

Implementation of MIS System in Minagish Water Injection Plant - West Kuwait

PI - SYSTEM



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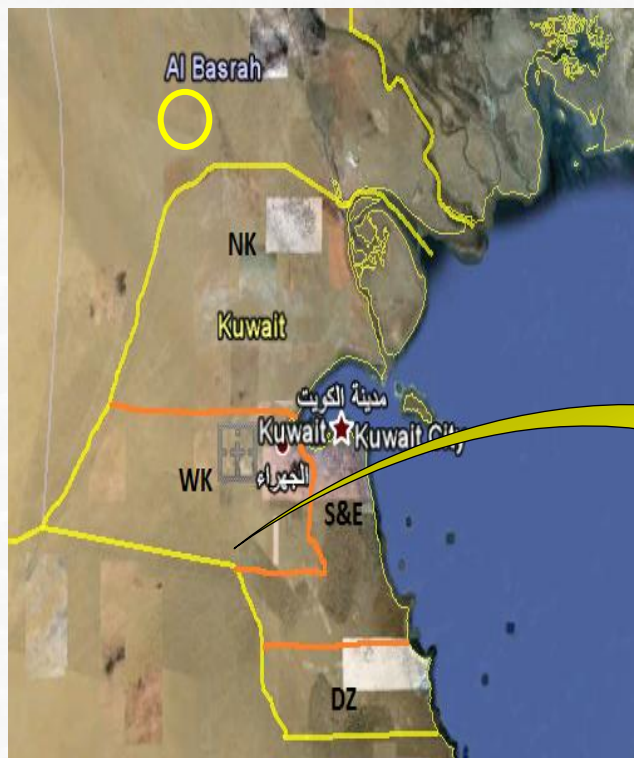
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Outline

- **Minagish Water Injection Plant Overview**
 - **Business Challenges**
- **CIT Key Activities**
- **IT Future Involvement**
- **MWIP – PI System Architecture**
- **Demo**
- **Benefits**
- **What Made Project Successful**
- **Concerns**
- **Conclusions & Questions**

Minagish Water Injection Plant Overview



- ❑ The OSIsoft PI System Software Technology was procured and implemented in the year 2002 by Snamprogetti as part of the MWIP construction Project.
- ❑ The PI Software version is out dated and was never upgraded since 2002. The PI Server is almost obsolete since no yearly Maintenance and Reliance Program was introduced.
- ❑ There was no training provided.

Business Challenges

- Long time data retrieval.
- No direct visibility into operational performance.
- Multiple data sources.
- Manual entry work.
- Insufficient communication among business teams.
- Major upsets due to lack of analysis .



Resulting in poor plant performance, higher maintenance cost , and causing severe impact to the enterprise business

CIT Key Activities

- ✓ **Project justification.**
- ✓ **Backup old PI server database & applications.**
- ✓ **Install and update PI server with latest PI software version.**
- ✓ **Installing/Upgrading PI client tools & applications.**
- ✓ **Check connection between PI and DCS interface/Client machines.**
- ✓ **Migrate graphic displays.**

