The PI System in 2012

Presented by **Brian Bostwick and Ray Hall**

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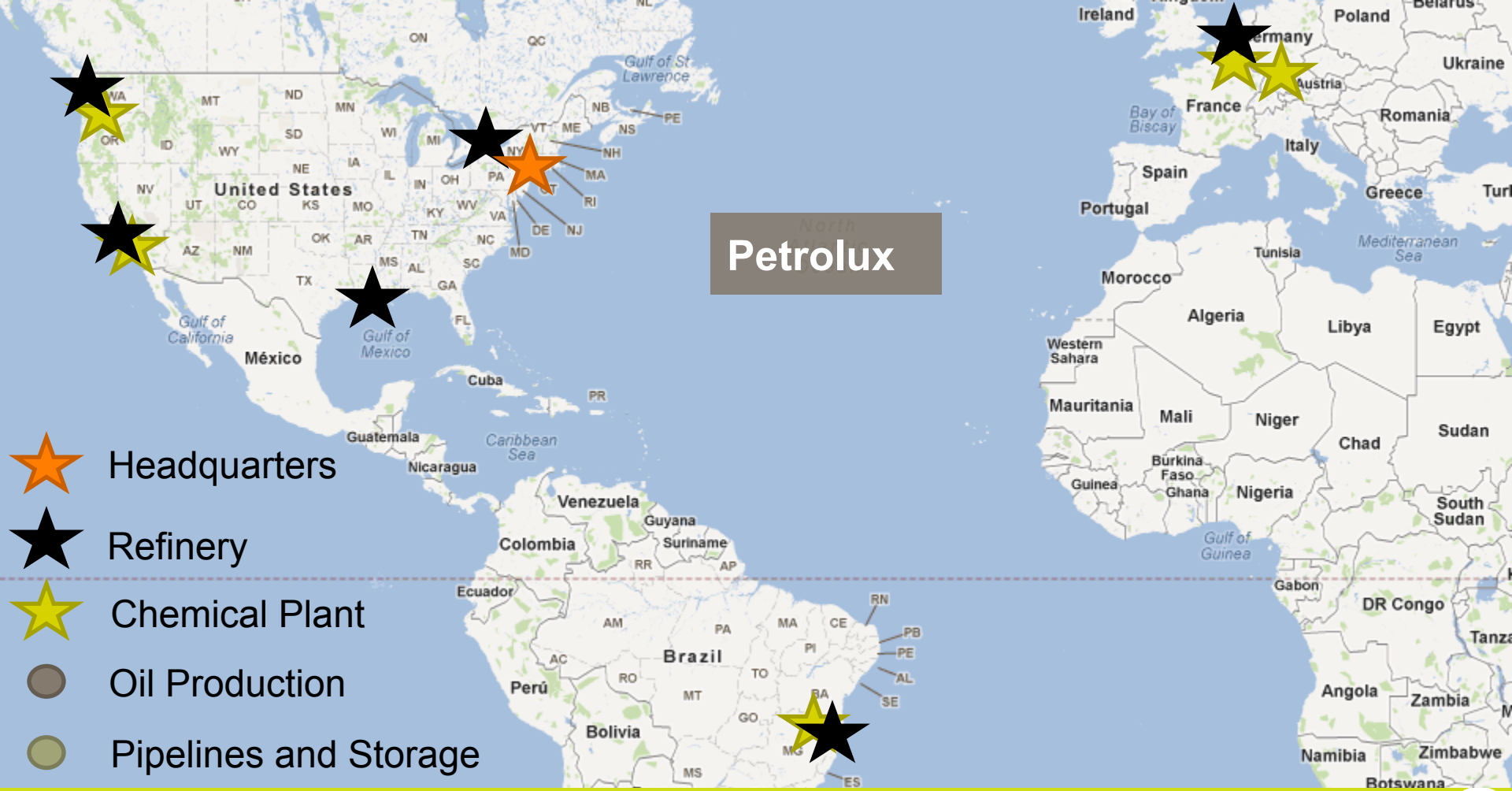
Petrolux



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PSE
DataLink - Exchanger

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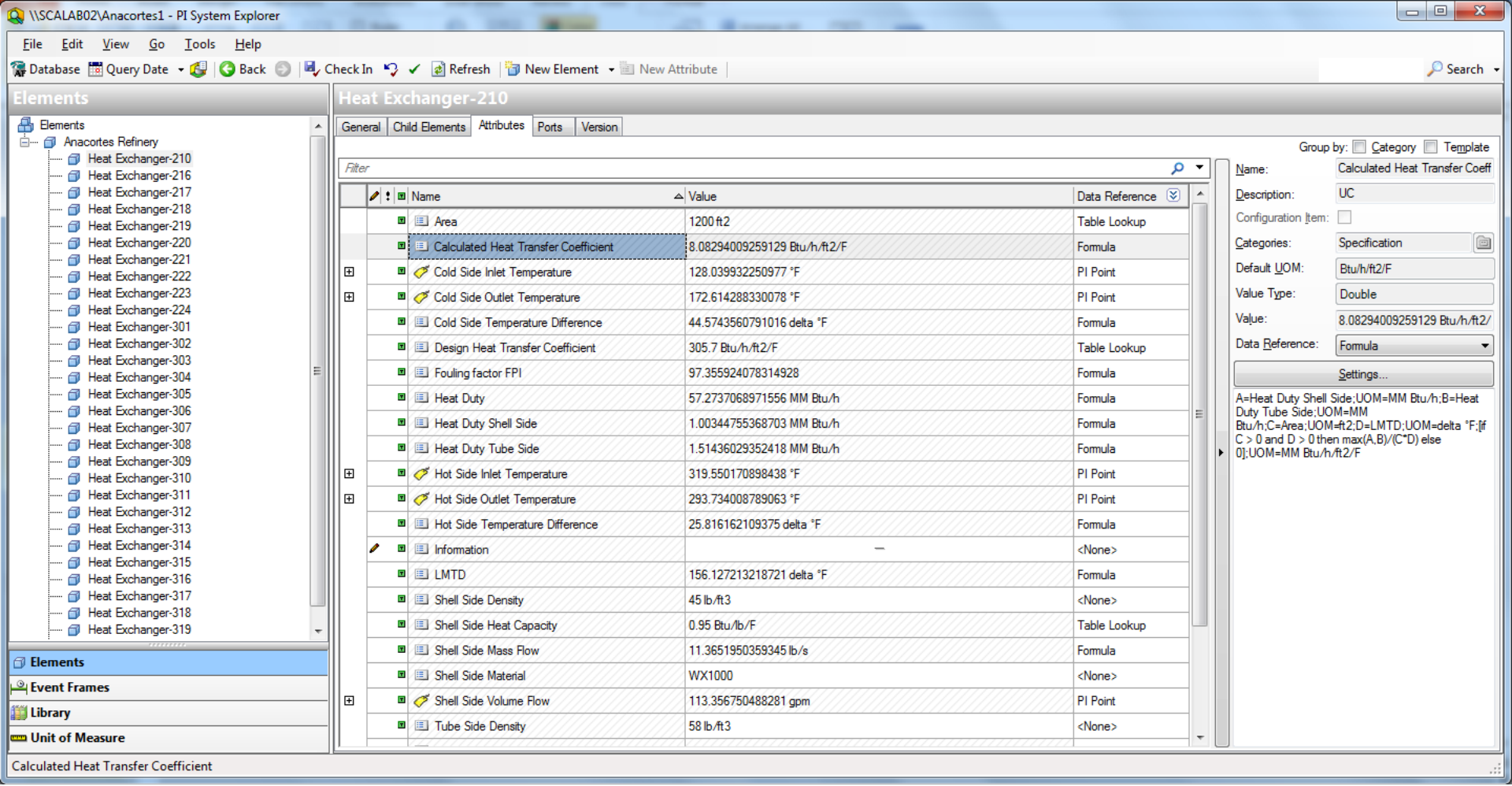

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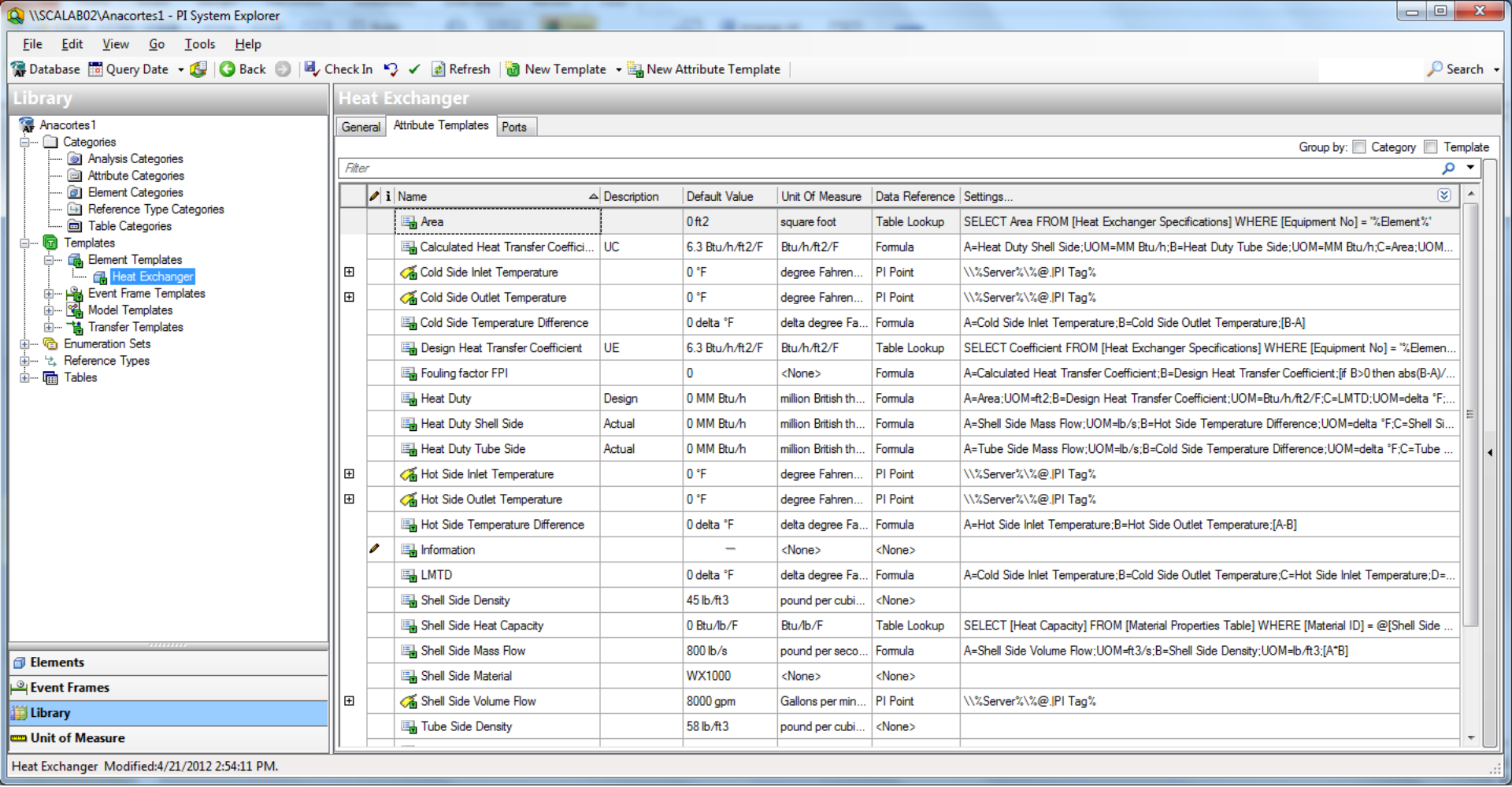

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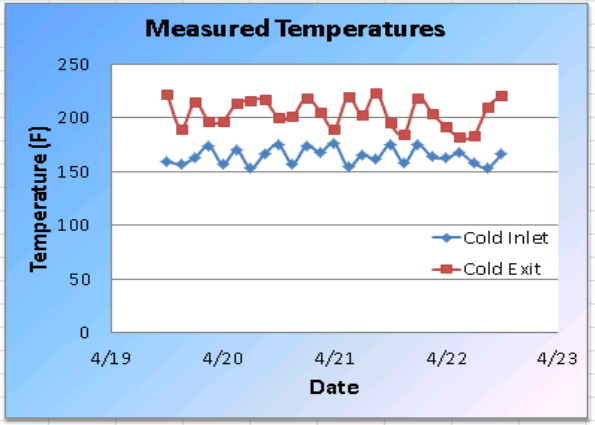
Anacortes1 Heat Exchangers - Microsoft Excel

File | Home | Insert | Page Layout | Formulas | Data | Review | View | PI DataLink | PI AF Builder

B16: Hot Side Inlet Temperature

	Site:	Anacortes Refinery					
	Heat Exchanger Name:	Heat Exchanger-309		Current Value		Min	Max
	Properties:	Area	Jan-01, 12:00 AM	1200.00	ft2	1200	1200
		Calculated Heat Transfer Coefficient	Apr-22, 11:50 AM	11.55	Btu/h/ft2/F		
		Cold Side Inlet Temperature	Apr-22, 11:50 AM	165.01	°F	147	180.9
		Cold Side Outlet Temperature	Apr-22, 11:50 AM	219.11	°F	180.4	228.5
		Cold Side Temperature Difference	Apr-22, 11:50 AM	54.10	delta °F		
		Design Heat Transfer Coefficient	Jan-01, 12:00 AM	301.40	Btu/h/ft2/F	301.4	301.4
		Fouling factor FPI	Apr-22, 11:50 AM	96.17			
		Heat Duty	Apr-22, 11:50 AM	66.58	MM Btu/h		
		Heat Duty Shell Side	Apr-22, 11:50 AM	-0.10	MM Btu/h		
		Heat Duty Tube Side	Apr-22, 11:50 AM	2.55	MM Btu/h		
		Hot Side Inlet Temperature	Apr-22, 11:50 AM	376.38	°F	307.3	427.1
		Hot Side Outlet Temperature	Apr-22, 11:50 AM	378.79	°F	282	394.7
		Hot Side Temperature Difference	Apr-22, 11:50 AM	-2.40	delta °F		
		LMTD	Apr-22, 11:50 AM	184.08	delta °F		
		Shell Side Density	Jan-01, 12:00 AM	45.00	lb/ft3	45	45
		Shell Side Heat Capacity	Jun-25, 08:24 AM	0.95	Btu/lb/F	0.95	0.95
		Shell Side Mass Flow	Apr-22, 11:50 AM	11.97	lb/s		
		Shell Side Material	Jan-01, 12:00 AM	WX1000			
		Shell Side Volume Flow	Apr-22, 11:50 AM	119.40	gpm	95.67	131
		Tube Side Density	Jan-01, 12:00 AM	58.00	lb/ft3	58	58
		Tube Side Heat Capacity	Jun-25, 08:24 AM	0.89	Btu/lb/F	0.885	0.885
		Tube Side Mass Flow	Apr-22, 11:50 AM	14.81	lb/s		
		Tube Side Material	Jan-01, 12:00 AM	HC1500			
		Tube Side Volume Flow	Apr-22, 11:50 AM	114.58	gpm	85.42	121.7



Heat Exchangers | Multi-site plus pumps | Sheet3

Ready

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PSE
DataLink - Energy

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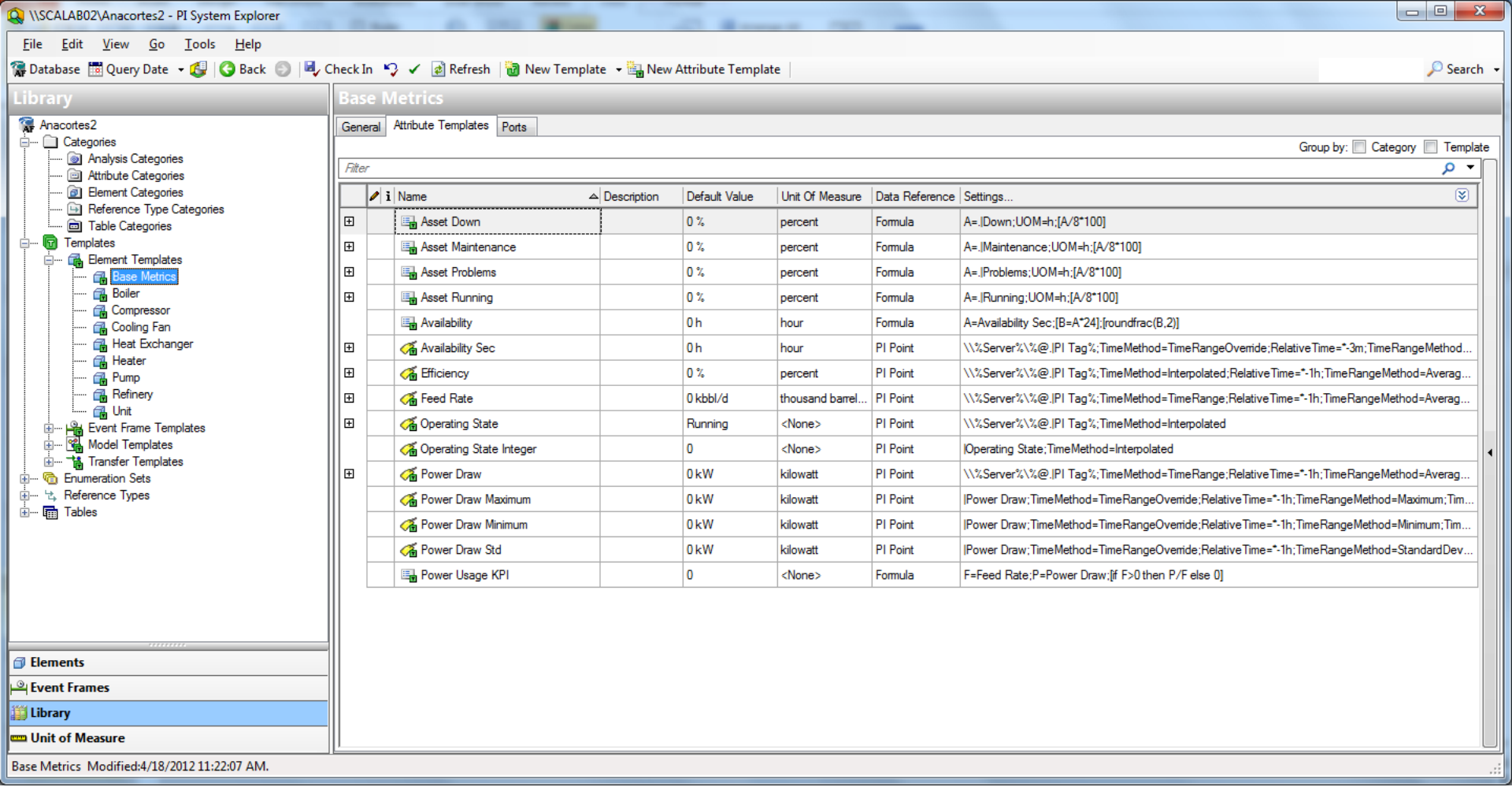

