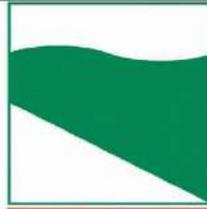




PROTEZIONE CIVILE
Presidenza del Consiglio dei Ministri
Dipartimento della Protezione Civile



Regione Emilia-Romagna



CONFERENZA DELLE REGIONI E
DELLE PROVINCE AUTONOME

Attuazione dell'articolo 11 della legge 24 giugno 2009, n. 77

MICROZONAZIONE SISMICA

Elaborato 7

Prove CPTU

Regione Emilia-Romagna

Comune di San Secondo



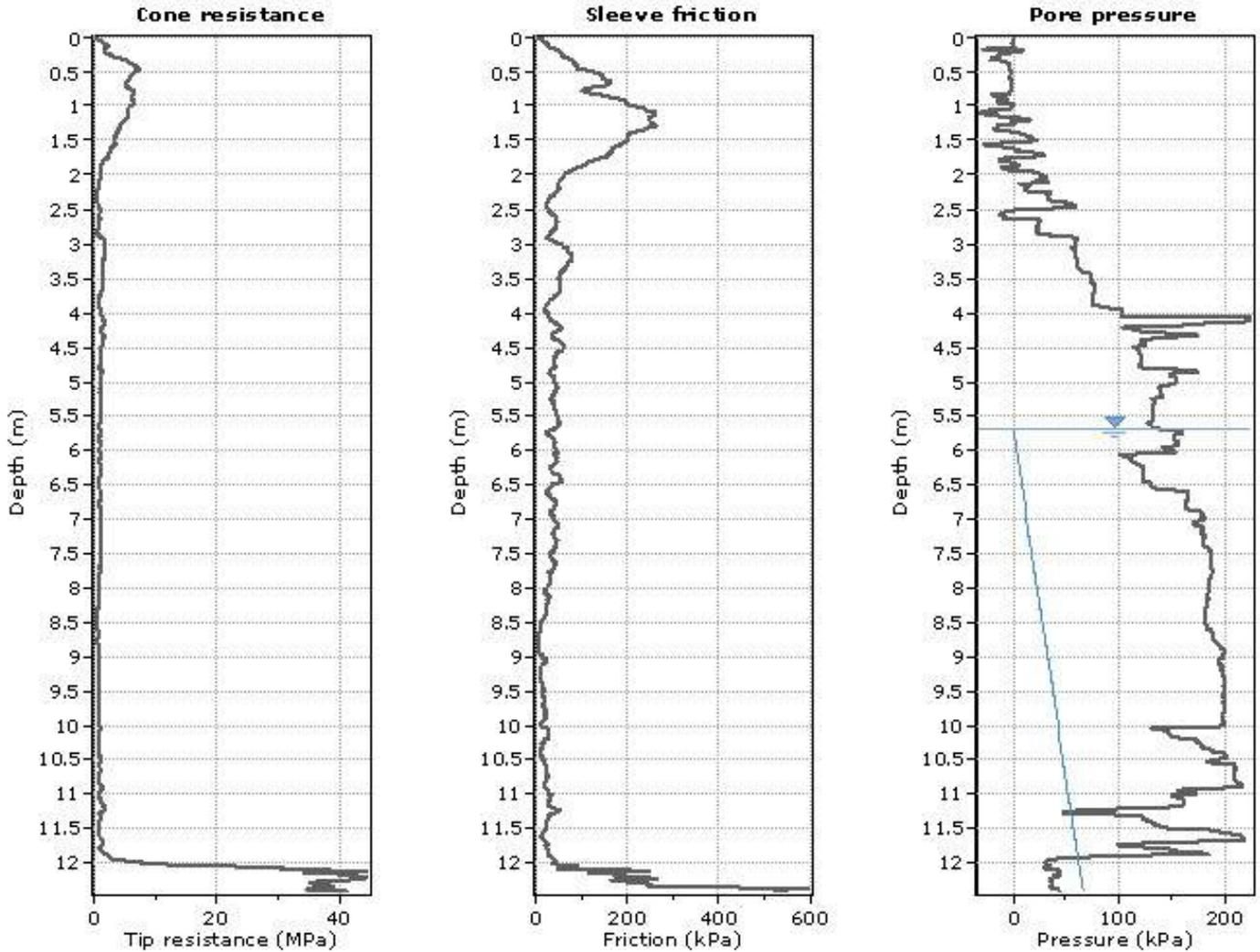
Regione Emilia-Romagna	Soggetto realizzatore Dott. Geol. Fabio Picinotti	Data Marzo 2020
		MS3

PROVE PENETROMETRICHE STATICHE CON PUNTA ELETTRICA E PIEZOCONO - CPTU

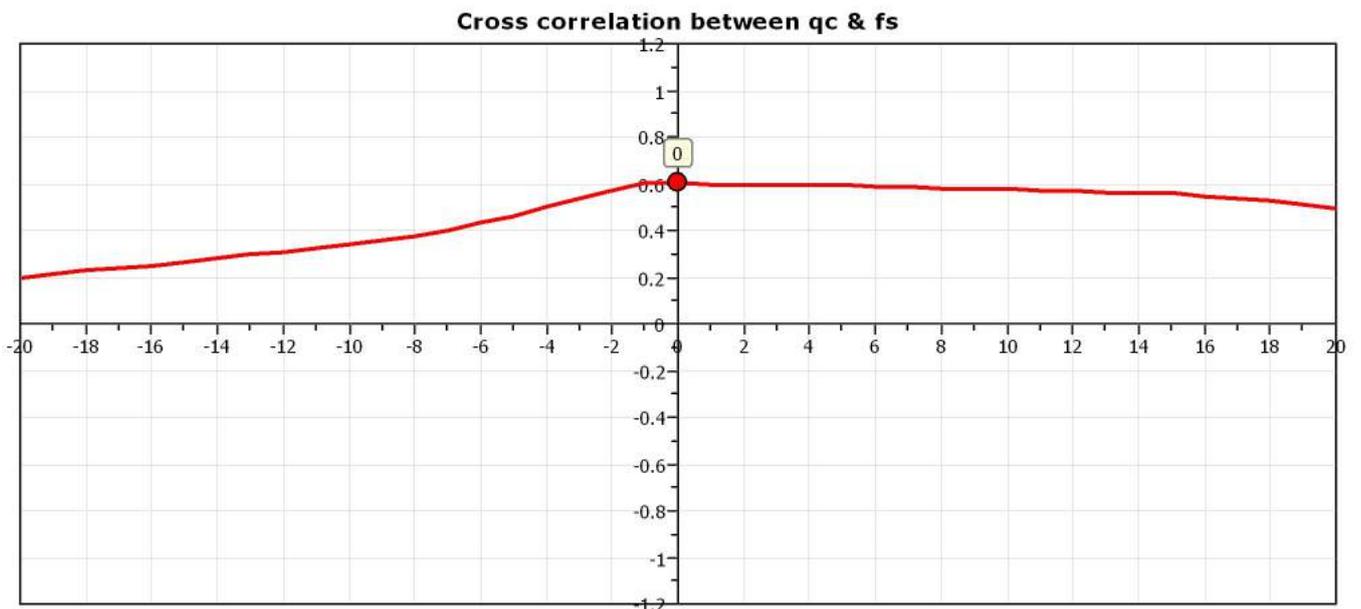
034033P194

Project:

Location:

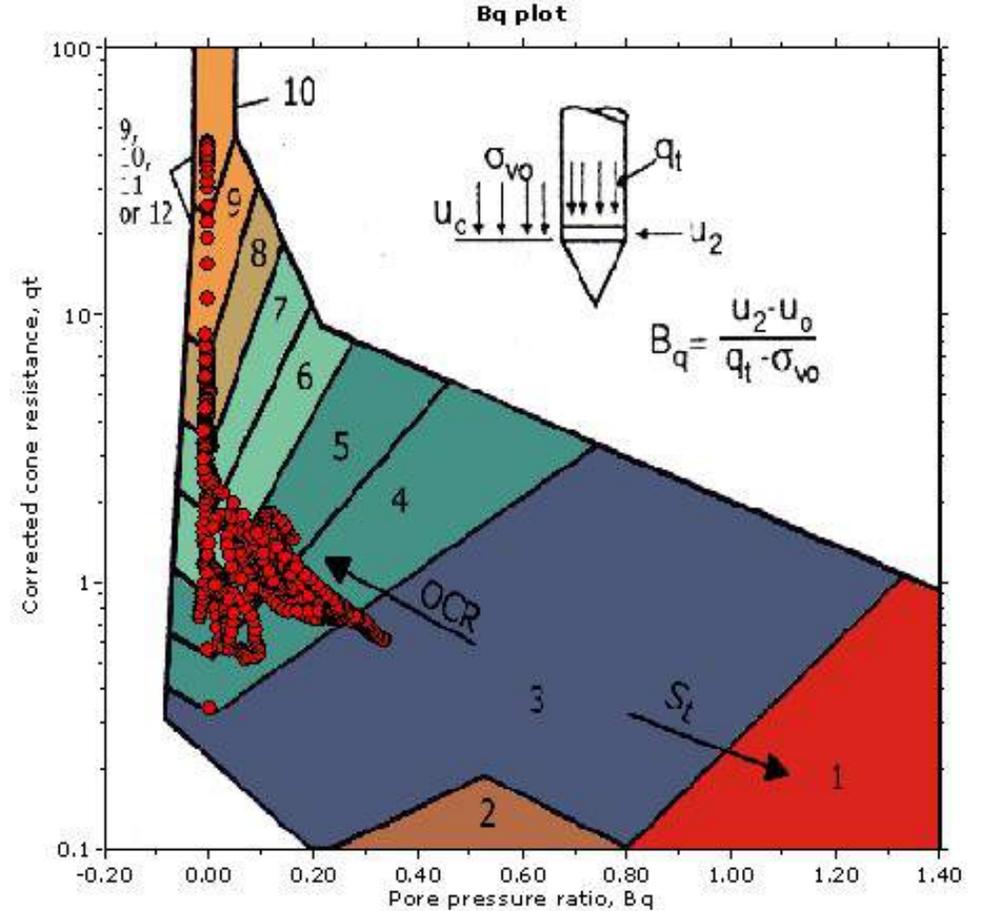
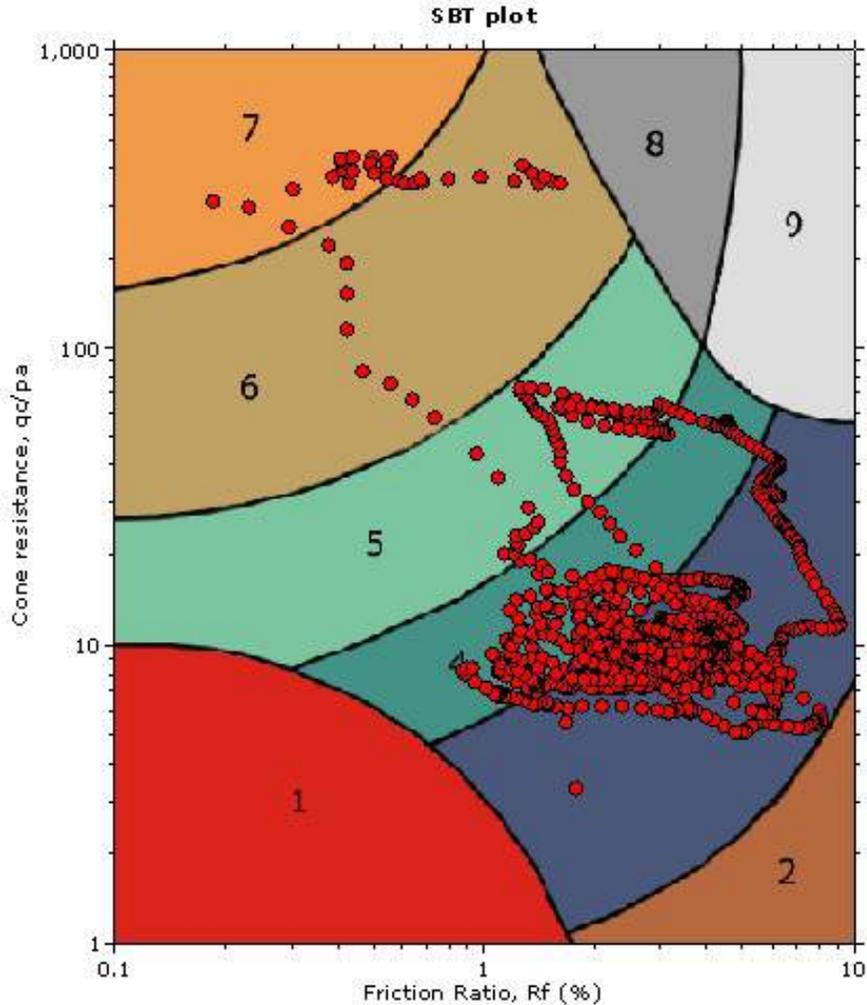


The plot below presents the cross correlation coefficient between the raw q_c and f_s values (as measured on the field). X axes presents the lag distance (one lag is the distance between two successive CPT measurements).



Project:
Location:

SBT - Bq plots



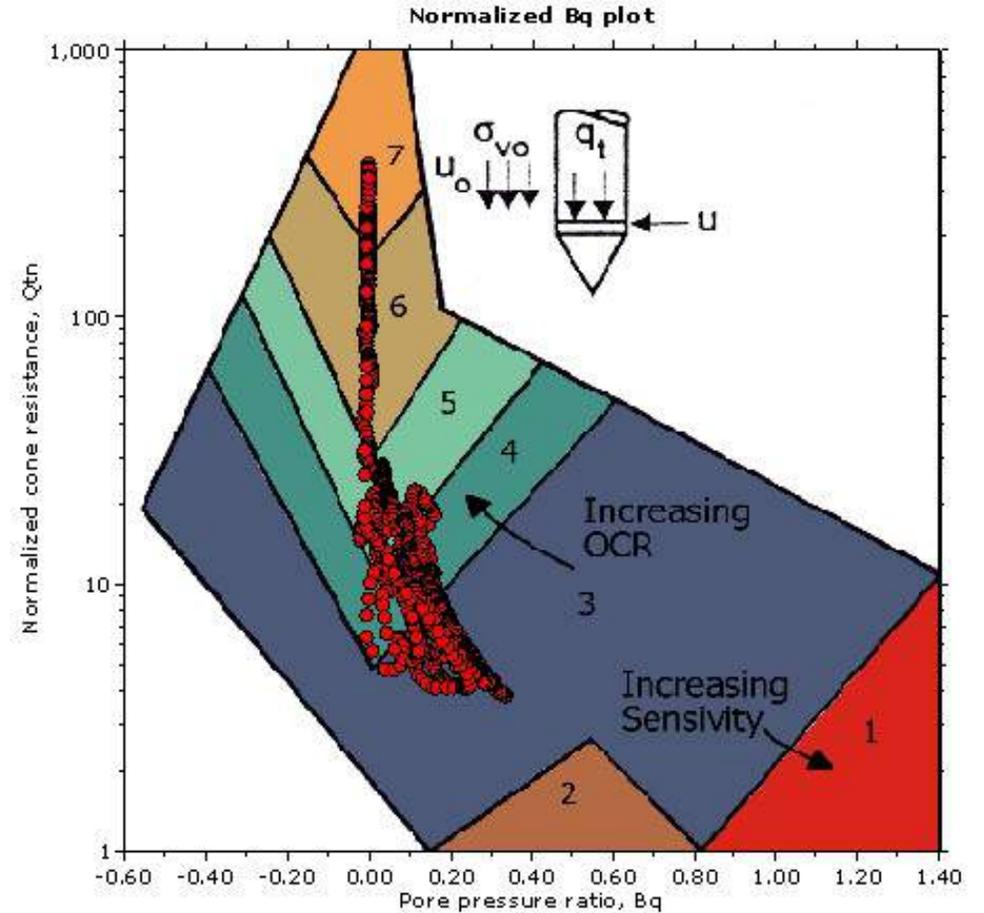
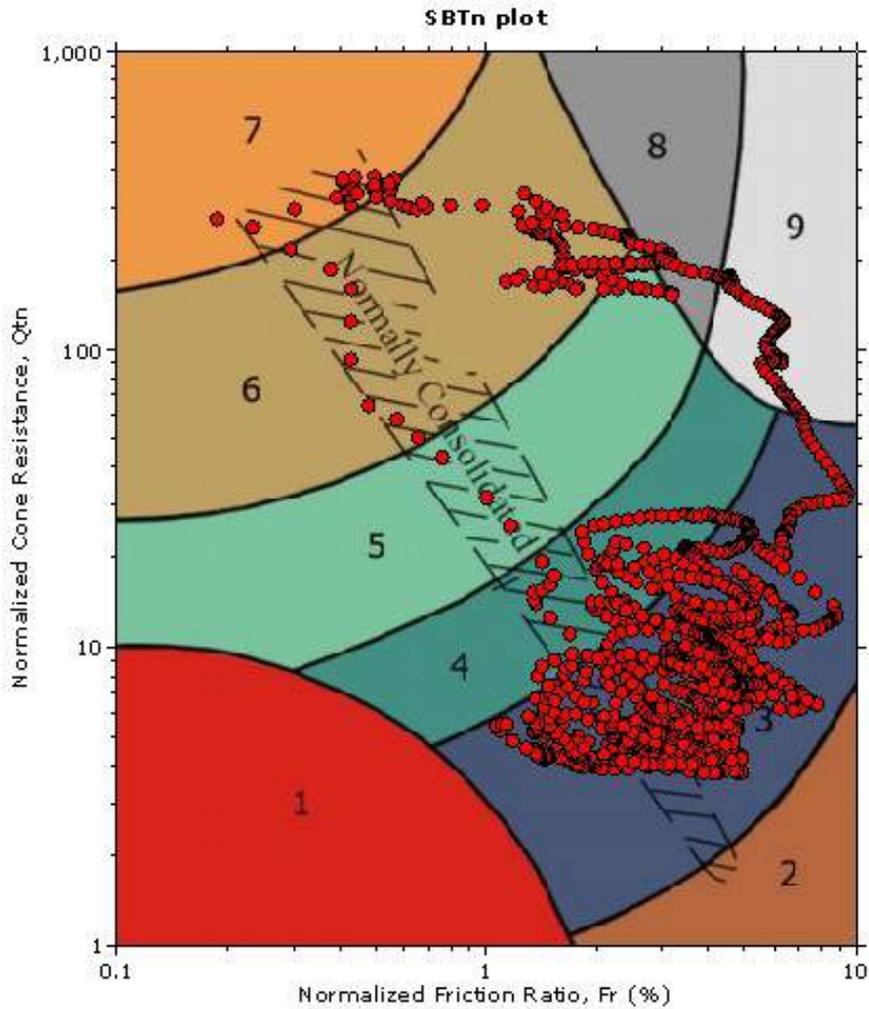
SBT legend

- | | | |
|---------------------------|------------------------------|-----------------------------------|
| 1. Sensitive fine grained | 4. Clayey silt to silty clay | 7. Gravely sand to sand |
| 2. Organic material | 5. Silty sand to sandy silt | 8. Very stiff sand to clayey sand |
| 3. Clay to silty clay | 6. Clean sand to silty sand | 9. Very stiff fine grained |

Project:

Location:

SBT - Bq plots (normalized)



