

VIRTUAL FALL CONFERENCE
OCTOBER 25-27, 2022

EMBRACE THE FUTURE CHAMPION CHANGE

GBA GEOPROFESSIONAL
BUSINESS
ASSOCIATION

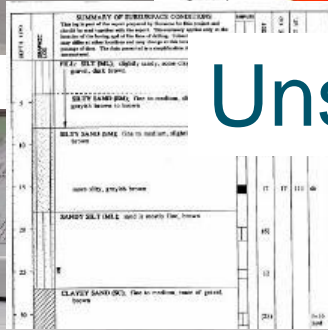
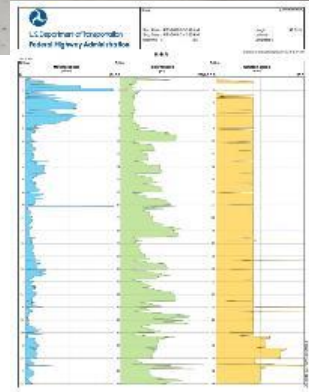
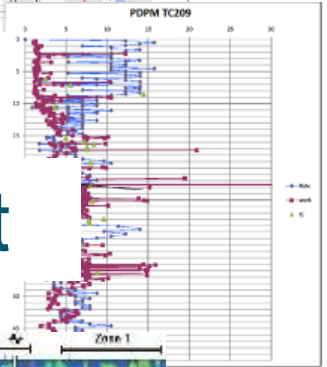
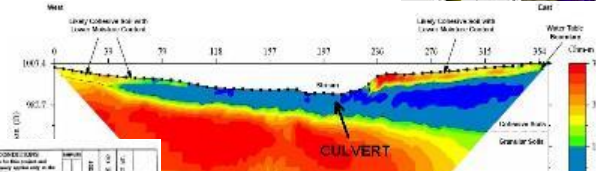
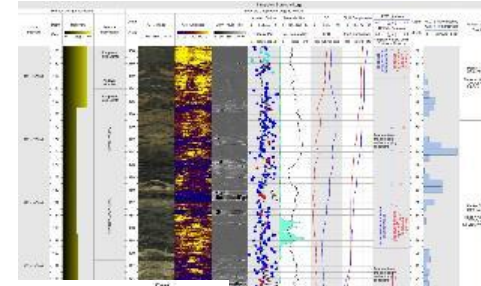
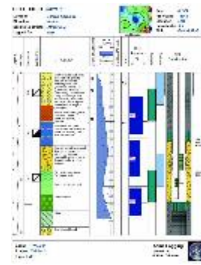
MAKING GEO DATA AVAILABLE

The DIGGS Solutions: Data Interchange for
Geotechnical and Geoenvironmental Systems