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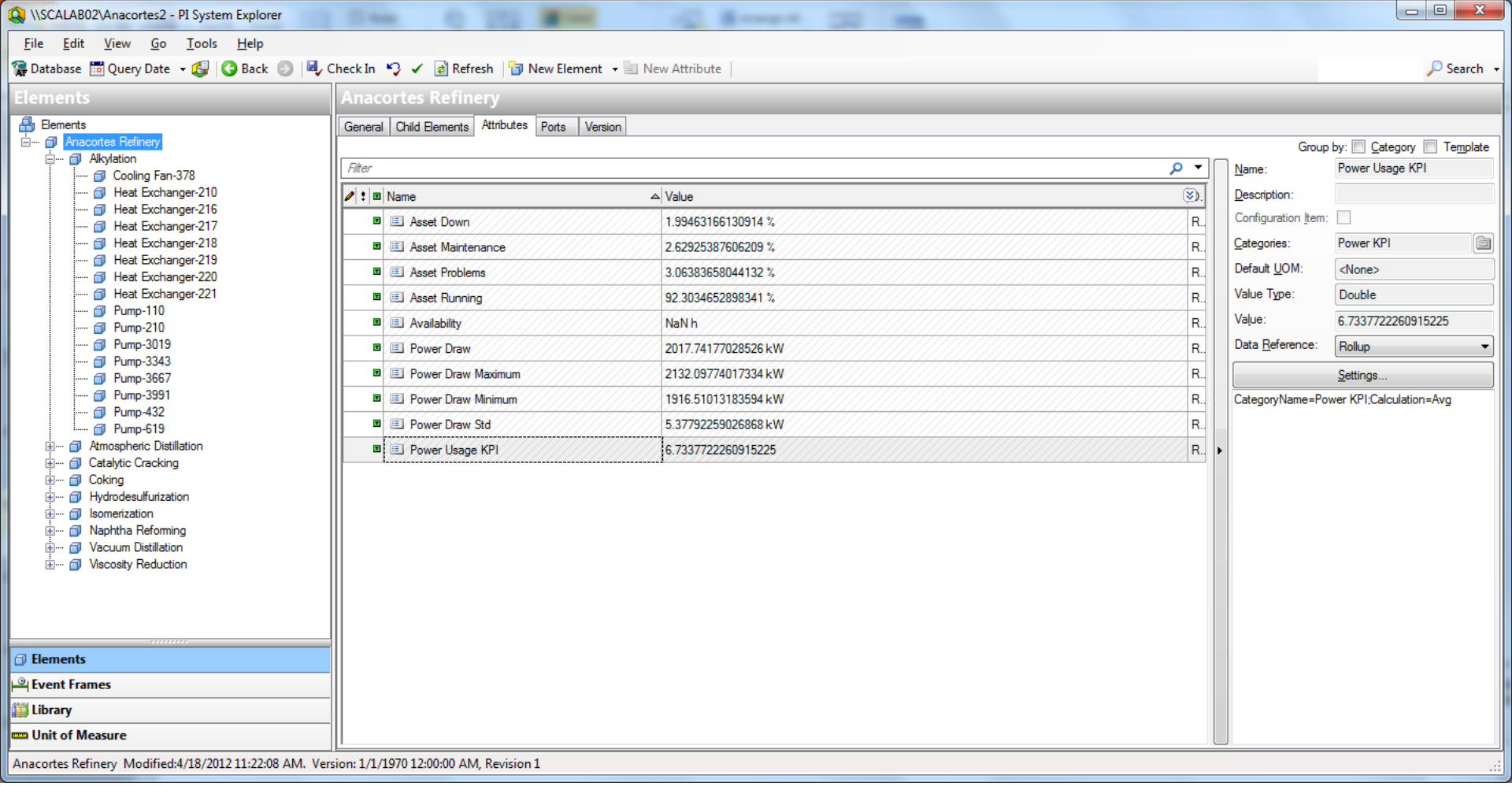

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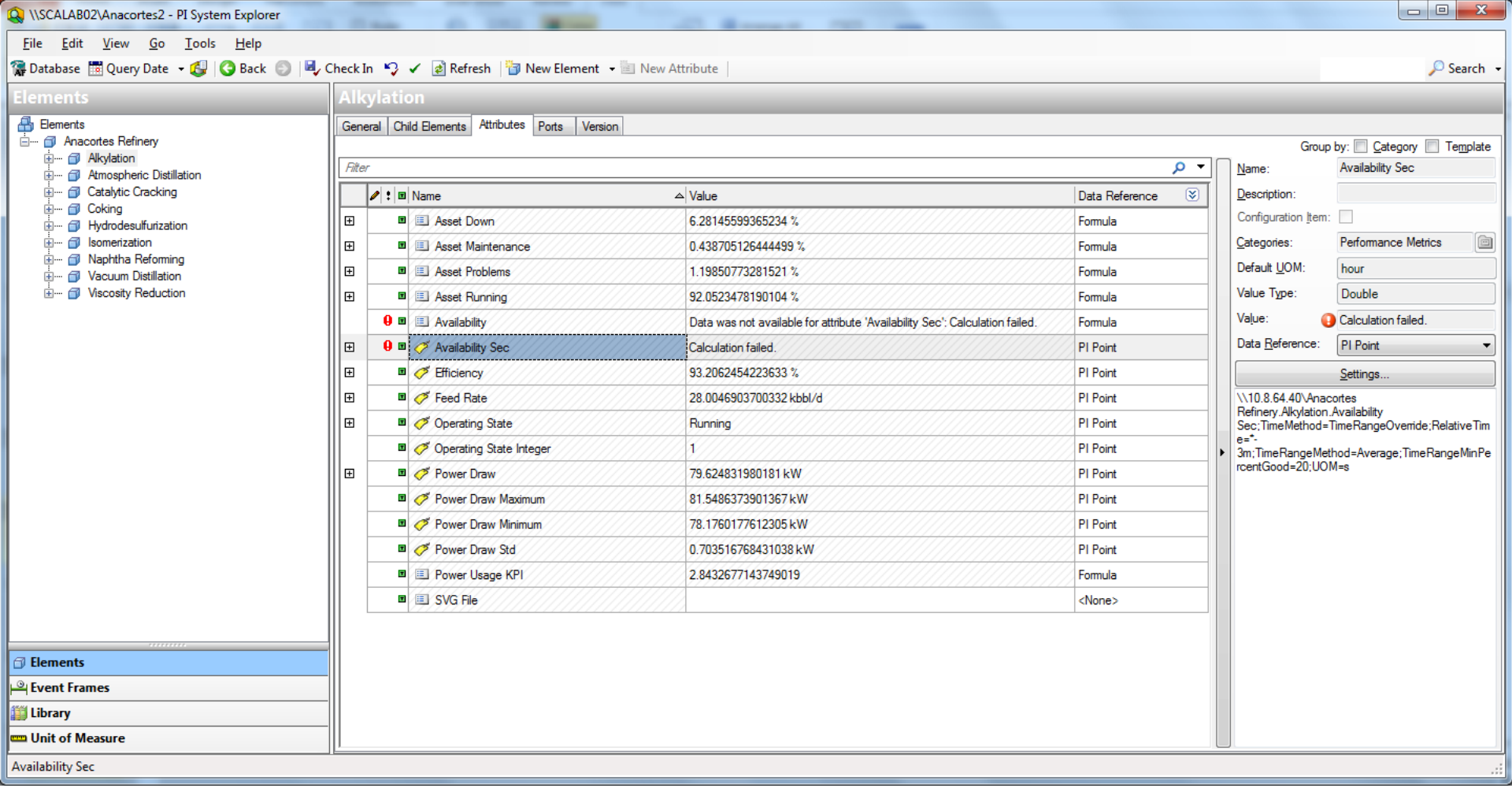

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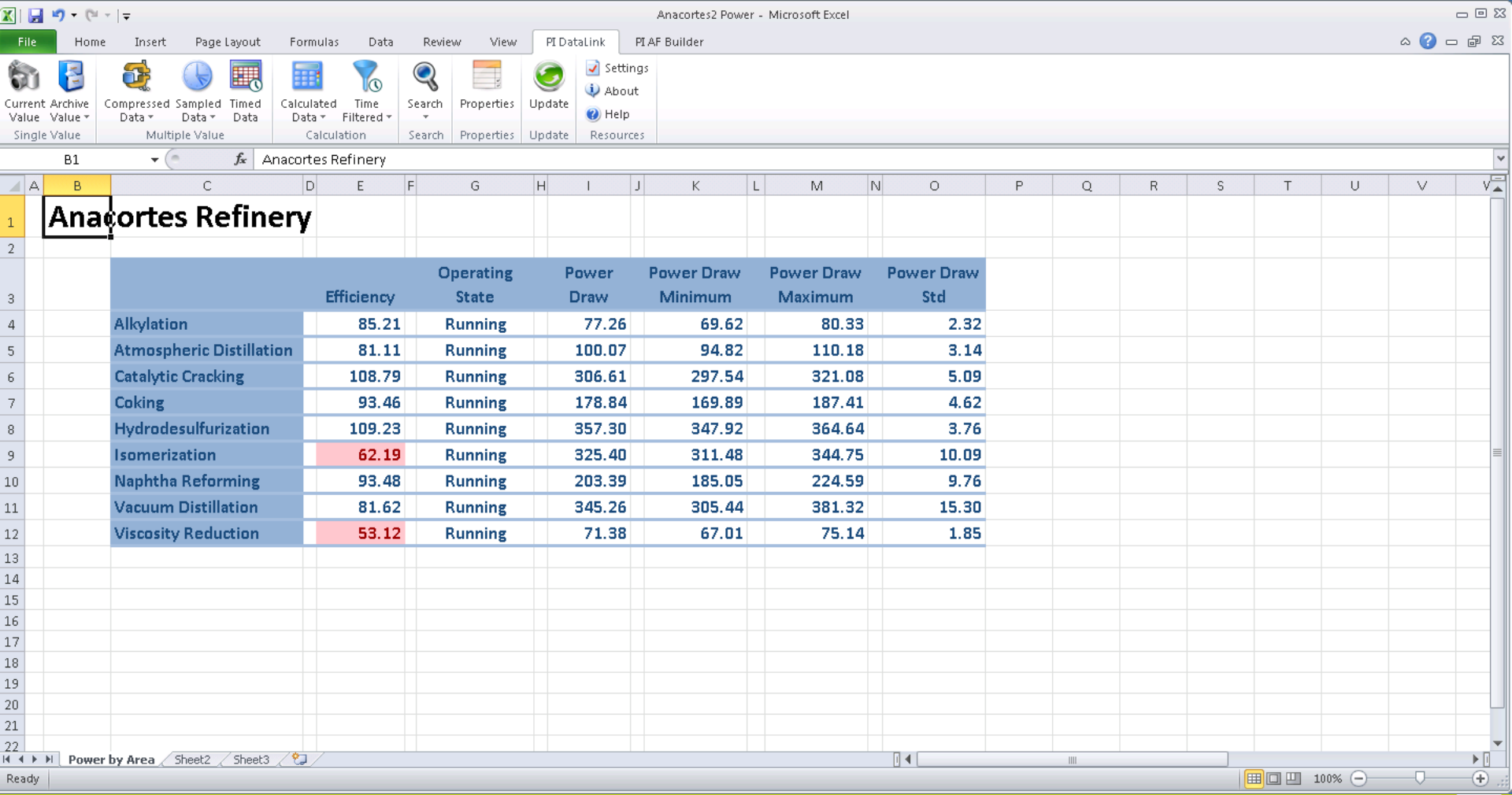

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PSE
ProcessBook ERD

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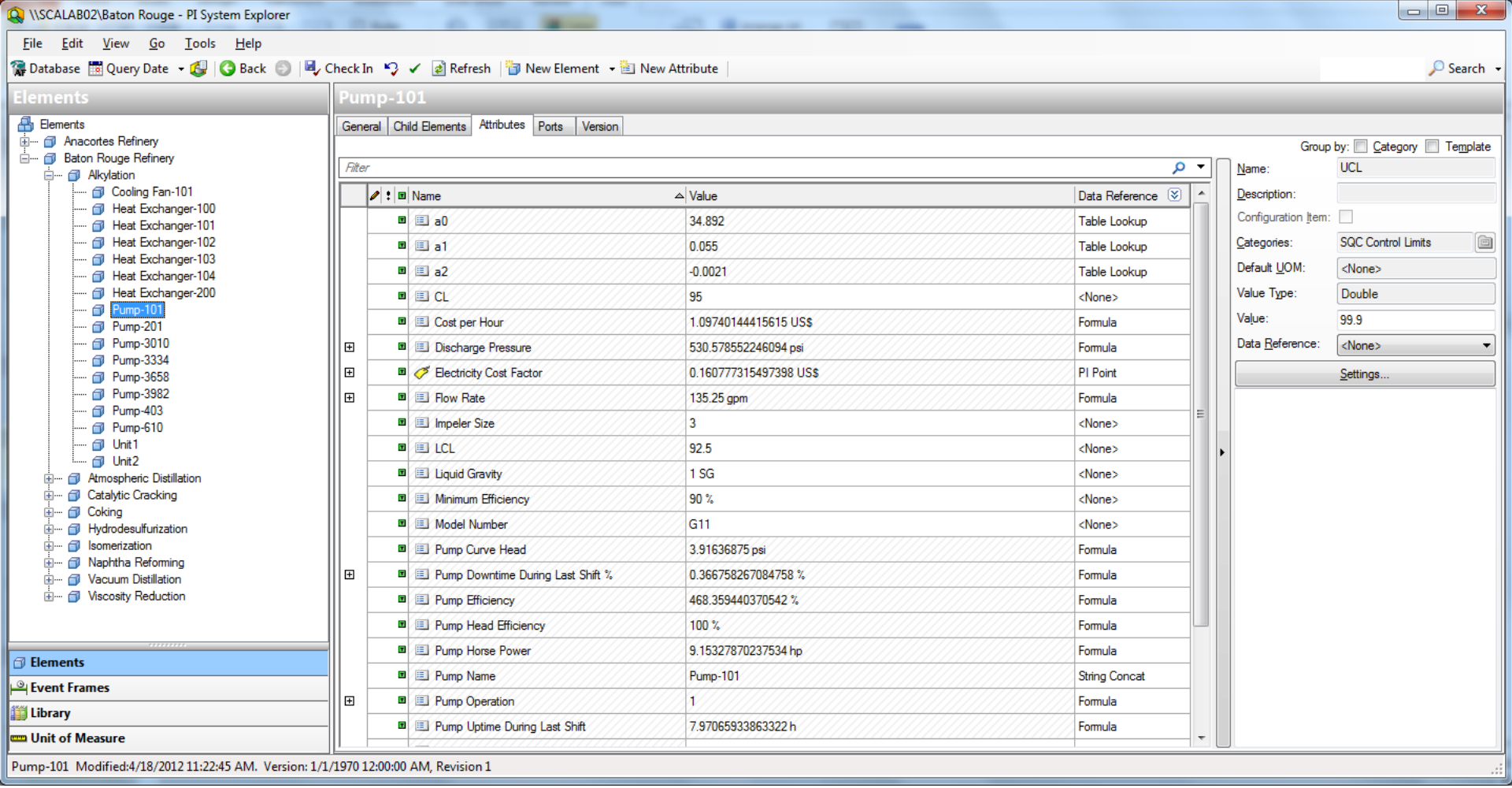

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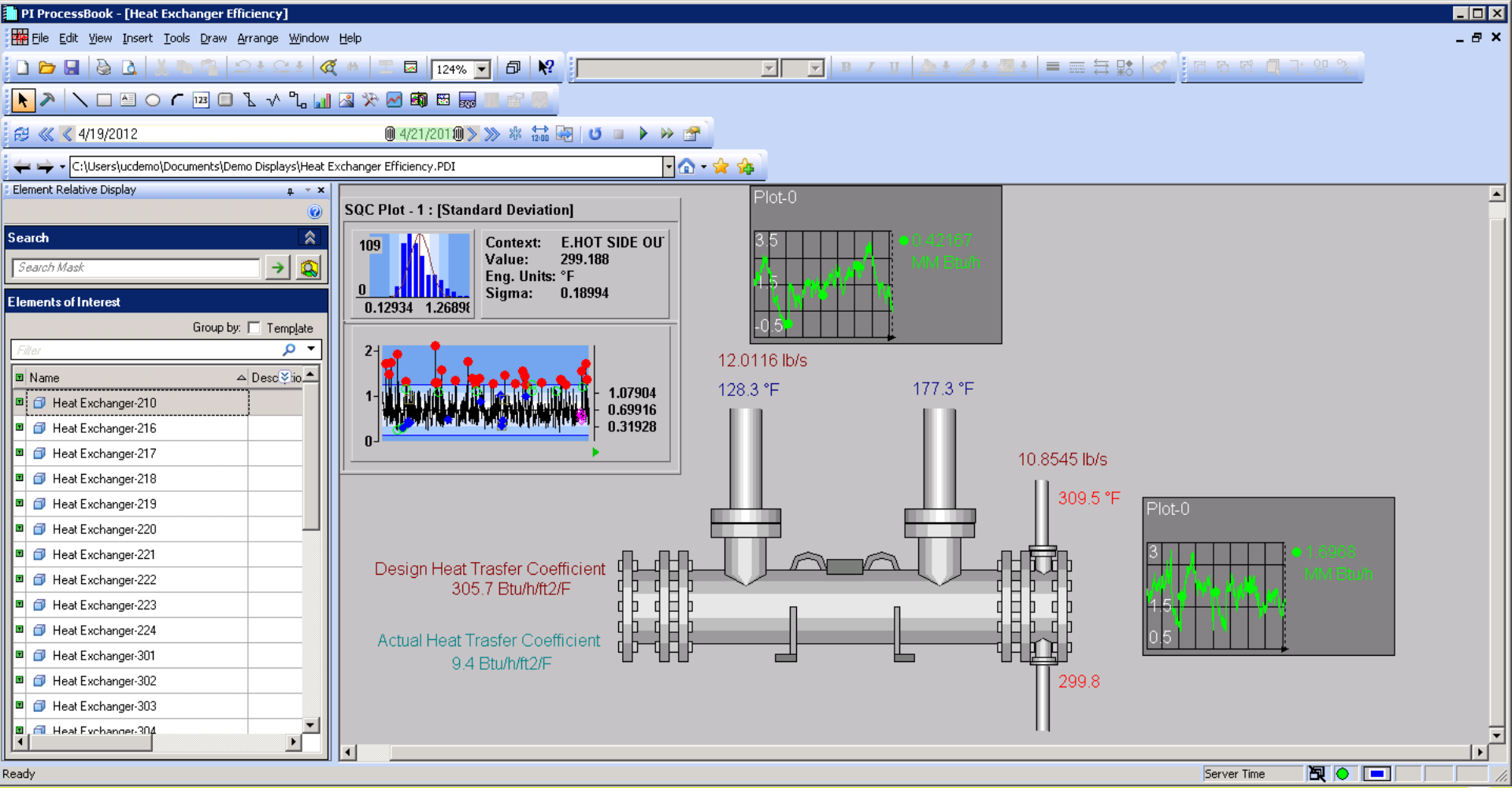