CIT Key Activities continue

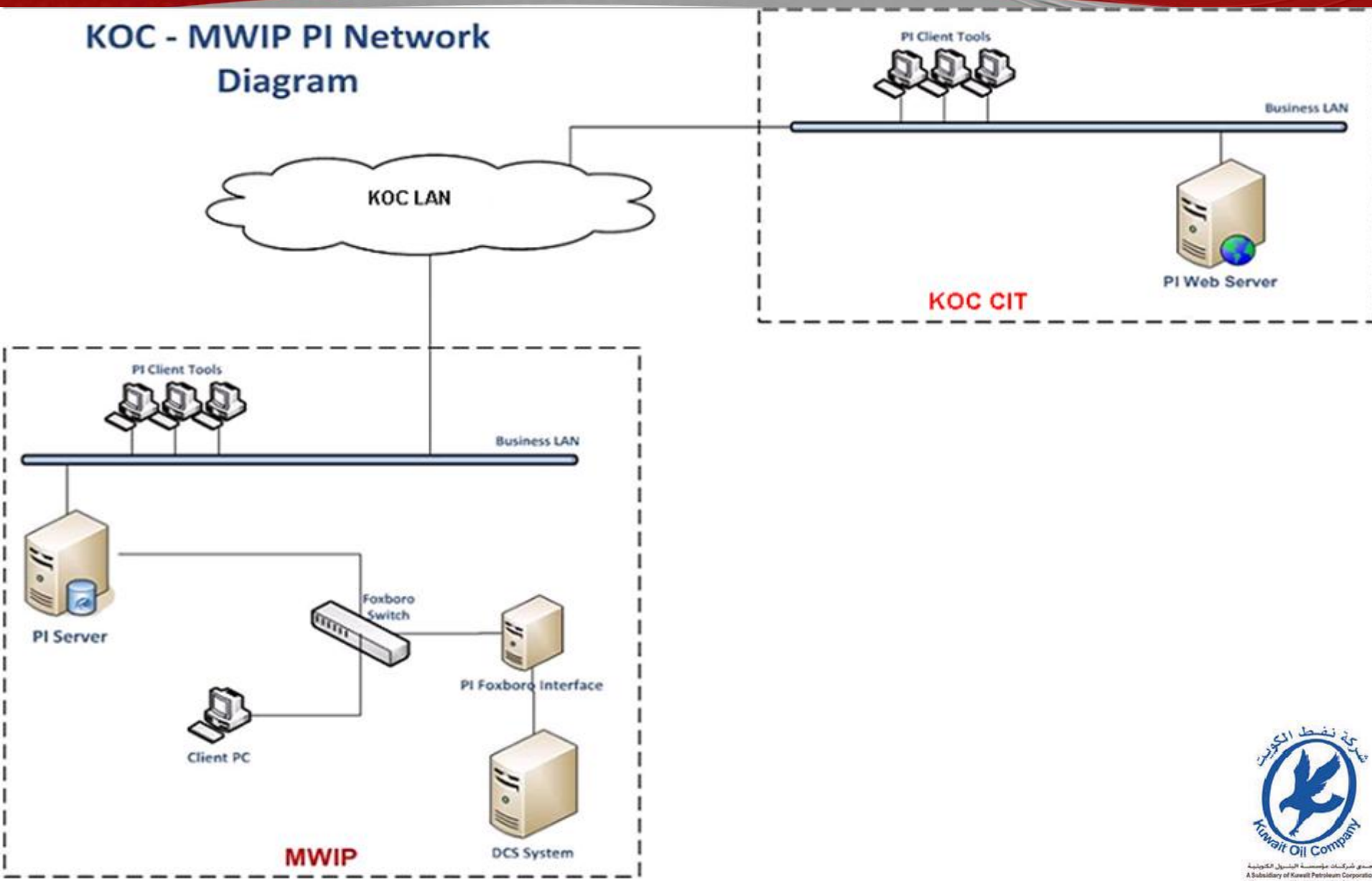
- ✓ Migrate reports.
- ✓ Introduce SharePoint portal interface and migrate client applications.
- ✓ Assign security roles & responsibilities. Enabling single sign-on.
- ✓ SAT,PAT, and on-site training.
- ✓ Enable one year Service Reliance Program (SRP).

IT Future Involvement :

- **System Architecture Enhancement**
- **New Application Deployment**
- **Renewal of Maintenance Contract**
- **Integration With Other KOC Systems**
- **Arrange User Training**

