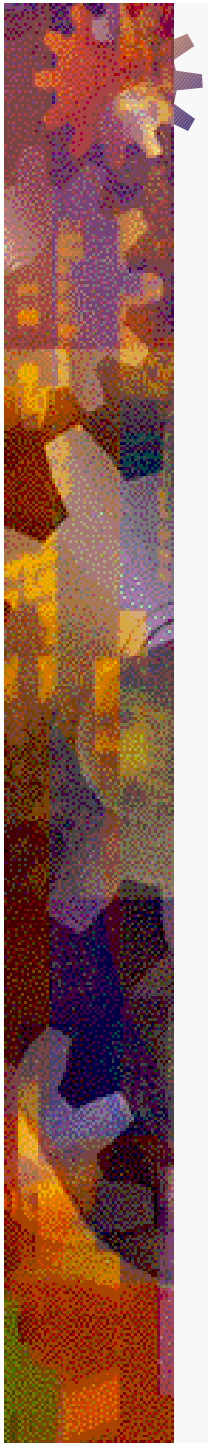
- Suite of Applications:
  - Ops Compliance ™
  - Ops Air ™
  - Ops Form R ™ (TRI data)
  - Ops Water ™
  - Ops Waste ™
  - Ops LDAR ™ (Fugitive Emissions Monitoring)
  - OpsMSDS ™
  - opsCEMRW™
  - Ops IH ™ (beta)

*Modules in red represent current licenses.



Key Application Highlights

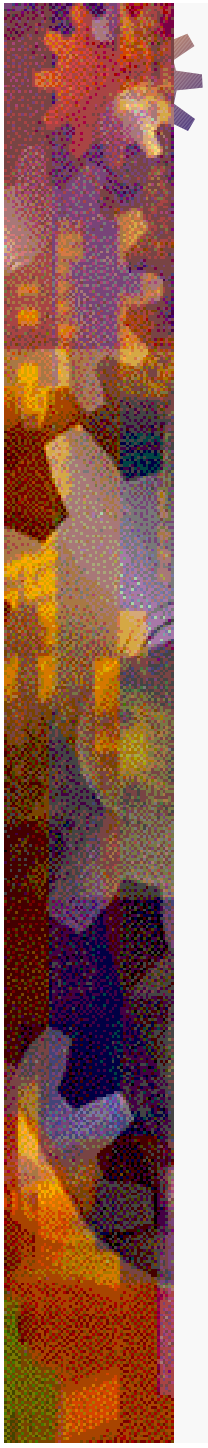
- Object based application with a Microsoft Explorer style tree structure that allows users to see how objects are related.
- Users design the tree structure to fit their compliance methods, allowing flexibility on how information is presented and managed.
- The application may be accessed via the client server or via the web. The following slides show some of the client user interfaces.



Key Application Highlights

- Ops is an extendable database. Users can add parameters or data elements to any environmental compliance object within the system.

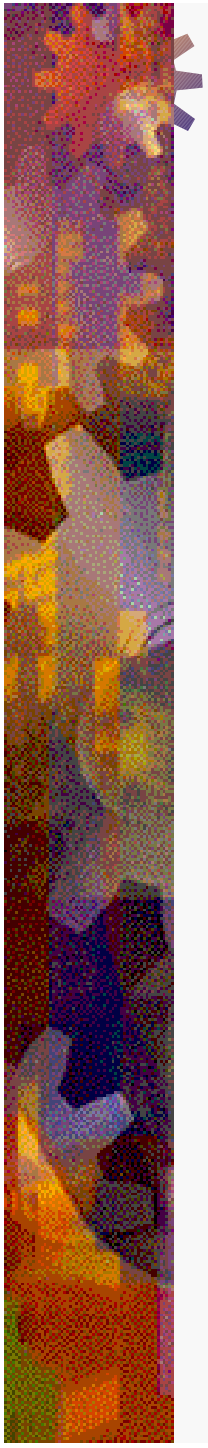
- Ops can read actual data from any ODBC compliant external database or spreadsheet. Where necessary, Ops has a flexible ASCII importing function when data is not available in an external ODBC format.



Key Application Highlights

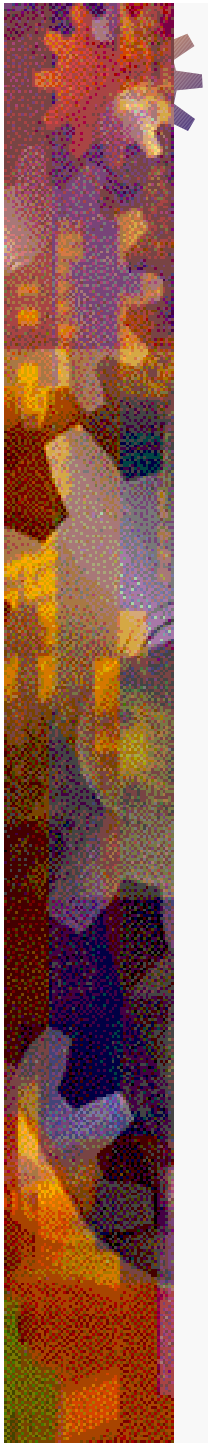
- Application modules include calculation libraries which contain standard expressions and emission factors. Libraries can be edited or expanded to include company or site-specific expressions by the user.

- Central libraries can be maintained and referenced by various sites within the company making future changes easy to administer.



Key Application Highlights

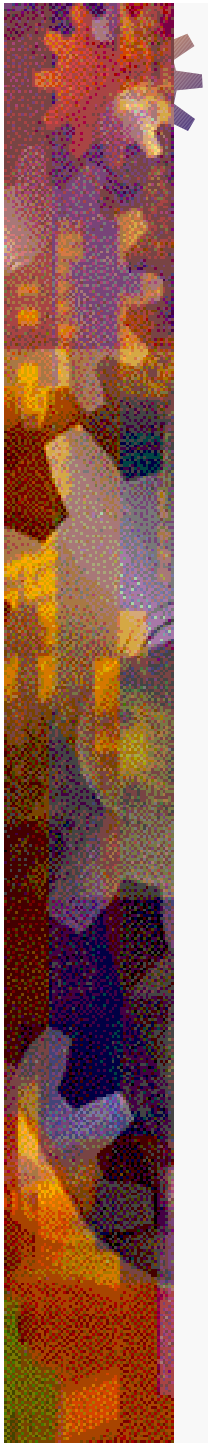
- Calculation engine can perform calculations across any time period, set of sources and range of pollutants. As changes are made to the template or calculation expression, all sources that use that expression are updated.
- Any calculation that can be used in excel can be performed in Ops while incorporating database functionality and security.
- Old expressions are retained and will still be used for the timeframe for which it was valid for any reports run over this prior timeframe.



Key Application Highlights

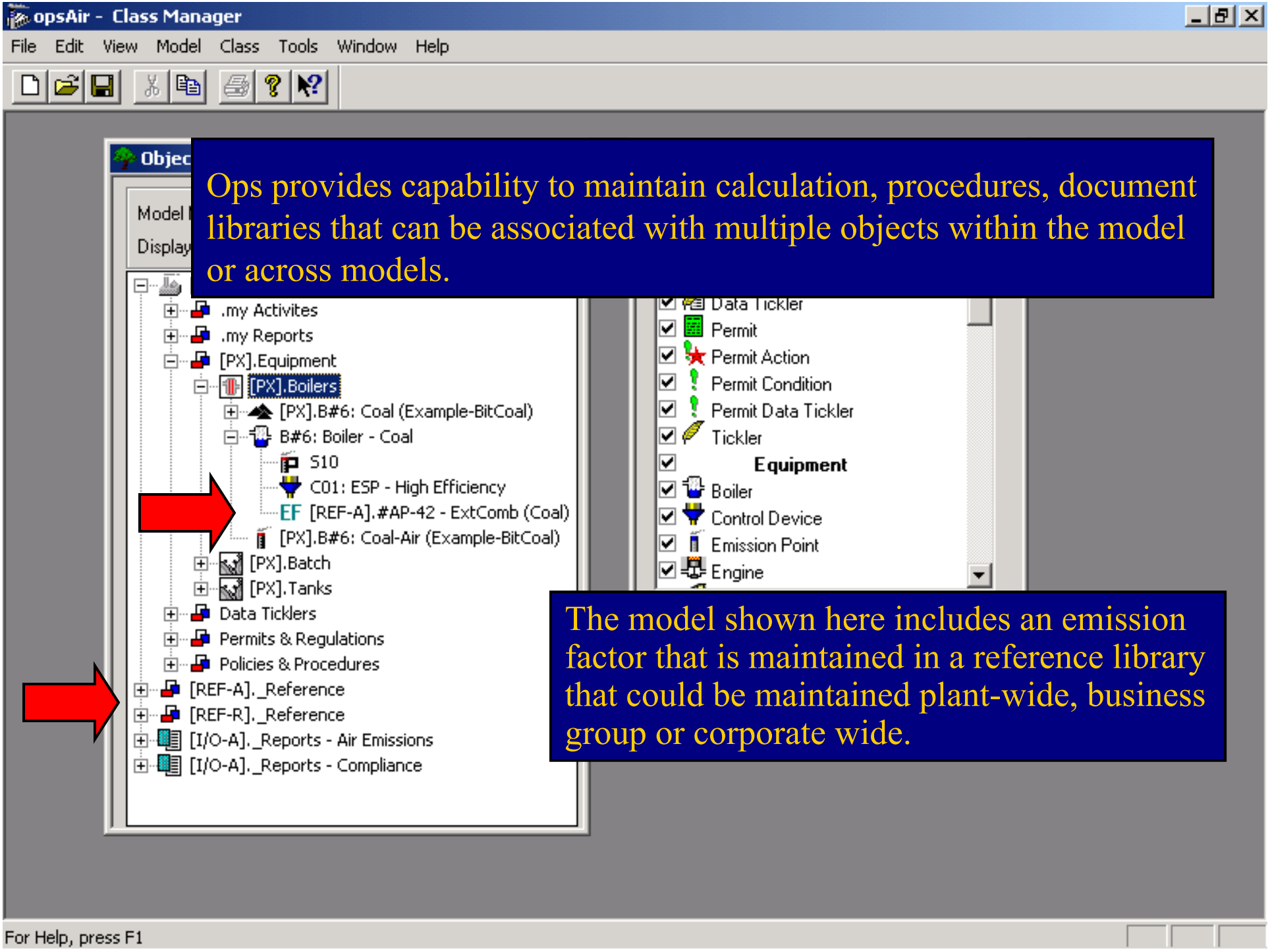
- Any kind of action can be tracked (e.g., running an engine calibration test, preparing an emissions summary, etc.) Includes person responsible, action description, schedule, advance notice ticklers, notes, data entry forms or procedure links.