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Coresight 1.0 Features
Coresight 1.1 Compare

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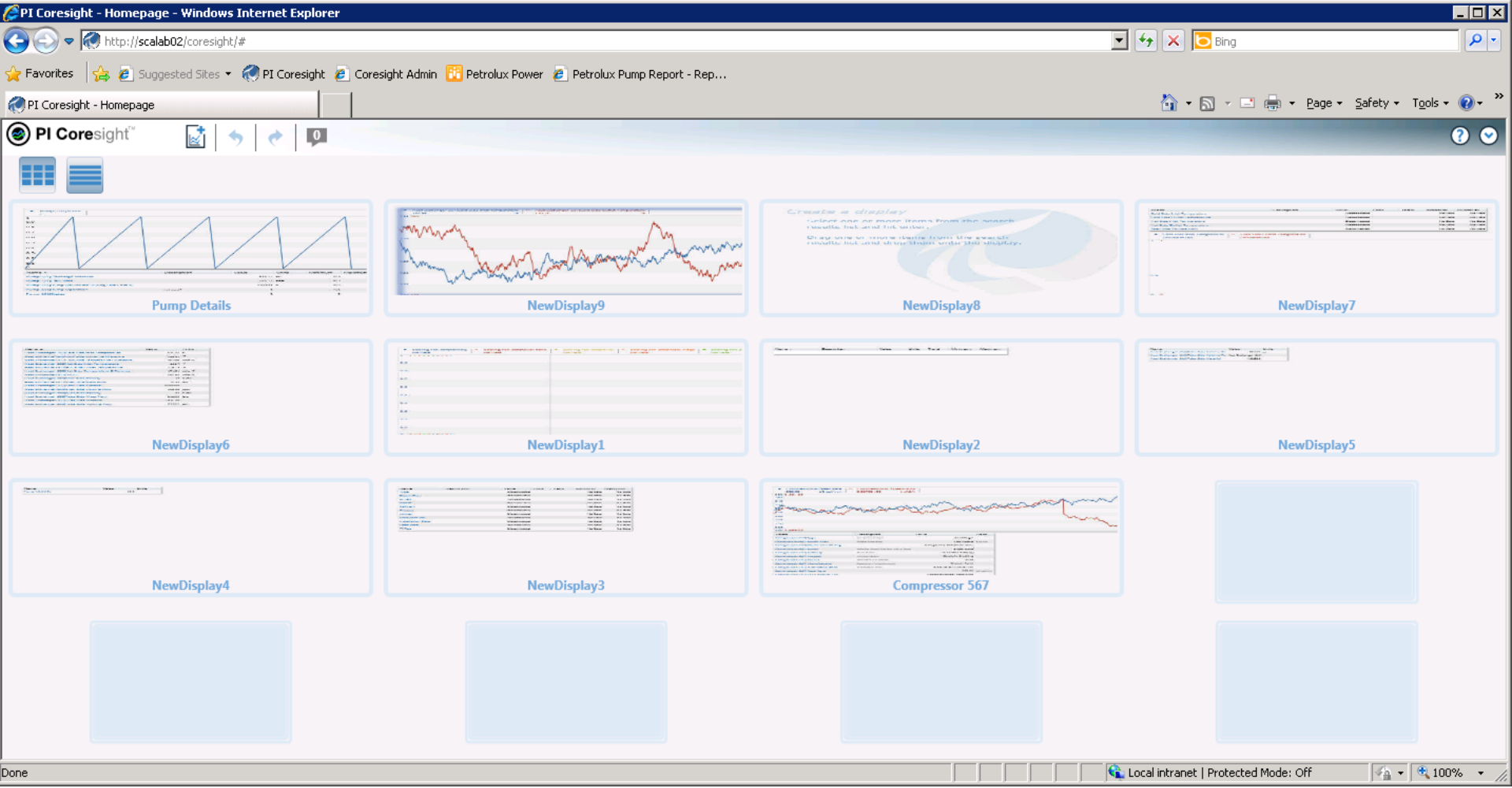

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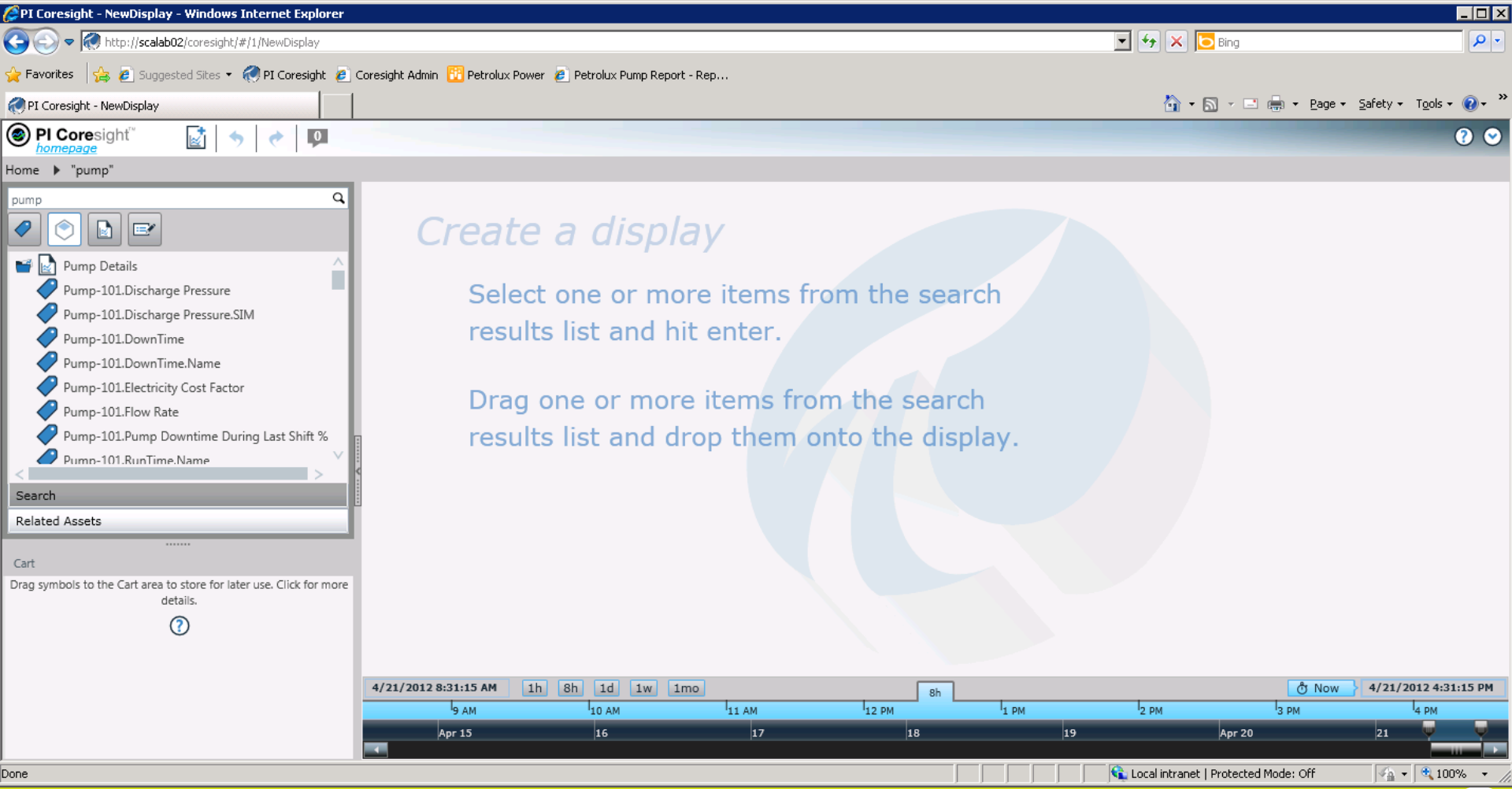

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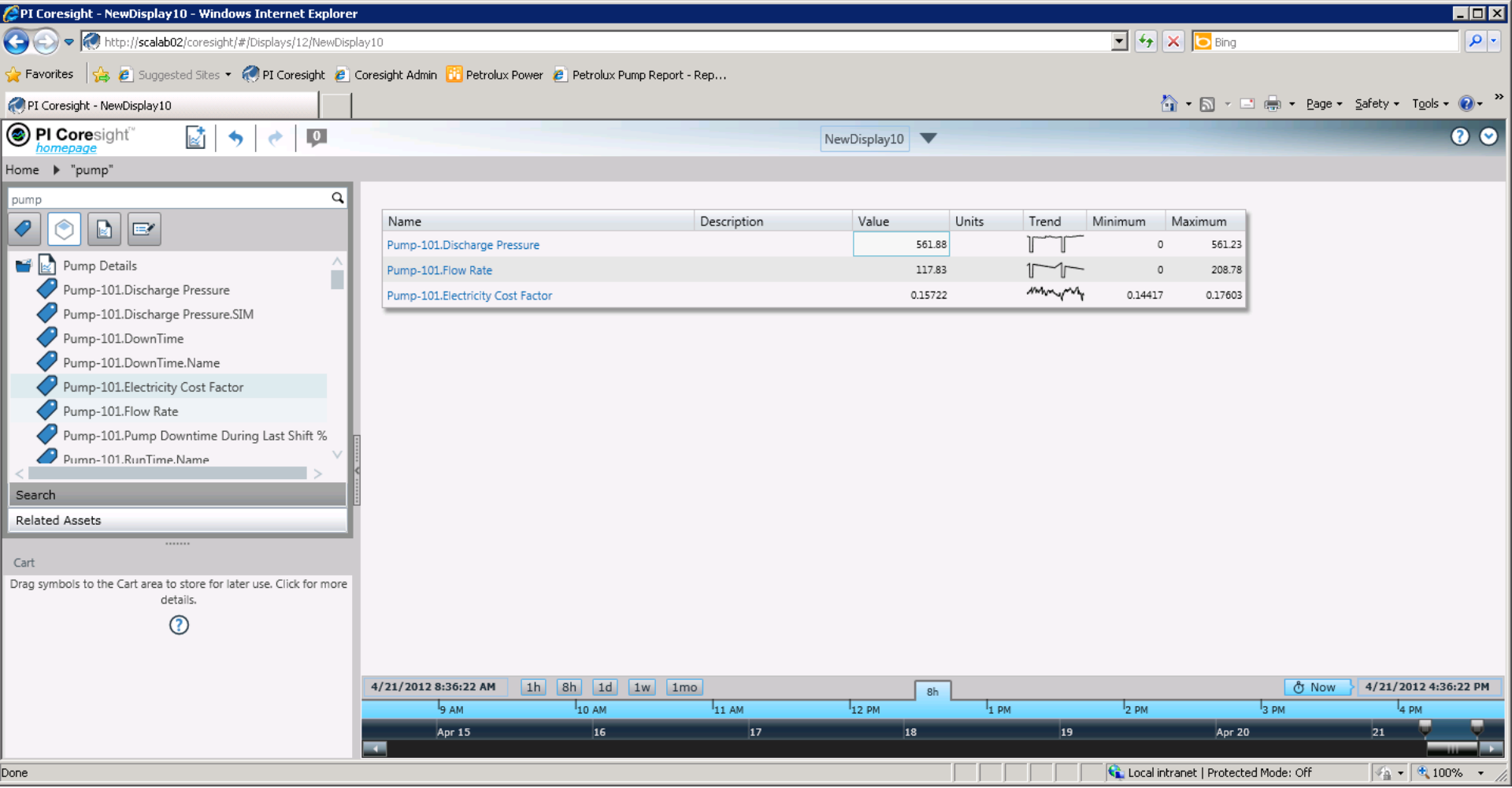

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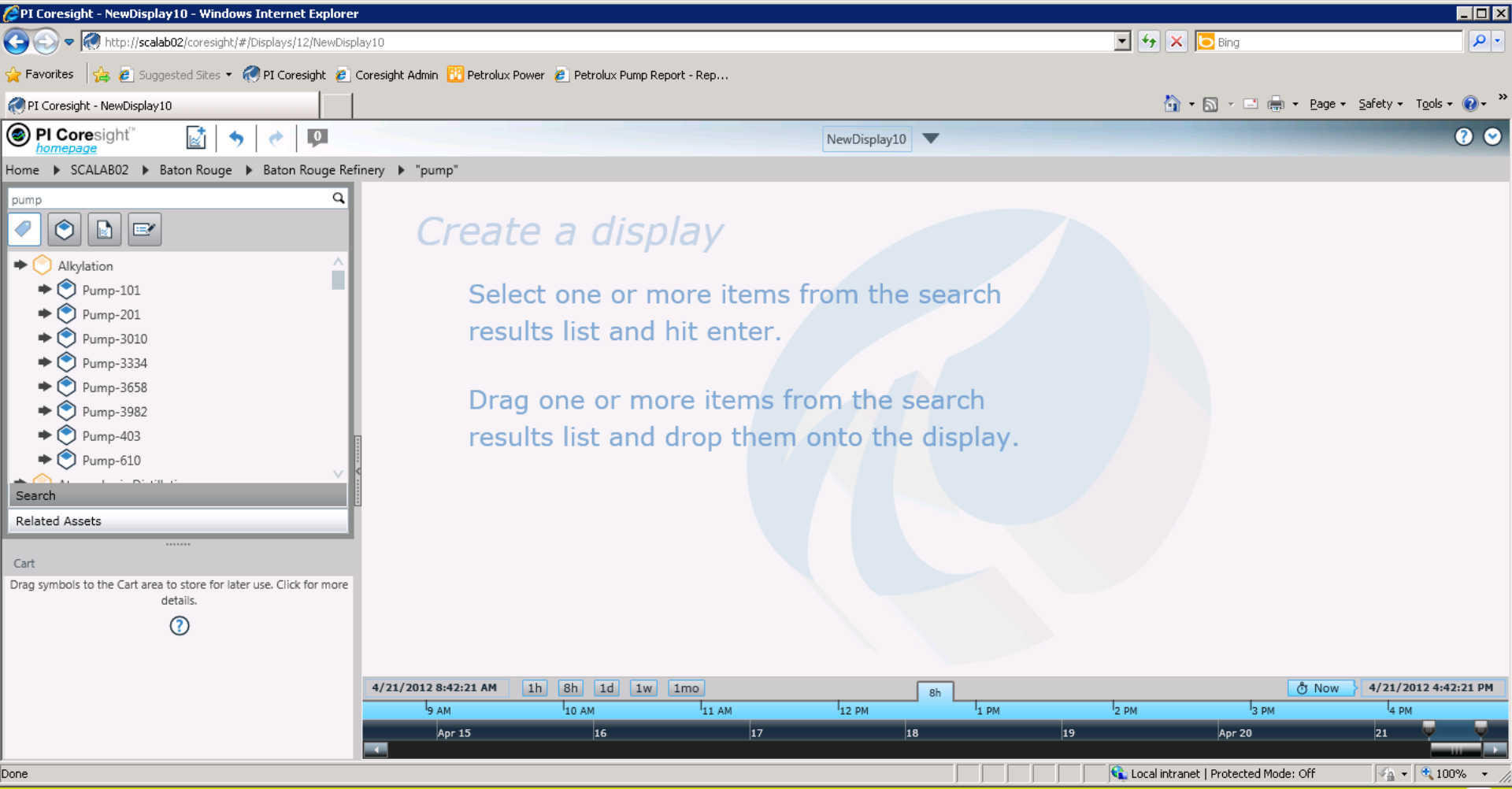