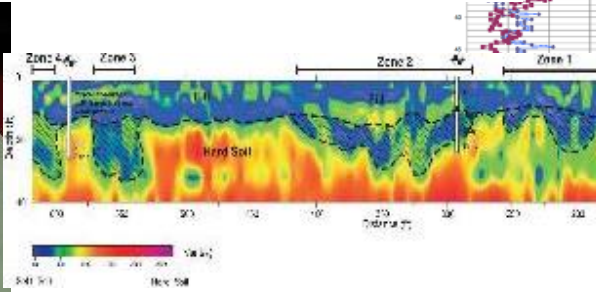
Allen Cadden, PE, D.GE

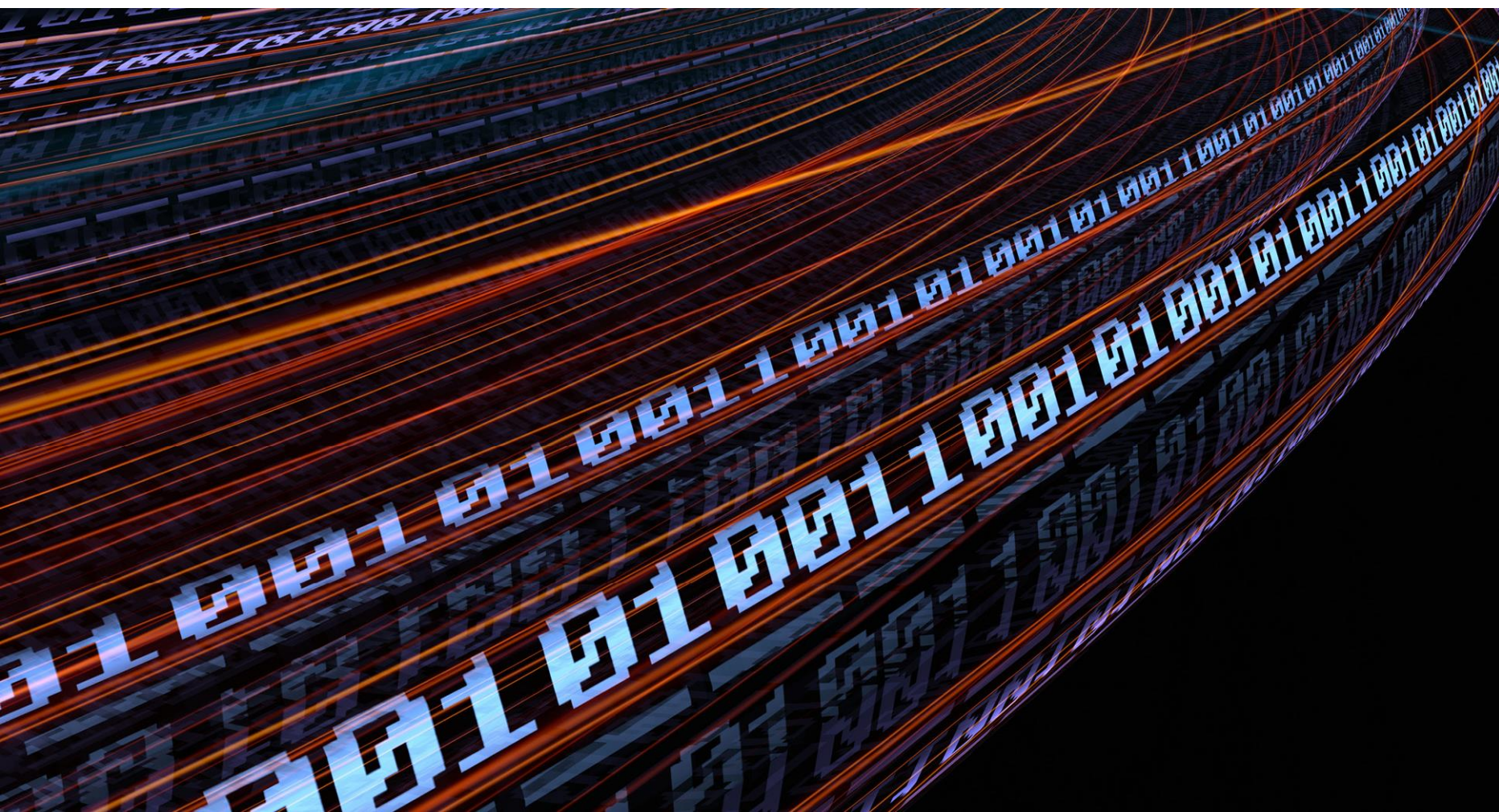


Information Now



Unstructured Text







What is DIGGS?

- XML Schema (XSD), dictionaries defining controlled terms and coordinate systems, and business rules
 - Basically, the same language web pages are written in.
 - You can open them in any web browser
- Data is transferred as XML (structured text) that follow the DIGGS rules, so everyone knows how to read it.
 - Unlike a spreadsheet or .csv file that you have to interpret and manipulate to use.

What is DIGGS?