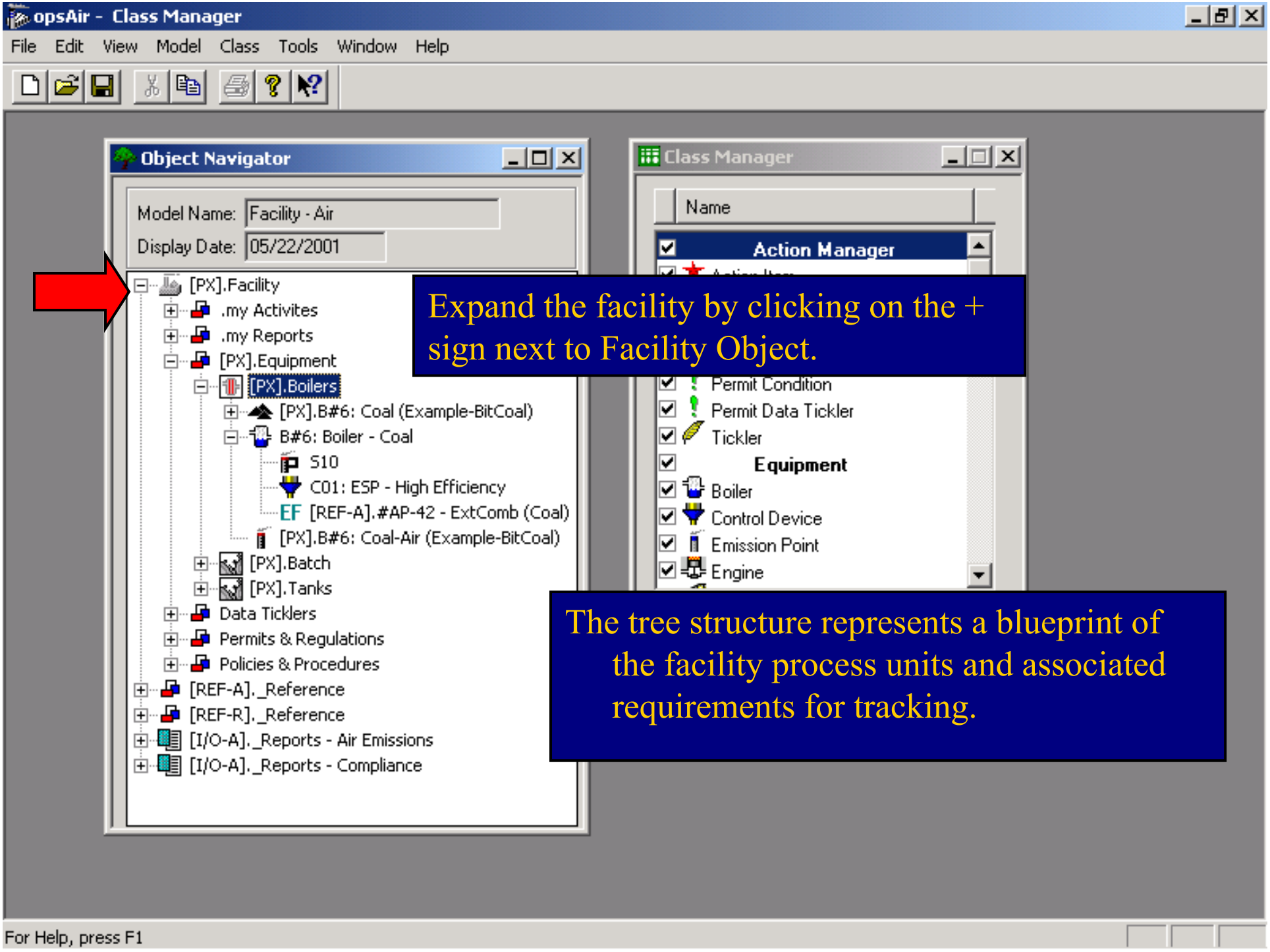
- Ticklers are used to notify users or groups of users of upcoming due dates or recently completed items. Ticklers may also be based on measured or calculated parameters.

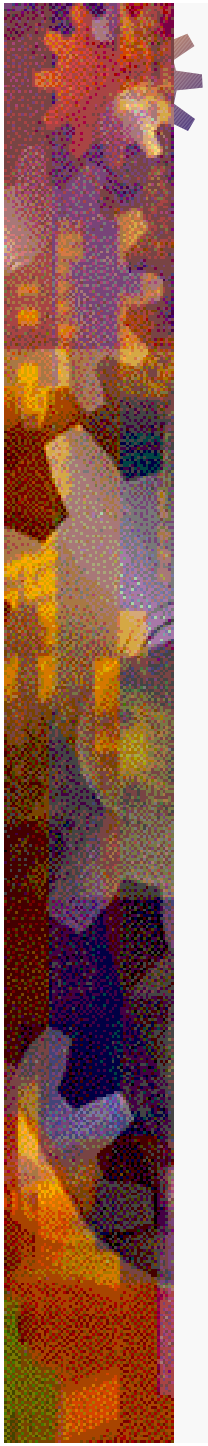


Key Application Highlights

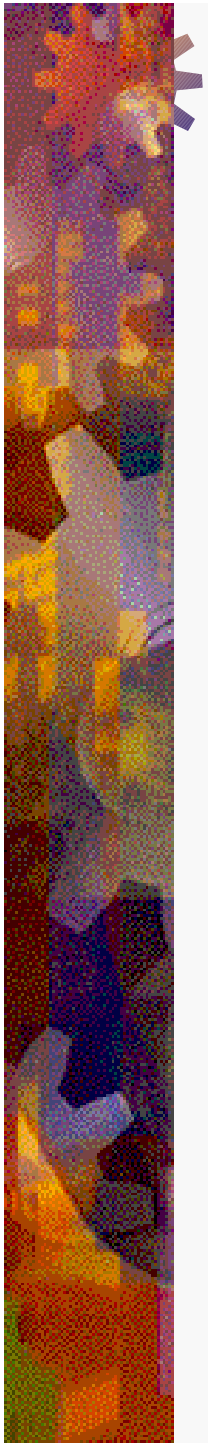
- Most users will access the system via a web browser.
- Users access a browser interface that reflects only those items that are pertinent to their job and have been assigned to them.
- Users can view and complete tasks including completing data entry forms, view documents and reports, etc.


opsAir - Class Manager
File Edit View Model Class Tools Window Help
Ops provides capability to maintain calculation, procedures, document libraries that can be associated with multiple objects within the model or across models.
.my Activites
.my Reports
[PX].Equipment
[PX].Boilers
[PX].B#6: Coal (Example-BitCoal)
B#6: Boiler - Coal
S10
C01: ESP - High Efficiency
EF [REF-A].#AP-42 - ExtComb (Coal)
[PX].B#6: Coal-Air (Example-BitCoal)
[PX].Batch
[PX].Tanks
Data Ticklers
Permits & Regulations
Policies & Procedures
[REF-A]._Reference
[REF-R]._Reference
[I/O-A]._Reports - Air Emissions
[I/O-A]._Reports - Compliance
Permit
Permit Action
Permit Condition
Permit Data Tickler
Tickler
Equipment
Boiler
Control Device
Emission Point
Engine
The model shown here includes an emission factor that is maintained in a reference library that could be maintained plant-wide, business group or corporate wide.
For Help, press F1


opsAir - Class Manager
File Edit View Model Class Tools Window Help
Object Navigator
Model Name: Facility - Air
Display Date: 05/22/2001
[PX].Facility
.my Activites
.my Reports
[PX].Equipment
[PX].Boilers
[PX].B#6: Coal (Example-BitCoal)
B#6: Boiler - Coal
S10
C01: ESP - High Efficiency
EF [REF-A].#AP-42 - ExtComb (Coal)
[PX].B#6: Coal-Air (Example-BitCoal)
[PX].Batch
[PX].Tanks
Data Ticklers
Permits & Regulations
Policies & Procedures
[REF-A]._Reference
[REF-R]._Reference
[I/O-A]._Reports - Air Emissions
[I/O-A]._Reports - Compliance
Class Manager
Name
Action Manager
Permit Condition
Permit Data Tickler
Tickler
Equipment
Boiler
Control Device
Emission Point
Engine
Expand the facility by clicking on the + sign next to Facility Object.
The tree structure represents a blueprint of the facility process units and associated requirements for tracking.
For Help, press F1