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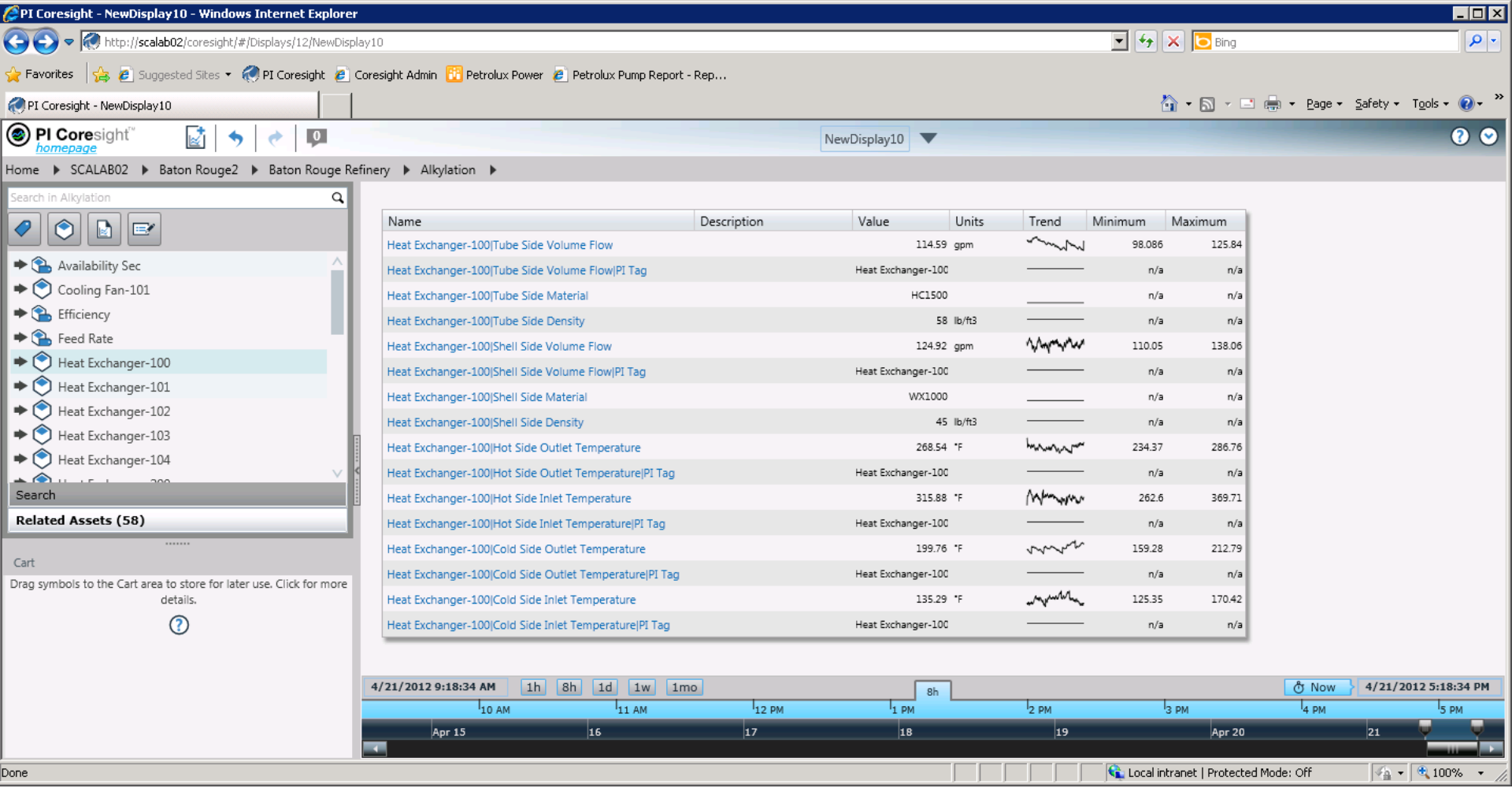

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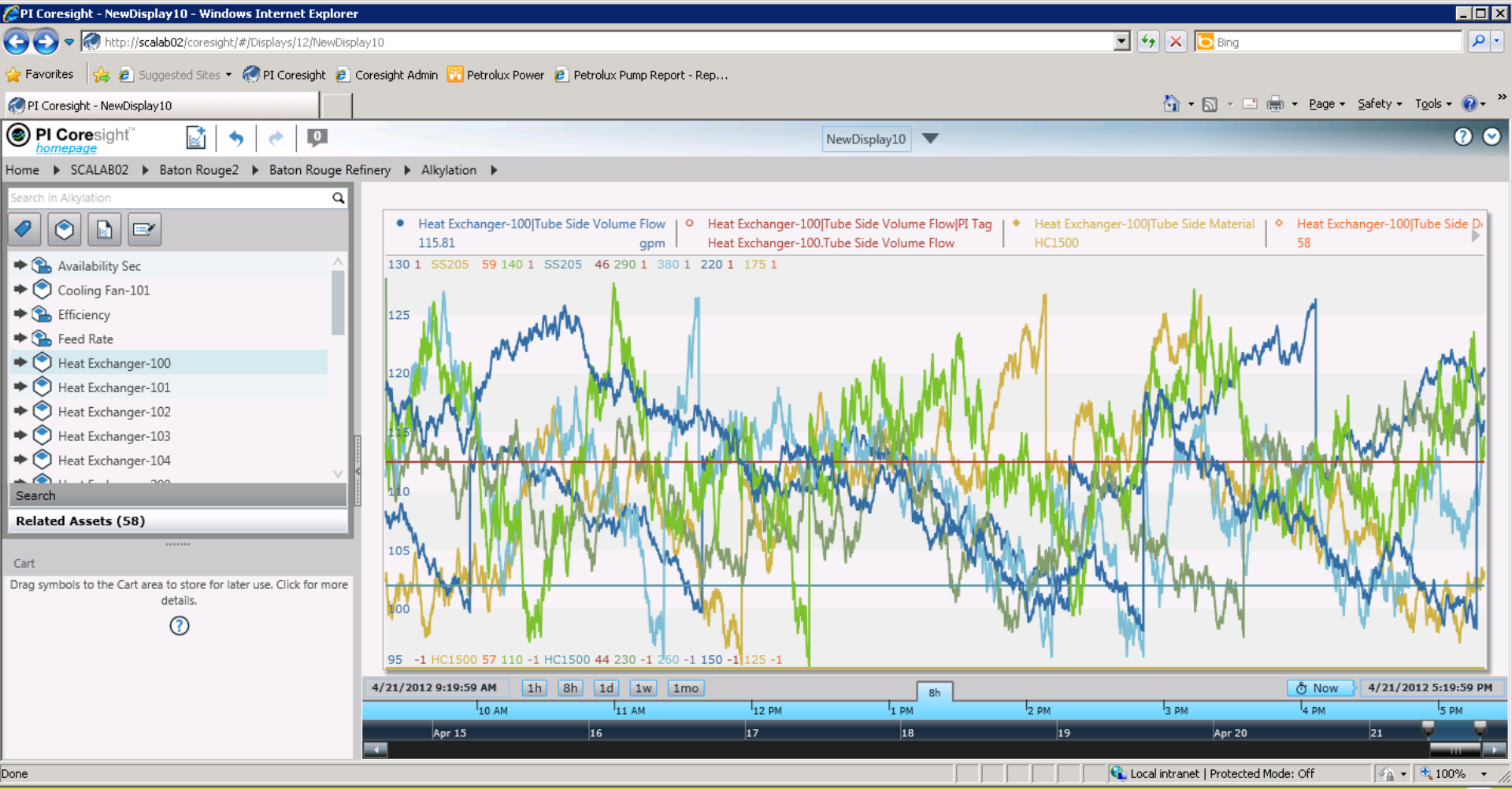

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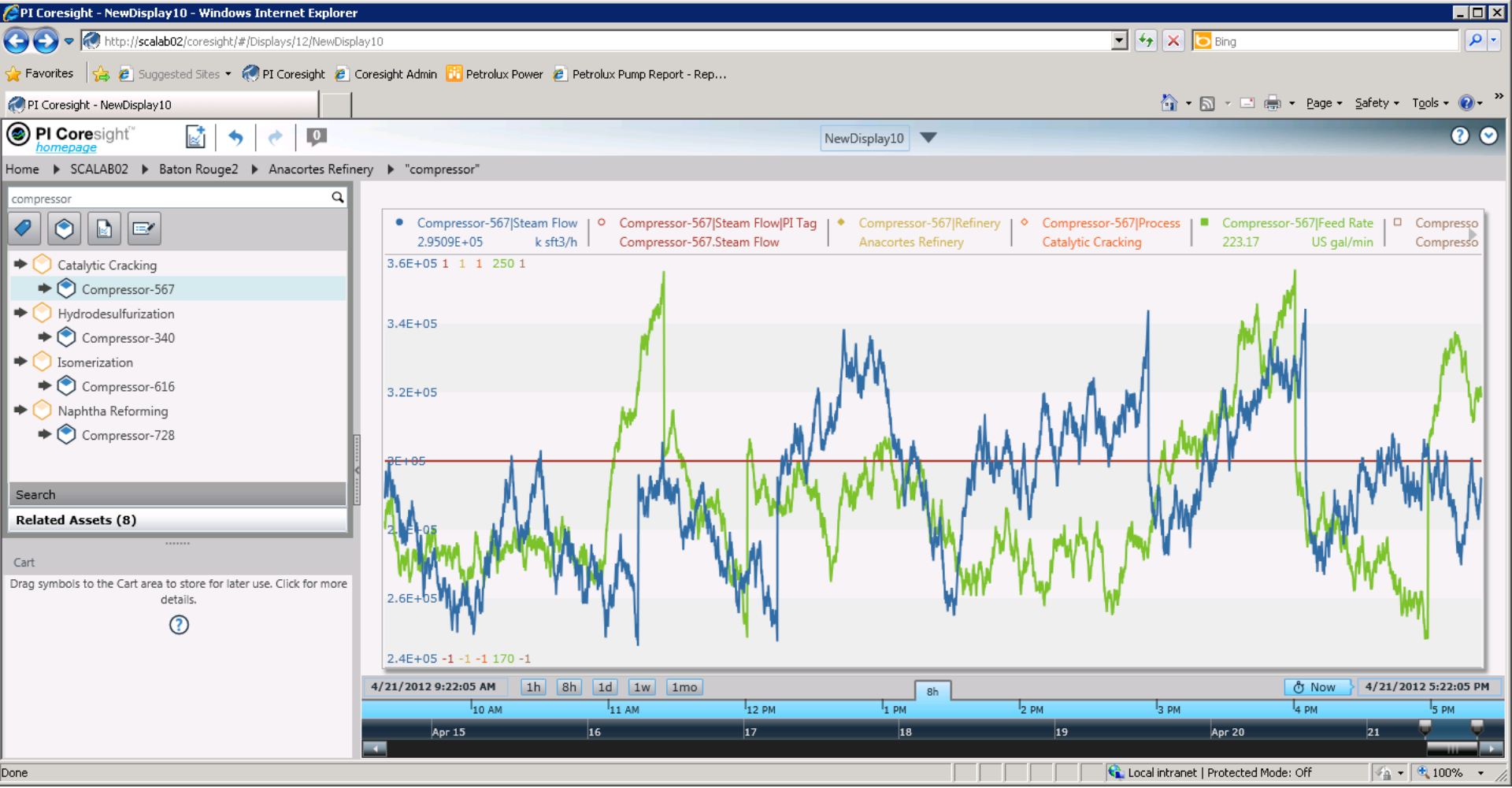

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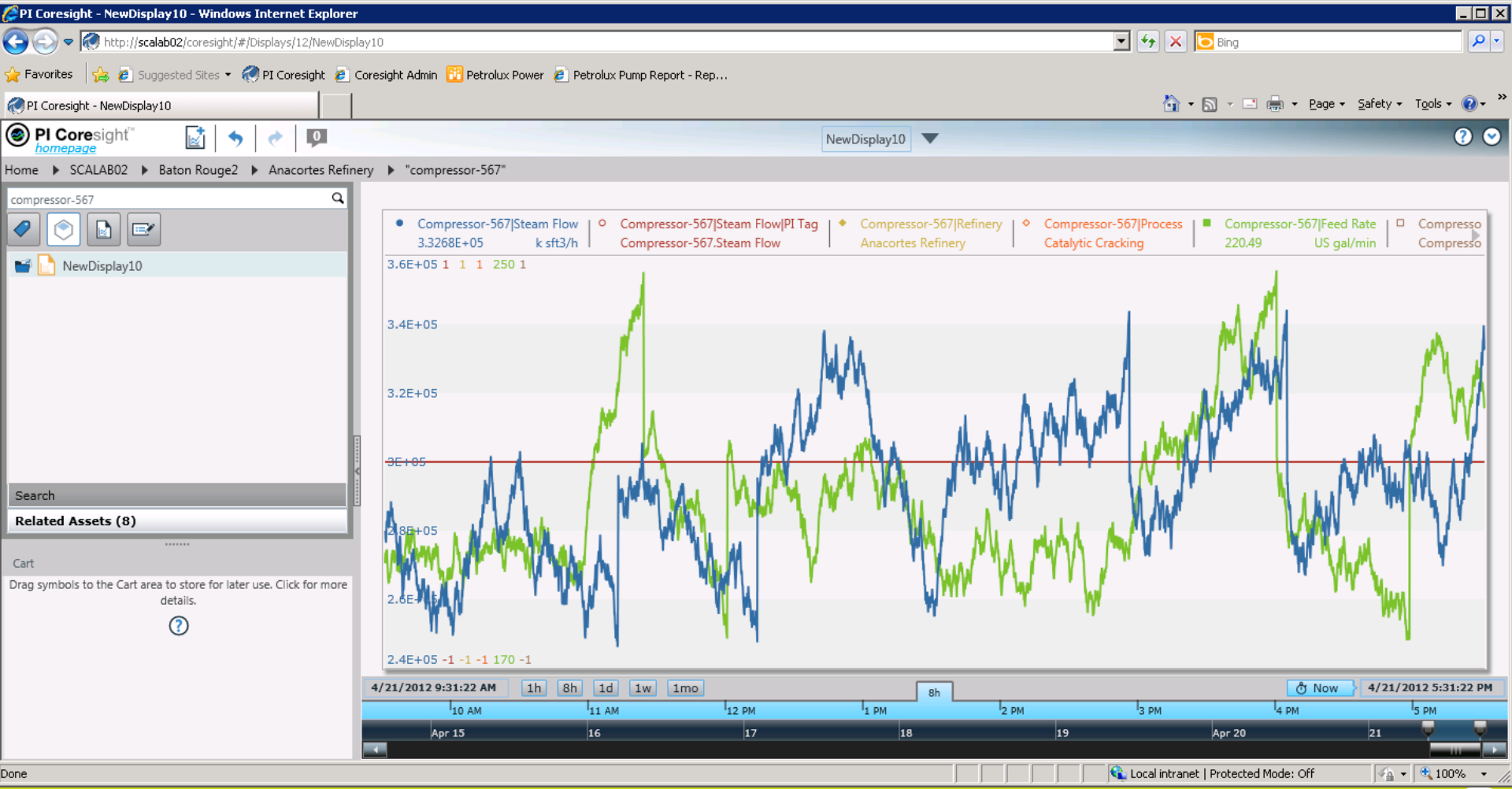

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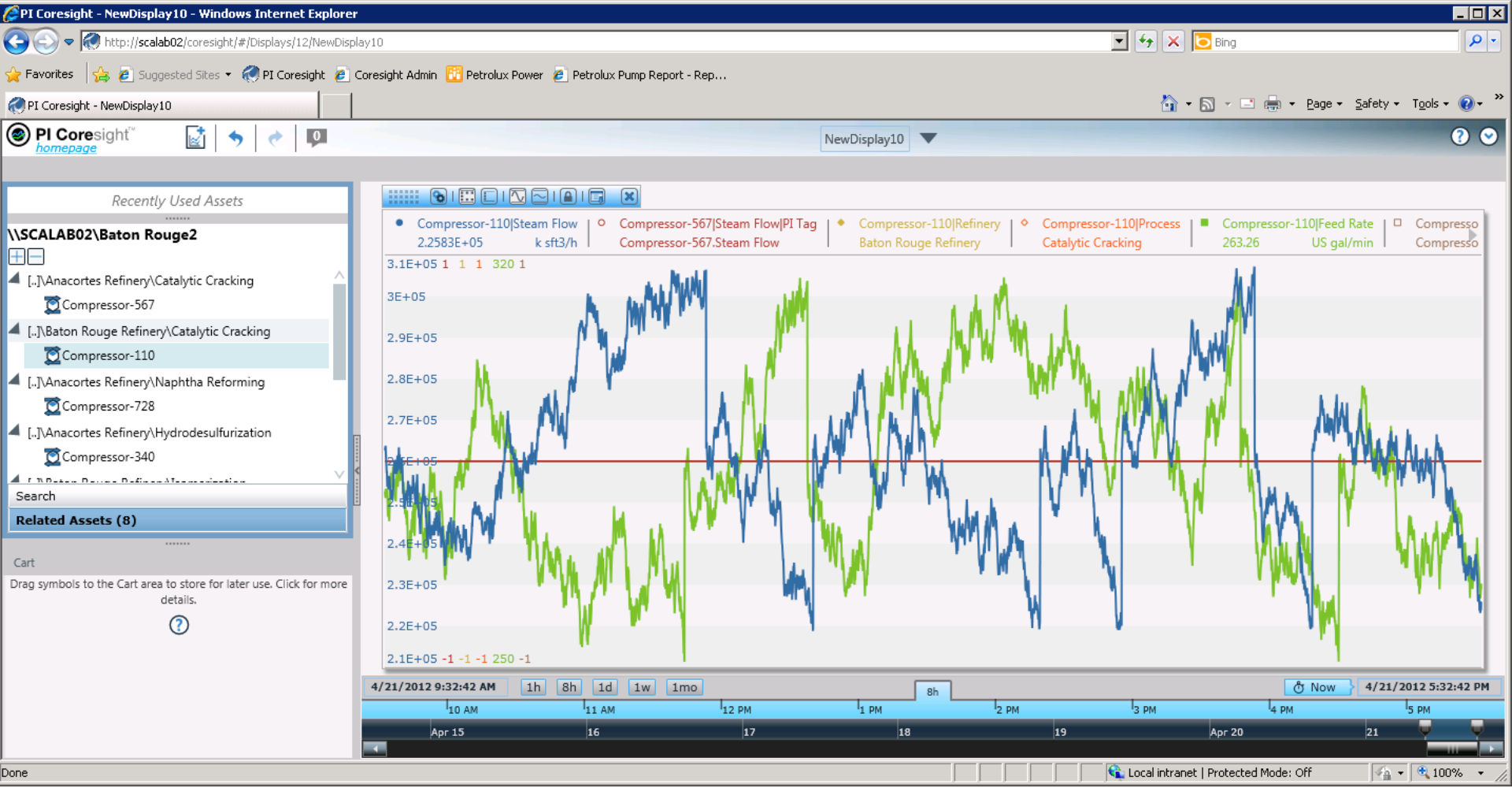

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PI Coresight - NewDisplay10 - Windows Internet Explorer

http://scalab02/coresight/#/Displays/12/NewDisplay10

Favorites | Suggested Sites | PI Coresight | Coresight Admin | Petrolux Power | Petrolux Pump Report - Rep...