MWIP – PI System Architecture

KOC - MWIP PI Network Diagram



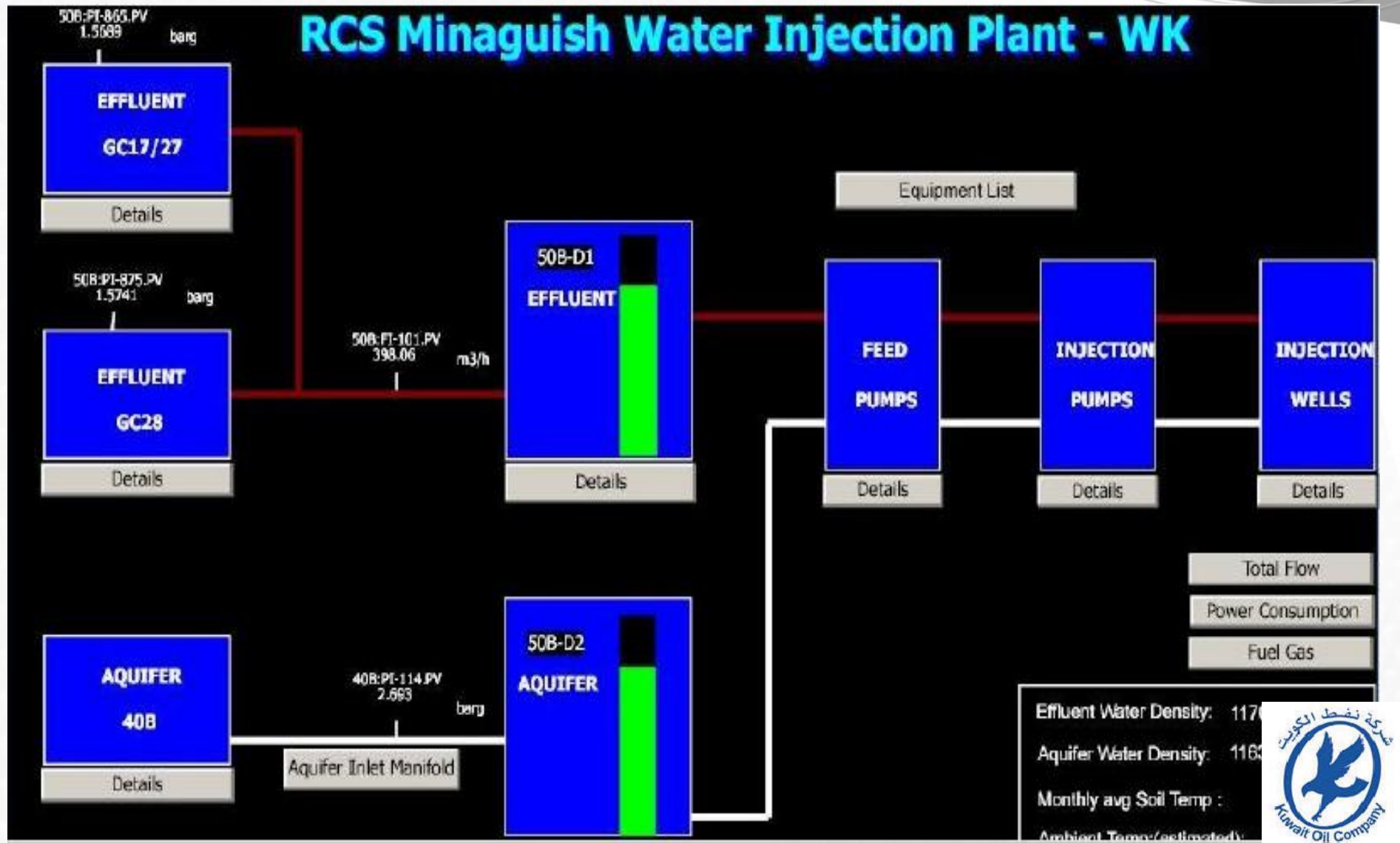
Demo...



MWIP - PI Dash Board



REMOTE CONTROL SYSTEM - OVERVIEW



Injection Pumps Status

Home - Windows Internet Explorer

http://mcssystempi/RCSGraphics/Pages/default.aspx

Search Images Weather News Highlight Resize Pop-up Blocker

Home Connection Issues Trouble...