SBTn legend

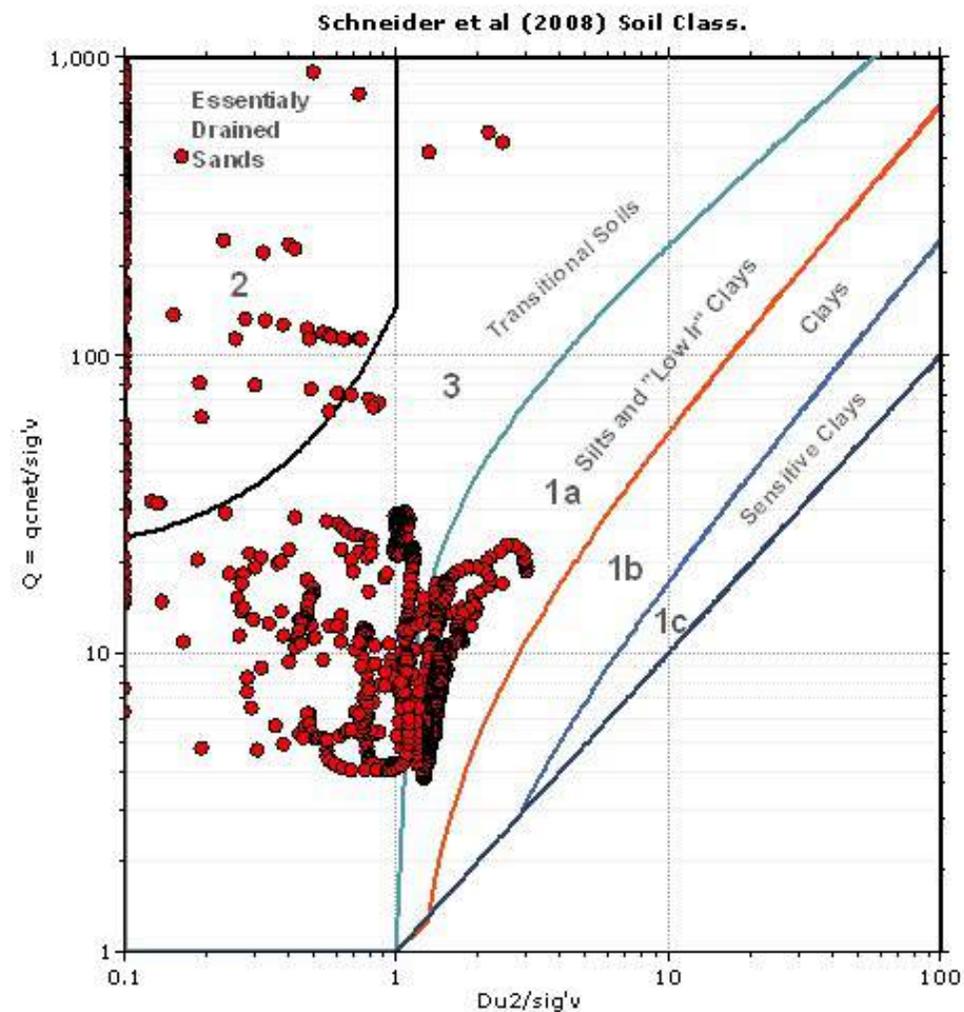
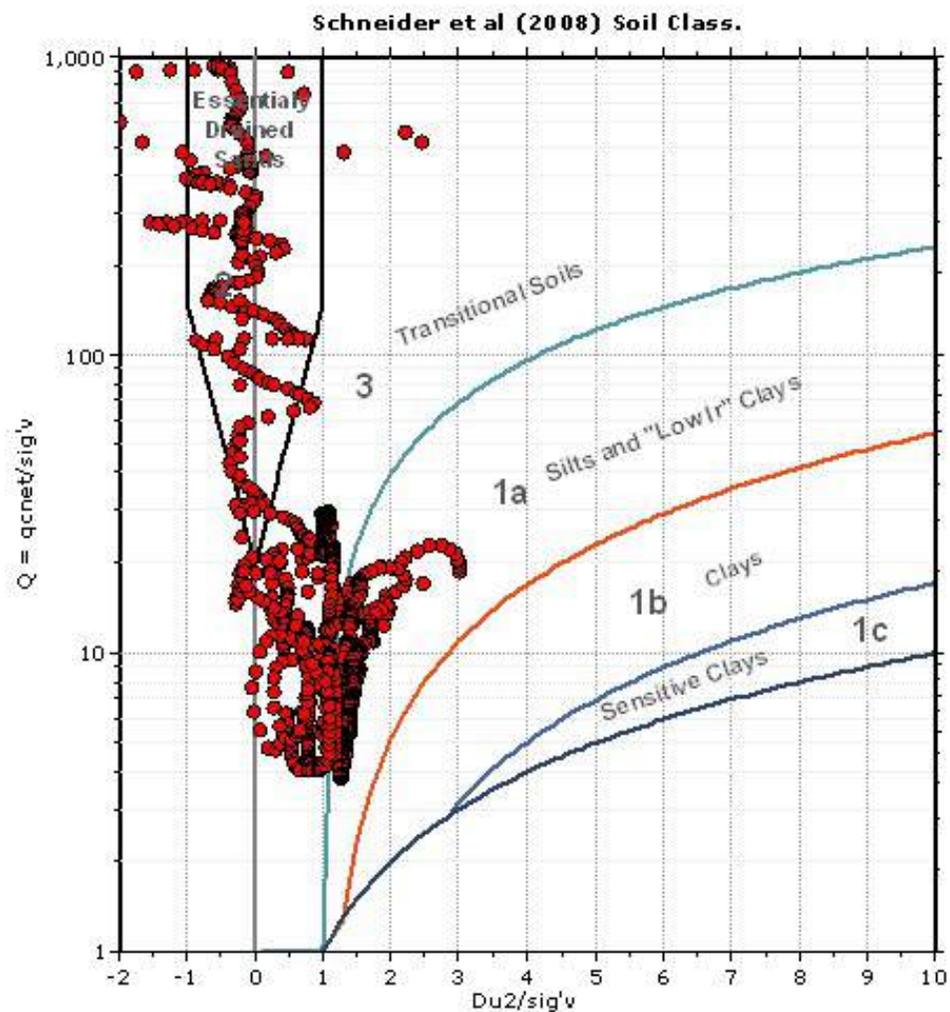
- | | | |
|---------------------------|------------------------------|-----------------------------------|
| 1. Sensitive fine grained | 4. Clayey silt to silty clay | 7. Gravely sand to sand |
| 2. Organic material | 5. Silty sand to sandy silt | 8. Very stiff sand to clayey sand |
| 3. Clay to silty clay | 6. Clean sand to silty sand | 9. Very stiff fine grained |



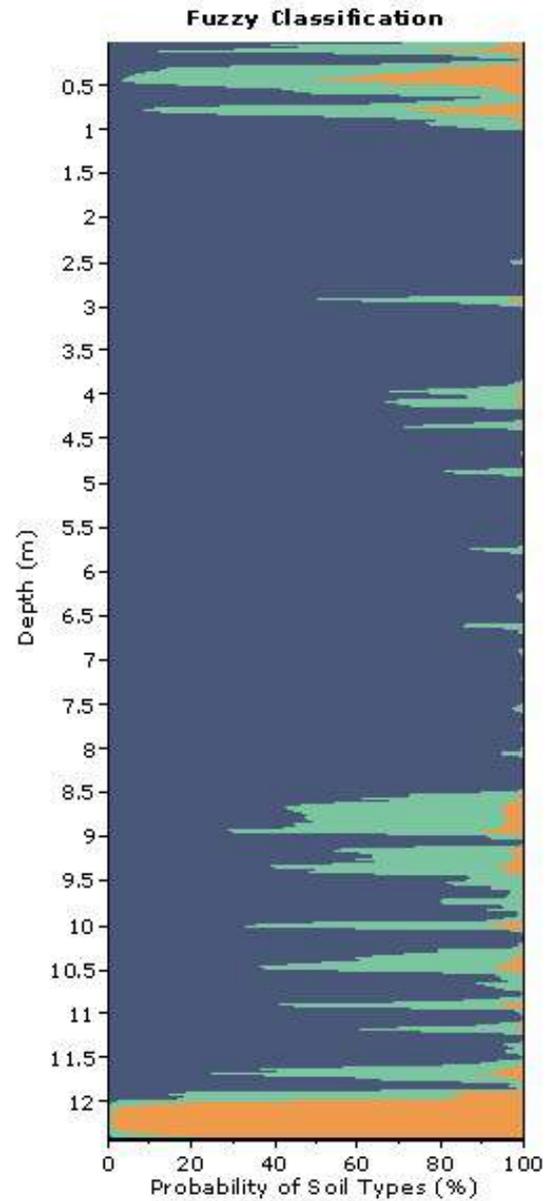
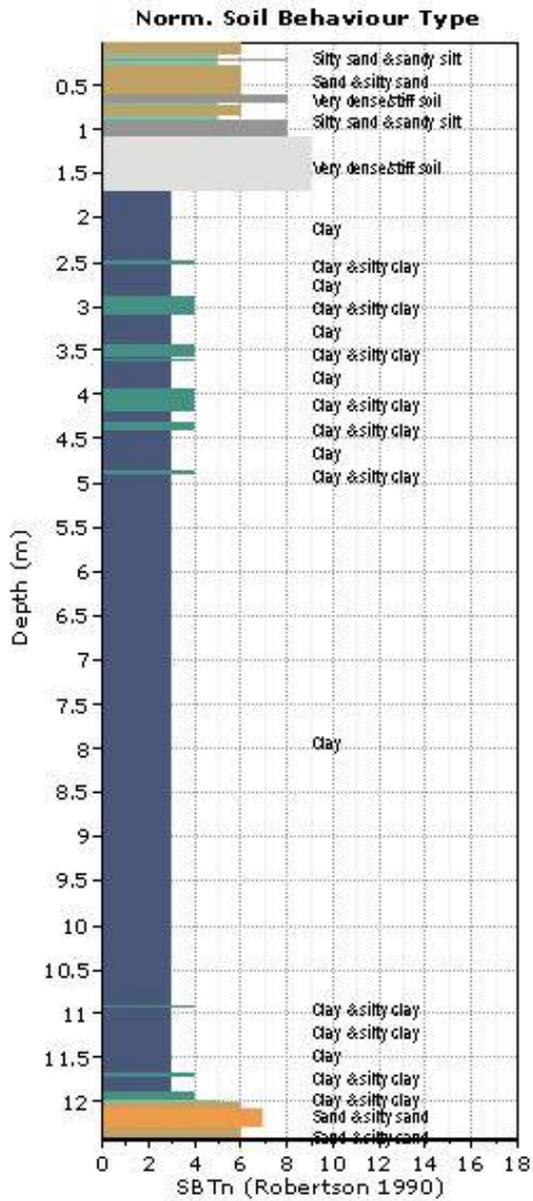
Project:

Location:

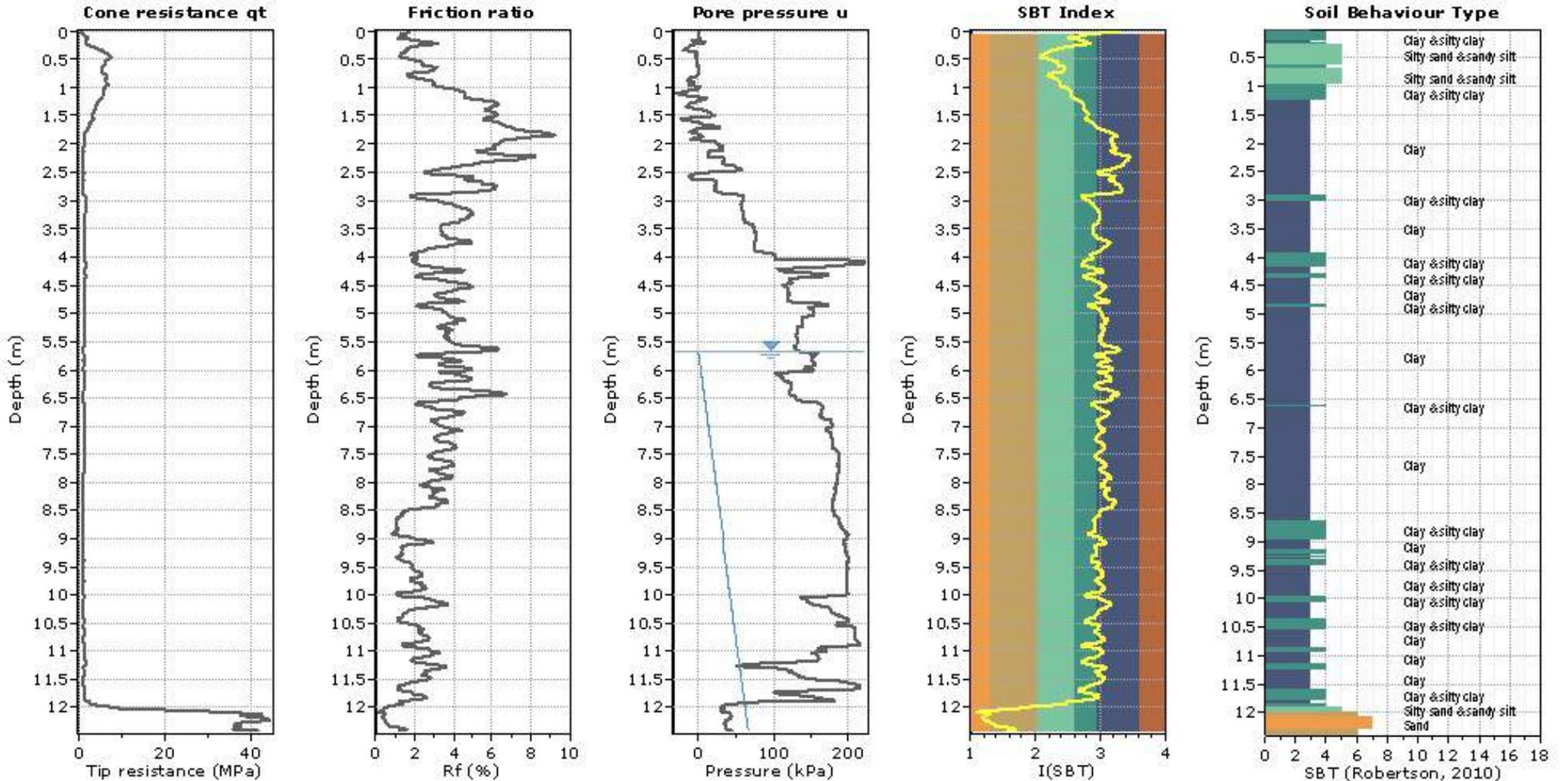
Bq plots (Schneider)



Project:
Location:



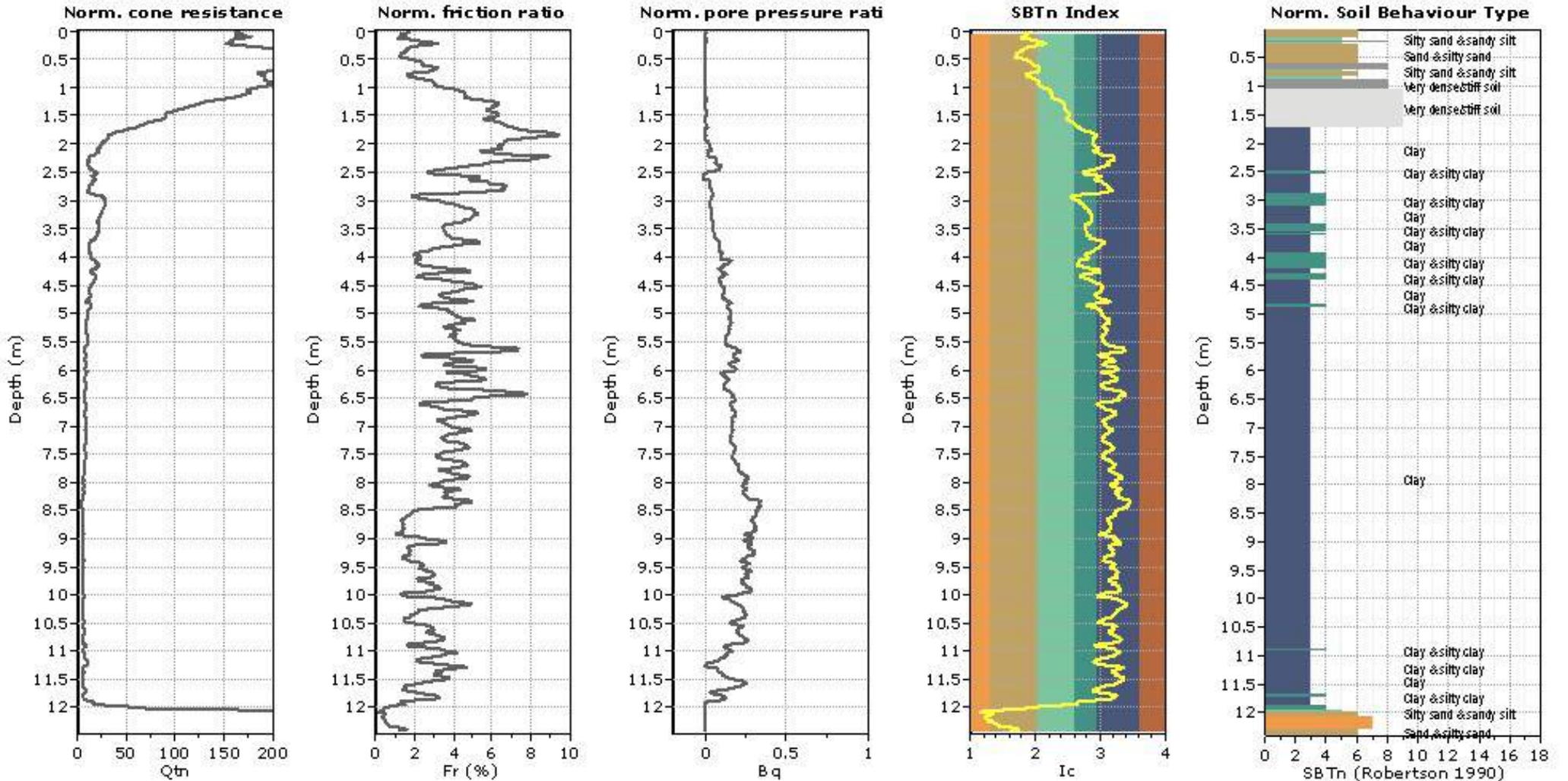
Project:
Location:



SBT legend

- | | | |
|--|---|---|
| ■ 1. Sensitive fine grained | ■ 4. Clayey silt to silty clay | ■ 7. Gravely sand to sand |
| ■ 2. Organic material | ■ 5. Silty sand to sandy silt | ■ 8. Very stiff sand to clayey sand |
| ■ 3. Clay to silty clay | ■ 6. Clean sand to silty sand | ■ 9. Very stiff fine grained |

Project:
Location:

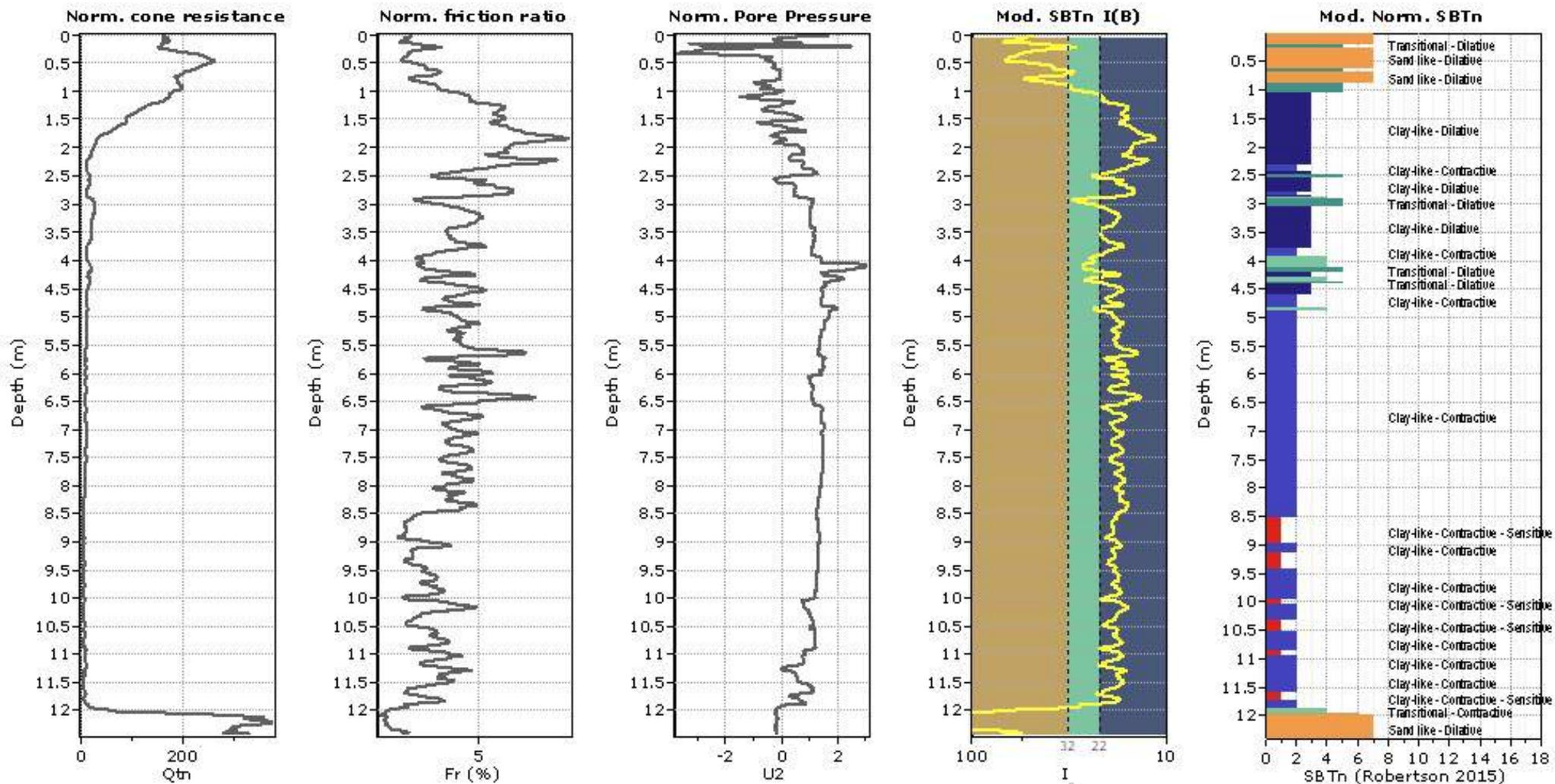


SBTn legend

- | | | |
|---------------------------|------------------------------|-----------------------------------|
| 1. Sensitive fine grained | 4. Clayey silt to silty clay | 7. Gravely sand to sand |
| 2. Organic material | 5. Silty sand to sandy silt | 8. Very stiff sand to clayey sand |
| 3. Clay to silty clay | 6. Clean sand to silty sand | 9. Very stiff fine grained |

Project:

Location:



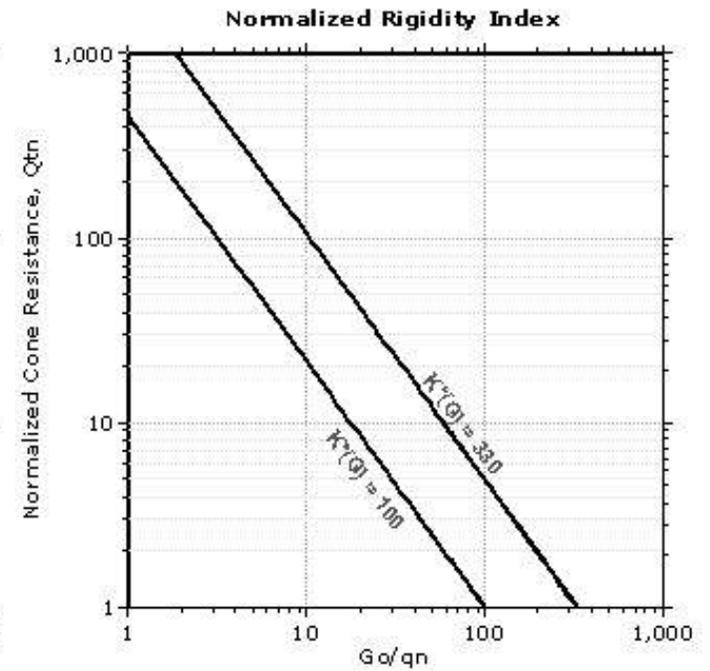
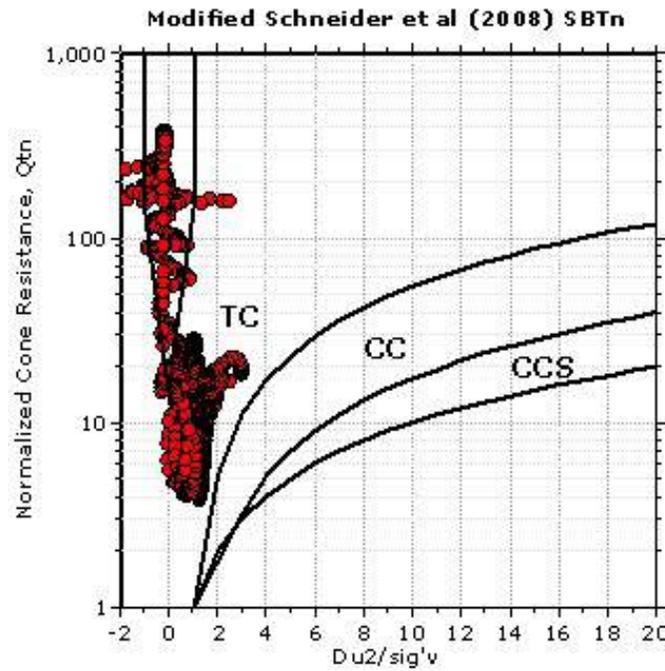
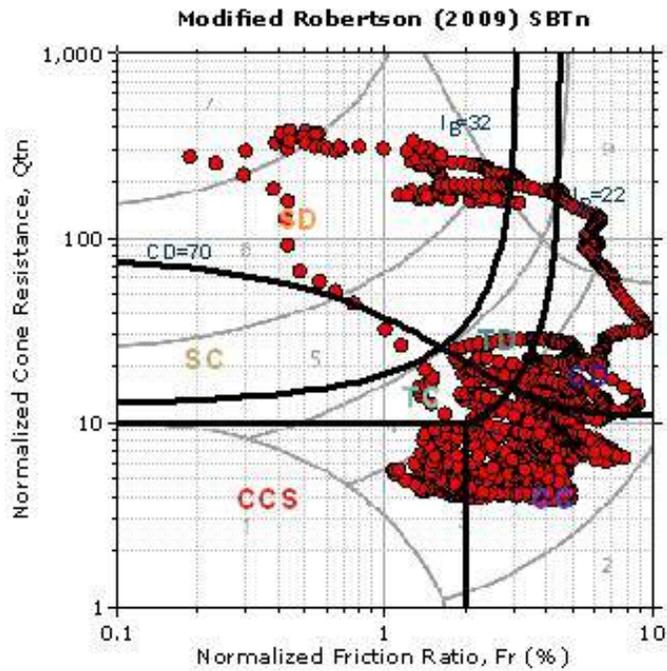
Mod. SBTn legend

- | | | |
|---|-----------------------------------|-----------------------------|
| 1. CCS: ClayLike - Contractive, Sensitive | 4. TC: Transitional - Contractive | 7. SD: Sand-like - Dilative |
| 2. CC: Clay-like - Contractive | 5. TD: Transitional - Dilative | |
| 3. CD: Clay-Like: Dilative | 6. SC: Sand-like - Contractive | |

Project:

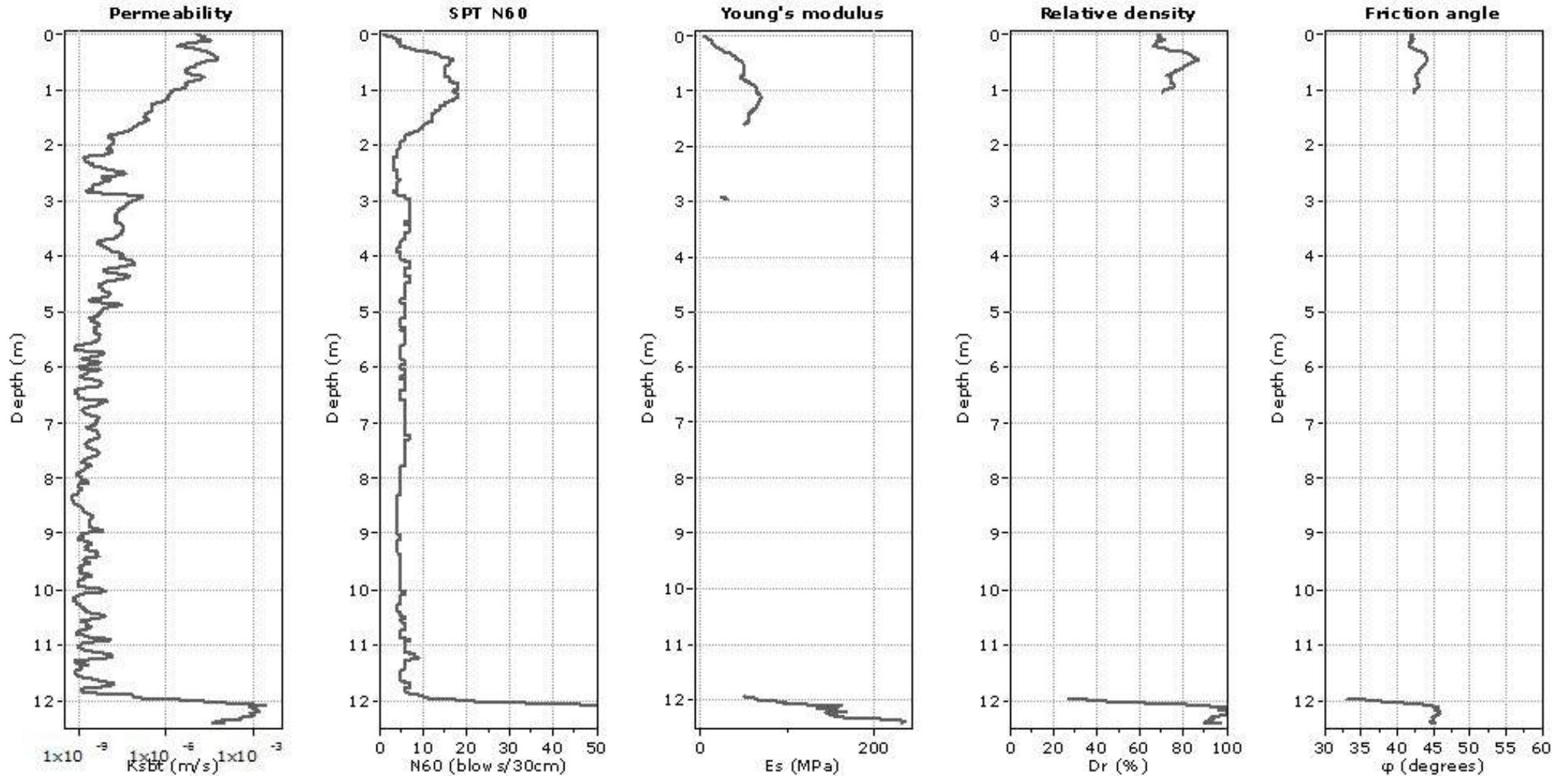
Location:

Updated SBTn plots



- CCS: Clay-like - Contractive - Sensitive
- CC: Clay-like - Contractive
- CD: Clay-like - Dilative
- TC: Transitional - Contractive
- TD: Transitional - Dilative
- SC: Sand-like - Contractive
- SD: Sand-like - Dilative

Project:
Location:



Calculation parameters

Permeability: Based on SBT_n

SPT N₆₀: Based on I_c and q_t

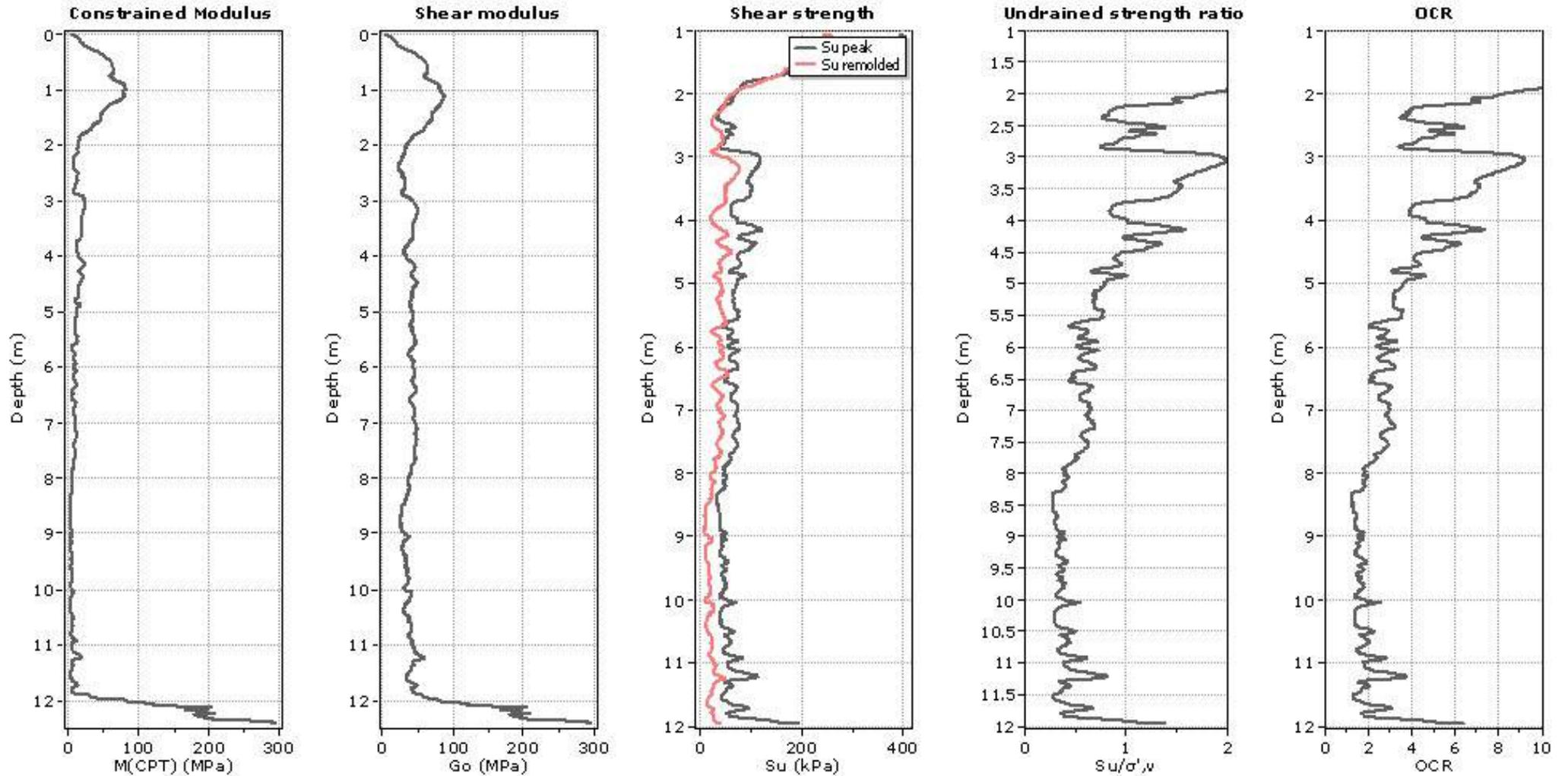
Young's modulus: Based on variable alpha using I_c (Robertson, 2009)

Relative density constant, C_D: 350.0

Phi: Based on Kulhavy & Mayne (1990)

● User defined estimation data

Project:
Location:



Calculation parameters

Constrained modulus: Based on variable *alpha* using I_c and Q_{tm} (Robertson, 2009)

Go: Based on variable *alpha* using I_c (Robertson, 2009)

Undrained shear strength cone factor for clays, N_{kt} : 14

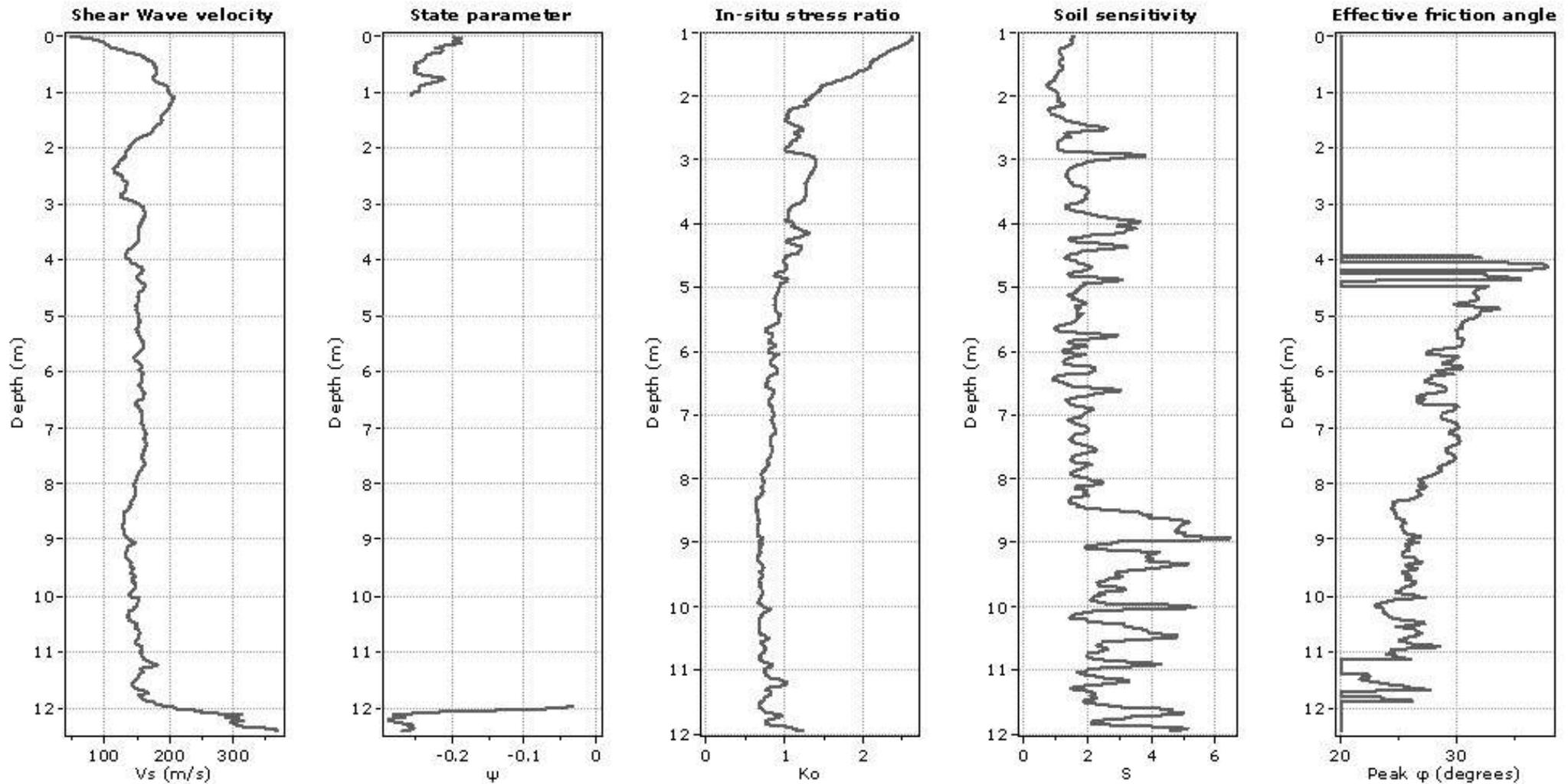
OCR factor for clays, N_{kt} : 0.33

● User defined estimation data

● Flat Dilatometer Test data

Project:

Location:



Calculation parameters

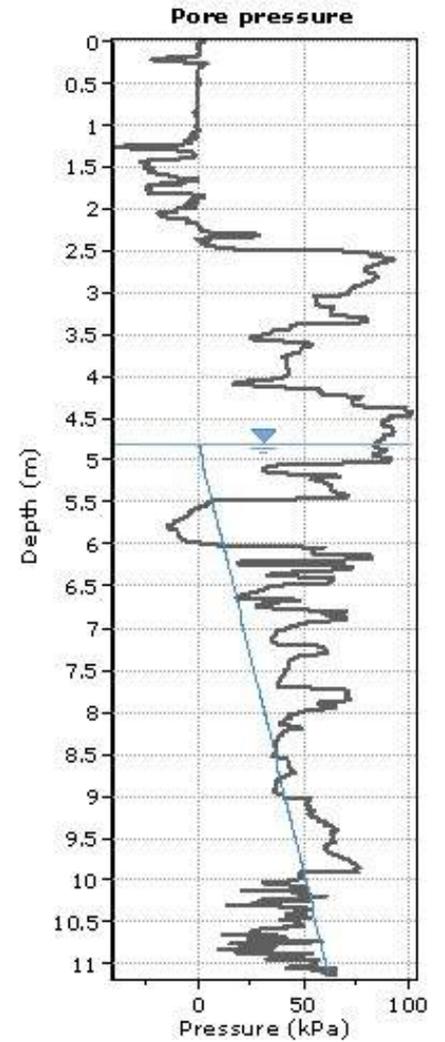
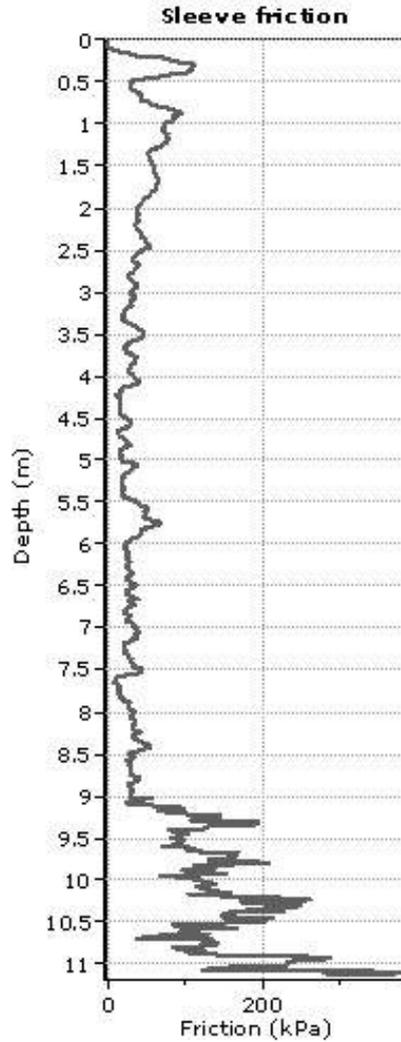
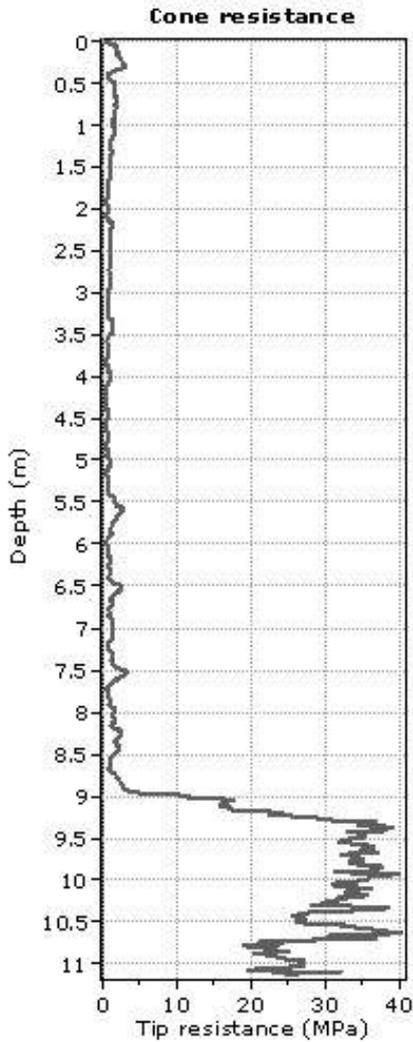
Soil Sensitivity factor, N_s : 7.00

—●— User defined estimation data

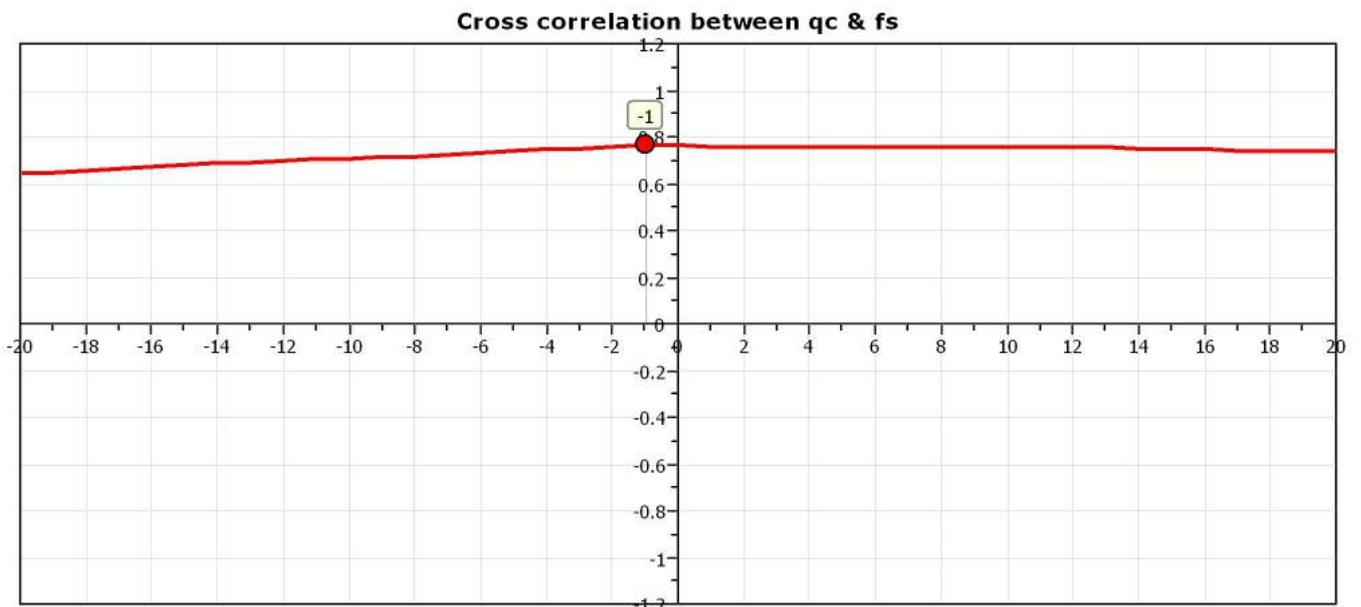
034033P195

Project:

Location:



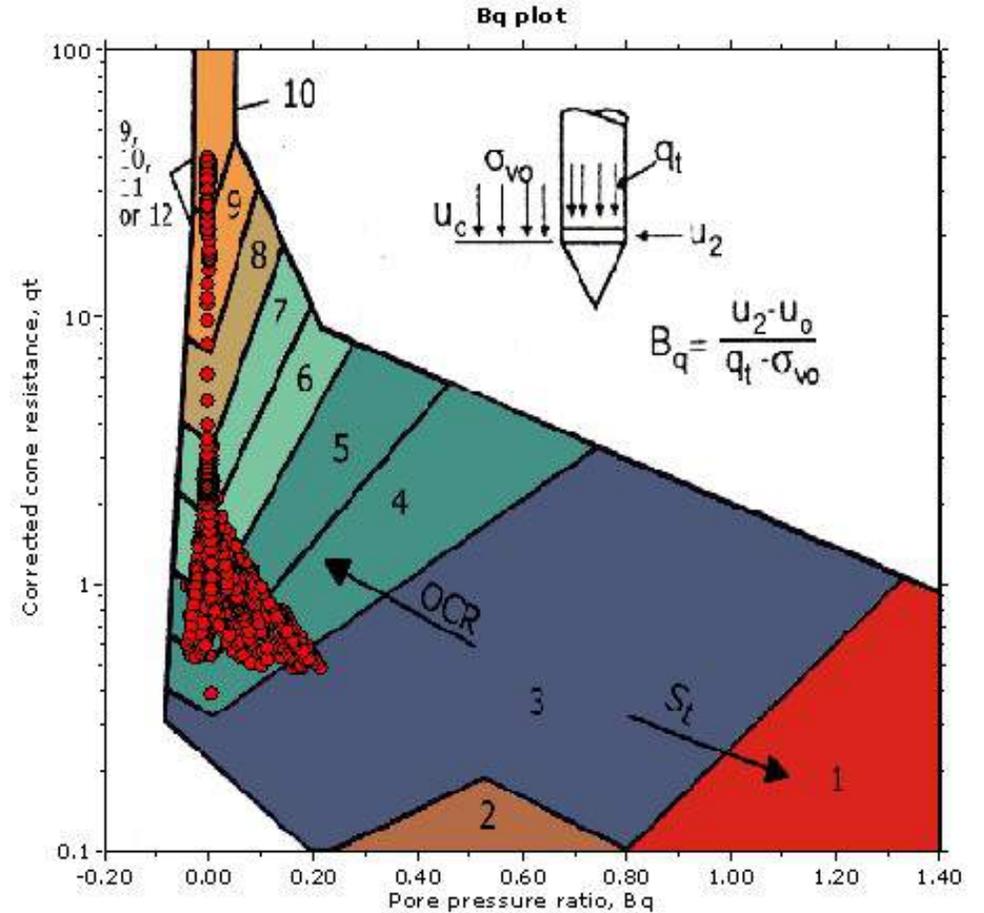
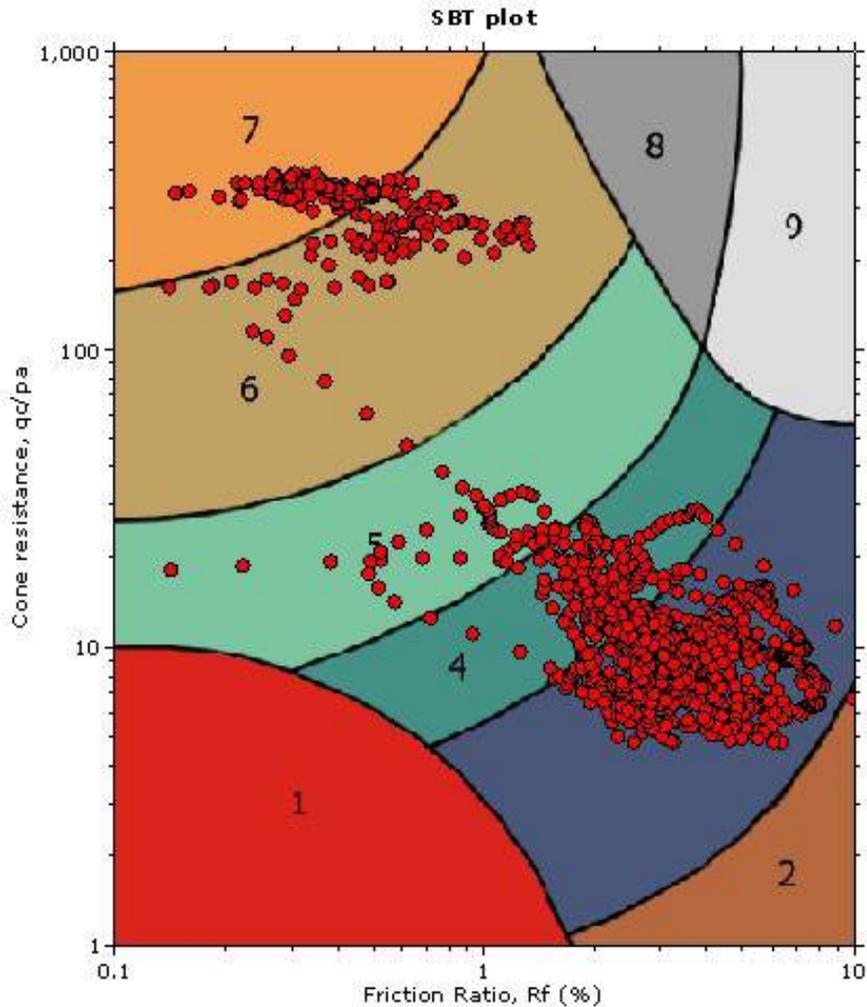
The plot below presents the cross correlation coefficient between the raw q_c and f_s values (as measured on the field). X axes presents the lag distance (one lag is the distance between two successive CPT measurements).



Project:

Location:

SBT - Bq plots



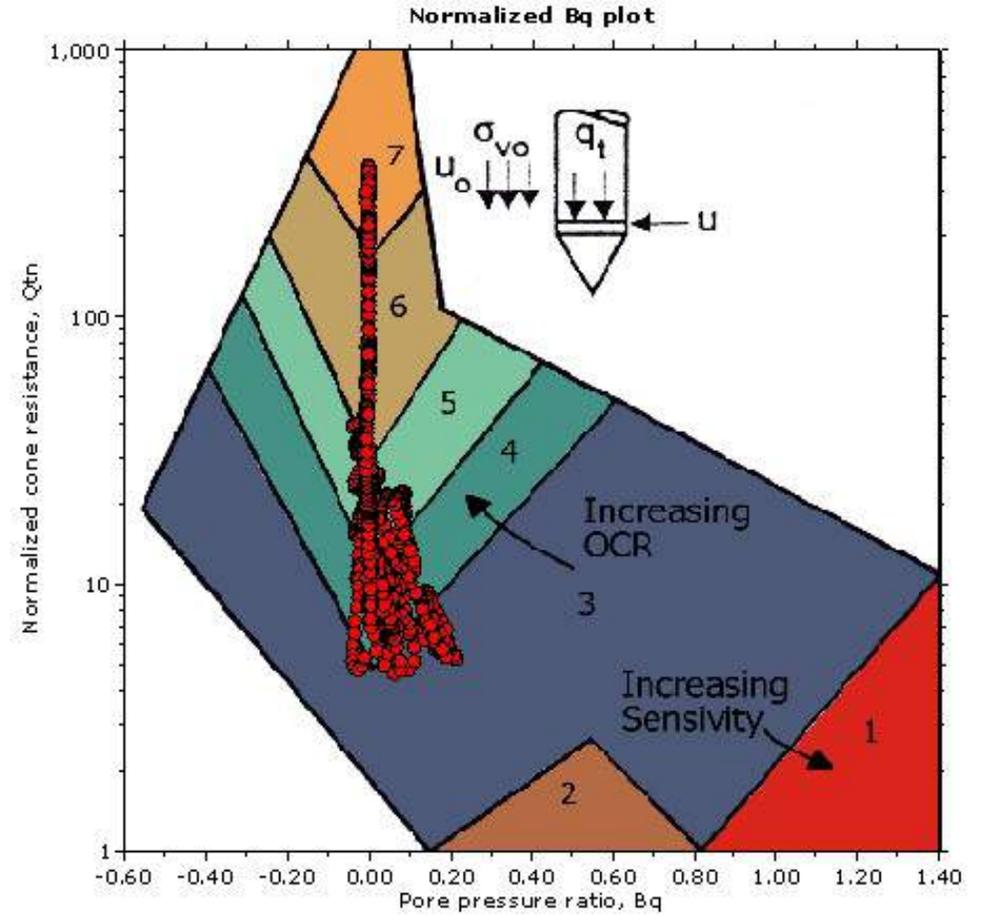
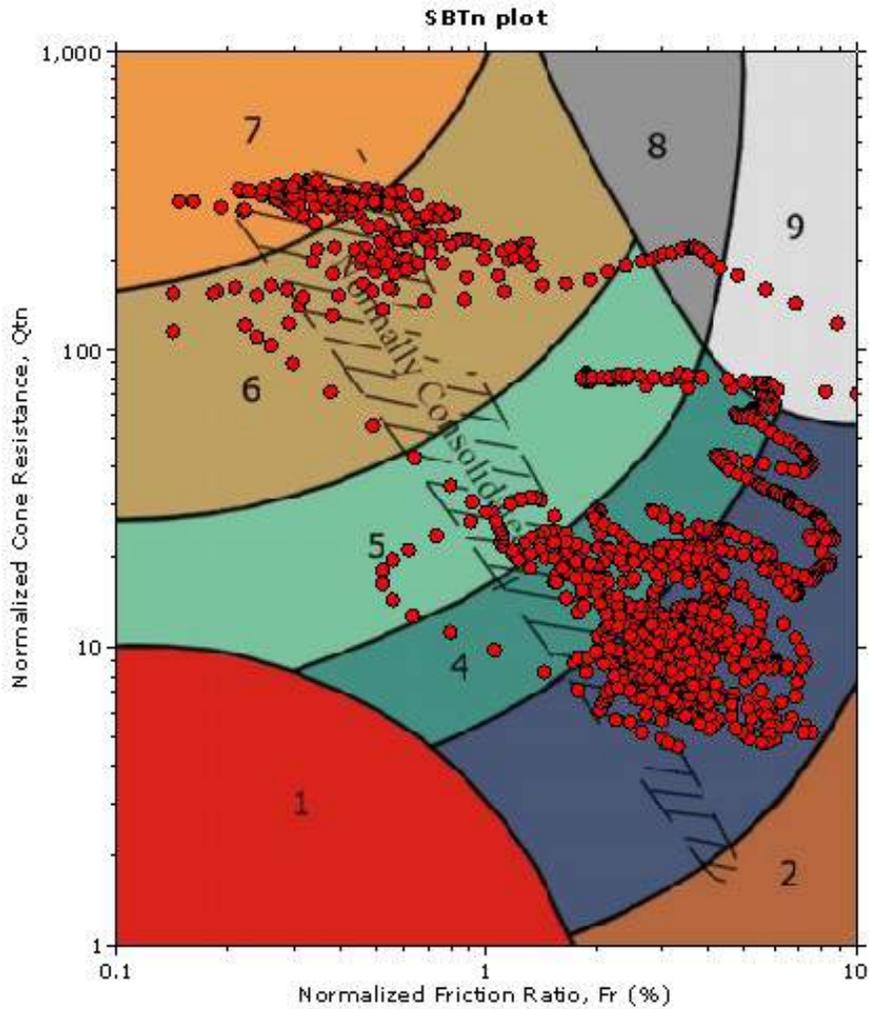
SBT legend