PI Coresight - NewDisplay10

Page | Safety | Tools

PI Coresight homepage

NewDisplay10

Recently Used Assets

\\SCALAB02\Baton Rouge2

- [..]\Anacortes Refinery\Catalytic Cracking
  - Compressor-567
- [..]\Baton Rouge Refinery\Catalytic Cracking
  - Compressor-110
- [..]\Anacortes Refinery\Naphtha Reforming
  - Compressor-728
- [..]\Anacortes Refinery\Hydrodesulfurization
  - Compressor-340

Search

Related Assets (8)

Cart

Drag symbols to the Cart area to store for later use. Click for more details.

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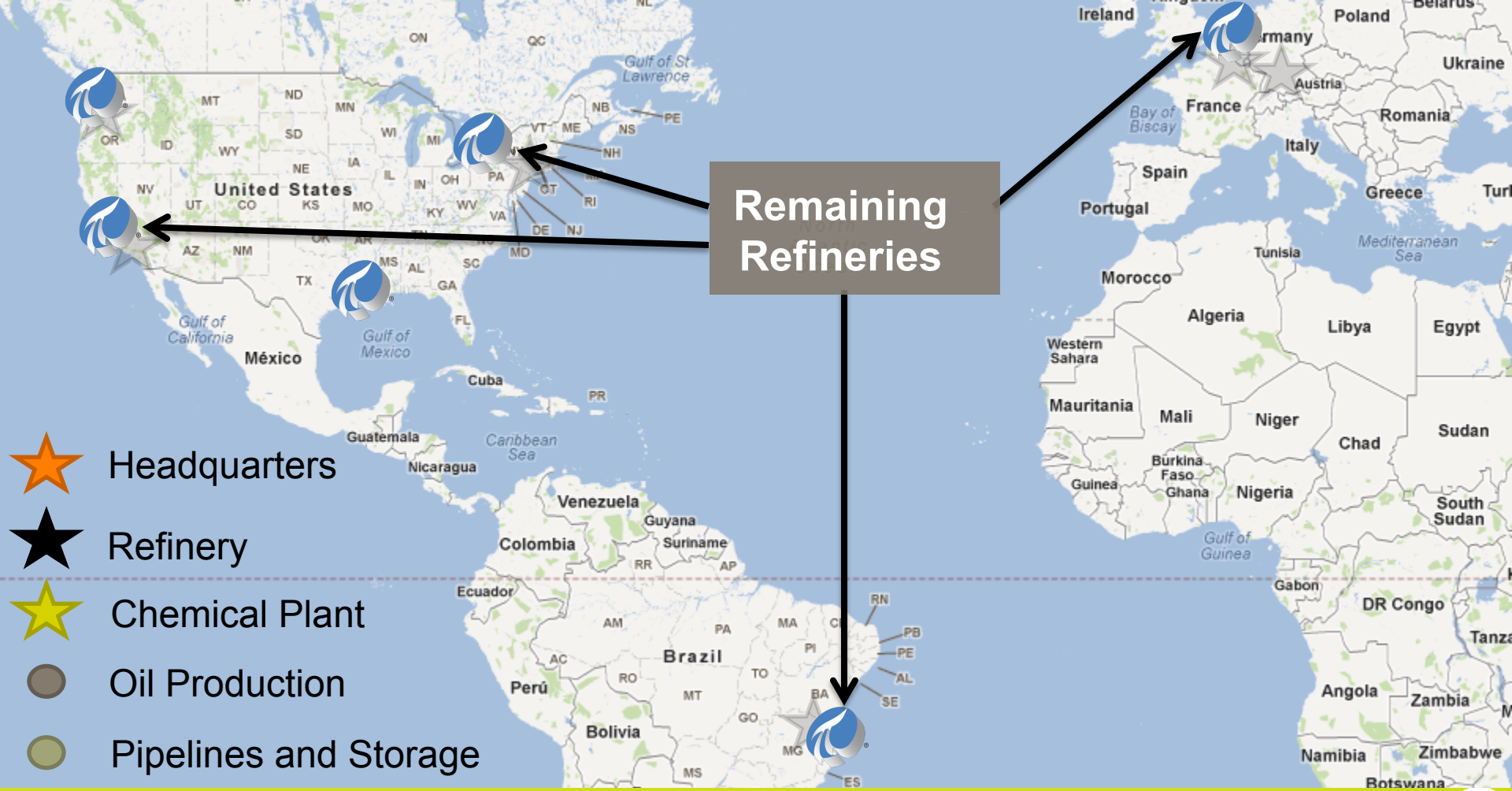

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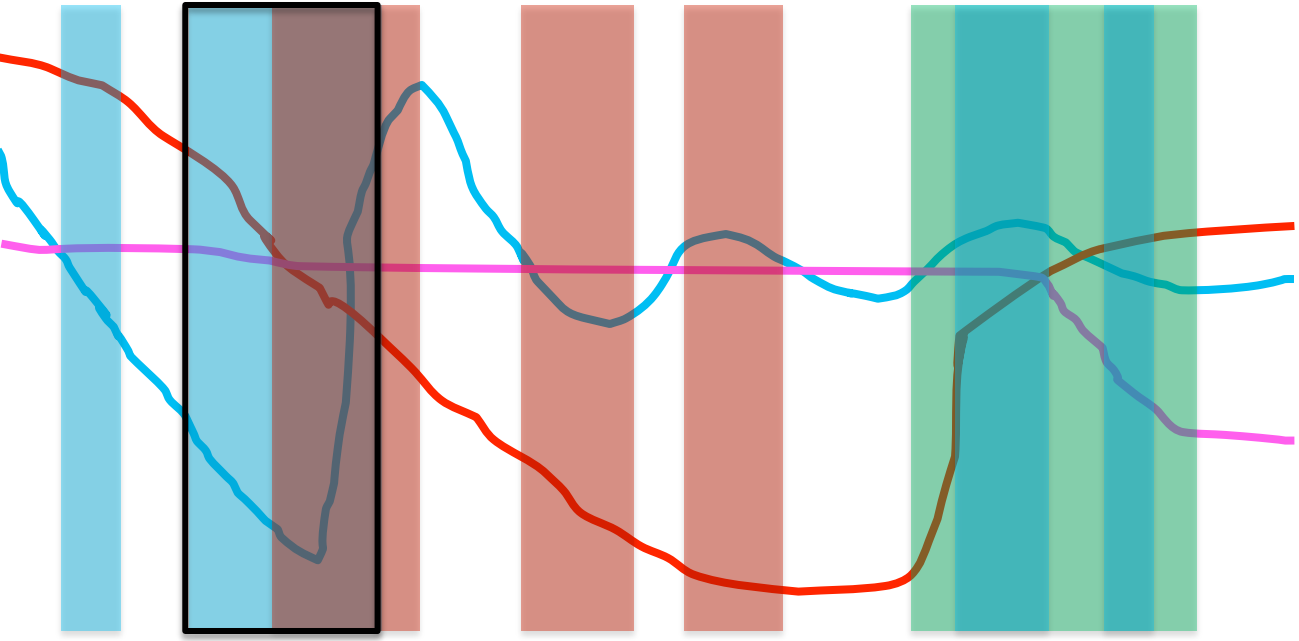
PI Event Frames is a core capability of the PI Server to record important process or business *events* and help you find the *related data*.



Event Attribute	Value
Name	Ex 20121215-0002
Start	15-Dec-2012 10:35:02
End	15-Dec-2012 10:47:26
Duration	12 min, 24 sec
Asset	Boiler-352
Excursion Type	High Violation
Fuel Gas Flow.Avg	37.12 k sft3/h
Fuel.Start	823.48 k sft3/ton
myPIKPI.Max	47.19 bbl/d

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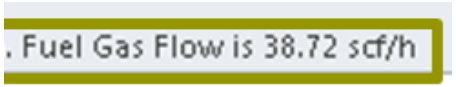
PI Notifications

- Define key events
- Customize message content



- Send to people and systems

- Acknowledge and escalate

- Simplify deployment with templates

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EF (PSE, SQL Report, Web Parts)
Notifications (Config, email, Coresight)

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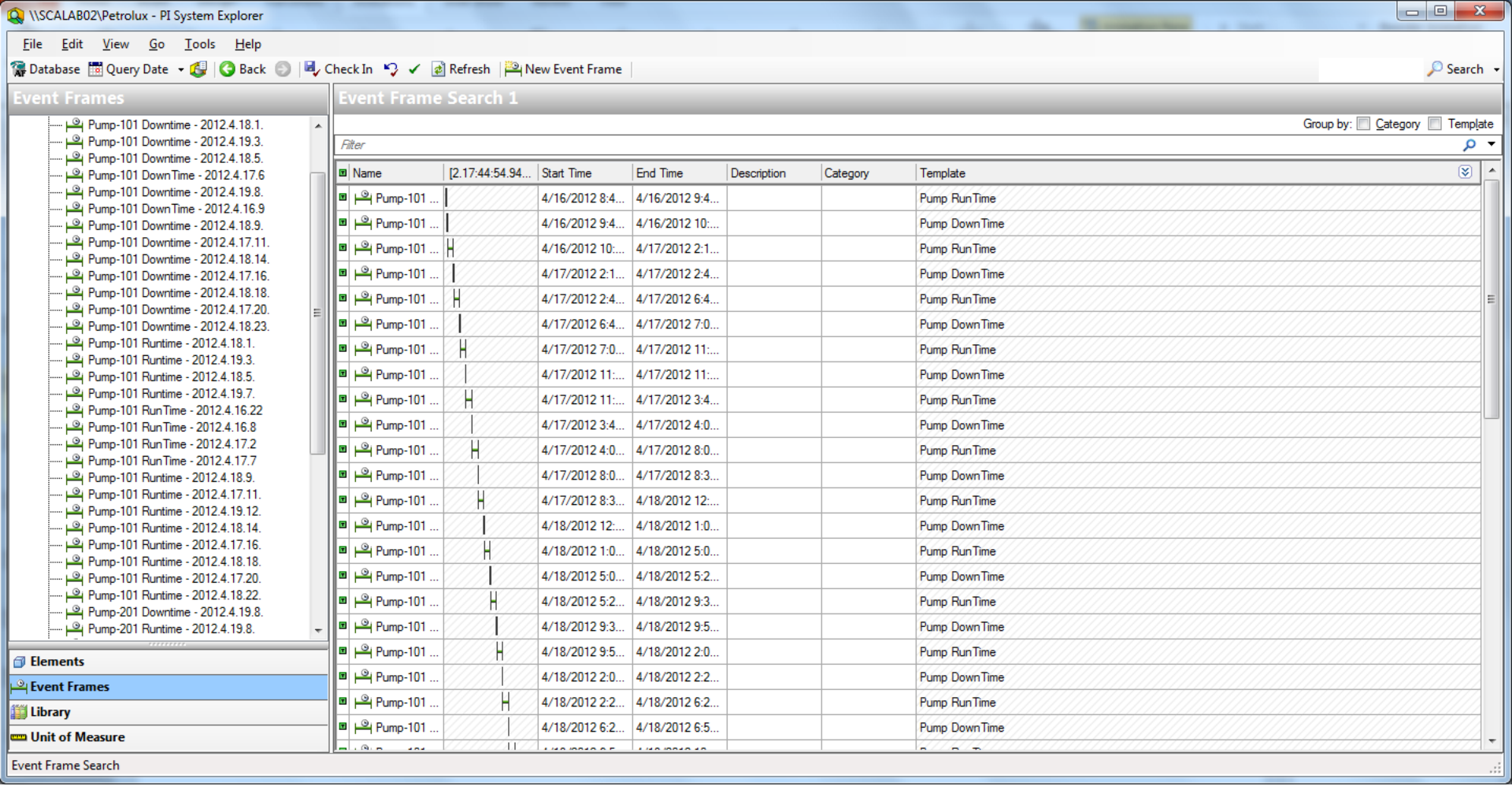

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Petrolux Pump Report - Report Manager - Windows Internet Explorer

http://scalab02/Reports/Pages/Report.aspx?ItemPath=%2fPetrolux+Production+Reports%2fPetrolux+Pump+Report

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Petrolux Pump Report - Report Manager

Home > Petrolux Production Reports > Petrolux Pump Report

Home | My Subscriptions | Site Settings | Help

Refinery: Baton Rouge Refinery Refinery Unit: Alkylation View Report

1 of 1 100% Find | Next

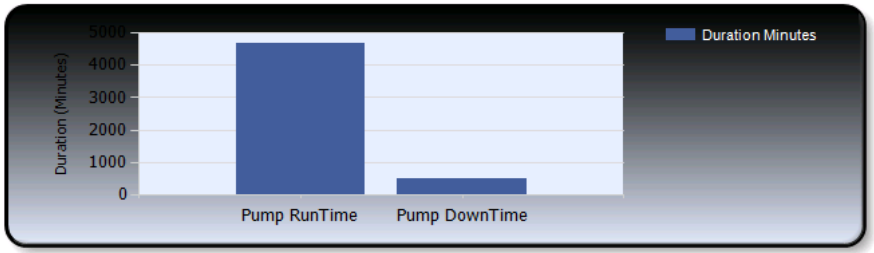
Petrolux Pump Report

Report Name: Petrolux Pump Report Report Execution Time: 4/21/2012 3:47:55 PM

Report Author: SCALE\ucdemo

Total Event Duration by Unit

Event Type	Total Event Duration	In Minutes	Event Count	Expected Duration
Pump DownTime	07:47:20	467	22	
Pump RunTime	3.06:11:34	4692	20	1051200



Total Event Duration by Pump

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Petrolux Pump Report - Report Manager

Page | Safety | Tools

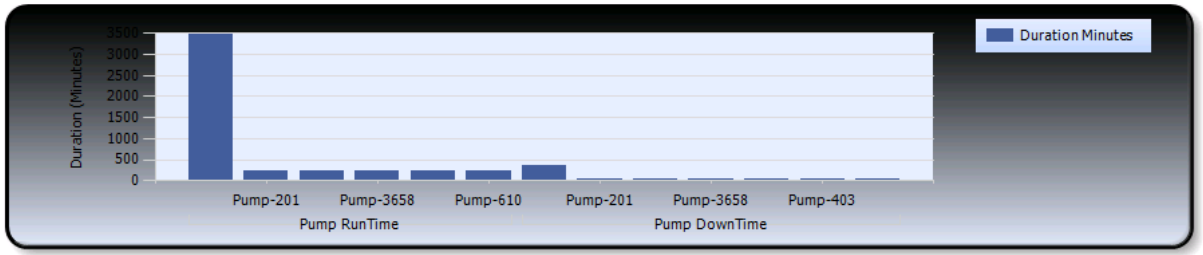
Home > Petrolux Production Reports > Petrolux Pump Report

Home | My Subscriptions | Site Settings | Help

Refinery: Baton Rouge Refinery Refinery Unit: Alkylation View Report

1 of 1 100% Find | Next

Pump Name	Event Type	Event Count	Duration Time	Duration Minutes	Expected Duration
Pump-101	Pump RunTime	15	2.09:51:33	3472	1051200
Pump-201	Pump RunTime	1	04:04:00	244	1051200
Pump-3010	Pump RunTime	1	04:04:01	244	1051200
Pump-3658	Pump RunTime	1	04:04:00	244	1051200
Pump-3982	Pump RunTime	1	04:04:00	244	1051200
Pump-403	Pump DownTime	1	00:24:00	24	
Pump-610	Pump RunTime	1	04:04:00	244	1051200



Pump Event Detail

Pump Name	Event Frame Name	Template Name	Start Time	End Time	Duration

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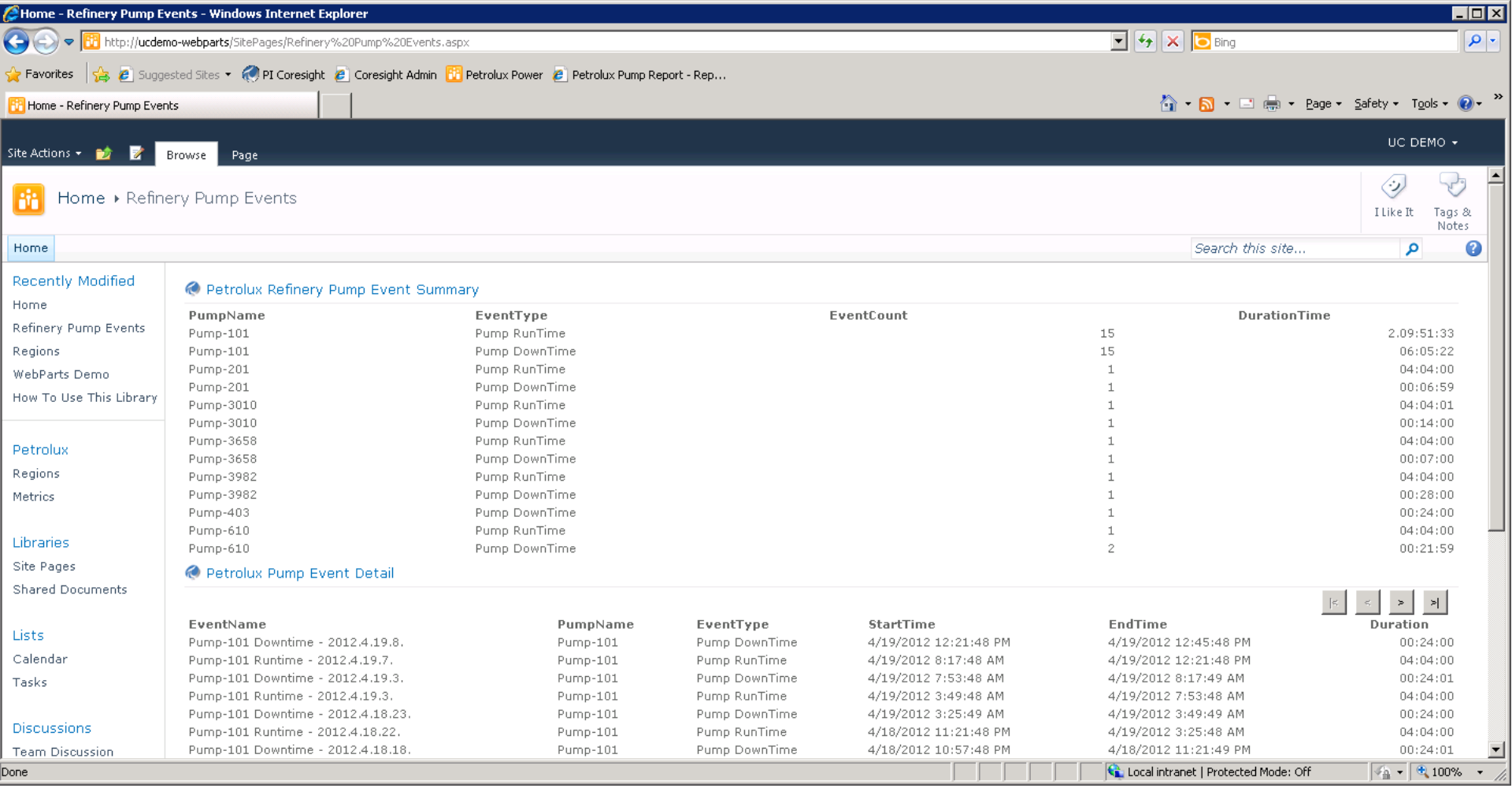

