Fifteen Years of Web Based Data Management at Tooele Army Depot

Suzan Hughes, Synectics | Pamela Wehrmann, USACE

Environmental Monitoring and Data Quality Workshop

March 28, 2012
Where Were You in 1996?

The price of gas was $1.25/gallon...

Minimum Wage was increased to $5.15/hour...

The National Debt was a mere $5.2 trillion...
Dolly the Sheep was Born...
Dallas Cowboys Won 5th Title...
Bill Clinton was Re-Elected...
The DVD was Launched...
An Online Auction Site was Launched...
And, Tooele Army Depot Goes Online

Following an EPA audit of nine federal facilities, Tooele Army Depot (TEAD) proactively begins the process of centralizing their environmental data.
Tooele Army Depot History

• The Tooele Valley was originally inhabited by Early Desert Archaic Indians
• Installation established in 1942 as Tooele Ordnance Depot
• Storage depot for World War II supplies, ammunition, and combat vehicles
Tooele Army Depot History

Current mission is storage, maintenance and demilitarization of conventional ammunition
USACE Awards Data Management Contract

The Sacramento District contracted with Synectics to provide an innovative solution allowing TEAD stakeholders to access the same data the prime contractor was using, in real time:

- The Government would have control of their data
- Information would all be in one central repository
- Data quality would be significantly improved
- Documentation would be easily accessible
Implementation Approach

• Import historical data from various formats, from as early as 1982 into a web enabled database
• Create processes for interns to utilize automation to enter data from hardcopy
• Implement data screening and loading tools for current and future data generators
• Utilize existing technologies wherever possible
Right on Target:
EPA Findings Published in 1997

“The primary goal of the QA program is to ensure that all environmentally related measurements...[laboratory analysis] produce data of known quality. The quality of data is known when all components...are thoroughly documented, such documentation being verifiable and defensible.”

-EPA Order 5360.1
All the Data in One Place
Documentation Resource
Continuity

Groundwater Measurements by Contractor
Sampling Location B-11

- James M. Montgomery, Consulting Engineers, Inc., W
- Metcalf & Eddy
- Geomatrix Consultants, Inc., Santa Ana Heights, CA
- Environmental Science & Engineering, Inc. (ES&E, I)
- Professional Services Group, Salt Lake, UT
- Montgomery Watson, Salt Lake City, UT
Ongoing Uses of the Database

- Real time data loading and screening used by laboratories and field personnel
- Automated Data Review
- Generate automated tables and charts
- Contractor support
- Automated generation of ERIS deliverables
- Groundwater modelers export data as needed
- Installation staff and regulators access information in real time
- Accessed regularly by various government research groups
The Environmental Security Technology Certification Program (ESTCP) is DoD’s environmental technology demonstration and validation program.

Students researching projects for acceptance into this program were able to access historical data through the Tooele web portal.
“I consider TEAD’s selection for the SERDP project as directly related to TEAD’s ability to provide quality historical and current data to support the SERDP project goals. The study is expected to generate new lines of evidence that will bolster the case for achieving acceptance of a Monitored Natural Attenuation remedy for the Tooele groundwater plumes. This provides a win-win scenario for both TEAD and the SERDP project.”

--Pamela Wehrmann
USACE Sacramento District Chemist
TCE Breakdown Chart

TCE and Breakdown Analytes
Location A-02A
Screen Interval Elevation
4450 - 4480 Feet

Collection Date

Analysis Concentration (ppb)

Water Elevation (Feet)

- X: Water Elevation
- Well Screen Top
- Well Screen Bottom
- 1,1-Dichloroethylene
- cis-1,2-Dichloroethylene
- trans-1,2-Dichloroethylene
- Trichloroethylene (TCE)
- Vinyl Chloride
# Chemistry Report

**SWMU 10 11 Data: Location A-02**  
Facility: Former Nebraska Ordnance Plant, Mead, Nebraska

## Table 2-TNT Washout Pond Detections

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<td>1,2-Dichloroethane</td>
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<td>-</td>
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<td>Chloroform</td>
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<td>Methyl Ethyl Ketone (2-Butanone)</td>
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<td>Methylene Chloride</td>
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<td>Toluene</td>
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<td>Trans-1,3-Dichloropropene</td>
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## Trace Metals by ICP

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<td>Barium</td>
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<td>0.000 J</td>
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<td>Chromium, Total</td>
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### Data Qualifier Definitions

- **J**: The analyte was positively identified, but the associated numerical value is estimated and represents the approximate concentration of the analyte in the sample.
- **UJ**: The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate.
- **R**: The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

**Indicates Contaminants of Concern (COCs)**
Saving Time and Money

- The USACE saved money by funding only one data management effort
- Resampling and reanalysis costs were decreased by increasing data quality and traceability
- Control of data and real time collection into a single repository saved time in researching and obtaining contractor data
“…Another key benefit of having the database and opening it up to all stakeholders (Army, State of Utah, EPA, contractors) is that it builds in a level of trust between the parties which we've found has been very valuable to the project.”

--Maryellen Mackenzie, PG
USACE Environmental Geology Section Chief
Collaboration and Portability

The USACE and other Department of Defense agencies and contractors have used the innovations developed at TEAD on many other environmental projects. Additional functionality added by these projects has been shared back to the TEAD portal, demonstrating cost savings and interagency collaboration.
Questions?

Pamela Wehrmann, Chemist
USACE, Sacramento District
pamela.a.wehrmann@usace.army.mil
916.557.6662

Suzan Hughes, Partner
Synectics
suzan.hughes@synectics.net
916.220.0801