- | | | |
|---------------------------|------------------------------|-----------------------------------|
| 1. Sensitive fine grained | 4. Clayey silt to silty clay | 7. Gravely sand to sand |
| 2. Organic material | 5. Silty sand to sandy silt | 8. Very stiff sand to clayey sand |
| 3. Clay to silty clay | 6. Clean sand to silty sand | 9. Very stiff fine grained |

Project:

Location:

SBT - Bq plots (normalized)

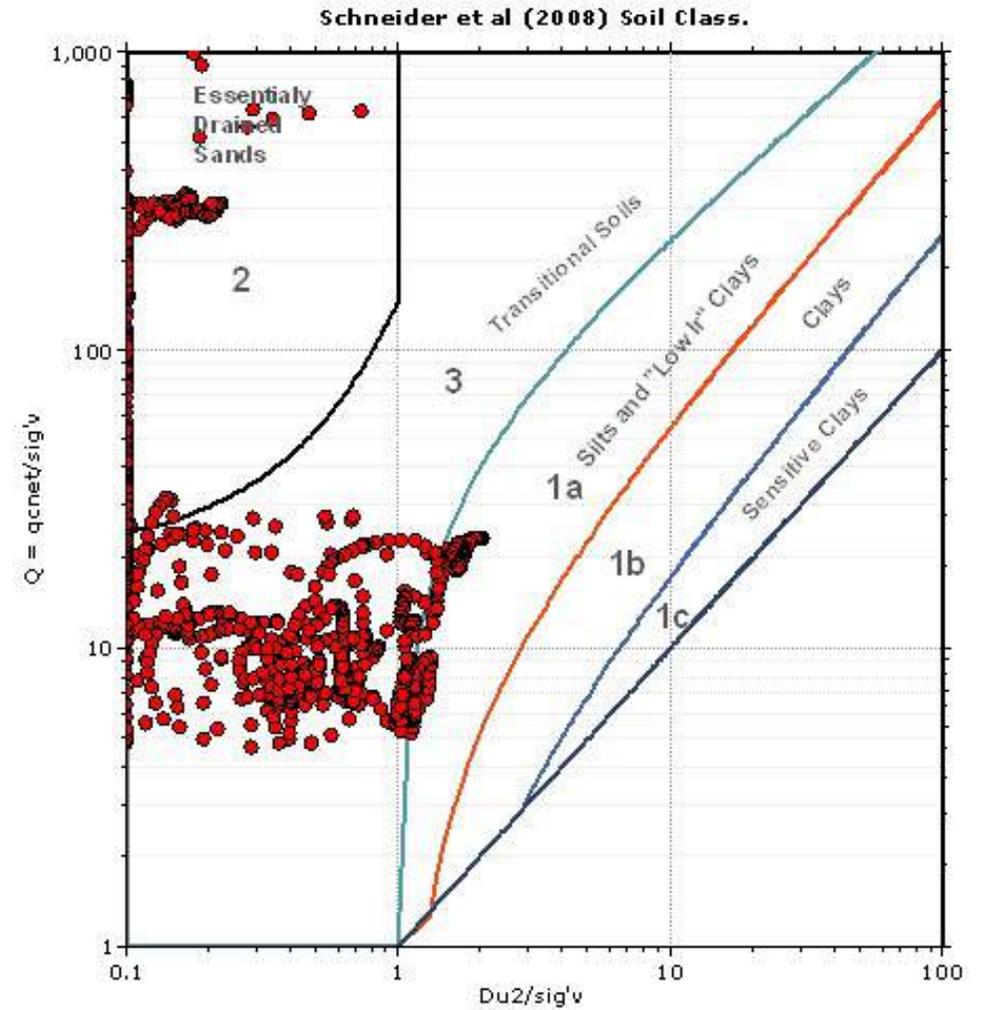
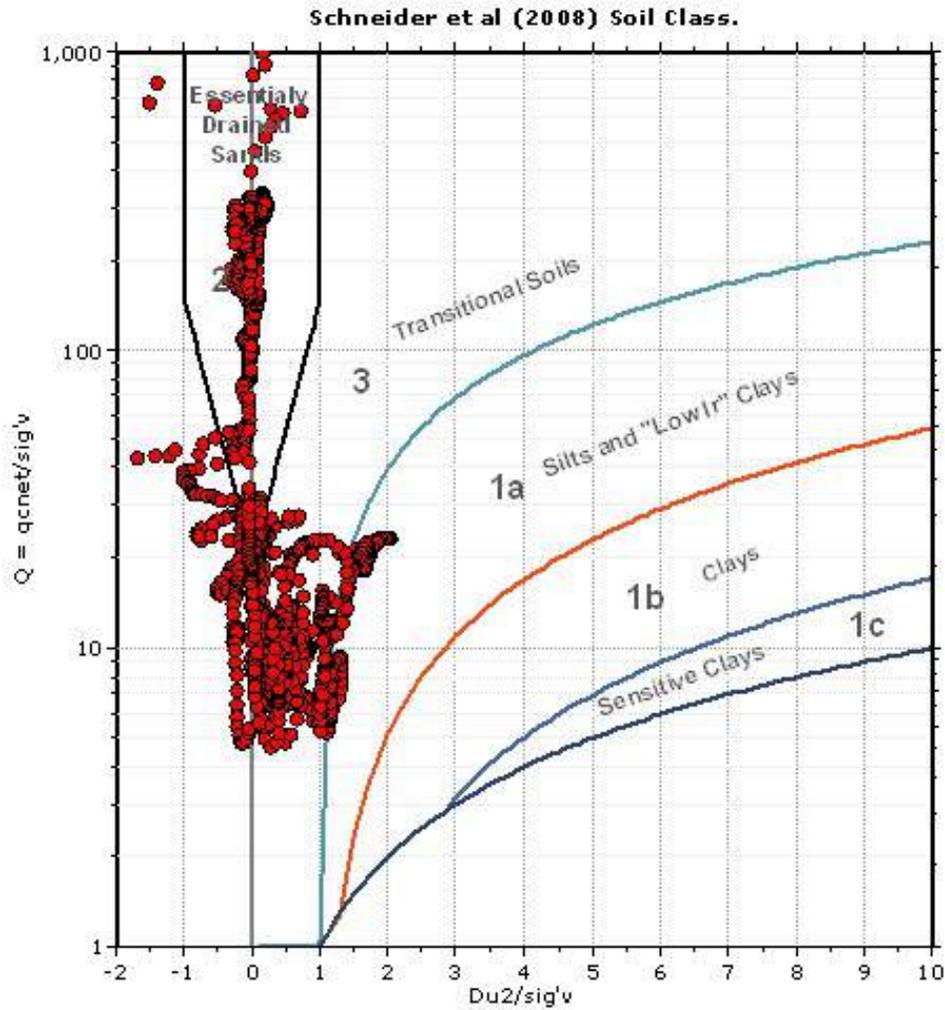


SBTn legend

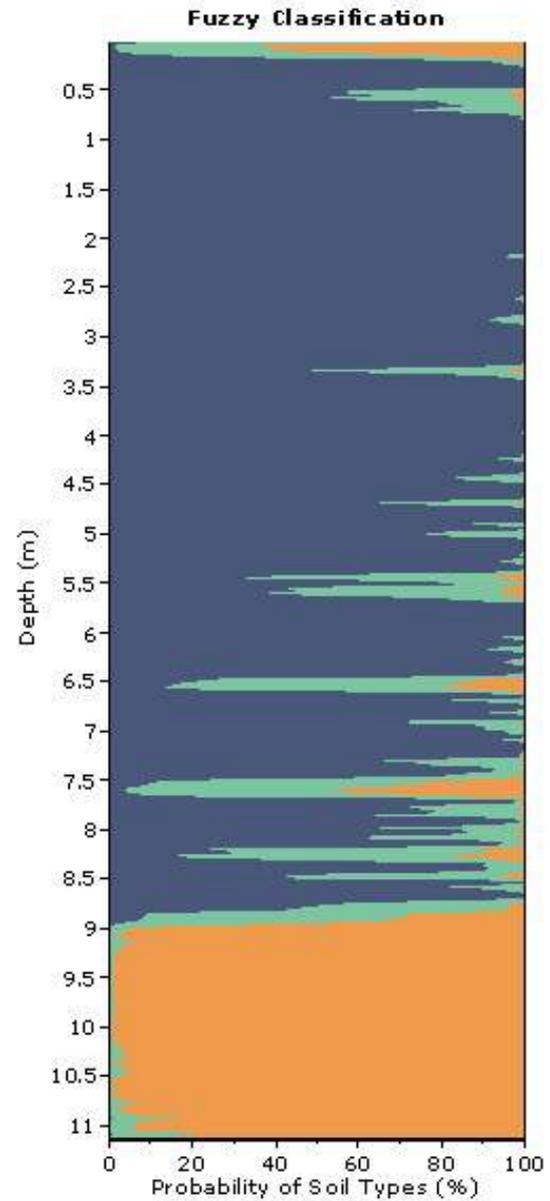
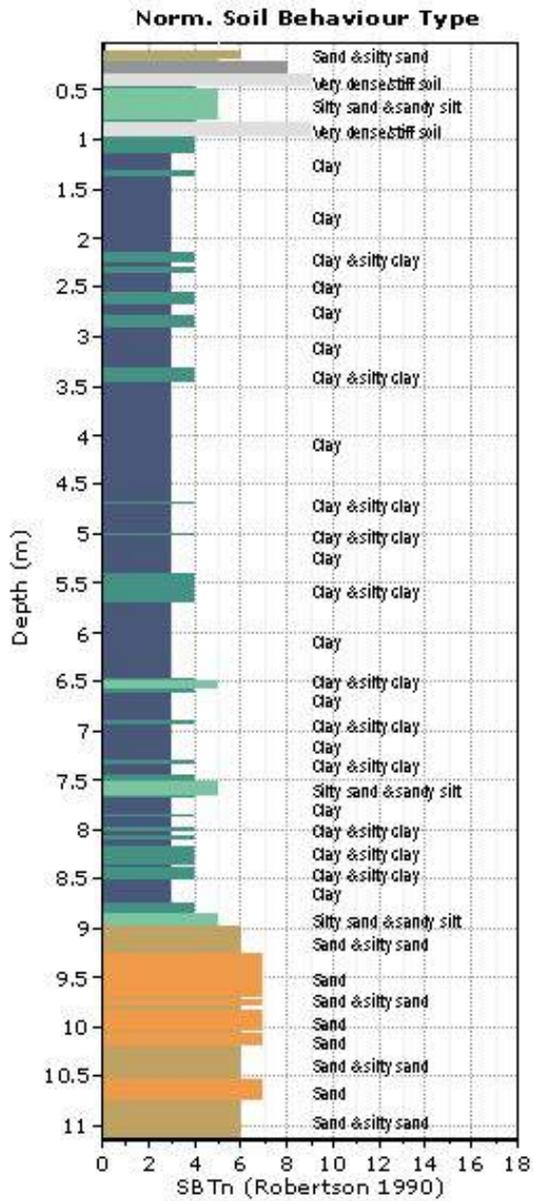
- | | | |
|---------------------------|------------------------------|-----------------------------------|
| 1. Sensitive fine grained | 4. Clayey silt to silty clay | 7. Gravely sand to sand |
| 2. Organic material | 5. Silty sand to sandy silt | 8. Very stiff sand to clayey sand |
| 3. Clay to silty clay | 6. Clean sand to silty sand | 9. Very stiff fine grained |

Project:
Location:

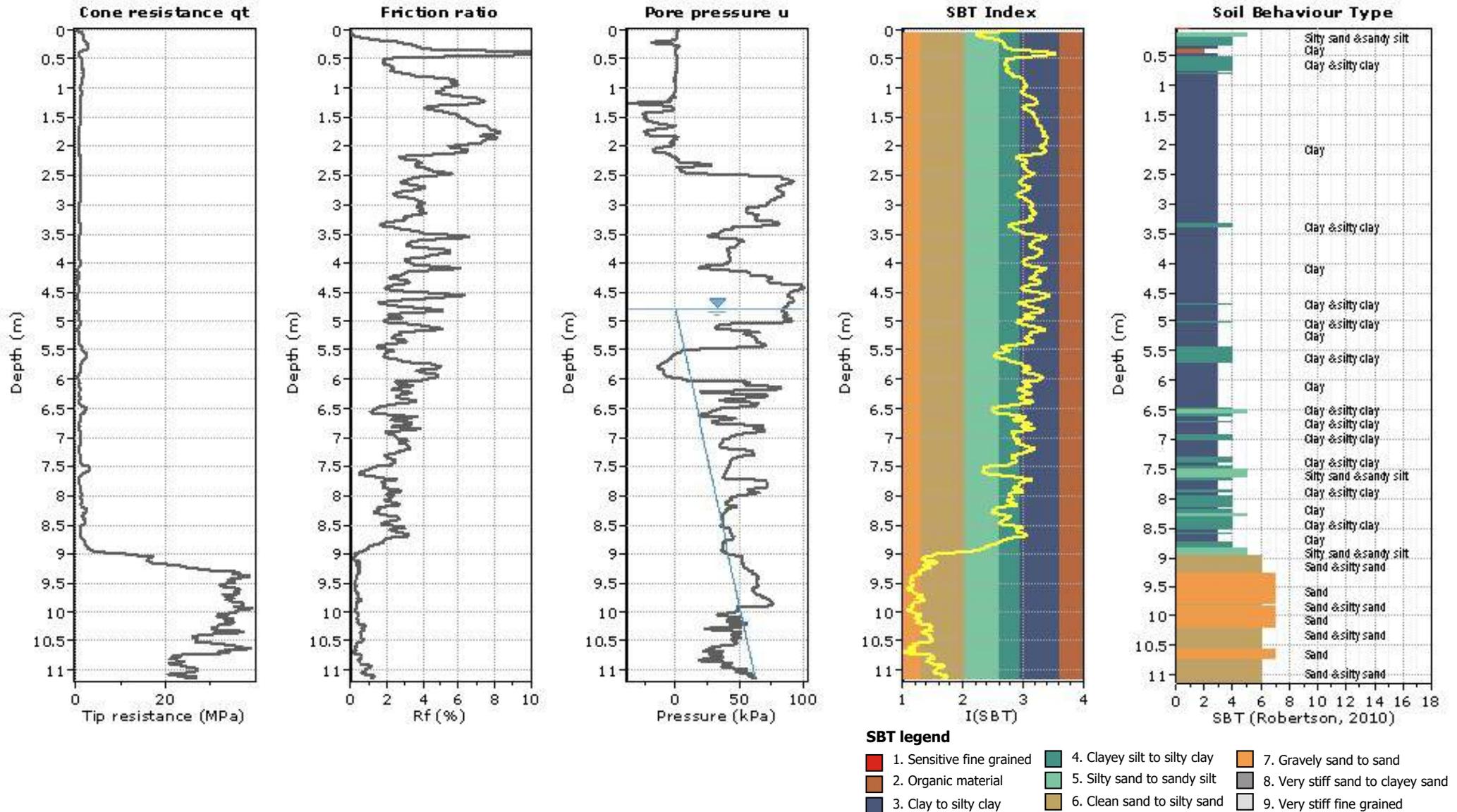
Bq plots (Schneider)



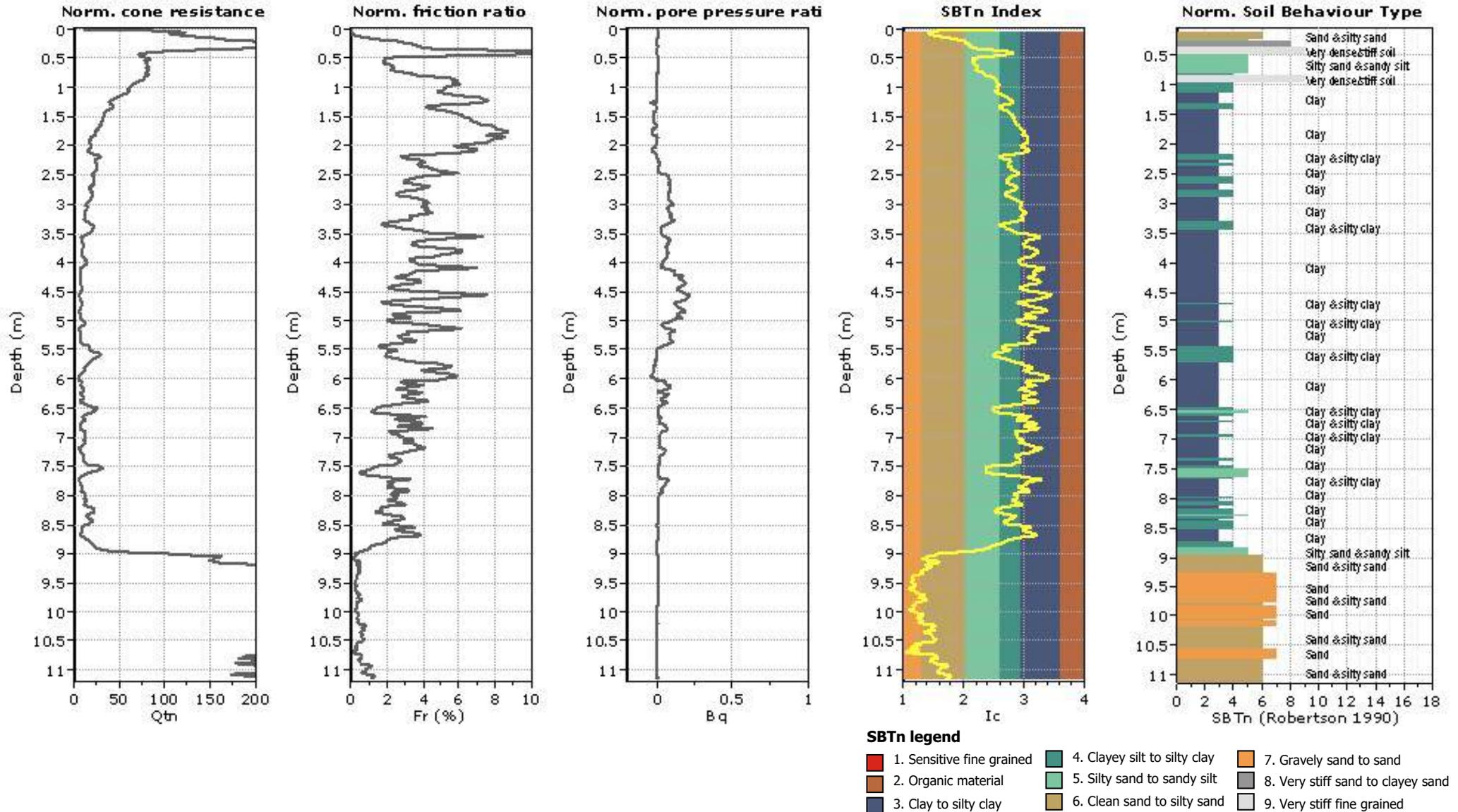
Project:
Location:



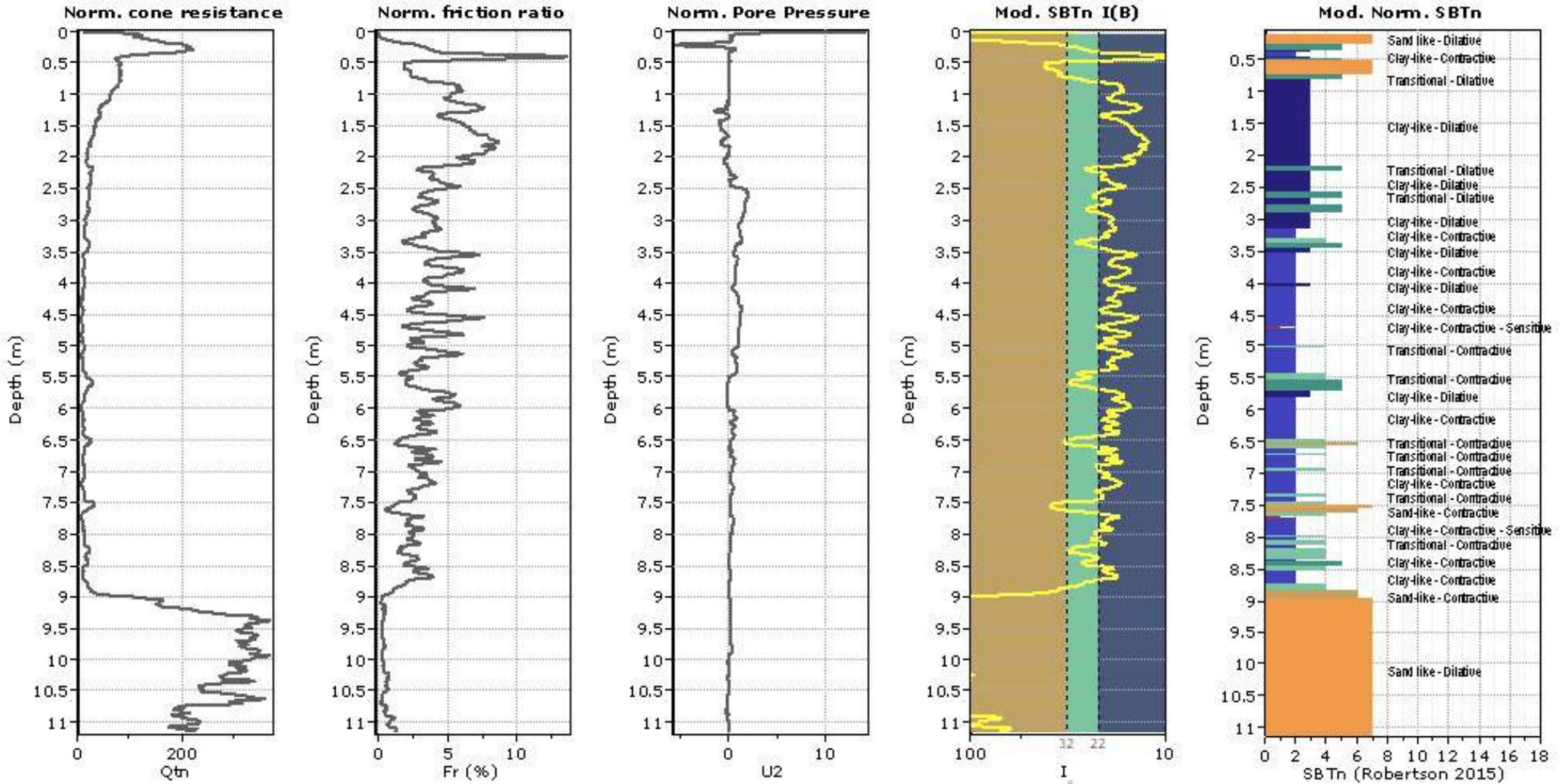
Project:
Location:



Project:
Location:



Project:
Location:

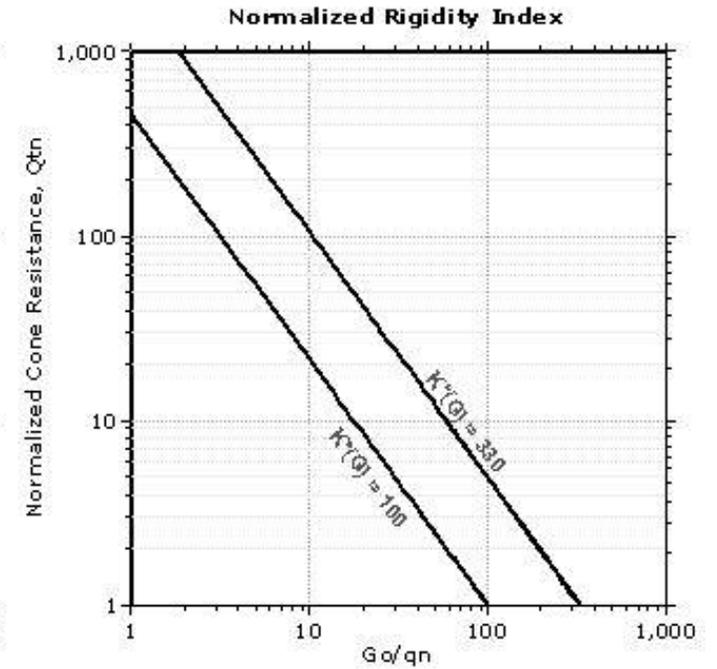
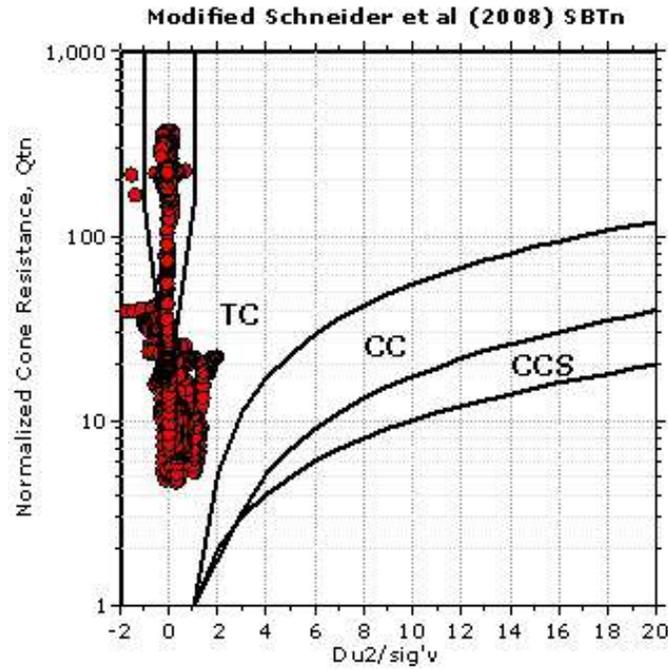
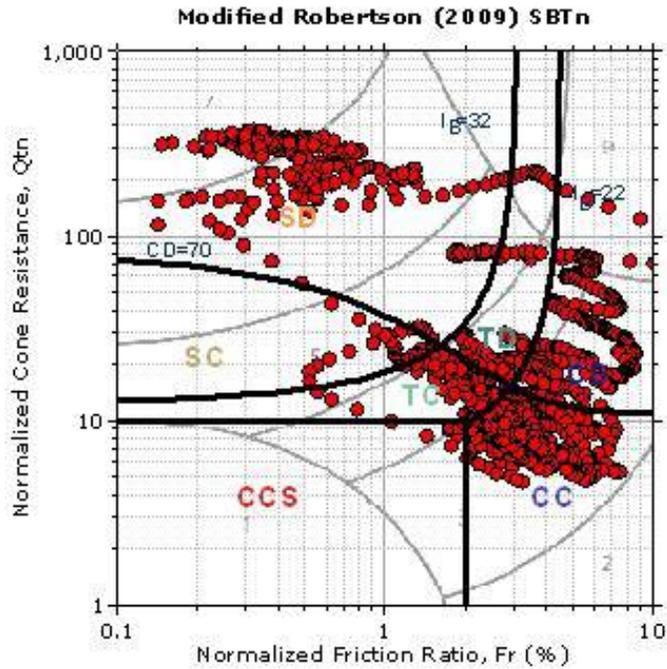


Mod. SBTn legend

- | | | |
|---|-----------------------------------|-----------------------------|
| 1. CCS: ClayLike - Contractive, Sensitive | 4. TC: Transitional - Contractive | 7. SD: Sand-like - Dilative |
| 2. CC: Clay-like - Contractive | 5. TD: Transitional - Dilative | |
| 3. CD: Clay-Like: Dilative | 6. SC: Sand-like - Contractive | |

Project:
Location:

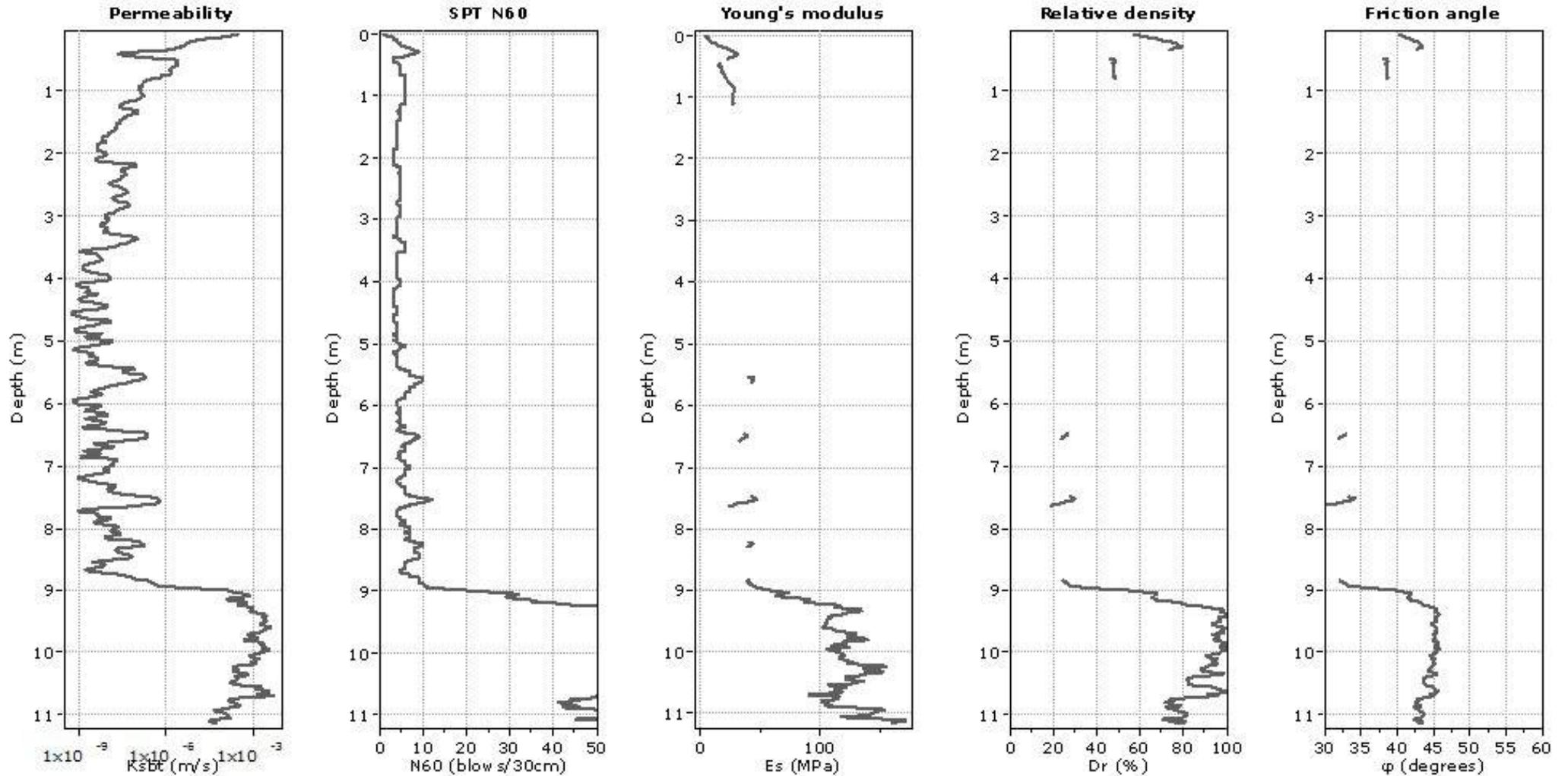
Updated SBTn plots



- CCS: Clay-like - Contractive - Sensitive
- CC: Clay-like - Contractive
- CD: Clay-like - Dilative
- TC: Transitional - Contractive
- TD: Transitional - Dilative
- SC: Sand-like - Contractive
- SD: Sand-like - Dilative

Project:

Location:



Calculation parameters

Permeability: Based on SBT_n

SPT N_{60} : Based on I_c and q_t

Young's modulus: Based on variable alpha using I_c (Robertson, 2009)

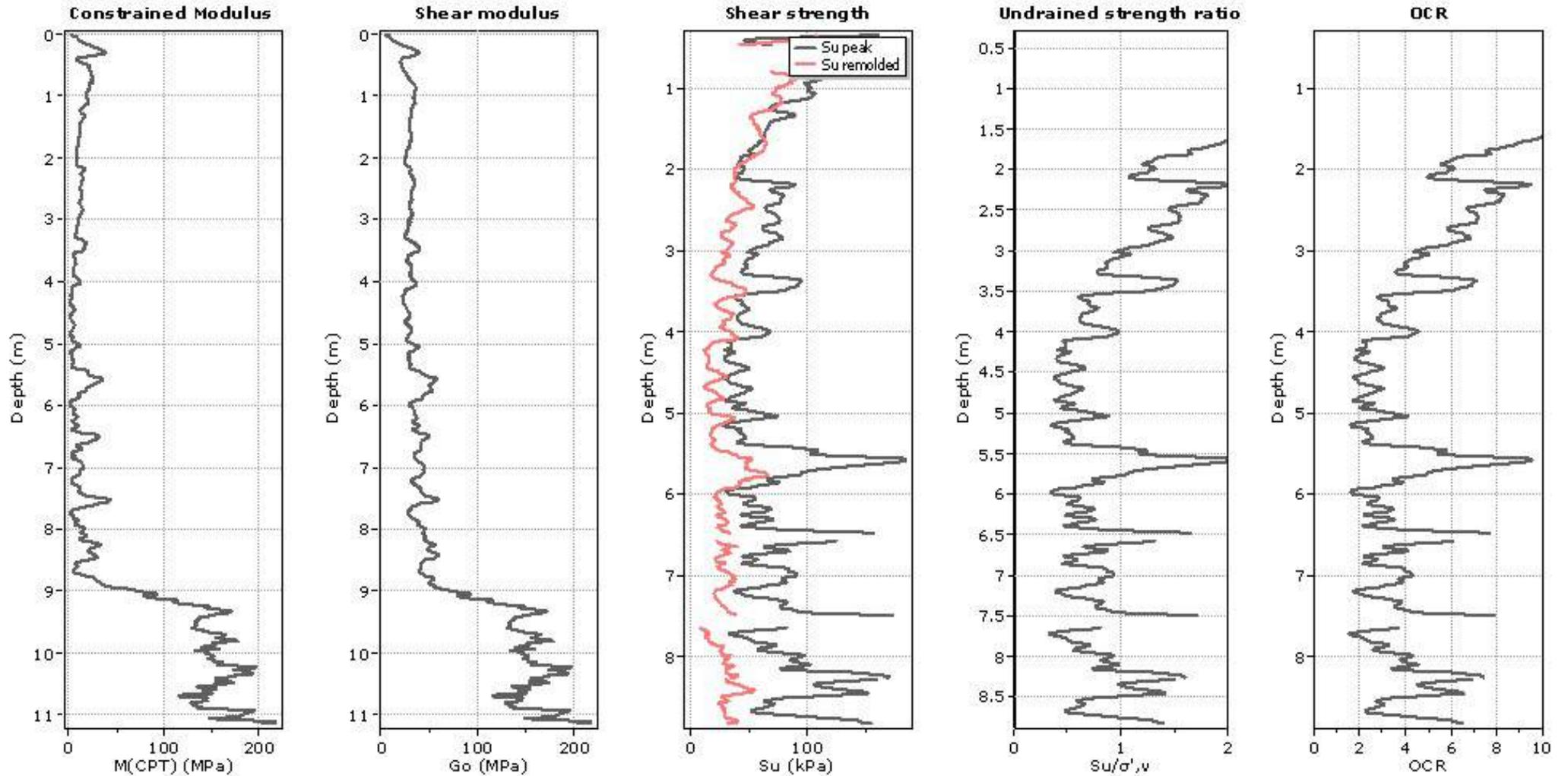
Relative density constant, C_{Dr} : 350.0

Phi: Based on Kulhavy & Mayne (1990)

● User defined estimation data

Project:

Location:



Calculation parameters

Constrained modulus: Based on variable *alpha* using I_c and Q_{tm} (Robertson, 2009)

Go: Based on variable *alpha* using I_c (Robertson, 2009)

Undrained shear strength cone factor for clays, N_{kt} : 14

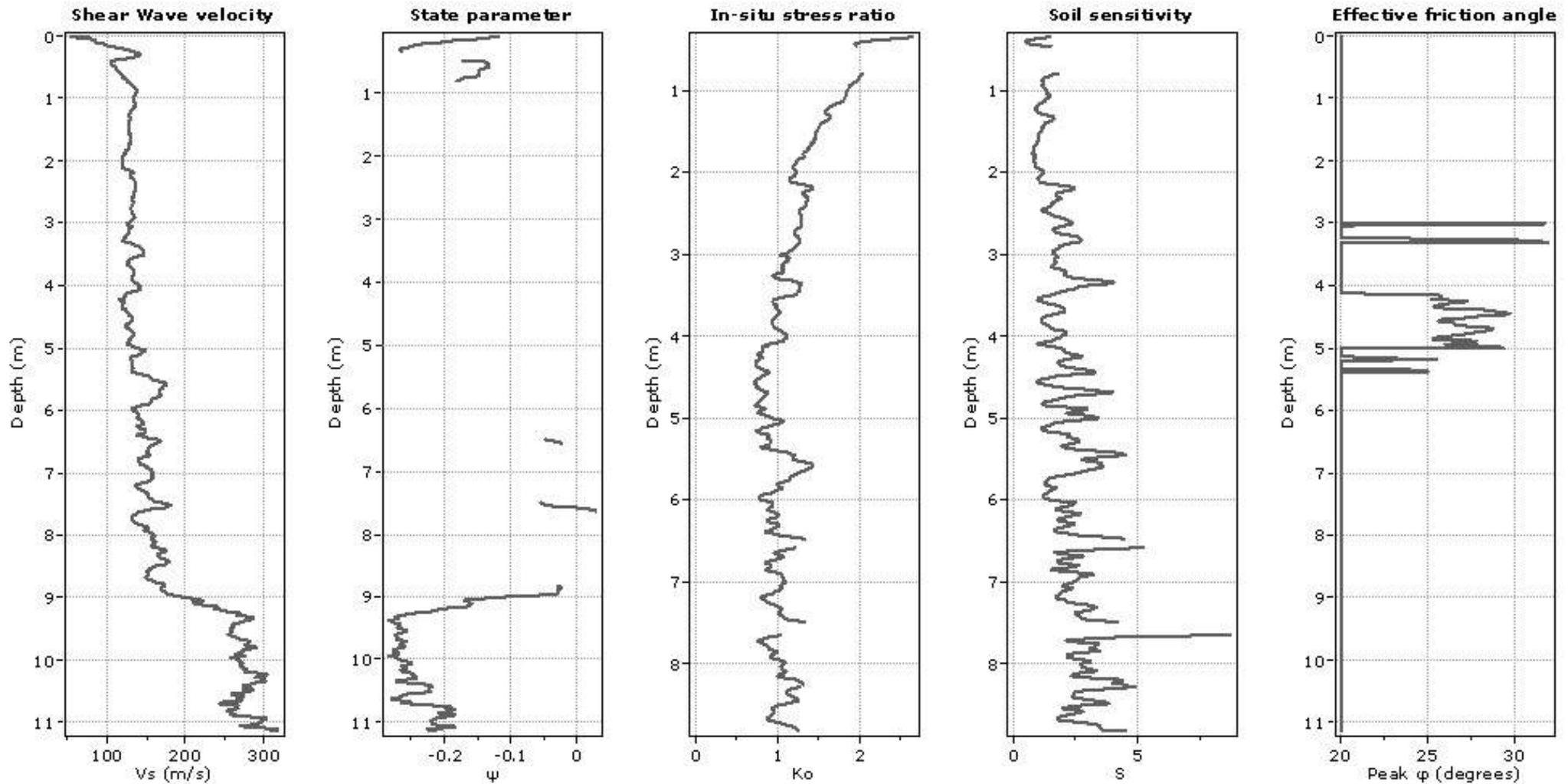
OCR factor for clays, N_{kt} : 0.33

● User defined estimation data

● Flat Dilatometer Test data

Project:

Location:



Calculation parameters

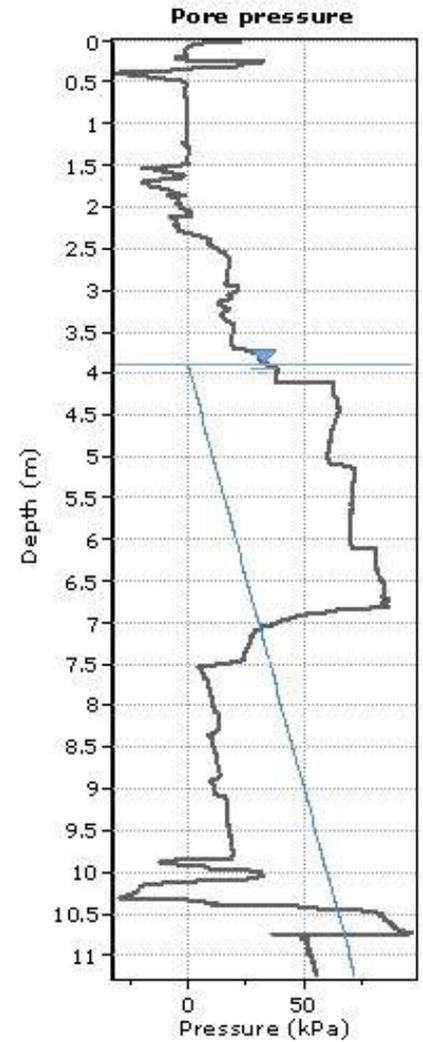
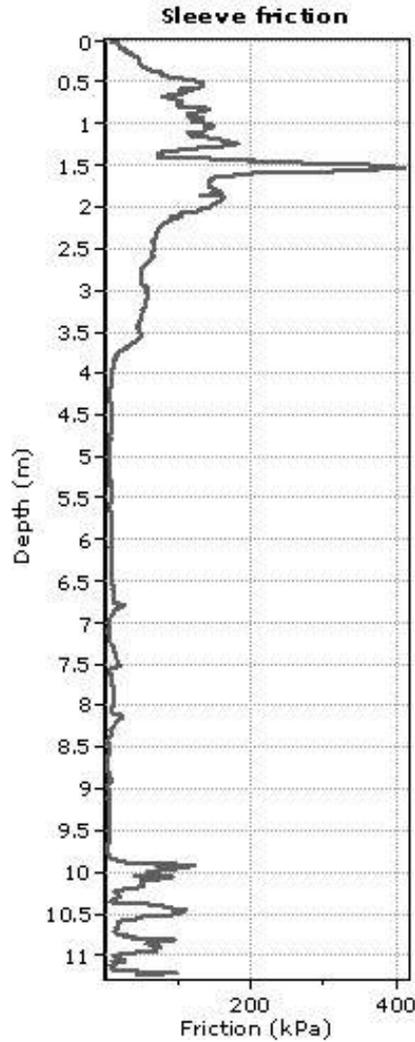
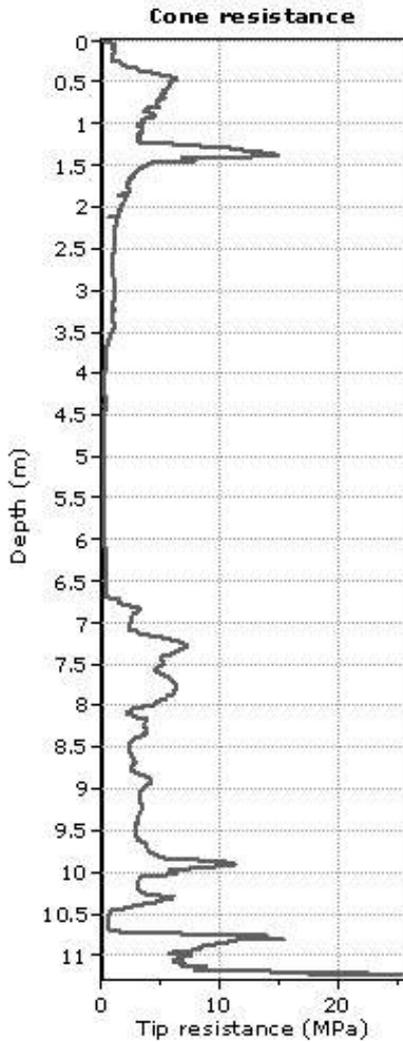
Soil Sensitivity factor, N_s : 7.00

—●— User defined estimation data

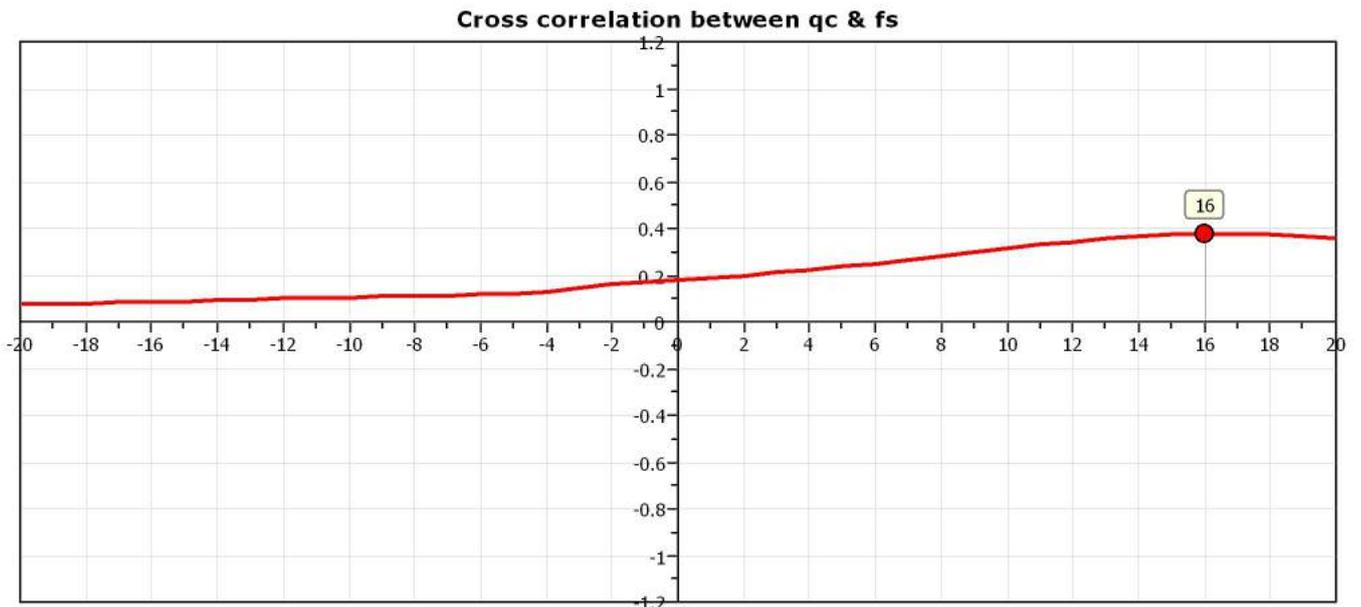
034033P196

Project:

Location:



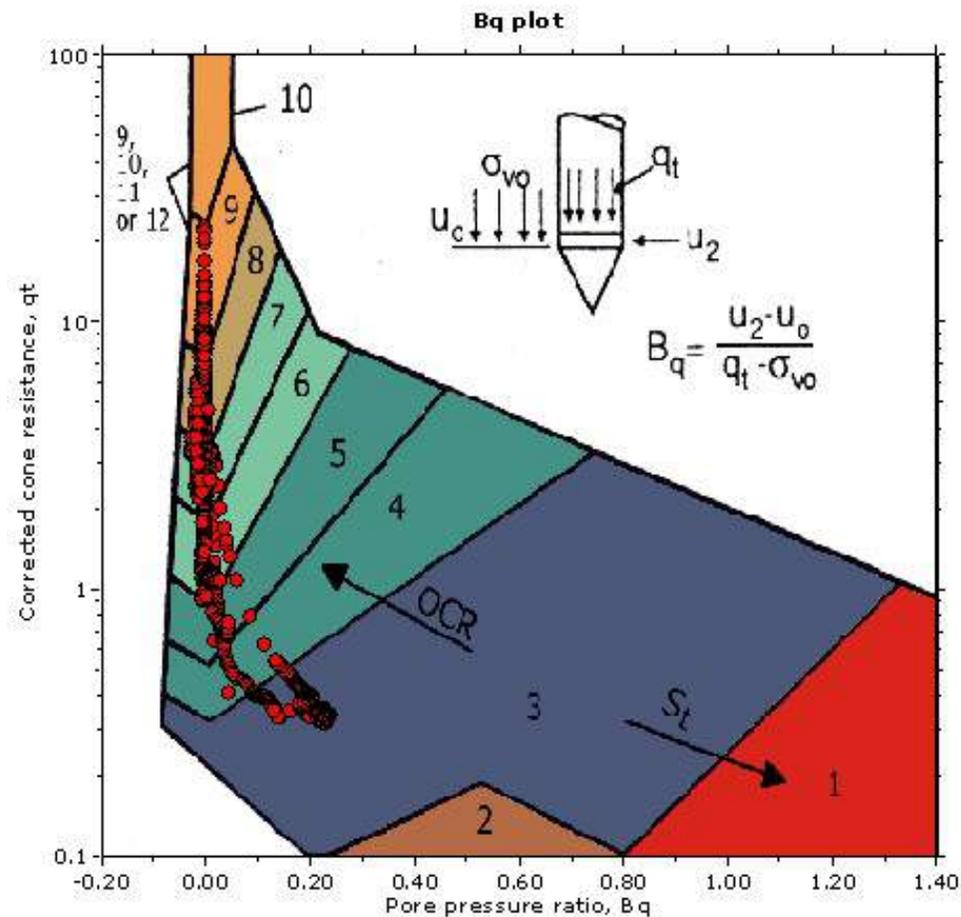
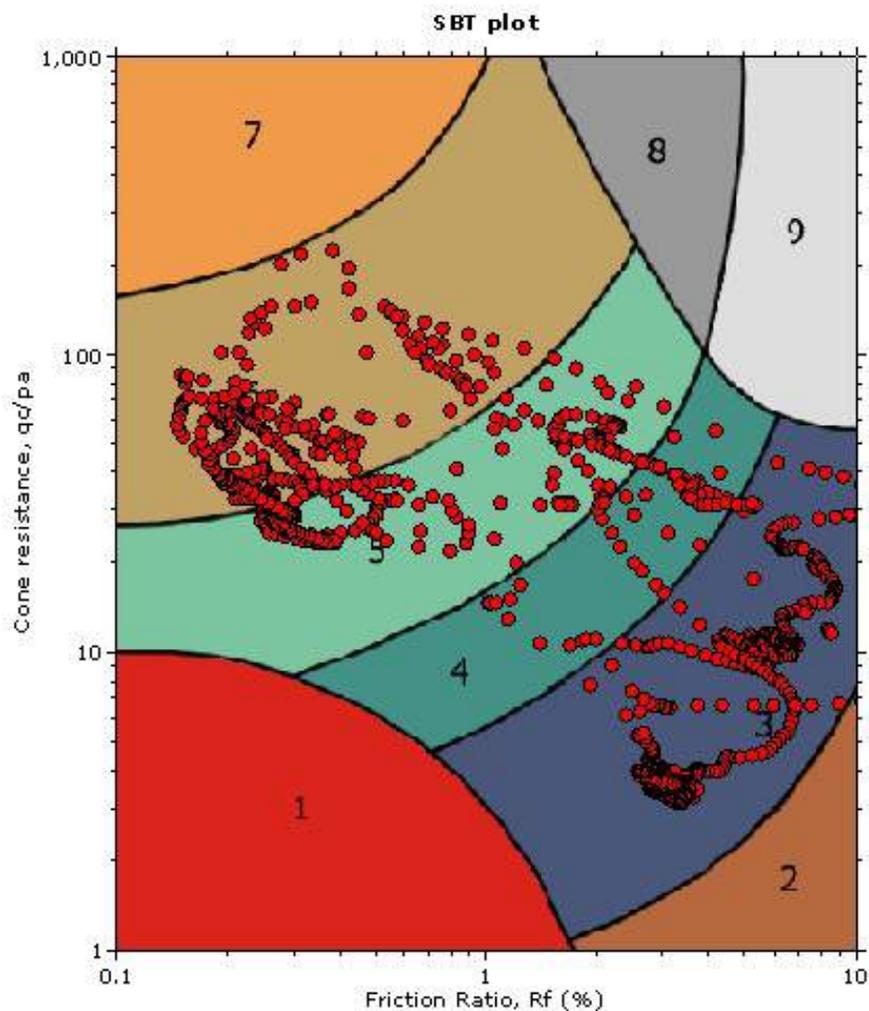
The plot below presents the cross correlation coefficient between the raw q_c and f_s values (as measured on the field). X axes presents the lag distance (one lag is the distance between two successive CPT measurements).



Project:

Location:

SBT - Bq plots



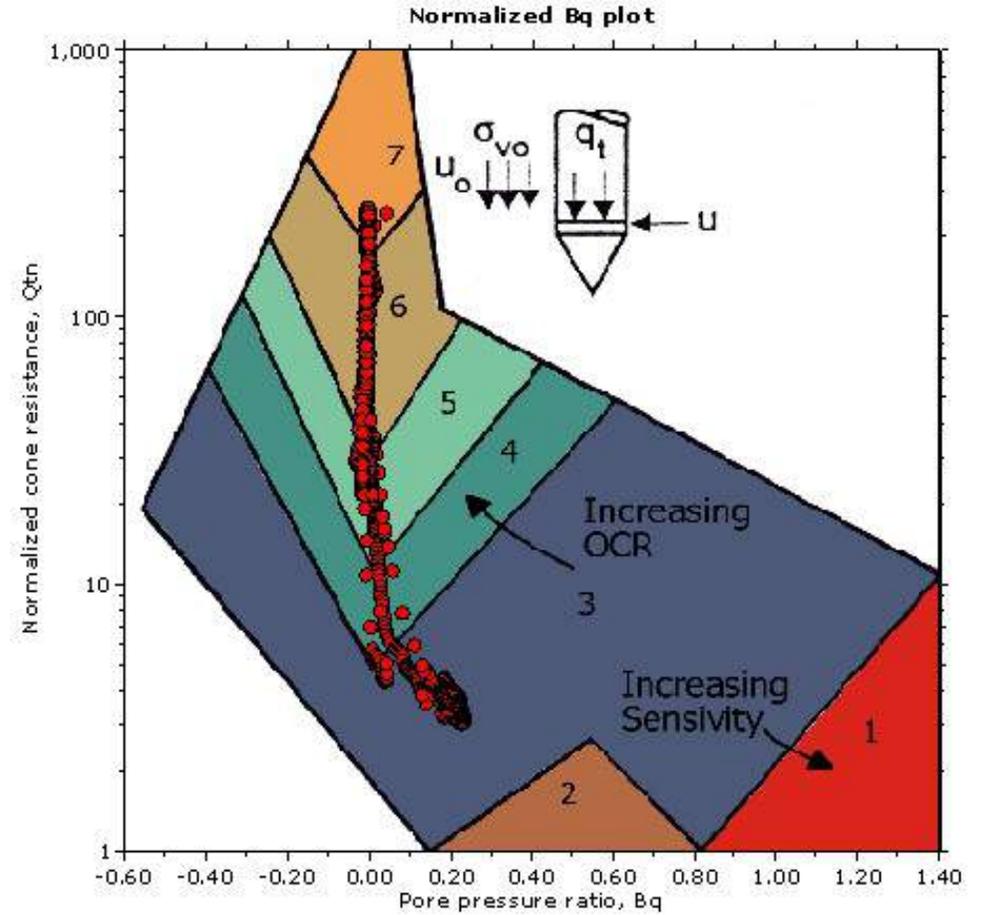
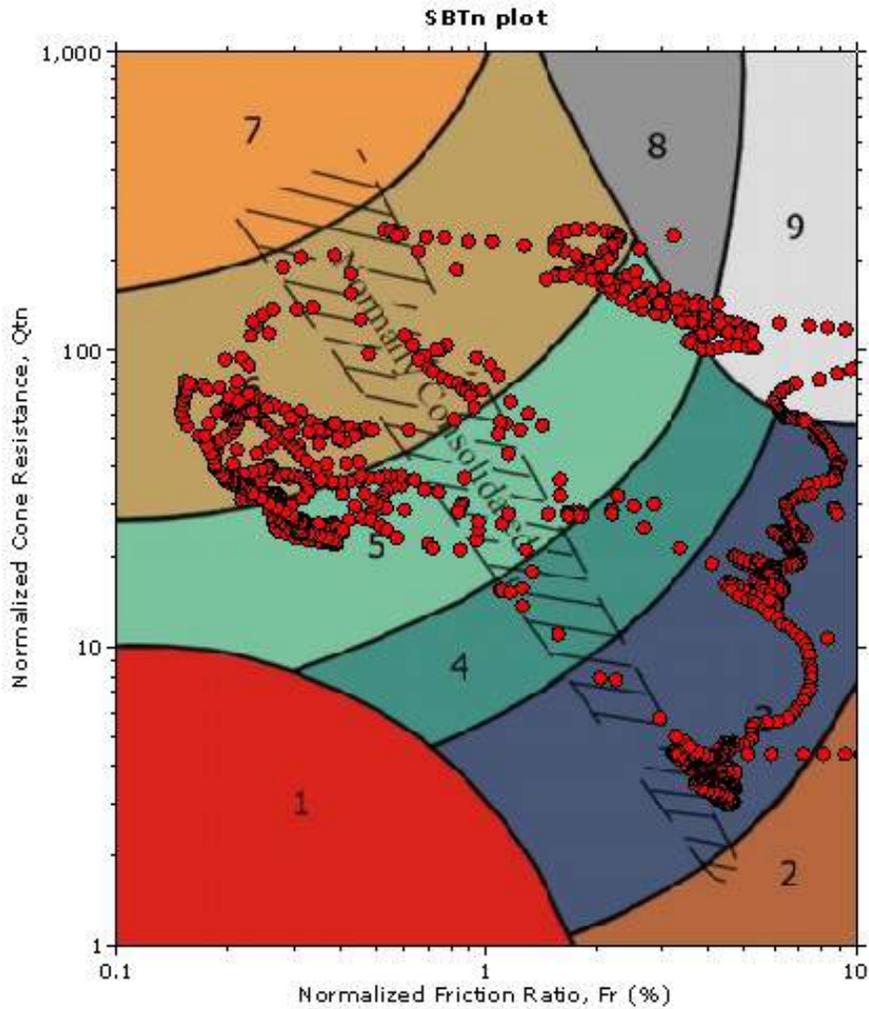
SBT legend