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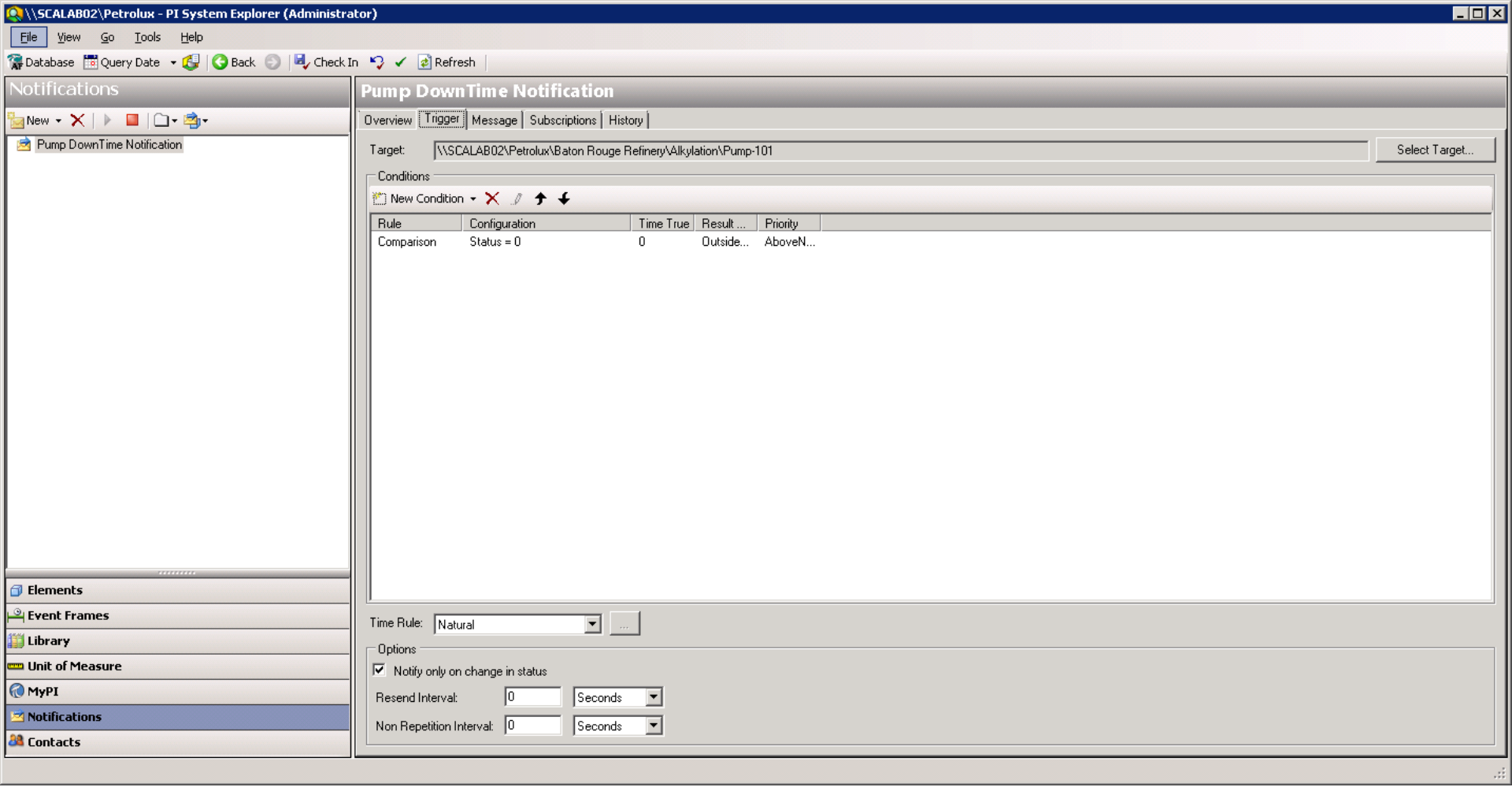

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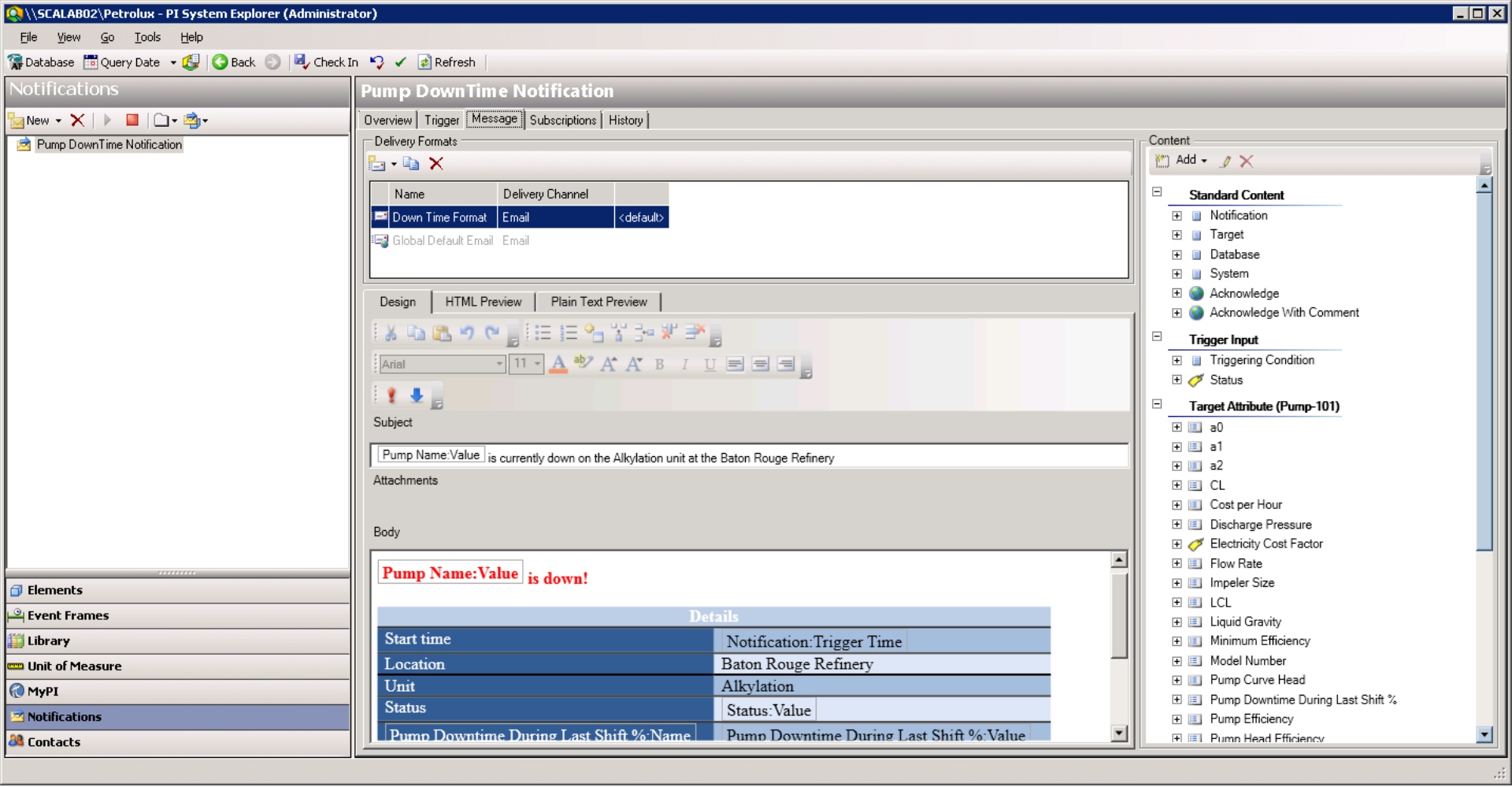

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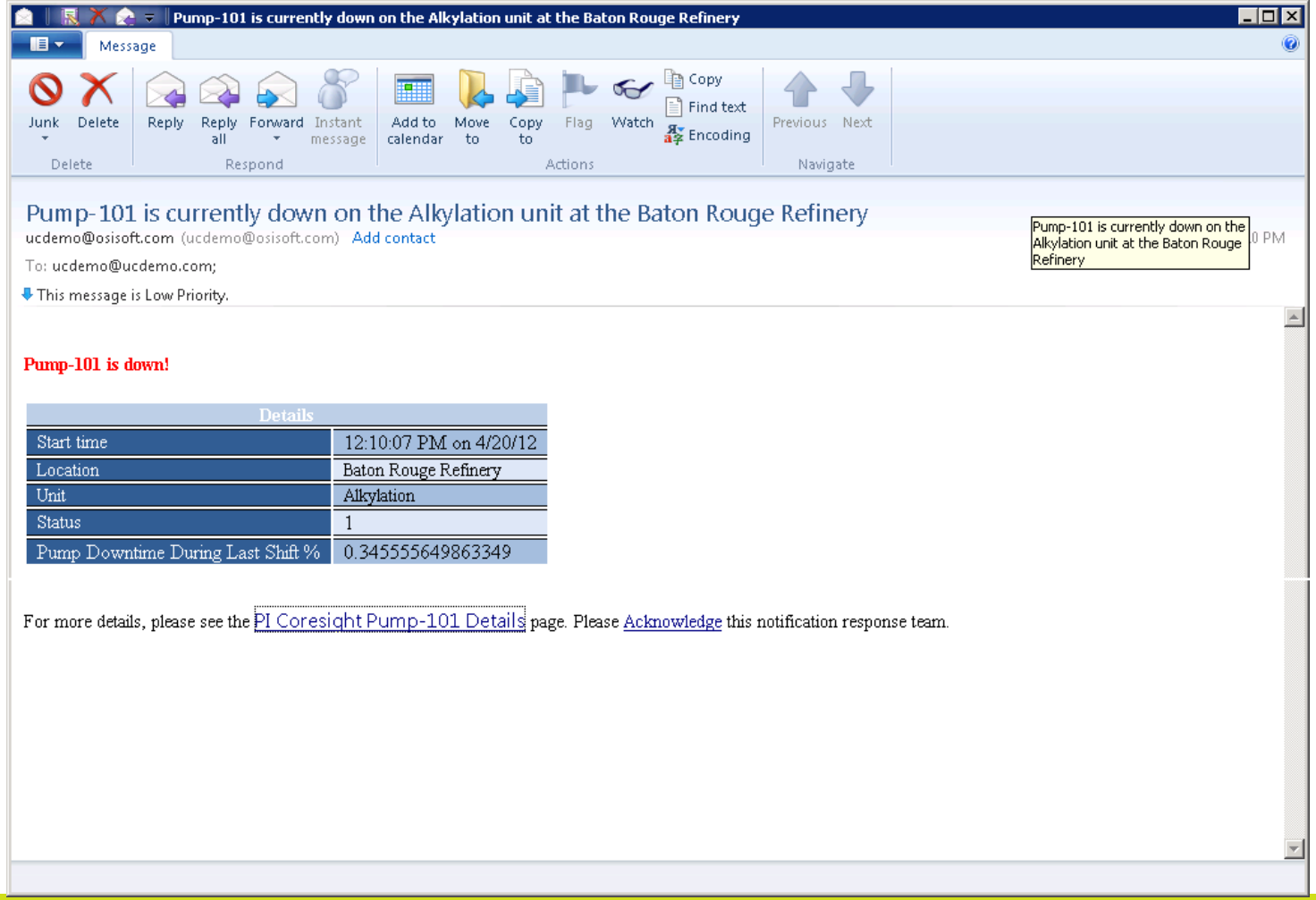

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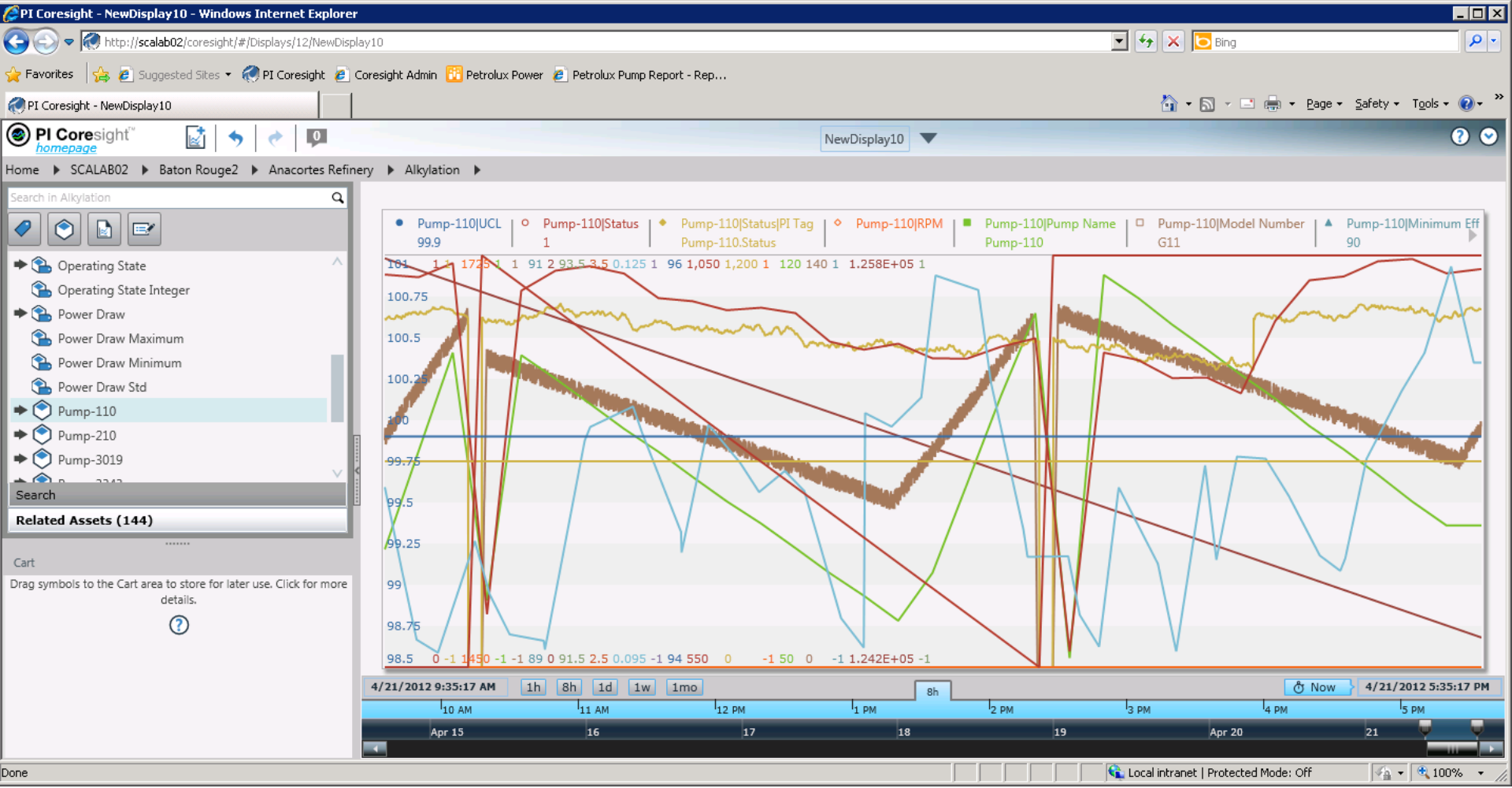