RCS Graphics

Search

Sites

Test Page

Daily Reports - HWIP

Recycle Bin

Start Time: -2h End Time: Apply

	STATUS	WATER TYPE	FLOWRATE (m3/h)	TOTAL RUNNING TIME (h)	RUNNING TIME WITH AQUIFER (h)	RUNNING TIME WITH EFFLUENT (h)	RUNNING TIME FROM LAST MAINTENANCE (h)
50B-G-2A	Stopped	None	0	78	78	0	13044
50B-G-2B	Stopped	Aquifer	0	4892	4892	0	4395
50B-G-2C	Running	Aquifer	442.33	50557	50547	10	Over Range
50B-G-2D	Stopped	None	41.246	48674	48674	0	Over Range
50B-G-2E	Stopped	Effluent	0	5546	0	5546	5558
50B-G-2F	Stopped	Effluent	0	6129	0	6129	6142
50B-G-2G	Running	Effluent	442.7	23	0	23	44

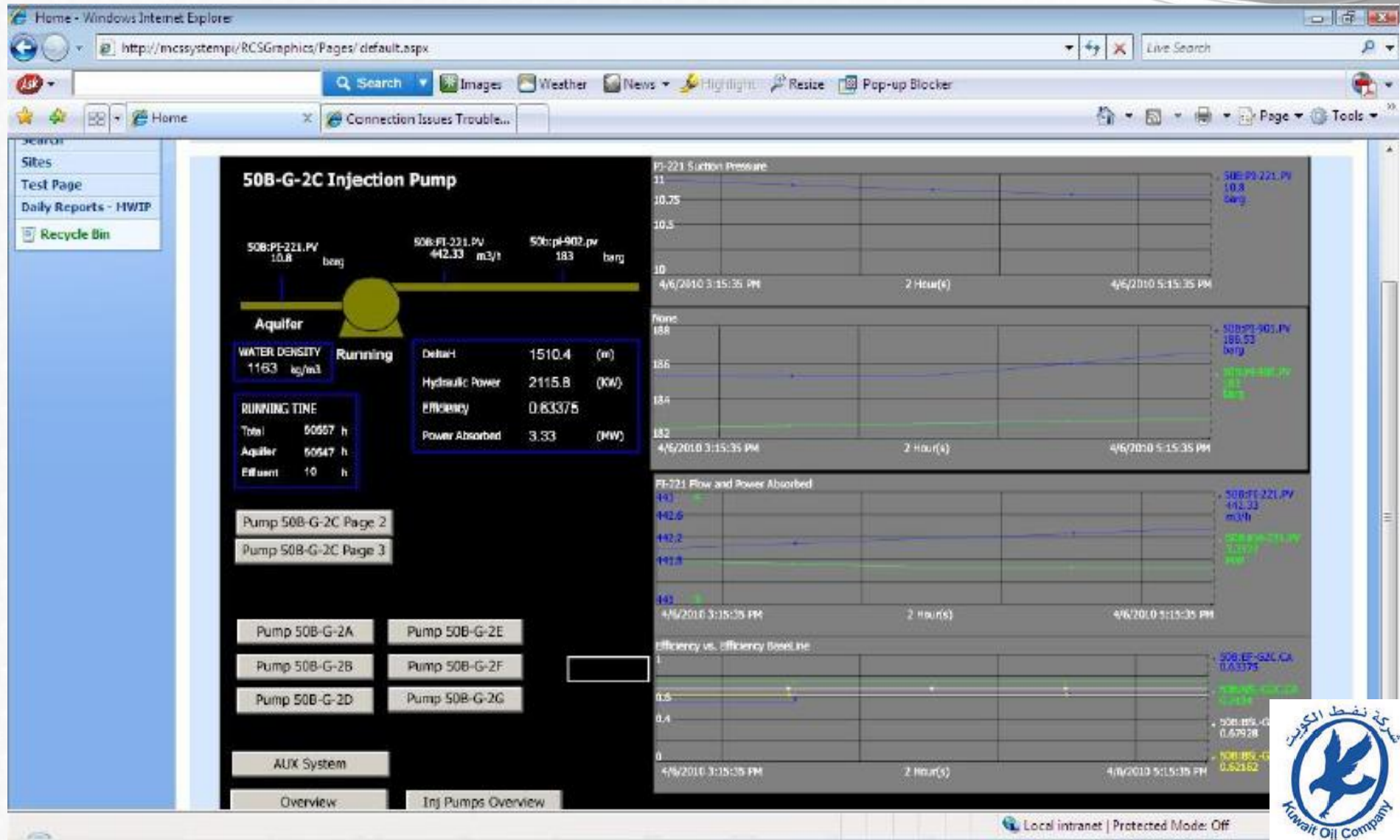
Running Pumps: 2

Aquifer 1

Effluent 1

Local intranet | Protected Mode: Off

Water Injection Pump Performing Trends



Feed pumps report in Excel Format

Home - Windows Internet Explorer
<http://mcssystempi/DailyReportsMWIP/Pages/default.aspx> Live Search