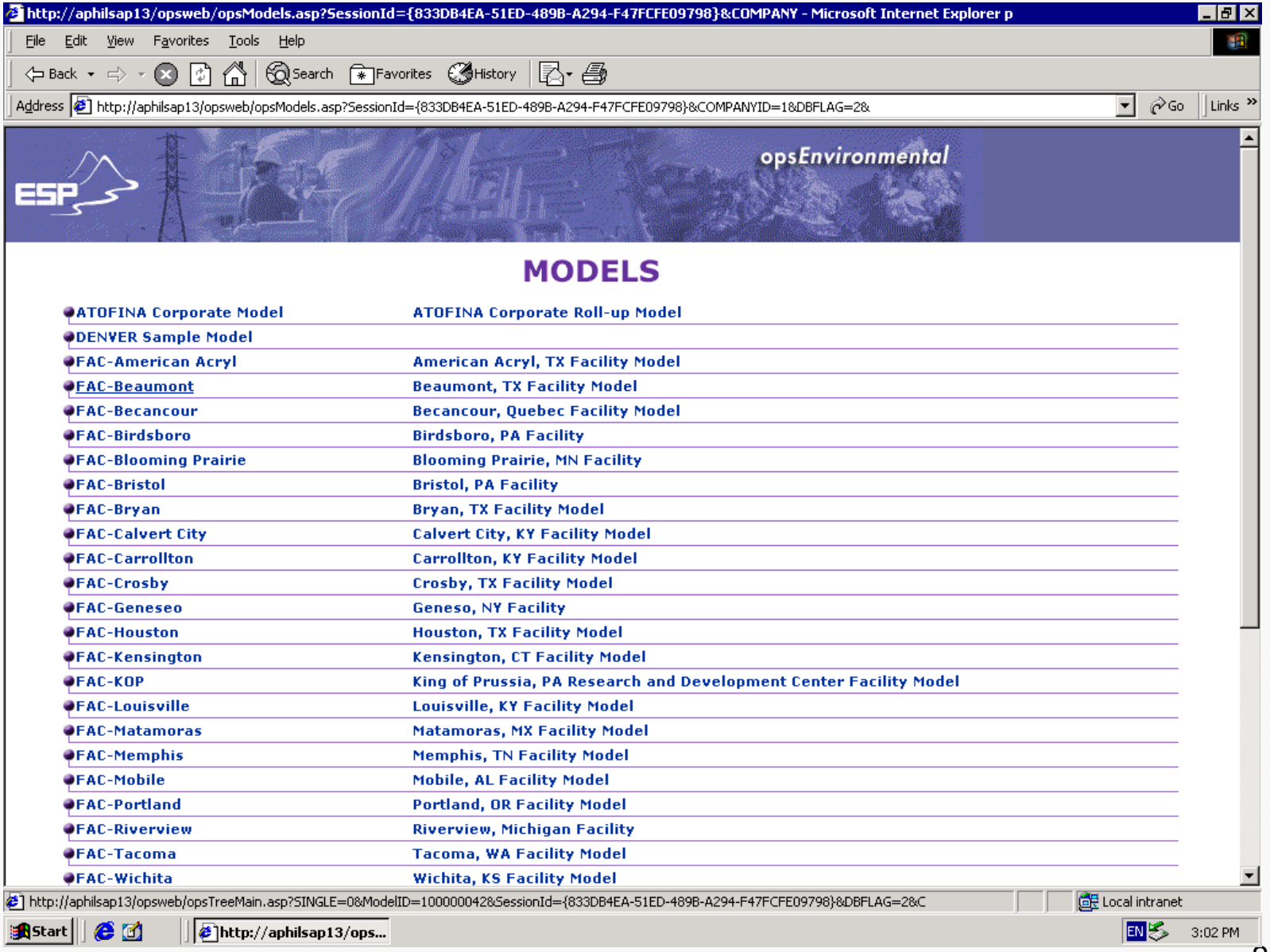
Corporate Roll-up Reporting



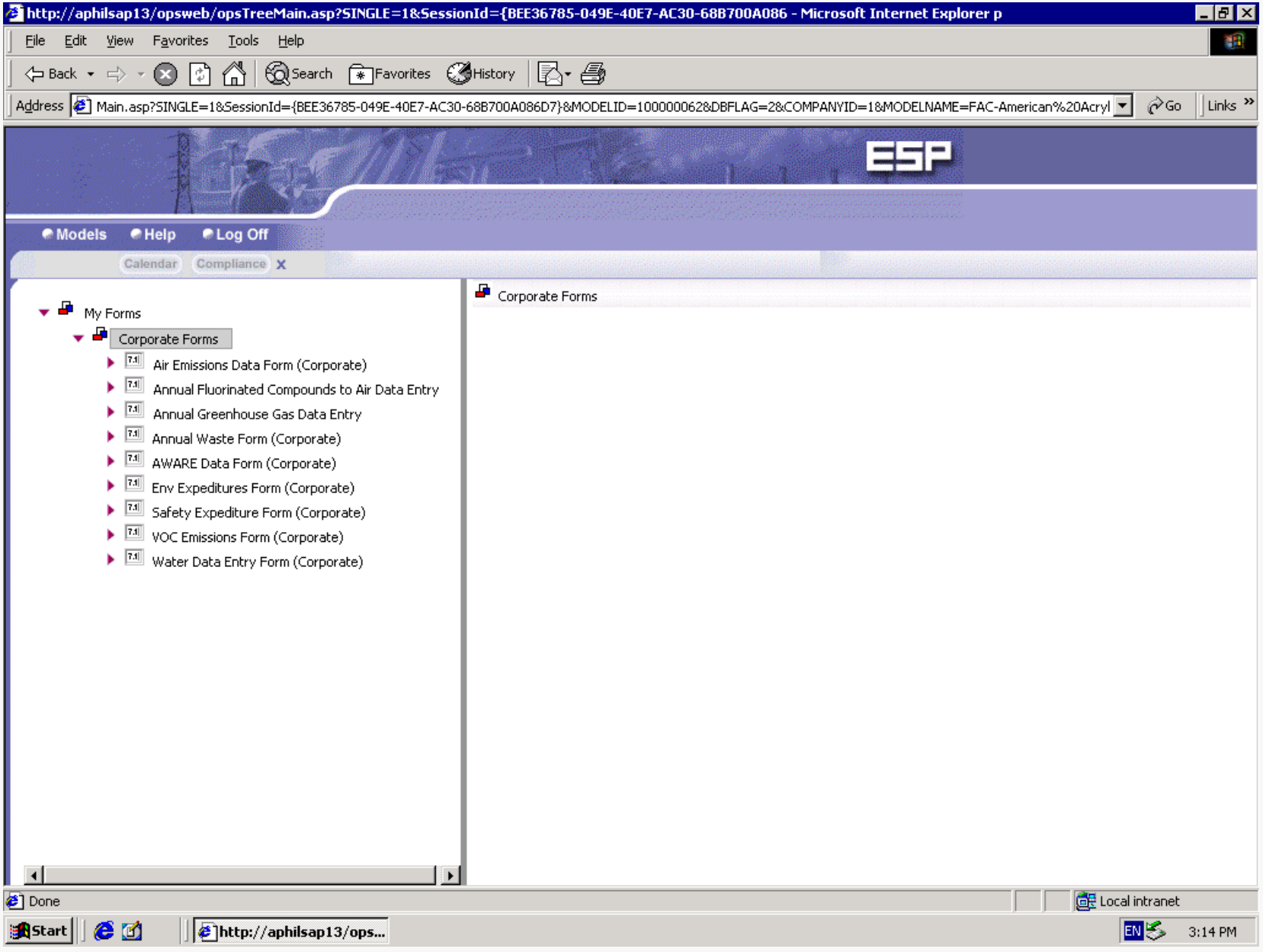
Corporate Rollup Reporting

- Annual Waste / Water Summary Report
- GHG Summary
- VOC Summary
- HFC Summary Report
- Annual HES Cost Report
- Annual Energy Summary Report