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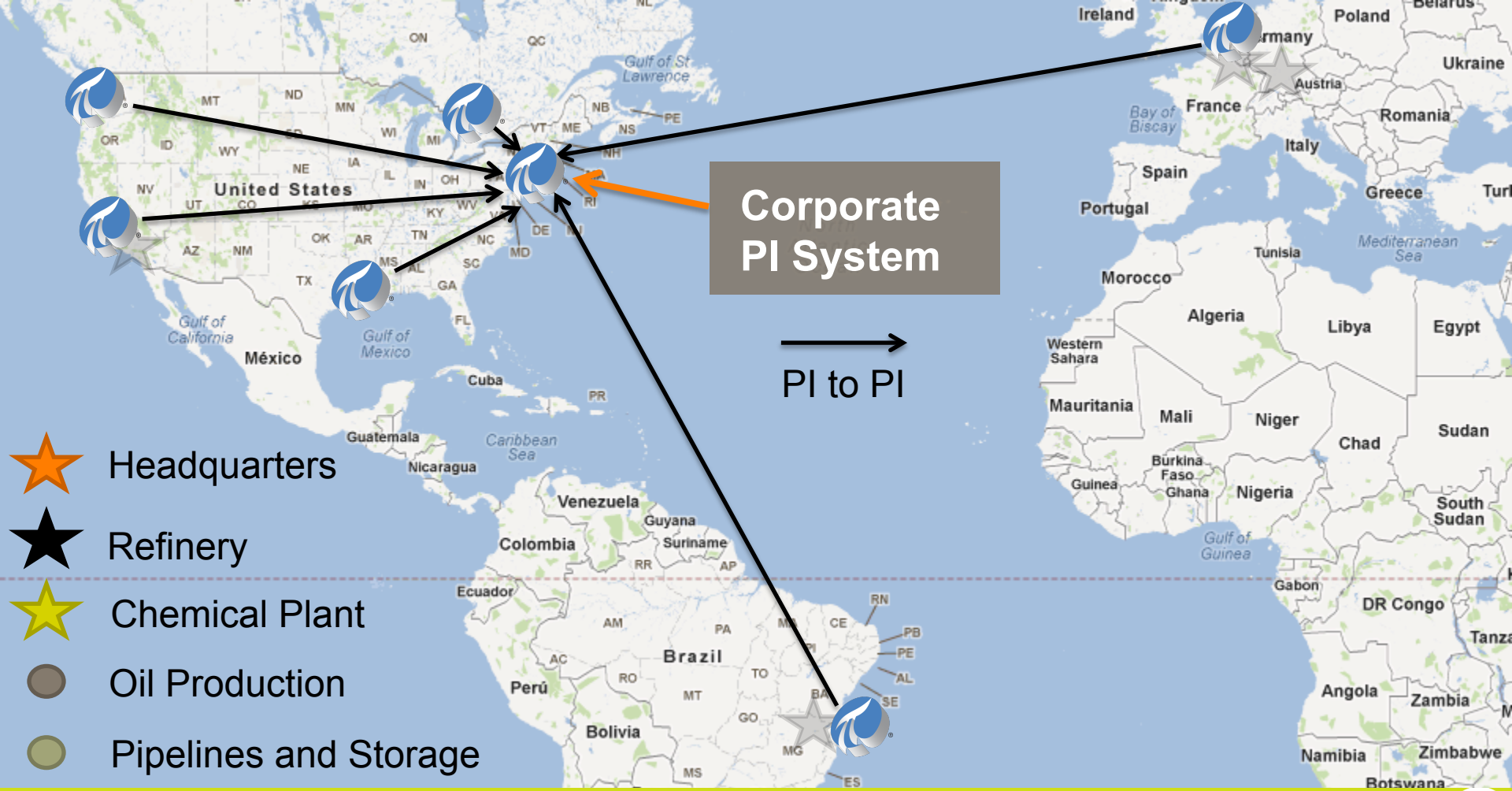

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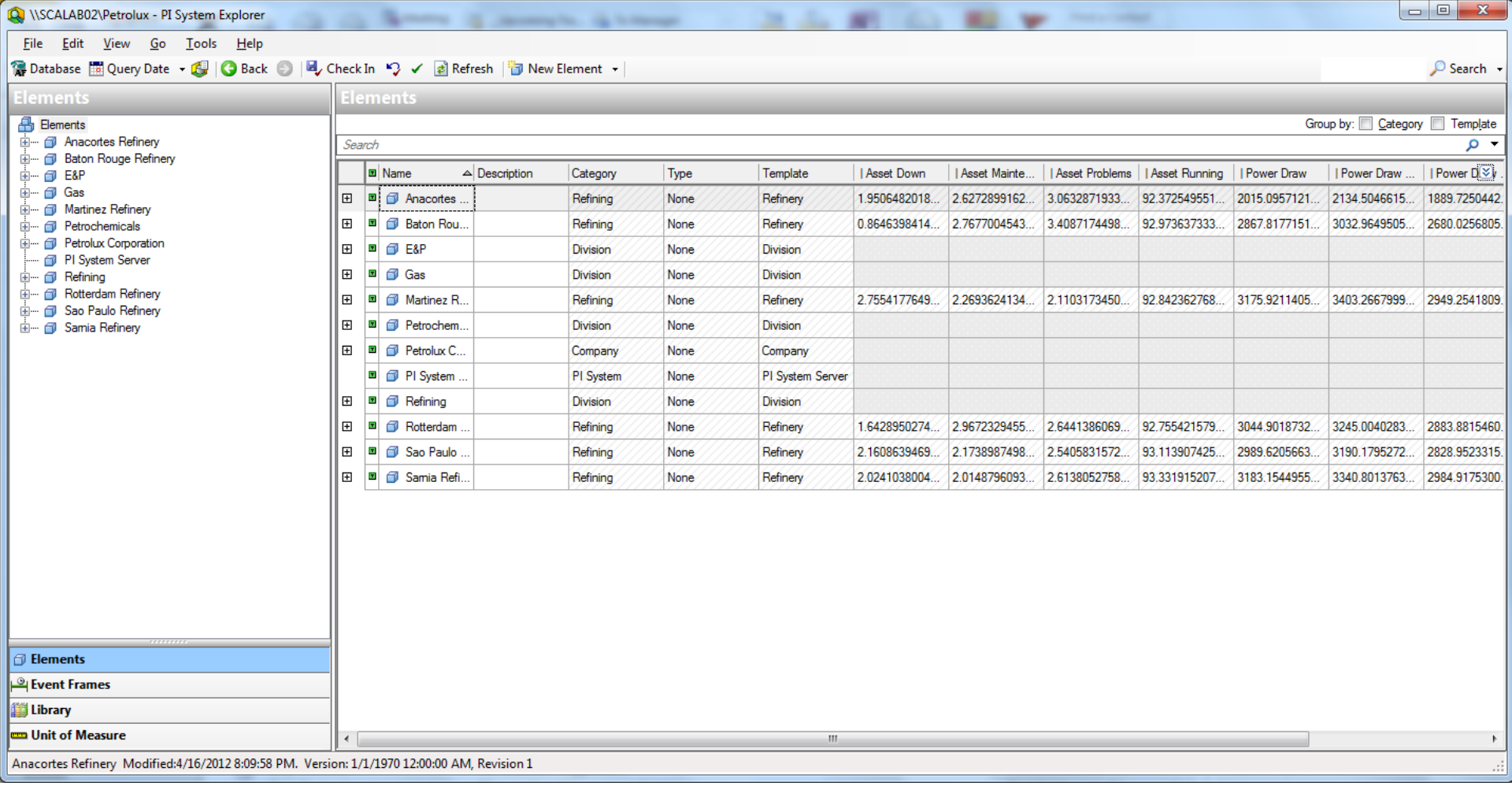

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Home - Home - Windows Internet Explorer

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Favorites | Suggested Sites | PI Coresight | Coresight Admin | Petrolux Power | Web Slice Gallery

Home - Home

Site Actions | Browse | Page | UC DEMO

Regions
Metrics

Libraries
Site Pages
Shared Documents

Lists
Calendar
Tasks

Discussions
Team Discussion

Recycle Bin
All Site Content

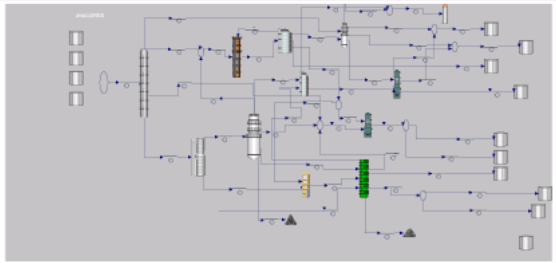
Petrolux

Metrics

Refinery	Power Usage KPI	Power Draw Std	Power Draw Minimum	Power Draw Maximum	Power Draw	Availability	Asset Running	Asset Problems	Asset Maintenance	Asset Down
Sarnia Refinery	8.0407	13.736	2837.5	3341.9	3076.8	184.52	93.525	2.5998	2.0191	1.8483
Sao Paulo Refinery	6.4535	10.112	2717.8	3158.1	2951.1	183.72	93.183	2.5471	2.1438	2.1389
Rotterdam Refinery	8.655	11.967	2834.5	3293	3075.1	183.42	92.902	2.6379	2.9613	1.4749
Martinez Refinery	8.5241	10.221	3008.5	3410.3	3193.5	182.09	92.879	2.1048	2.2589	2.8774
Baton Rouge Refinery	4.0762	8.5166	2675	3034.9	2860.1	184.63	92.759	3.3982	2.76	1.0643
Anacortes Refinery	6.4596	5.2272	1883.3	2101.7	2007	183.25	92.406	3.0565	2.6316	1.9177

PI Graphic

Messages [1]



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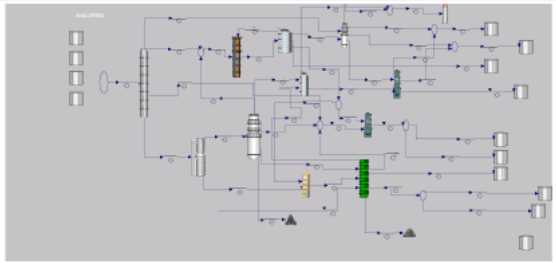
Page | Safety | Tools

Site Actions | Browse | Page | UC DEMO

Recycle Bin

All Site Content

Messages [1]



PI Table

Region	Total Production	Oil Forecast	Gas Forecast	Fuel Gas	Chemical Use
\E&P\South Region\Field J5	24.085	2928.6	5300	123	435
\E&P\South Region\Field J4	123.22	3666.7	2020	369	1305
\E&P\South Region\Field J3	85.671	3428.6	1900	246	870
\E&P\South Region\Field J2	130.73	3333.3	1800	246	870
\E&P\South Region\Field J1	105.95	3142.9	1600	123	435
\E&P\North Region\Yellow	107.95	3142.9	1600	246	870
\E&P\North Region\Terminal 2D	89.399	3333.3	1643	123	435
\E&P\North Region\Red	77.868	3142.9	1600	246	870

Showing 1 to 8 of 28

Done | Local intranet | Protected Mode: Off | 100%

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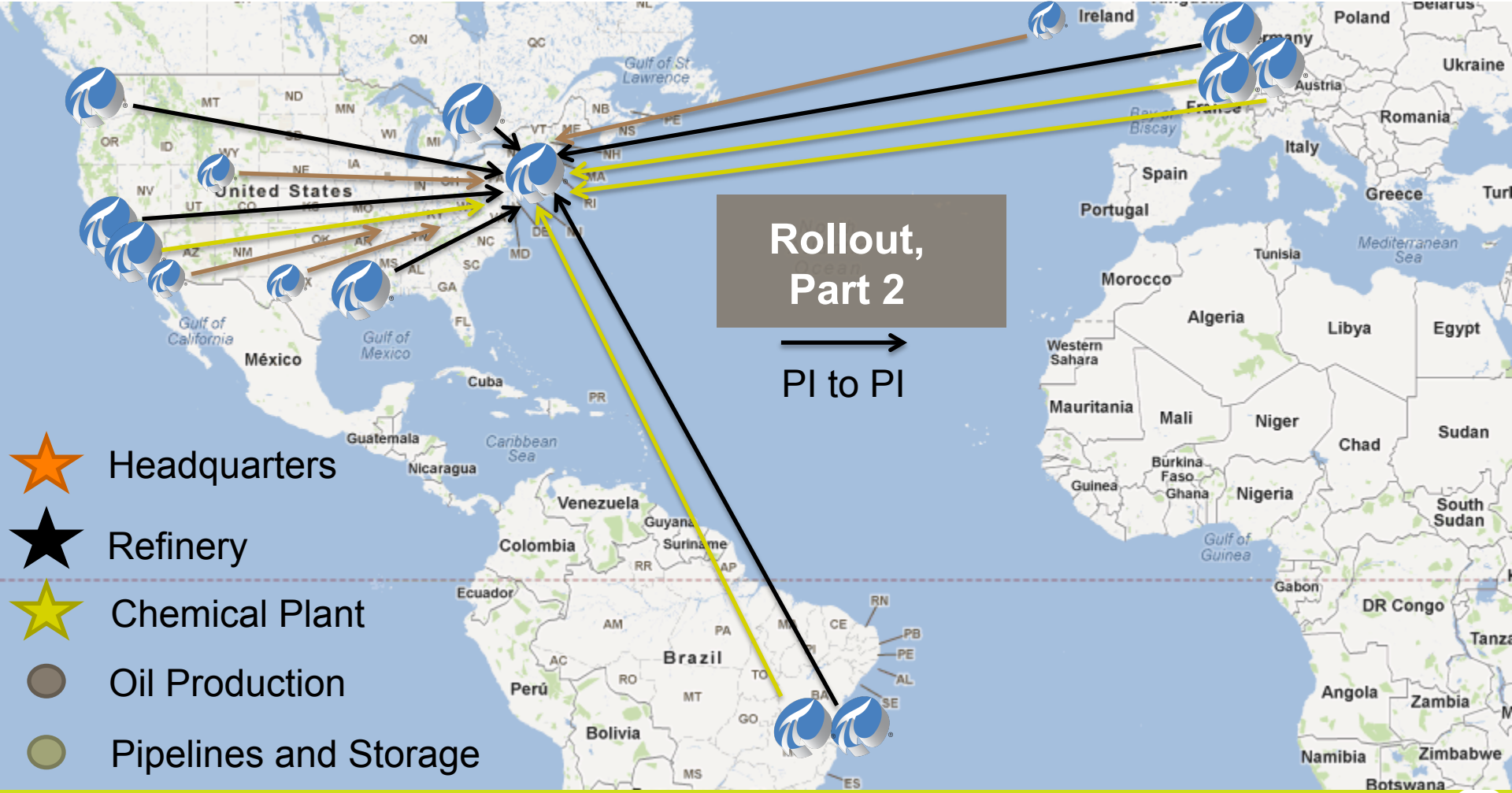

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2010 R3

Max Point Count	2M+ tags
Point Changes	<10 pt/sec
Startup Time	>20 minutes
Real-time Updates	200K signups
Max Data Rate	<100K ev/sec
Query Throughput	<1M ev/sec
Online Archives	<10K files

5x

2012

Max Point Count	10M tags
Point Changes	>1,000 pt/sec
Startup Time	<4 minutes
Real-time Updates	>1M signups
Max Data Rate	500K ev/sec
Query Throughput	>5M ev/sec
Online Archives	>50K files

Be sure to see: Do. More. Faster. Now! PI Server 2012

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PLEASE **PAUSE** FOR **DEMO**

Coresight Display: Scale Lab

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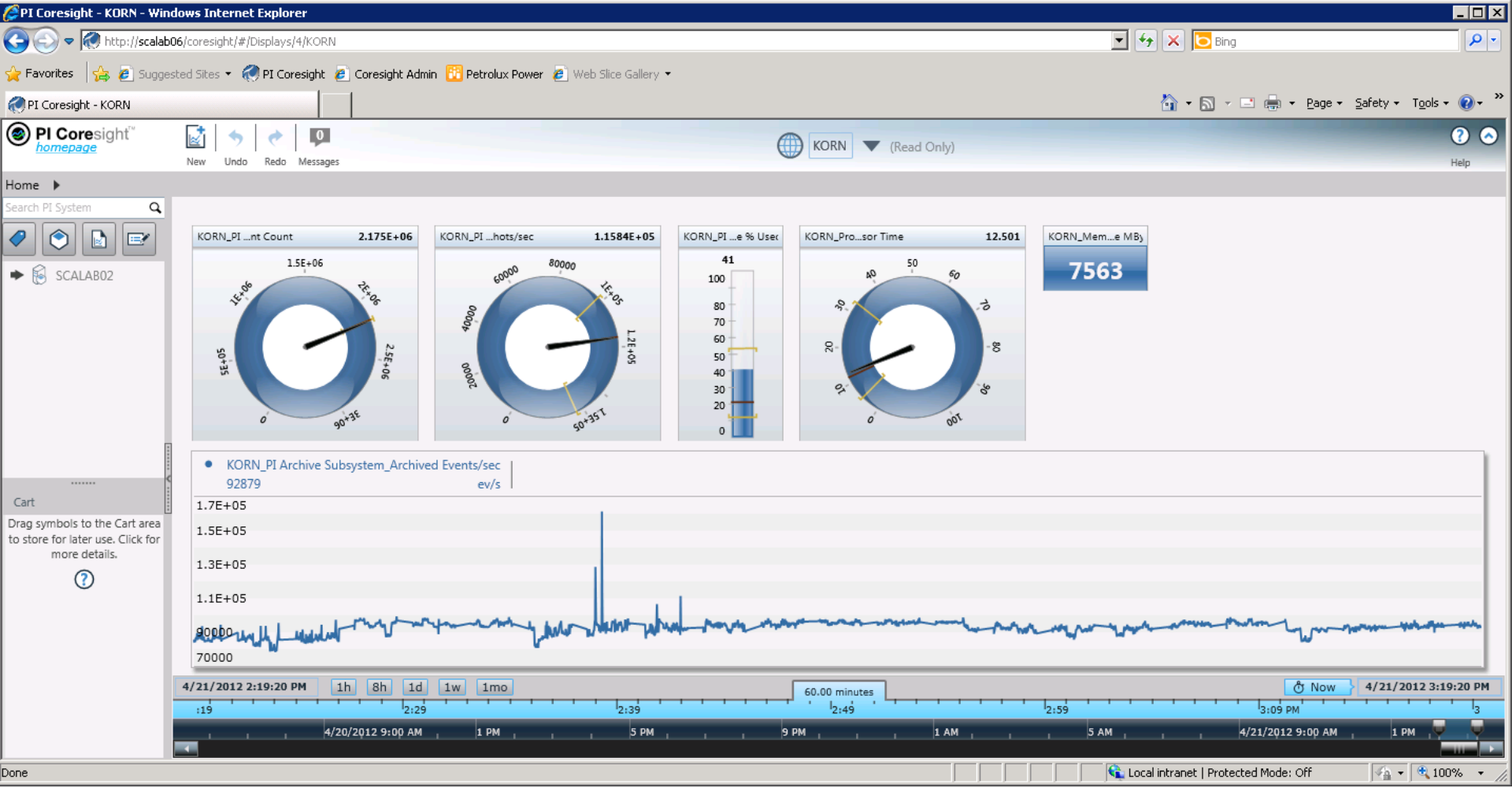

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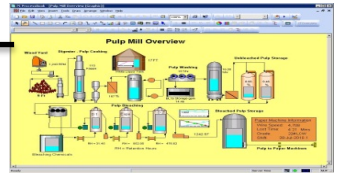
PI Server 2012 is More Resilient