Search Images Weather News Highlight Resize Pop-up Blocker

Home Connection Issues Trouble...

RCS Graphics
 Search
 Sites
 Test Page
 Daily Reports - MWIP
 Recycle Bin

Date: 4/6/2010

RCS Daily Reports
 Aquifer Manifold
Feed Pumps
 Feed Pumps Mech
 Injection Flowline
 Injection Pumps
 Miscellaneous
 Power

Open Update Find

FROM 04/05/10 05:00 TO 04/05/10 05:00

Menagish Water Injection Plant - West Kuwait

FEED PUMPS PROCESS REPORT

	508-G-1A	508-G-1B	508-G-1C	508-G-1D	508-G-1E	508-G-1F	508-G-1G
AVG SUCTION PRESSURE	508:PI-151	508:PI-155	508:PI-161	508:PI-165	508:PI-171	508:PI-175	508:PI-182
(bars)	1.34	0.87	1.12	0.61	0.99	-0.01	1.02
(psig)	19.45	12.61	16.29	8.84	14.33	-0.18	14.76
AVG DISCHARGE PRESSURE	508:PI-153	508:PI-157	508:PI-163	508:PI-167	508:PI-173	508:PI-177	508:PI-184
(bars)	1.40	1.97	7.13	0.81	9.18	-0.05	0.31
(psig)	20.26	28.62	103.47	11.75	133.20	-0.72	4.50
AVG MOTOR ABSORBED POWER	508:KW-151	508:KW-152	508:KW-153	508:KW-154	508:KW-155	508:KW-156	508:KW-157
(KW)	0.35	[-11059] No Good	114.03	-1.68	59.39	[-11059] No Good	3.72
(HP)	0.47	#VALUE!	152.91	-2.26	79.64	#VALUE!	4.98
AVG FLOW							
(m3/h)	0.00	0.00	301.09	0.00	301.53	0.00	0.00
(MBWPD)	0.00	0.00	45.45	0.00	45.52	0.00	0.00
TOTAL FLOW							
(m3)	0.00	0.00	7226.05	0.00	7236.60	0.00	0.00
(MBBLS)	0.00	0.00	45.45	0.00	45.52	0.00	0.00
TOTAL INJECTION							

Done

Local intranet | Protected Mode: Off

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Benefits

- **PI Implementation has covered our requirement and resulted in many benefits to KOC.**
- **Improved Work efficiency of our employees & increased productivity.**
- **Supplies the users with mimic process displays and trends real time, averaged and historical data for analysis.**
- **Automated Reports generation on user demands or at scheduled times for faster decision making.**
- **Ease, speed and accuracy of reporting remotely through KOC intranet and timely access to the plant real time data.**
- **PI Server requires less maintenance effort and user-friendly with human interface.**



What made project successful?

- ☐ **Effective Communication**
- ☐ **Clear expectations from the client (WH)**
- ☐ **Team work among Water Handling operation staff, IT staff & system integrator**
- ☐ **Detailed action plan with scheduled cutover**
- ☐ **Extensive pre-testing, SAT and PAT**
- ☐ **Provided on-site training on latest PI technology**



Concerns:

- ❑ Rotation of man power.
- ❑ User encouragement to utilize PI system.

Conclusion

Functions / Goals

- ❖ Web Interface / Share point portal Integration to monitor plant operations
- ❖ Establish a common platform for integration of all plant applications
- ❖ Provide long-term online data archive
- ❖ Assist management with decision making
- ❖ Can be a roadmap of Enterprise Management Information system in West Kuwait Area

The End



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THANK YOU