- DIGGS is a Geography Markup Language (GML) application schema
 - Data is tied to a location and the geometry of the feature
 - Elements are located in space
 - They don't have to be vertical nor linear
- DIGGS is extensible
 - Framework for adding other things – geophysics, piles, instruments, MWD, grouting...

What does this look like?

Atterberg Limits

LIQUID AND PLASTIC LIMIT TESTS

Project 01645 Example Date 18 Dec 2015
 Boring No. DP-2A Sample No. 14

LIQUID LIMIT		1	2	3	4	5	6
Run No.							
Tare No.		4	15	23	8		
Tare plus wet soil		63.1	60.2	58.4	61.4		
Tare plus dry soil		49.3	49.1	49.7	58.8		
Water	W _v	13.8	11.1	9.2	8.6		
Tare		10.1	10.5	9.8	10.8		
Dry soil	W _s	39.2	38.8	39.9	42.0		
Water content	w	35.2	28.6	23.1	17.4		
Number of blows		16	22	27	32		

Weight in grams

Water content, w

Number of blows

Symbol from plasticity chart

CL

PLASTIC LIMIT		1	2	3	4	5	Natural Water Content
Run No.							
Tare No.		5	2	18			6
Tare plus wet soil		22.3	25.1	19.7			70.3
Tare plus dry soil		21.6	23.6	18.7			68.2
Water	W _v	1.3	1.5	1.0			10.1
Tare		10.1	10.8	11.9			10.3
Dry soil	W _s	10.9	12.8	8.8			49.9
Water content	w	11.9	11.7	11.4			20.2
Plastic limit		12					