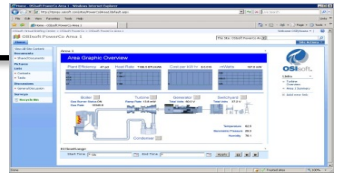
PI Interface

PI Server

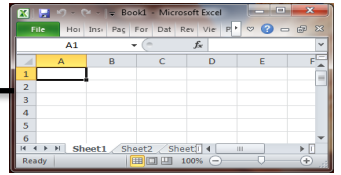
PI Coresight



PI ProcessBook



PI WebParts



PI DataLink

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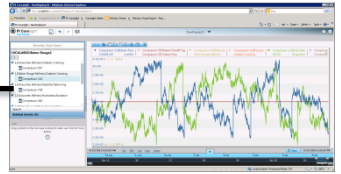
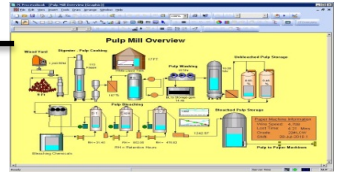
Resilient During: Restarting from Hard Power Stop

PI Interface

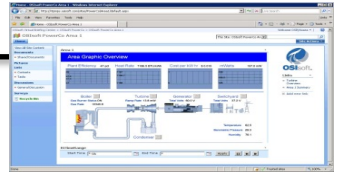
PI Server



PI Coresight



PI ProcessBook



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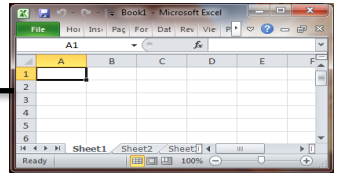

PI DataLink

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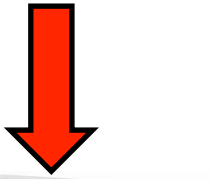
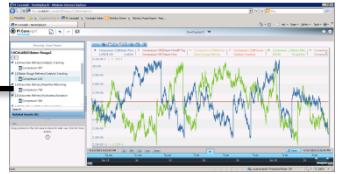
Resilient During: Heavy Backfilling



PI Interface

PI Server



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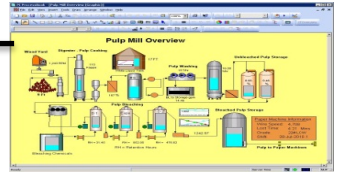
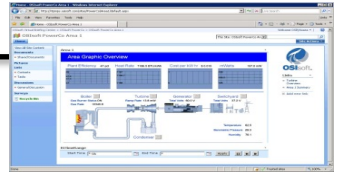
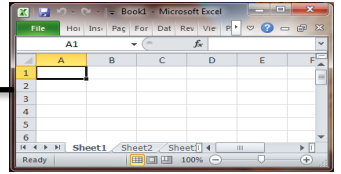


PI ProcessBook



PI WebParts



PI DataLink

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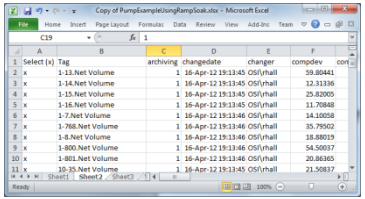
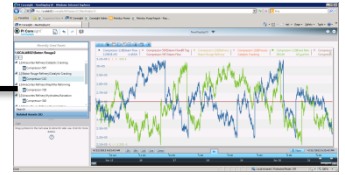
Resilient During: Large Point Building Operations





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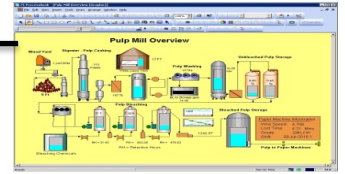

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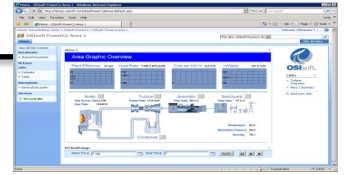

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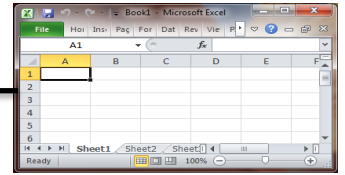

PI DataLink

PI Interface

PI Server

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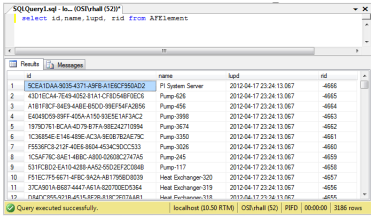
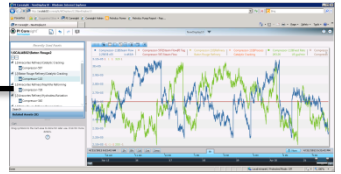
Resilient During: Large PI OLEDB Queries



PI Interface

PI Server



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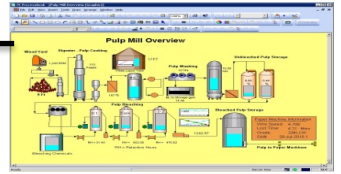

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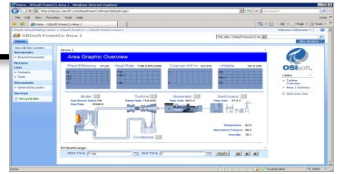

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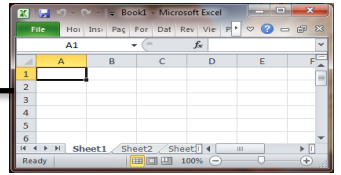

PI DataLink

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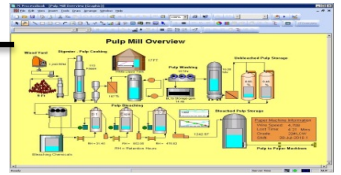
Resilient During: Network Disruption, Reconnection

PI Interface

PI Server

PI Coresight



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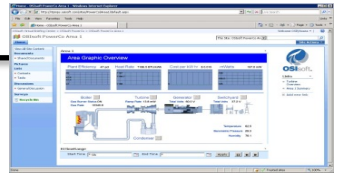

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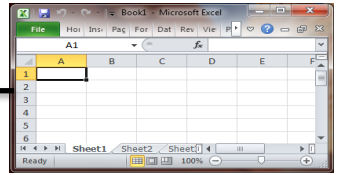

PI DataLink

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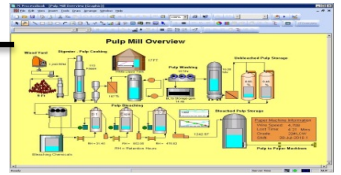
Resilient During: Backup Operations

PI Interface

PI Server

PI Coresight



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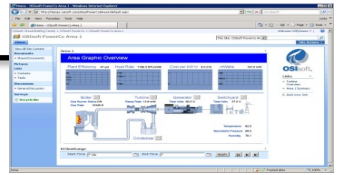

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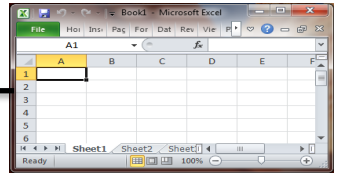

PI DataLink

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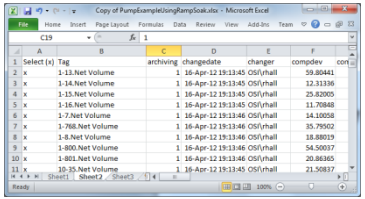
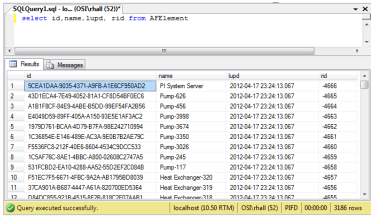
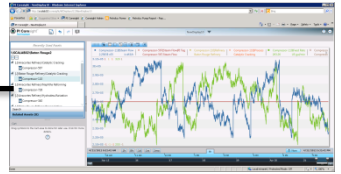
Resilient During: Several Events at the Same Time







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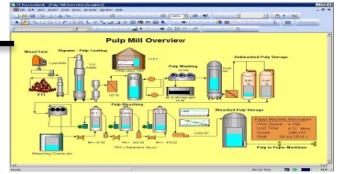
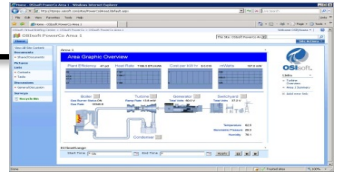
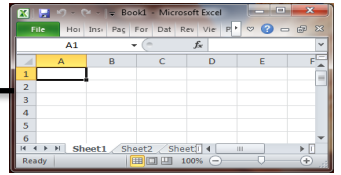


PI ProcessBook



PI WebParts



PI DataLink

PI Interface

PI Server

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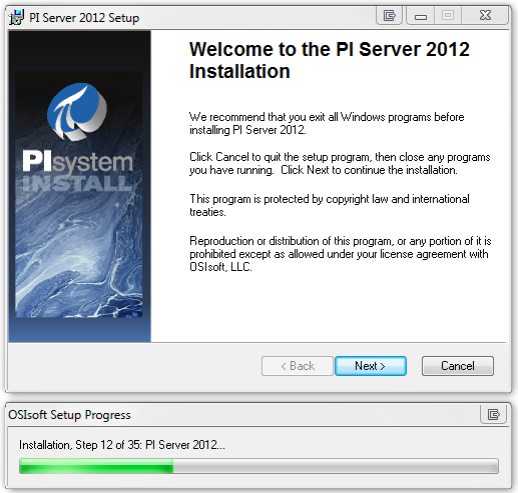
PI Server 2012 Setup



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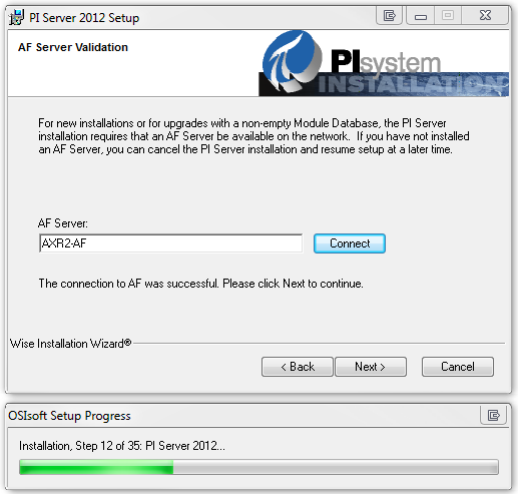

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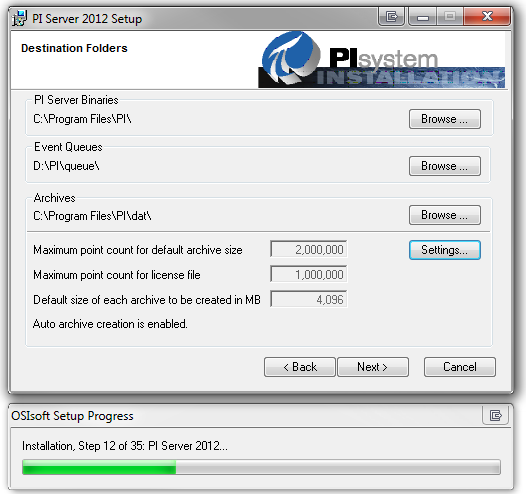

3

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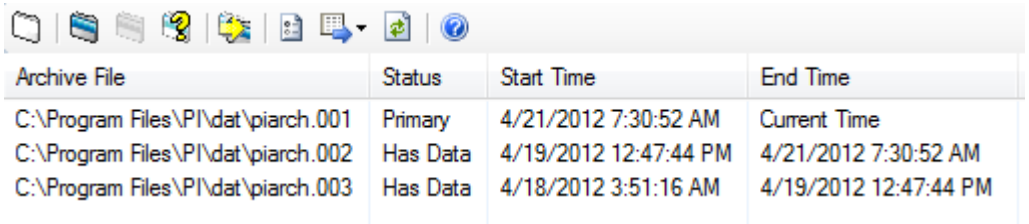
DATA BACKFILLING

Historical Data in Legacy System



Archive File	Status	Start Time	End Time
C:\Program Files\PI\dat\piarch.001	Primary	4/21/2012 7:30:52 AM	Current Time
C:\Program Files\PI\dat\piarch.002	Has Data	4/19/2012 12:47:44 PM	4/21/2012 7:30:52 AM
C:\Program Files\PI\dat\piarch.003	Has Data	4/18/2012 3:51:16 AM	4/19/2012 12:47:44 PM

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Data Backfilling

2010 R3

1	Create PI Points	**minutes**
2	Delete Pt. Created	**hours**
3	Check Disk Space	**minutes**
4	Reprocess Archives	**weeks**
5	Create New Archives	**hours**
6	Backfill Data	**days**
	Total	**weeks**

2012

1	Create PI Points	**minutes**
2	Check Disk Space	**minutes**
3	Create New Archives	**hour**
4	Backfill Data	**hours**
	Total	**hours**

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Petrolux Value from PI Server 2012

- **Simplified** Installation, Automatic Backfilling
- Very high **Scale** for growth
- **Faster** queries and response
- More **Resilient** during atypical scenarios

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Mission Critical and Strategic

- Resource Scheduling
- Environmental Reporting
- Energy and Oil trading
- Crude Accounting
- Real Time Response to Markets
- Constraint Management
- Batch Release
- Prediction Scheduling
- Power Up Sequencing
- Quality Management
- Responding to Faults
- Production Planning and Forecasting
- Unit Oversight
- Crisis Management and Diagnosis

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Conversation with Rachel

- How many PI System components do you monitor?
- What are typical problems you see?
- How do you address them, and customer exper?
- How important is PI Server uptime to you?
- How did your upgrade to PI Server 2012 Beta go?

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Our Demonstrations

- PI Server 2012 — Beta
- PI Asset Framework 2012 — Beta
- PI Notifications 2010 — Released
- PI OLEDB Enterprise 2012 — Alpha
- Event Frame Gen Interface — Alpha
- PI ProcessBook 2012 — Released
- PI Coresight 2012 — Beta
- PI DataLink 2012 — Beta
- PI Web Parts 2010 — Released

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Our Demonstrations

- PI Server 2012 — Release in Q3
- PI Asset Framework 2012 — Release in Q3
- PI Notifications 2010 — Released
- PI OLEDB Enterprise 2012 — Release in Q3
- Event Frame Gen Interface — Release in Q3
- PI ProcessBook 2012 — Released
- PI Coresight 2012 — Release in Q2
- PI DataLink 2012 — Release in Q3
- PI Web Parts 2010 — Released

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PLEASE **PAUSE** FOR **DEMO**

Coresight on iPad

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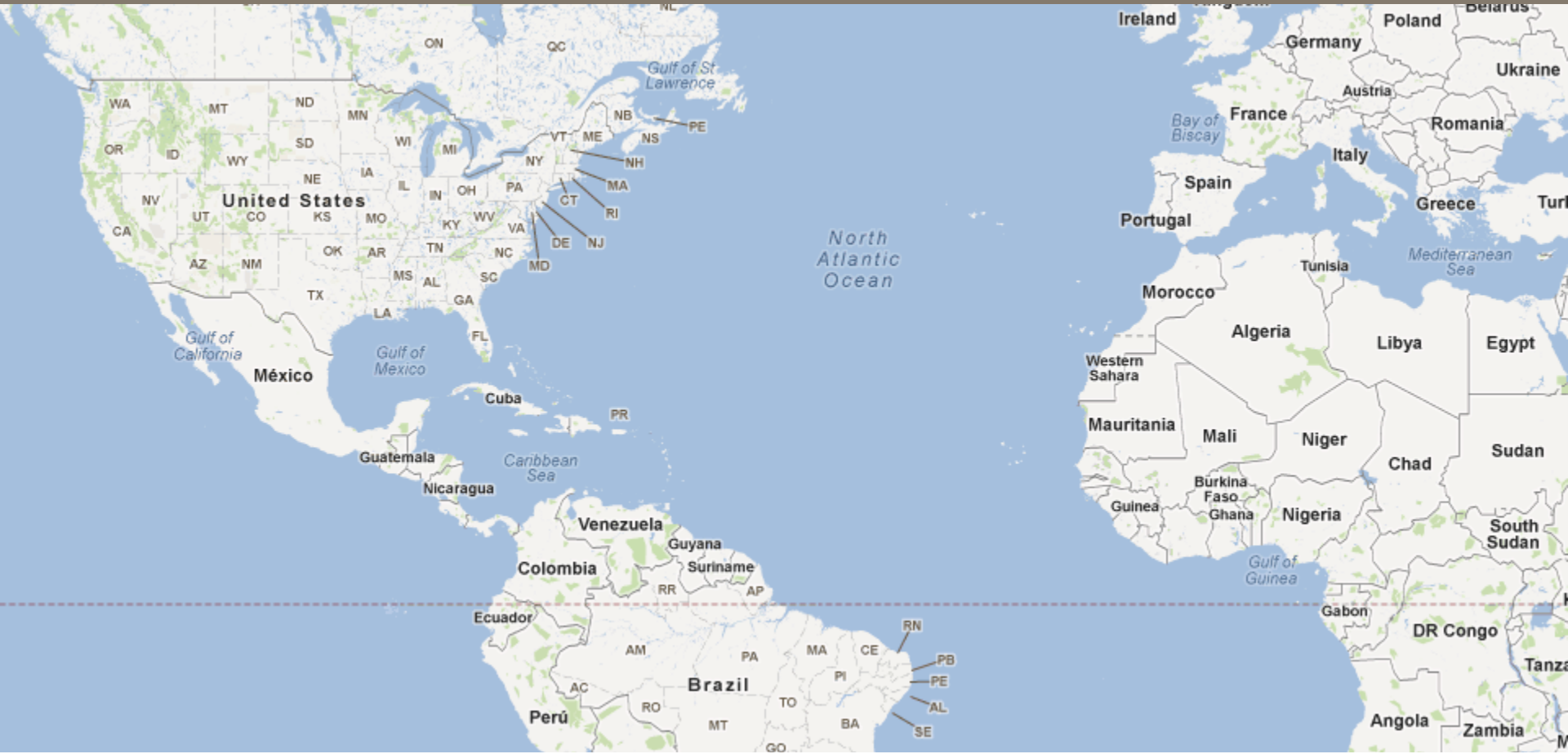
As You Go Through *Your* PI Journey….



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THANK YOU

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