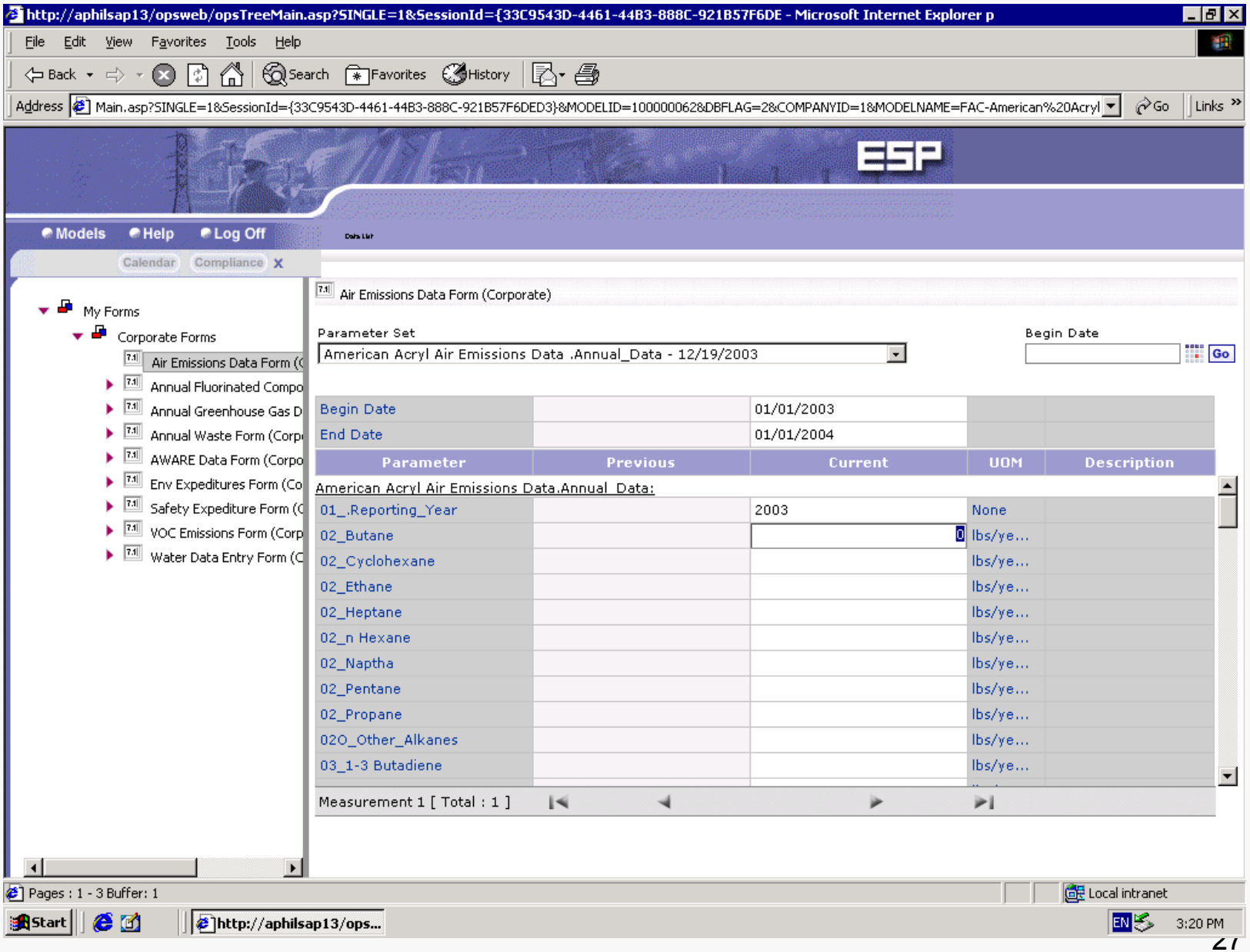
Rollup Reporting Corporate Model

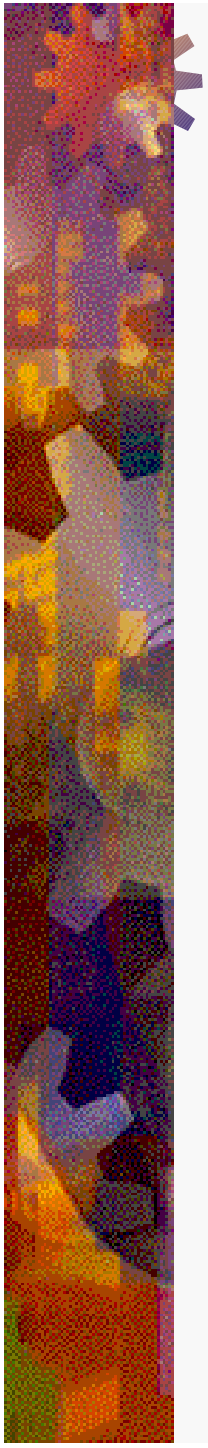


Rollup Reporting Data Forms

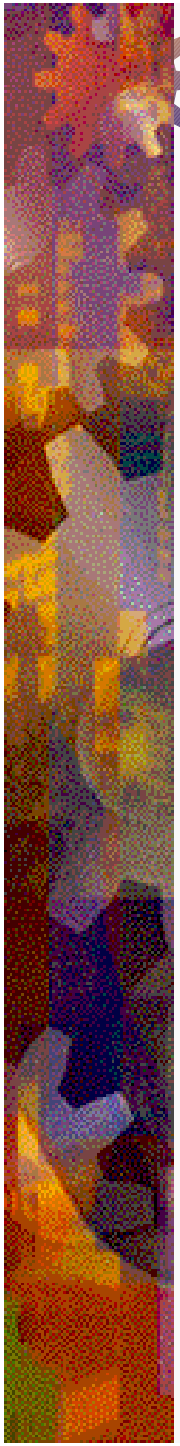


Rollup Reporting Data Entry Forms



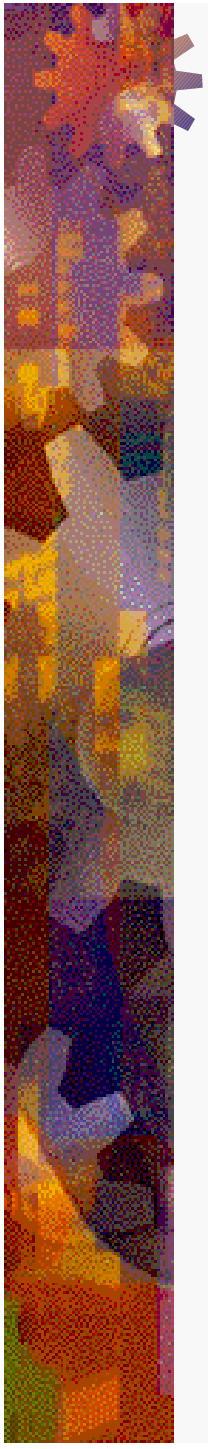


ops*Environmental* Implementation at the Beaumont Facility - Beaumont Experience



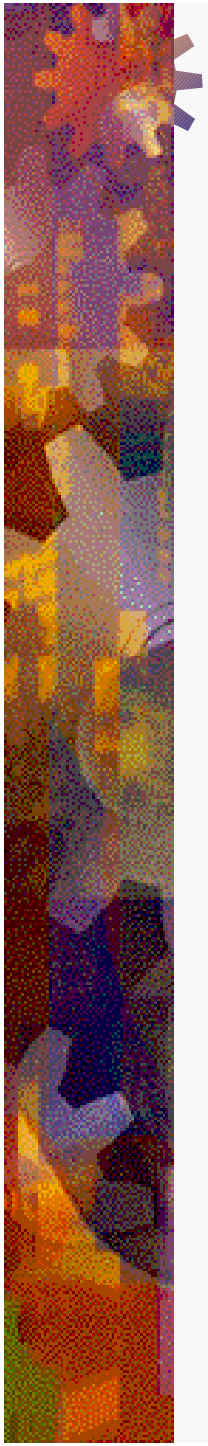
Beaumont Experience

- Beaumont Drivers
- Beaumont Expectations
- Implementation Philosophy
- Implementation in Three Phases
  - ✓ Phase I – Introduction to Ops
  - ✓ Phase II – Beaumont Model (Air)
  - ✓ Phase III – Compliance Tracking
- Lessons Learned
- Handheld Integration



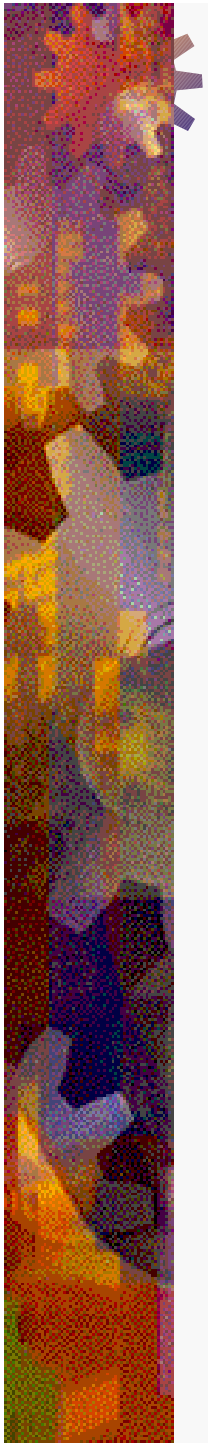
Beaumont Experience - Drivers

- Compliance
  - ✓ Title V – Permit Requirements, Deviation Tracking
  - ✓ NSR/PSD Permit Requirements
- Reporting
  - ✓ Annual Air Emission Inventory
  - ✓ Monthly EI and 12-Month Rolling Totals
  - ✓ Annual TRI
  - ✓ Corporate
  - ✓ Internal
- Inspection
  - ✓ Paperless
  - ✓ Built-in QC – Reduce Human Error