Weight in grams

Remarks Liquidity Index = 0.66 PI = 13

Technician RCB Computed by RCB Checked by DP

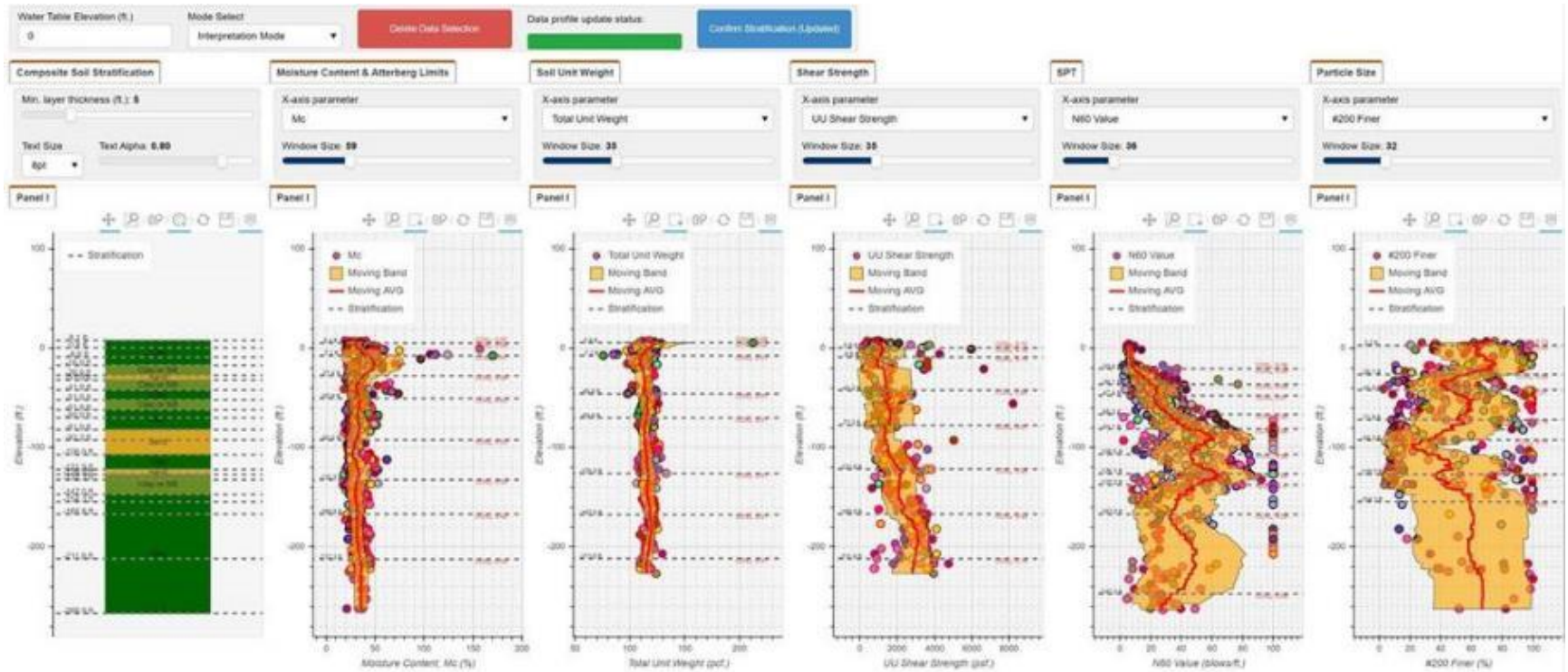
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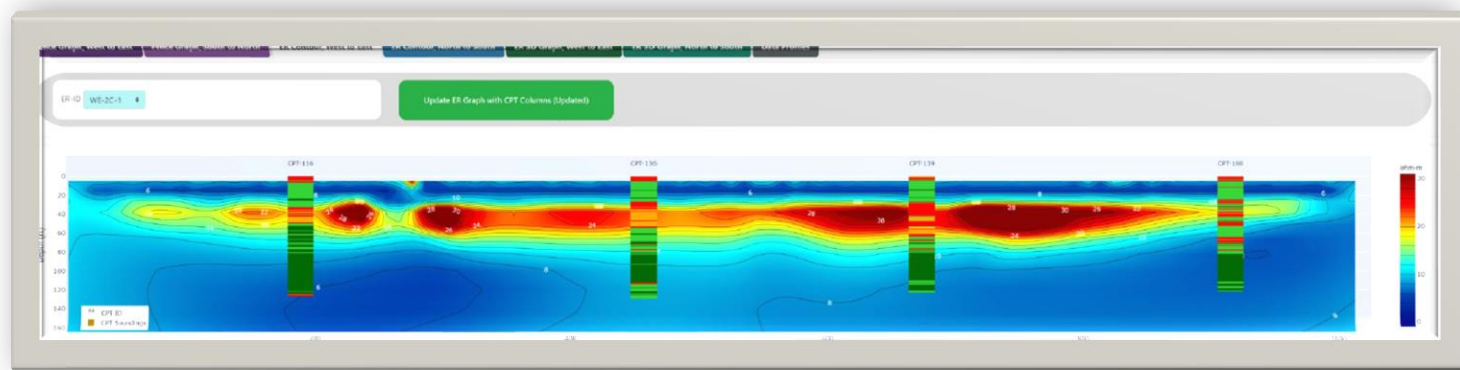
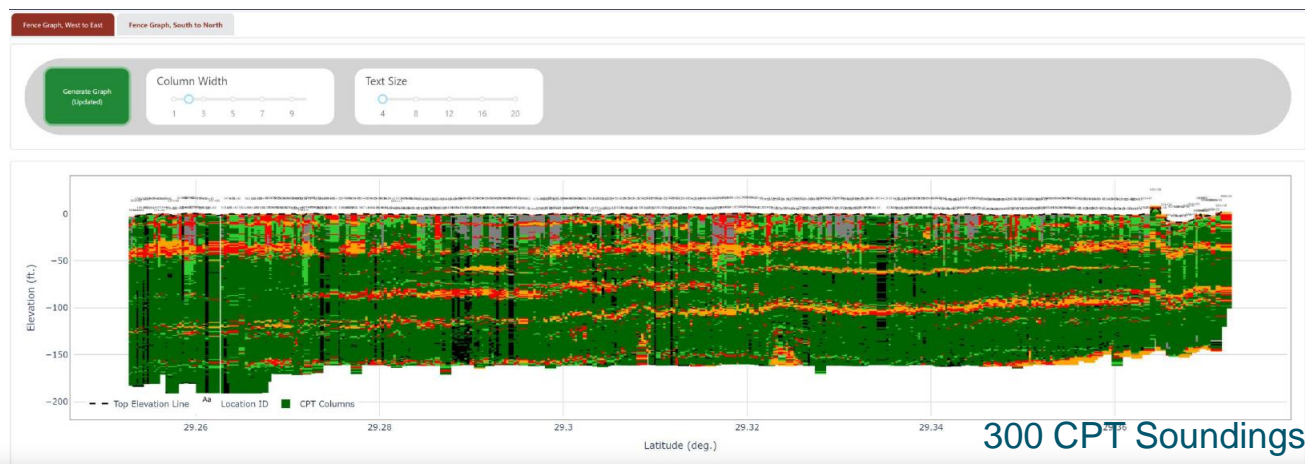