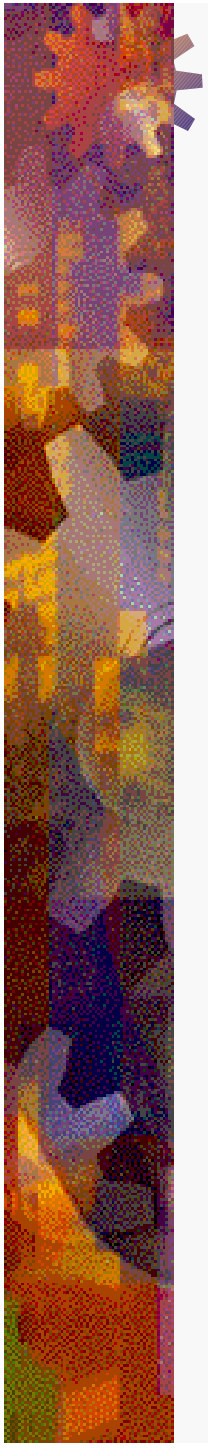
Beaumont Experience - Expectations

- Interface with Legacy and Enterprise Applications
- Generate Additional Reports
- Quality Enhanced (Reduce Human Error)
- Alerting through Lotus Notes
- Always On-line
- Corporate and Vendor Support



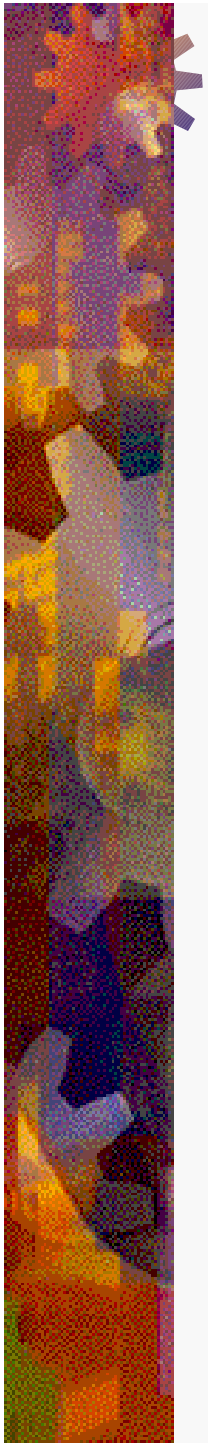
Beaumont - Implementation Philosophy

- Majority of the Work Performed by Beaumont
- T3 used as a Technical Resource
  - ✓ Training
  - ✓ Corporate Model/Object
  - ✓ Documentation
  - ✓ ODBC Tie-In
  - ✓ Great Help-desk
- Beaumont one of the Pilot Facilities
- Management Commitment
  - ✓ Time for Environmental Specialist
  - ✓ Budget for Travel (Training/Meetings)



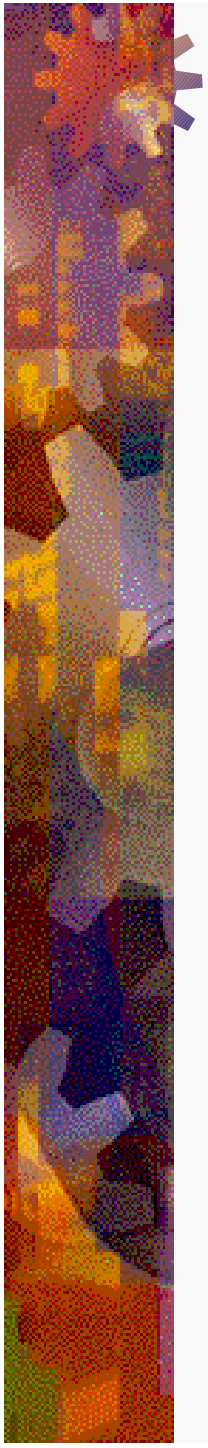
Beaumont Experience – Phase I

- Initiated Summer 2002
- Introduction to Ops
  - ✓ Time Commitment for Initial Training
  - ✓ Large Learning Curve for Environmental Specialist with no prior Database Experience
  - ✓ Hands-on Experience Vital
- Time Commitment
  - ✓ 60 Person-hours (Three 2-Day Training Sessions + Hands-On)



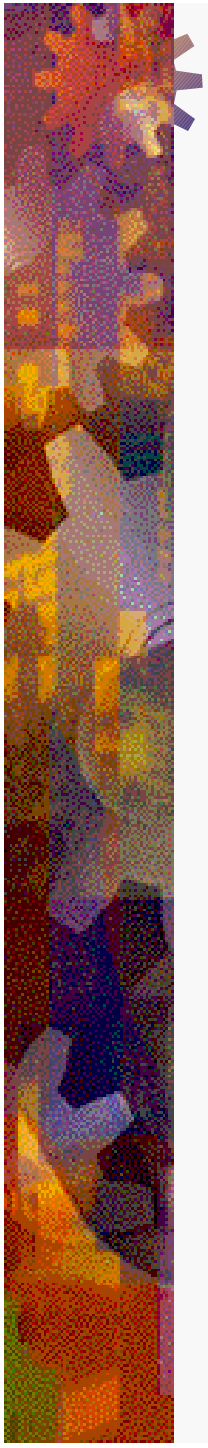
Beaumont Experience – Phase II

- Foundation of Beaumont Model (Air)
  - ✓ Corporate Model
  - ✓ Facility Emission Inventory
- Beaumont Specific Objects (April 2003)
- ODBC Tie-Ins (OSI-PI, SAP, GP-Mate)
  - ✓ T3 and Corporate IT Heavy Support
- First Emission Inventory June 2003
- Time Commitment
  - ✓ Beaumont – 100 Hours over Six Months
  - ✓ T3/Corporate – 100 Hours (Majority on ODBC Tie-Ins; Lessons learned applicable to other facilities)



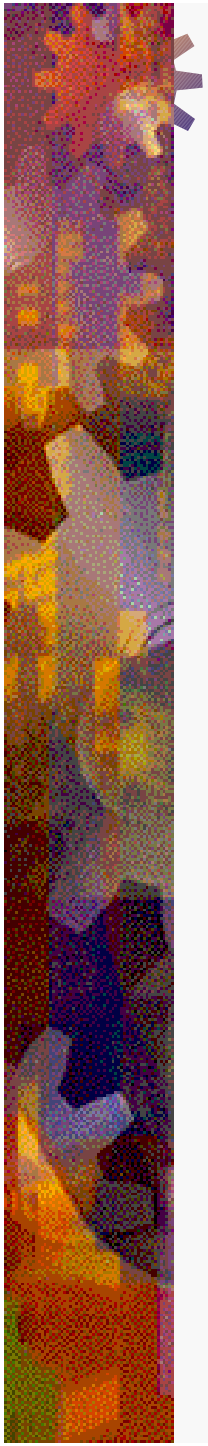
Beaumont Experience – Phase III

- Compliance Tracking
  - ✓ Using ESP V6.1 (Web based)
  - ✓ State NSR/PSD Permit Conditions Entered
    - Majority Time Driven (Inspection/Reports)
    - Data (Permit Limits)
  - ✓ On-going with Additional Data Ticklers
    - Title V Permit Conditions
    - Compliance Monitoring
- Time Commitment
  - ✓ 40 Hours Beaumont



Beaumont Experience – Lessons Learned

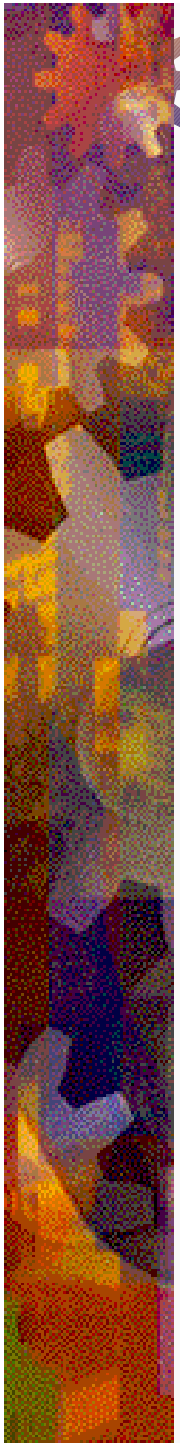
- Need at Least One Power User
- Training and Hands-On Use
  - ✓ "Use it or Lose It!"
- Consultant and Corporate IT Support Vital
- Implementation is Resource Heavy Upfront
- Throw Time-lines out the Window – Other Crises will Interrupt
  - ✓ Surprise EPA Inspections
  - ✓ Loss of Personnel (Consultant and Corporate)
- No Halfway on Implementation
  - ✓ 100% Consultant OR Majority Plant Driven



Handheld Technologies in Conjunction with an EMIS Solution

Project Focus

- Internal and regulatory guidelines require the ATOFINA Chemical Beaumont facility to complete several inspection/data entry forms within specifically determined time frames. This project focused on 12 different data collection and inspection forms.

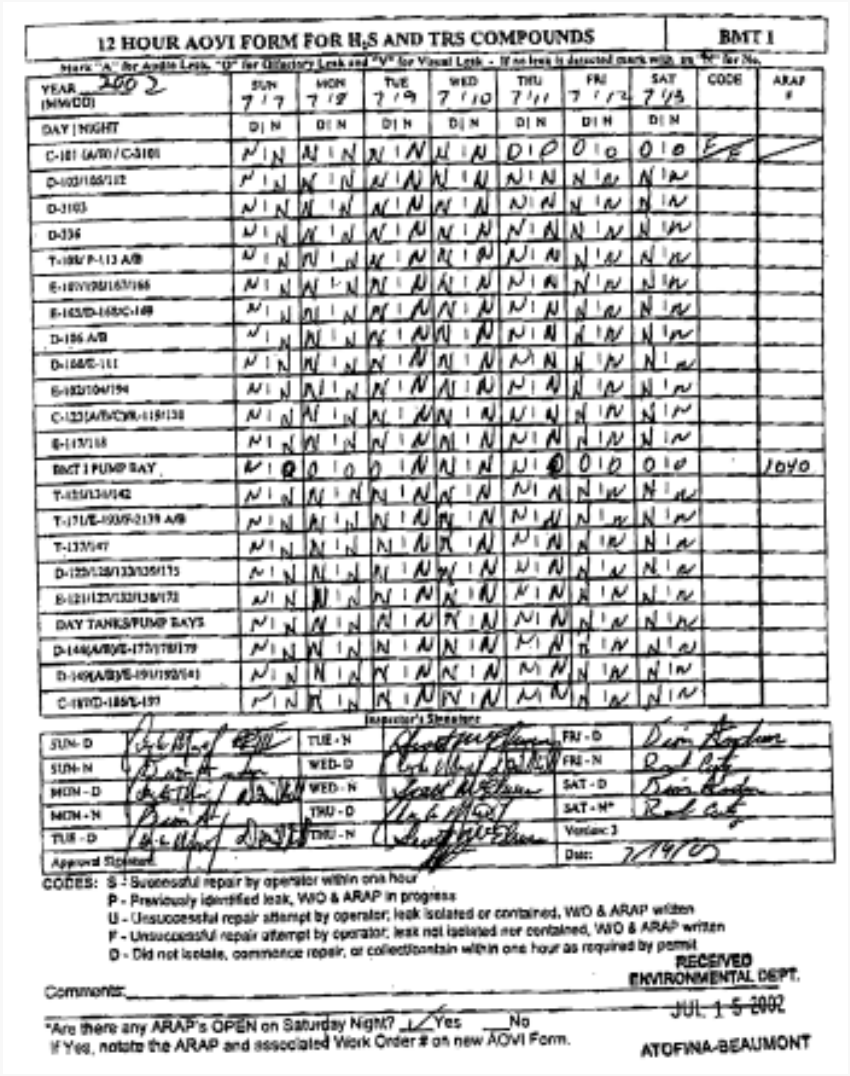


Inspection/Data Collection Forms

- Hazardous Waste Storage (Rail Area) – RCRA Weekly Inspection
- Hazardous Waste Storage (Tank) – RCRA Daily Inspection
- Incinerator Knock Out Drum – RCRA Daily Inspection
- Flare Knock Out Drum – RCRA Daily Inspection
- Non-Hazardous/Hazardous/Bulk Waste Container Weekly Inspection
- Spill Response Equipment Weekly Inspection
- 12-Hour AOVI Inspection Form (H2S and TRS Compounds)
- Waste Water Treatment Plant Daily Operations Logsheets (3)

Sample Form

- 12-Hour AOVI Inspection Form



12 HOUR AOVI FORM FOR H_2S AND TRS COMPOUNDS — BMT I

Mark "A" for Audible Leak, "O" for Olfactory Leak and "V" for Visual Leak - If no leak is detected mark with an "N" for No.

YEAR (MM/DD)	SUN 7/7	MON 7/8	TUE 7/9	WED 7/10	THU 7/11	FRI 7/12	SAT 7/13	CODE	ARAP #
DAY | NIGHT	D | N	D | N	D | N	D | N	D | N	D | N	D | N		
C-101 (A/B) / C-3101	N | N	N | N	N | N	N | N	D | O	O | O	O | O	E-E	
D-102/103/102	N | N	N | N	N | N	N | N	N | N	N | N	N | N		
D-2103	N | N	N | N	N | N	N | N	N | N	N | N	N | N		
D-336	N | N	N | N	N | N	N | N	N | N	N | N	N | N		
T-108/ P-113 A/B	N | N	N | N	N | N	N | N	N | N	N | N	N | N		
E-107/108/167/166	N | N	N | N	N | N	N | N	N | N	N | N	N | N		
E-165/D-168/C-169	N | N	N | N	N | N	N | N	N | N	N | N	N | N		
D-186 A/B	N | N	N | N	N | N	N | N	N | N	N | N	N | N		
D-184/E-111	N | N	N | N	N | N	N | N	N | N	N | N	N | N		
E-182/104/194	N | N	N | N	N | N	N | N	N | N	N | N	N | N		
C-133(A/B/C)/R-119/138	N | N	N | N	N | N	N | N	N | N	N | N	N | N		
E-117/118	N | N	N | N	N | N	N | N	N | N	N | N	N | N		
BMT I PUMP BAY	V | O	O | O	O | N	N | N	N | O	O | O	O | O		1040
T-135/134/142	N | N	N | N	N | N	N | N	N | N	N | N	N | N		
T-171/E-193/S-2139 A/B	N | N	N | N	N | N	N | N	N | N	N | N	N | N		
T-133/147	N | N	N | N	N | N	N | N	N | N	N | N	N | N		
D-125/128/133/135/175	N | N	N | N	N | N	N | N	N | N	N | N	N | N		
E-121/123/132/138/172	N | N	N | N	N | N	N | N	N | N	N | N	N | N		
DAY TANKS/PUMP BAYS	N | N	N | N	N | N	N | N	N | N	N | N	N | N		
D-144(A/B)/E-177/178/179	N | N	N | N	N | N	N | N	N | N	N | N	N | N		
D-149(A/B)/E-191/192/141	N | N	N | N	N | N	N | N	N | N	N | N	N | N		
C-187/D-188/E-197	N | N	N | N	N | N	N | N	N | N	N | N	N | N		

Inspector's Signature

SUN - D		TUE - N		FRI - D	
SUN - N		WED - D		FRI - N	
MON - D		WED - N		SAT - D	
MON - N		THU - D		SAT - N*	
TUE - D		THU - N		Version: 3	
Approval Signature				Date: 7/14/02	

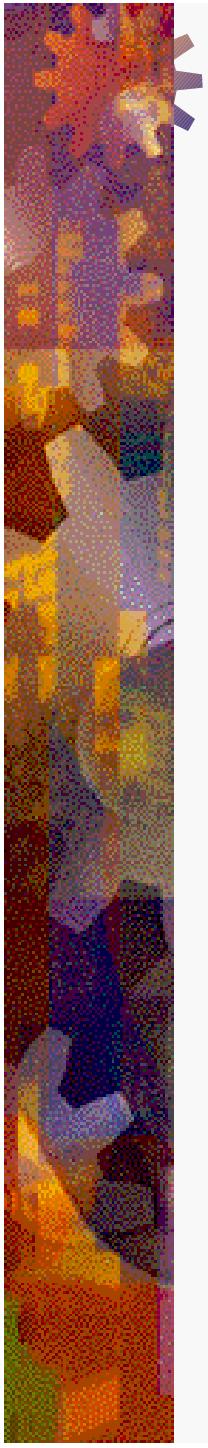
CODES: S - Successful repair by operator within one hour
P - Previously identified leak, WO & ARAP in progress
U - Unsuccessful repair attempt by operator; leak isolated or contained, WO & ARAP written
F - Unsuccessful repair attempt by operator; leak not isolated nor contained, WO & ARAP written
D - Did not isolate, commence repair, or collect/contain within one hour as required by permit

RECEIVED ENVIRONMENTAL DEPT. JUL 15 2002

Comments:

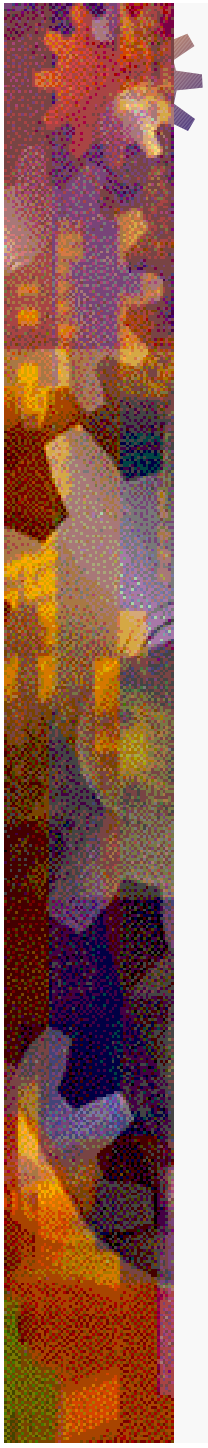
*Are there any ARAP's OPEN on Saturday Night? ✓ Yes ___ No
If Yes, notate the ARAP and associated Work Order # on new AOVI Form.