What DIGGS is NOT

- NOT A DATABASE
- Not a scheme to collect data from everyone and share it...

Graphical Presentations

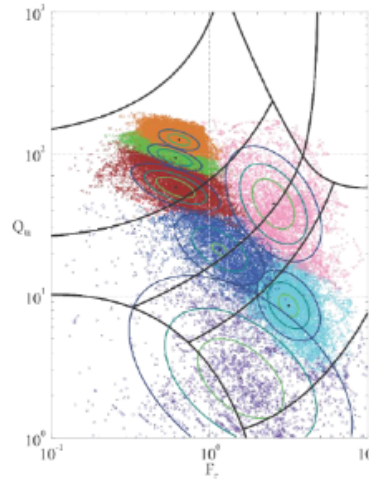
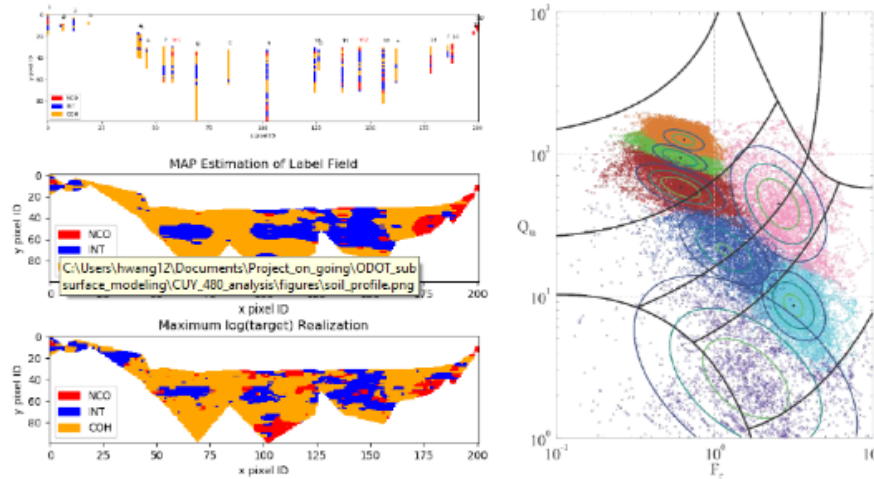


Xin Peng, Ardaman and Jesse Rauser, LADOT



Study of AI Based Methods for Characterization of Geotechnical Site Investigation Data

Analytics



Prepared by:

Hui Wang, Xiangrong Wang, Robert Liang

Prepared for:

The Ohio Department of Transportation,
Office of Statewide Planning & Research

The DIGGS Solutions

We don't really know what we will be able to do with the data in the future, but we need to start collecting and storing it now.

More info at www.diggsml.org and <https://github.com/DIGGSml>



Panel Discussion

Carrie Foulk – BSK Associates

Terence Scanlan -Cairncross & Hempelmann