ATOFINA-BEAUMONT



Early Drivers

- Corporate EMIS (cont.)
  - ✓ Allowed inspection form work process changes to coincide with those brought on by larger EMIS implementation
  - ✓ Take advantage of EMIS system attributes
    - Centralized storage location
    - E-mail notification capabilities
    - Reporting



Early Drivers

- Work Process Deficiencies
  - ✓ Paper filing of documents time/space consuming
  - ✓ Extraction of data for audit purposes is time consuming and not electronic
  - ✓ Increasing regulatory trend towards making information “even more readily available”
  - ✓ No easy way of determining if a reading was missed, skipped, or forgotten

Early Drivers

- Work Process Deficiencies (cont.)
  - ✓ Non-standardized data entry
  - ✓ Handwritten responses difficult to read

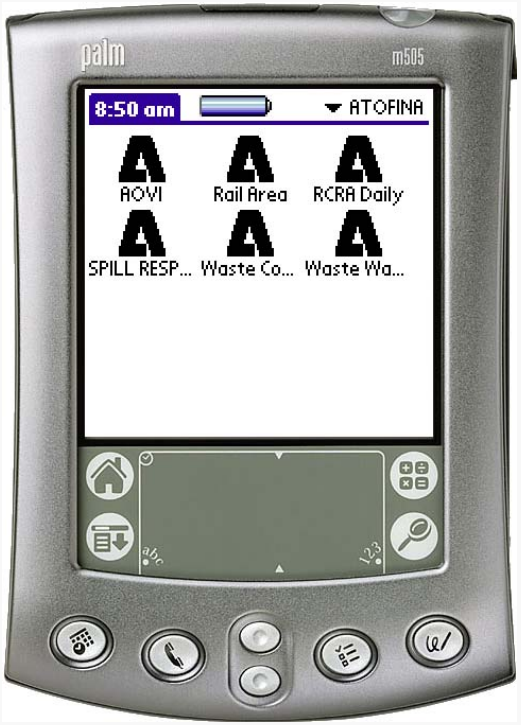
PLEASE IDENTIFY THE FOLLOWING:	PROVIDE AN ANSWER TO ALL LINE ITEMS. NOTE ANY UNUSUAL CIRCUMSTANCES AND/OR CONDITIONS.
Number of Drums in Storage (The number on printout should match the physical count.)	~~46~~ 21 ~~48~~
Do all Drums have an Accumulation Date?	5/30/02 — yes
Are all Drums Labeled Correctly?	Y
Are all Drums Closed?	Y
What is the Earliest Accumulation Date?	5/30/02
Is the Condition of the Dike Acceptable?	Y
Are any Corrective Actions Needed?	N overpacked a few drums — done

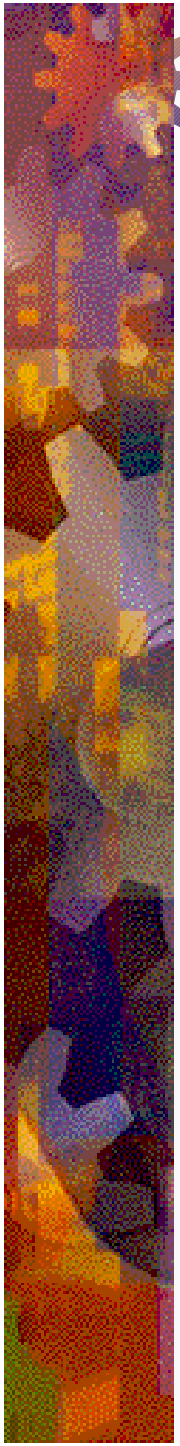
Project Description and Stages

- Handheld Device Selection
  - ✓ Operating System (PalmOS™)
  - ✓ Intrinsic Safety Classifications (Class 1 Div 2)
  - ✓ Processing Power (33 MHz)
  - ✓ Memory (16 MB)
  - ✓ Hardware Cost ($279)

Project Description and Stages

- Handheld System Design
  - ✓ 6 Inspectors therefore 6 devices
  - ✓ “Mini-Application” Concept
- Prototype Demonstration
  - ✓ Demonstrate look and feel
  - ✓ Confirm data types and entry mechanisms



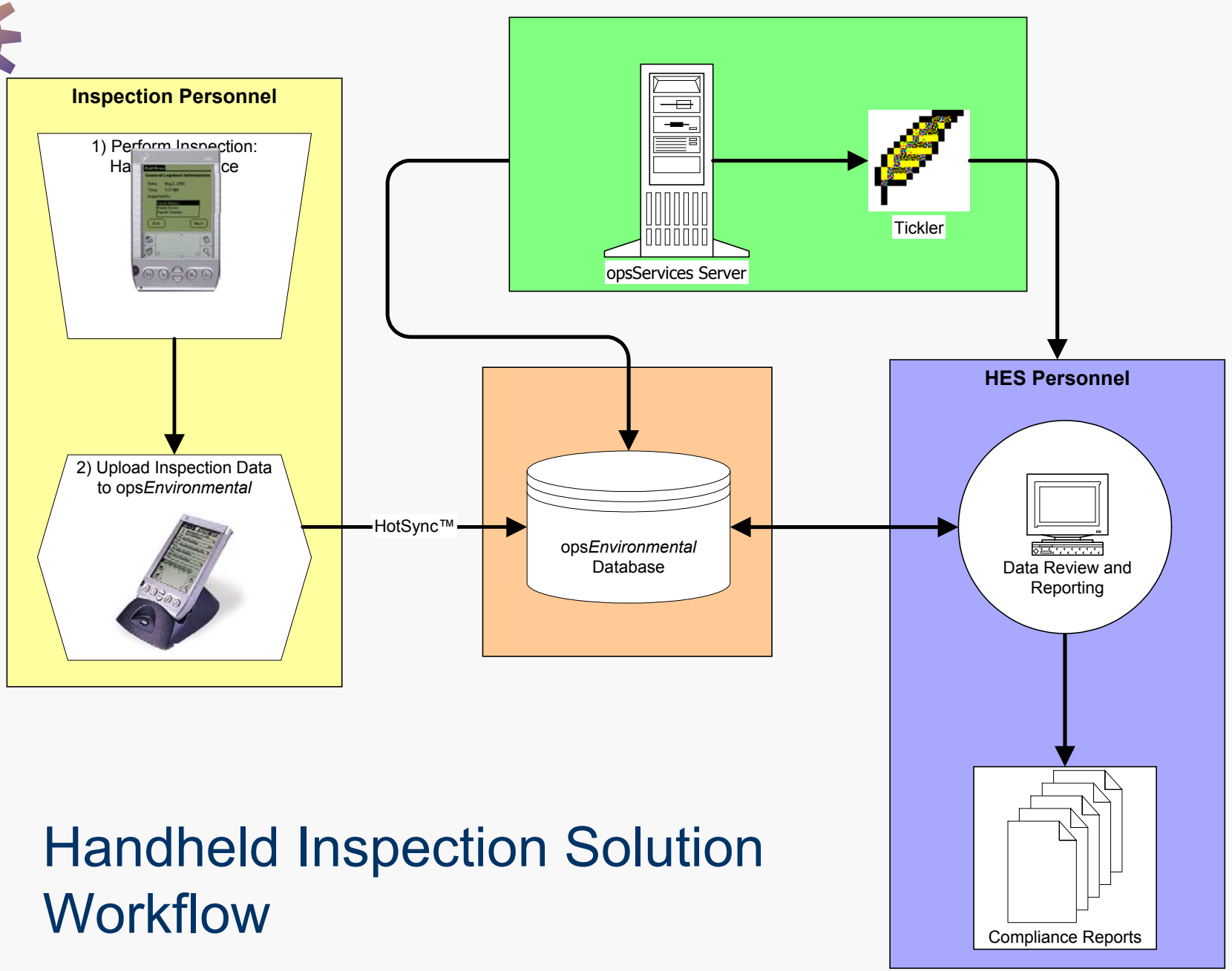


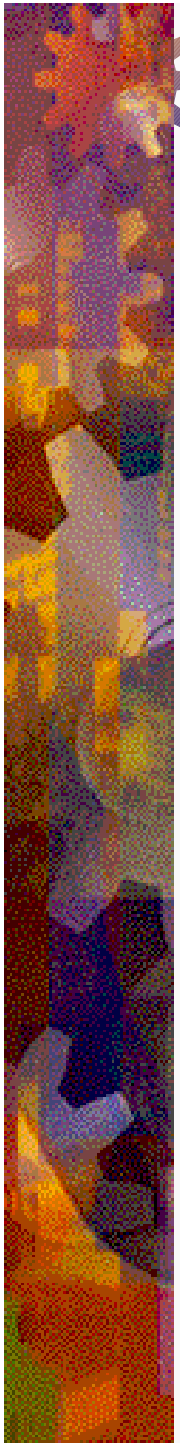
Project Description and Stages

Three major development stages remained:

1. Handheld Application Development
2. Data Synchronization and EMIS Configuration
3. Report Development

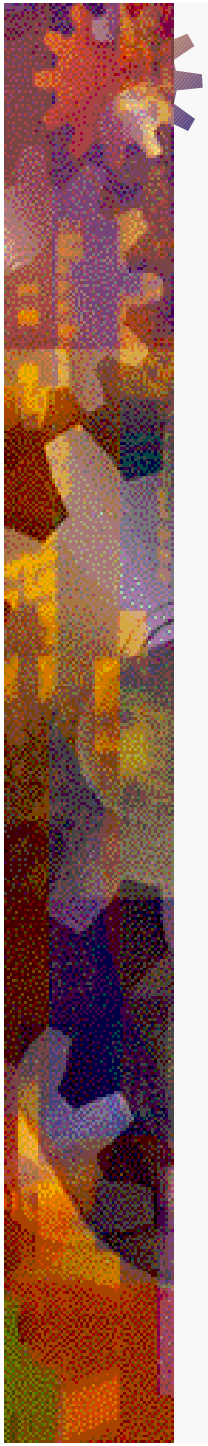
Handheld Inspection Solution Workflow





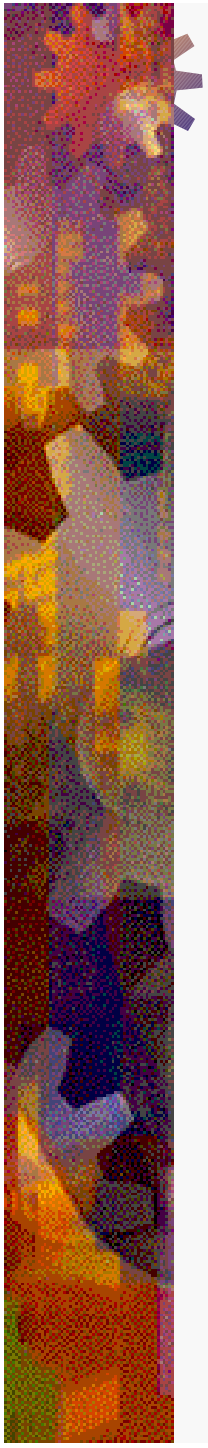
Project Description and Stages

- Handheld Application Development
  - Data entry fields from forms are recreated within handheld applications
    - Pick lists
    - Pull-down lists
    - Pull-down lists with write in option
    - Numerical and/or text entry fields using Graffiti™ or key pad



Benefits and Advantages

- Minimize the risk of human error
  - ✓ Standardizes data collection process and data at the source
    - Pull-down lists
    - Radio buttons
  - ✓ Eliminates data transcription and other potential data errors
  - ✓ Ability to synchronize with existing Information Management Systems



Benefits and Advantages

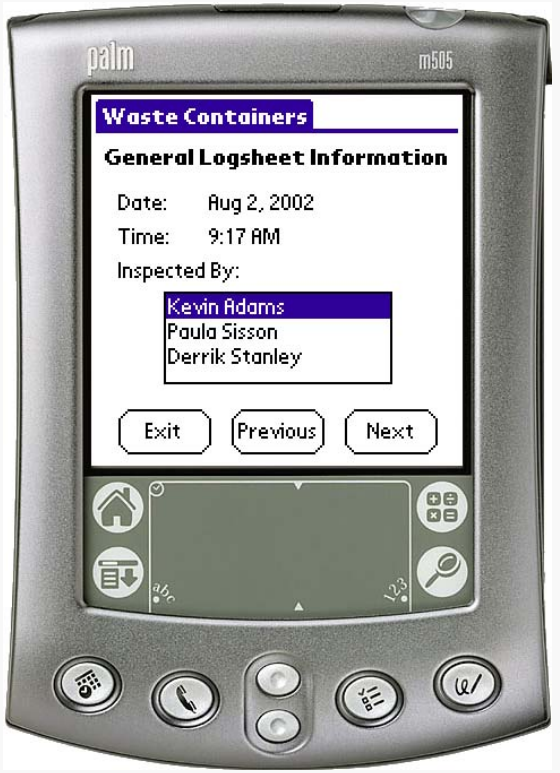
- Work Process Simplification
  - ✓ Inspections and Data Collecting easier to perform
  - ✓ Electronic record keeping
  - ✓ Quick and easy data recovery via reporting
  - ✓ E-mail Notification
  - ✓ More accurate information
  - ✓ Eliminates paper filing/storage ($$)
  - ✓ Saves time

Benefits and Advantages

Original Work Process

Today's Inspection Date	Today's Inspection Time	Signature
8/2/02	9:17 Am	

New Work Process



Benefits and Advantages

Original Work Process

ATOFINA CHEMICALS, INC.
BEAUMONT, TEXAS
Weekly Inspection Form
HAZARDOUS WASTE CONTAINERS

Date of Last Inspection:	Today's Inspection Date	Today's Inspection Time	Signature	Next Inspection Due on or Before
	8/2/02	9:17 Am		

INSTRUCTIONS: A PRINTOUT OF THE DRUMS STORED IN THIS AREA MUST BE COMPARED TO THE DRUMS IN STORAGE DURING THE INSPECTION AND ATTACHED TO THIS FORM AFTER THE INSPECTION IS COMPLETE. ALL UNACCEPTABLE CONDITIONS MUST BE NOTED. CONTACT THE CHIEF OPERATOR, MAINTENANCE AND ENVIRONMENTAL DEPTS. AS NEEDED TO BEGIN CORRECTIVE ACTIONS. RETURN COMPLETED FORM TO THE ENVIRONMENTAL DEPARTMENT.

PLEASE IDENTIFY THE FOLLOWING:	PROVIDE AN ANSWER TO ALL LINE ITE CIRCUMSTANCES AND/OR
Number of Drums in Storage (The number on printout should match the physical count.)	21
Do all Drums have an Accumulation Date?	5/30/02
Are all Drums Labeled Correctly?	
Are all Drums Closed?	
What is the Earliest Accumulation Date?	5/30/02
Is the Condition of the Dike Acceptable?	
Are any Corrective Actions Needed?	overpacked a few Some day.

W:\ENV\Env_Oper_Record\Env_Forms\Inspection Forms\HAZ WASTE CONTAINER INSPECTION.doc

New Work Process

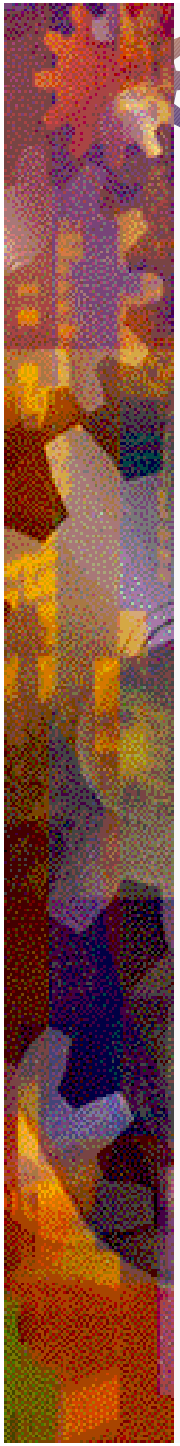
ATOFINA Chemicals, INC.
Beaumont, Texas
Weekly Inspection Form
Hazardous Waste Containers

Inspection Date:	Time:	Inspected By:
01/17/2003	7:45 am	Kevin Adams

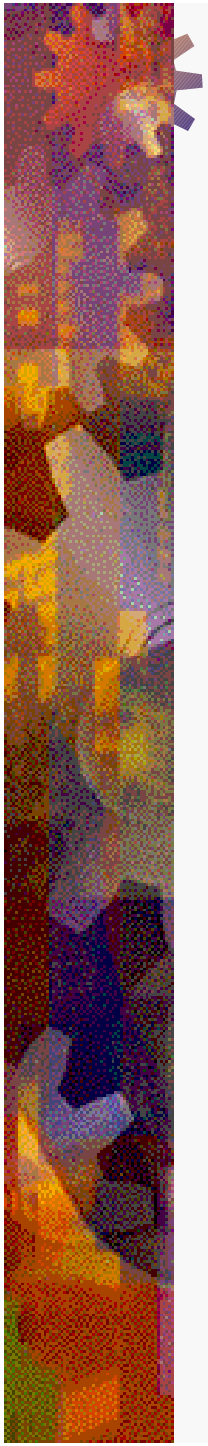
Instructions: A printout of the drums stored in this area must be compared to the drums in storage during the inspection and attached to this form after the inspection is complete. All unacceptable conditions must be noted. Contact the chief operator, maintenance and environmental depts. as needed to begin corrective actions. Return completed form to the environmental department.

Please Identify The Following:	Provide an answer to all line items. Note any unusual circumstances and/or conditions. Response:	Comment:
Number of drums in storage (The number on printout should match the physical count.	21	
Do all drums have an accumulation date?	Yes	
Are all drums labled correctly?	Yes	
Are all drums closed?	Yes	
What is the earliest accumulation date?	05/30/2002	
Is the condition of the dike acceptable?	Yes	
Are any corrective actions needed?	No	Overpacked a few drums - Done same day.

Revision 2: January 21, 2003



Summary



Questions ?

Contact Information:

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Handheld Info:

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