- | | | |
|---------------------------|------------------------------|-----------------------------------|
| 1. Sensitive fine grained | 4. Clayey silt to silty clay | 7. Gravely sand to sand |
| 2. Organic material | 5. Silty sand to sandy silt | 8. Very stiff sand to clayey sand |
| 3. Clay to silty clay | 6. Clean sand to silty sand | 9. Very stiff fine grained |

Project:

Location:

SBT - Bq plots (normalized)



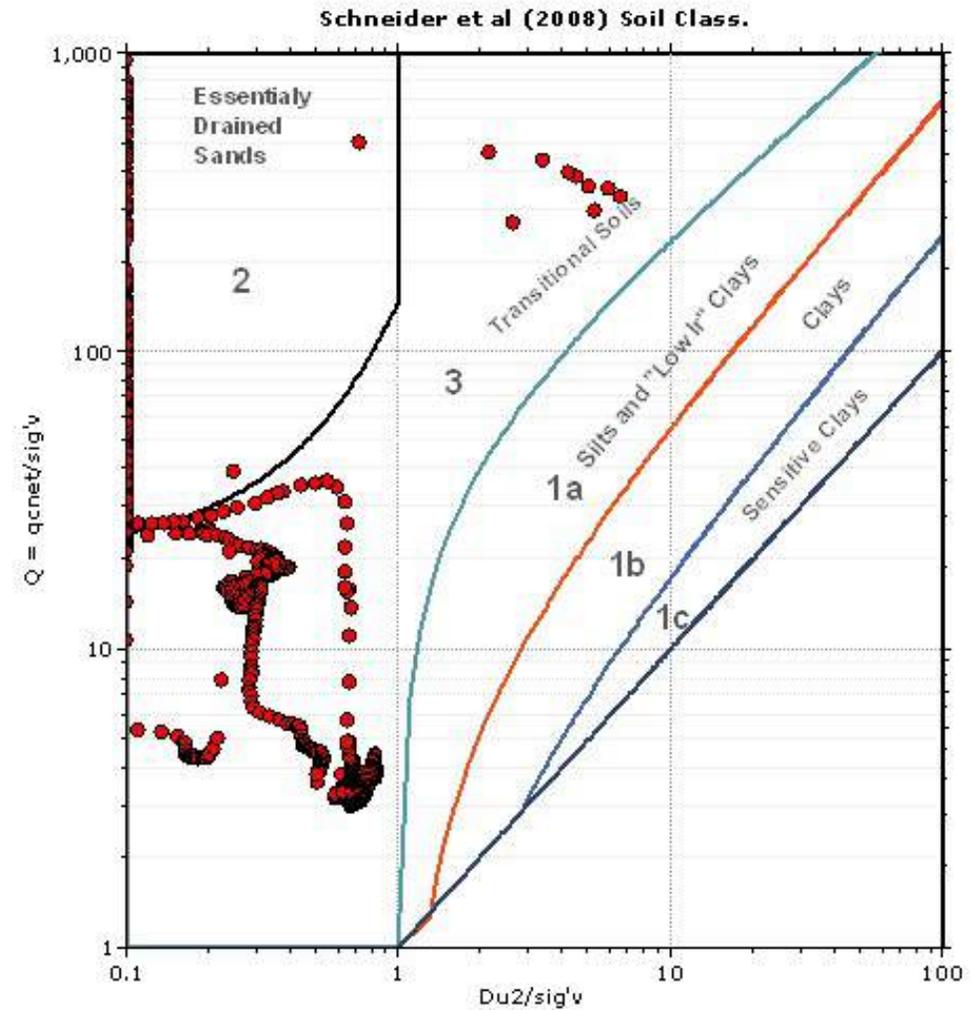
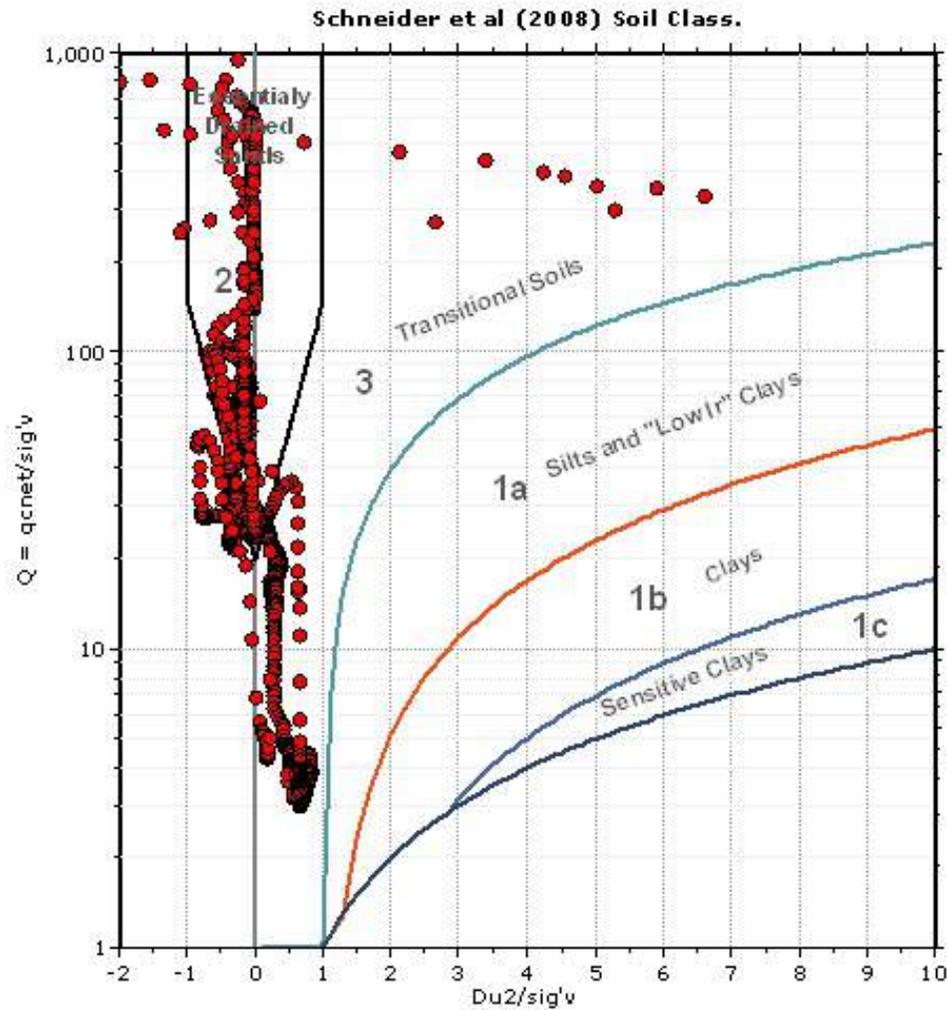
SBTn legend

- | | | |
|---------------------------|------------------------------|-----------------------------------|
| 1. Sensitive fine grained | 4. Clayey silt to silty clay | 7. Gravely sand to sand |
| 2. Organic material | 5. Silty sand to sandy silt | 8. Very stiff sand to clayey sand |
| 3. Clay to silty clay | 6. Clean sand to silty sand | 9. Very stiff fine grained |

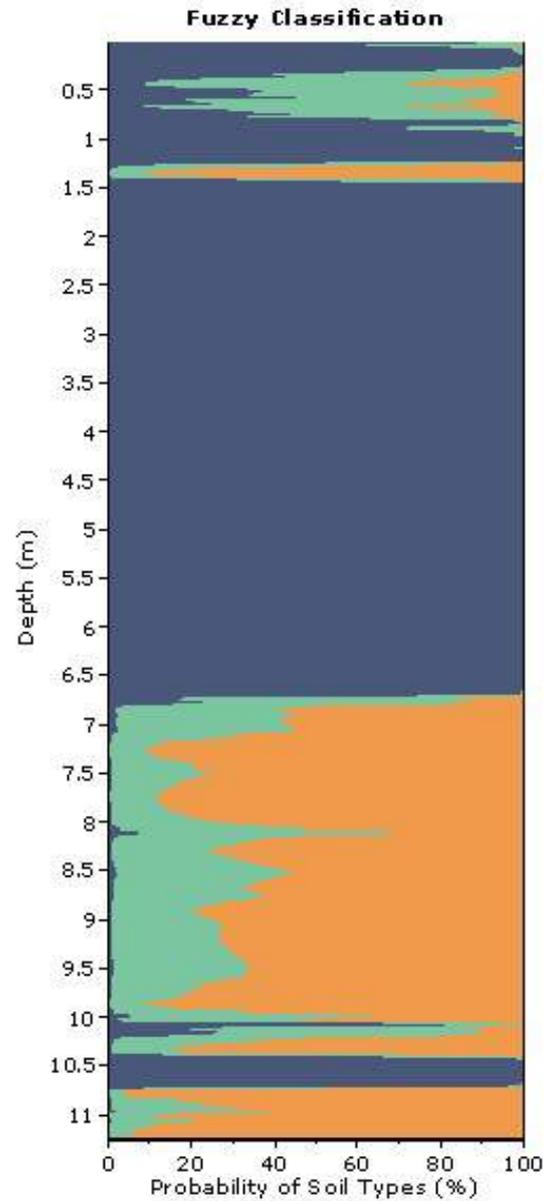
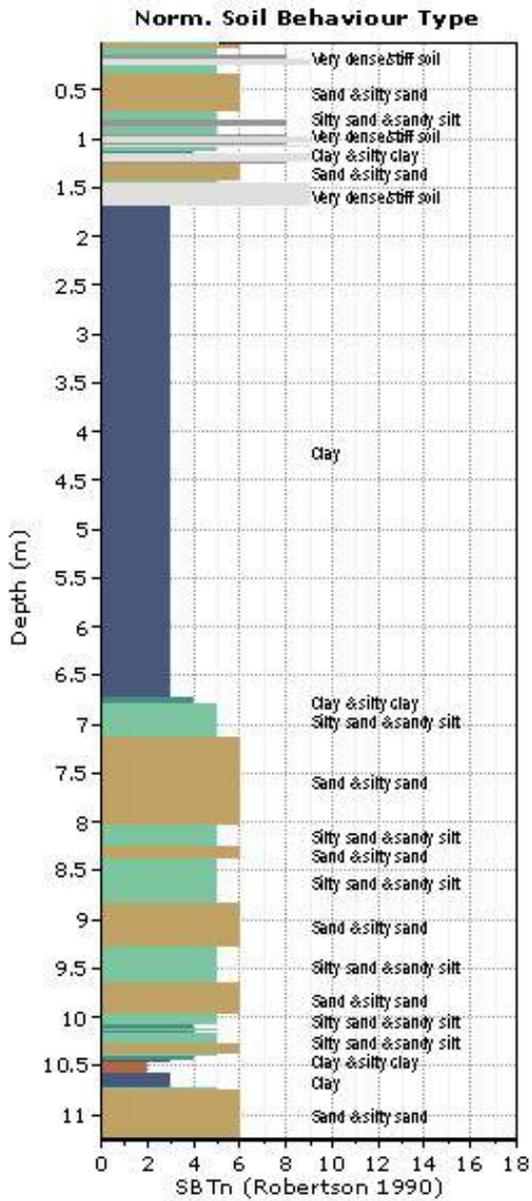
Project:

Location:

Bq plots (Schneider)

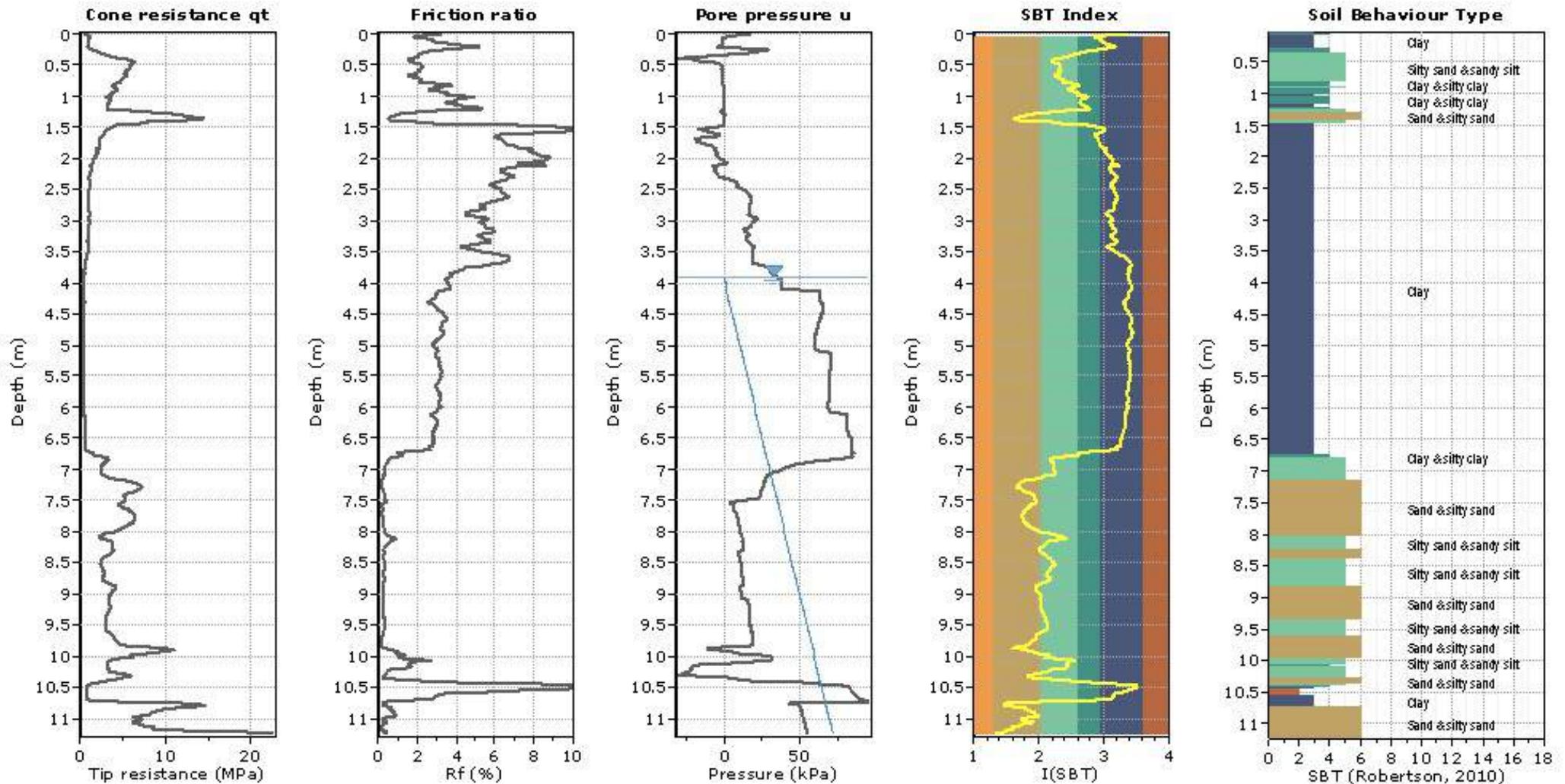


Project:
Location:



Project:

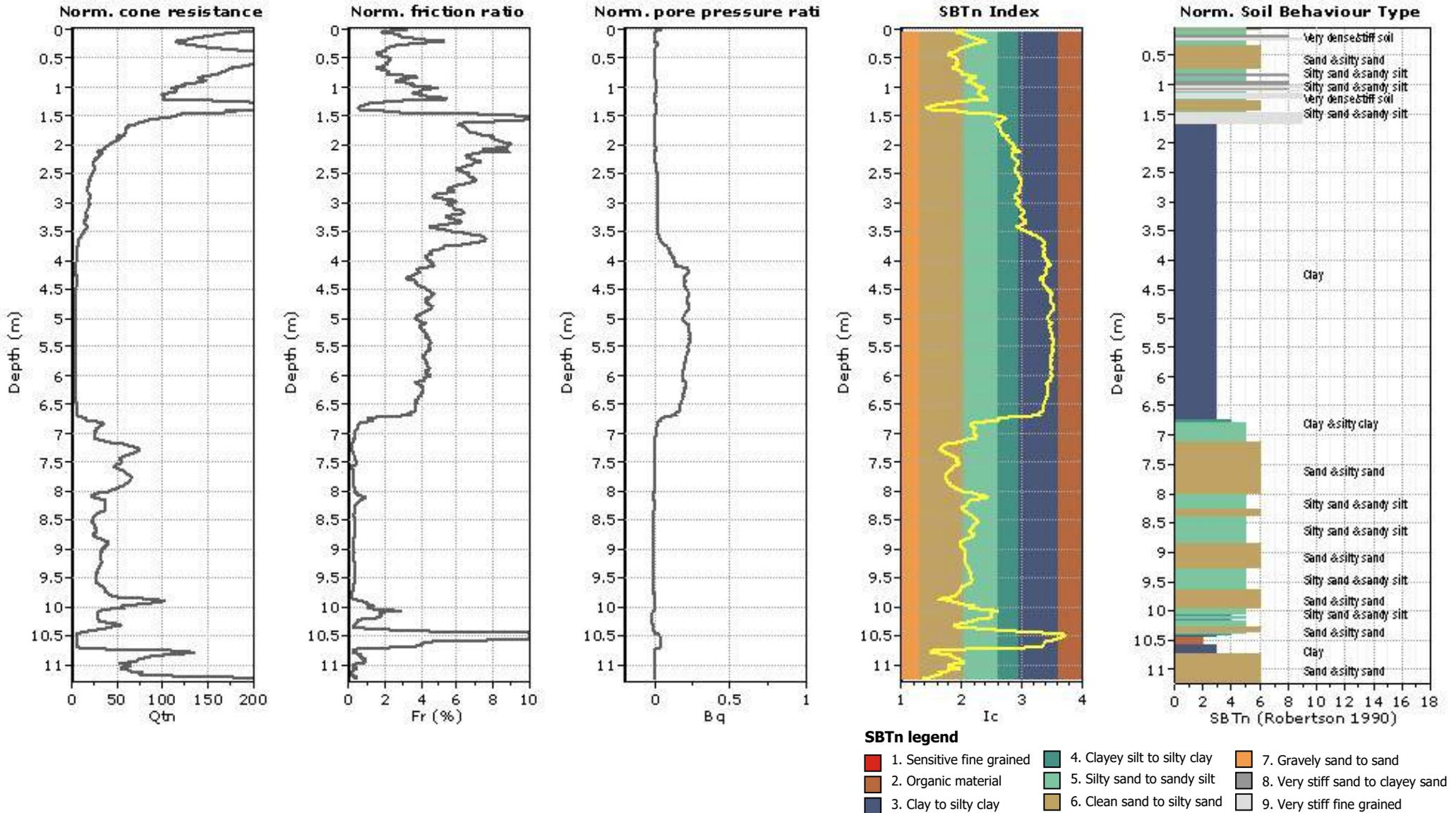
Location:



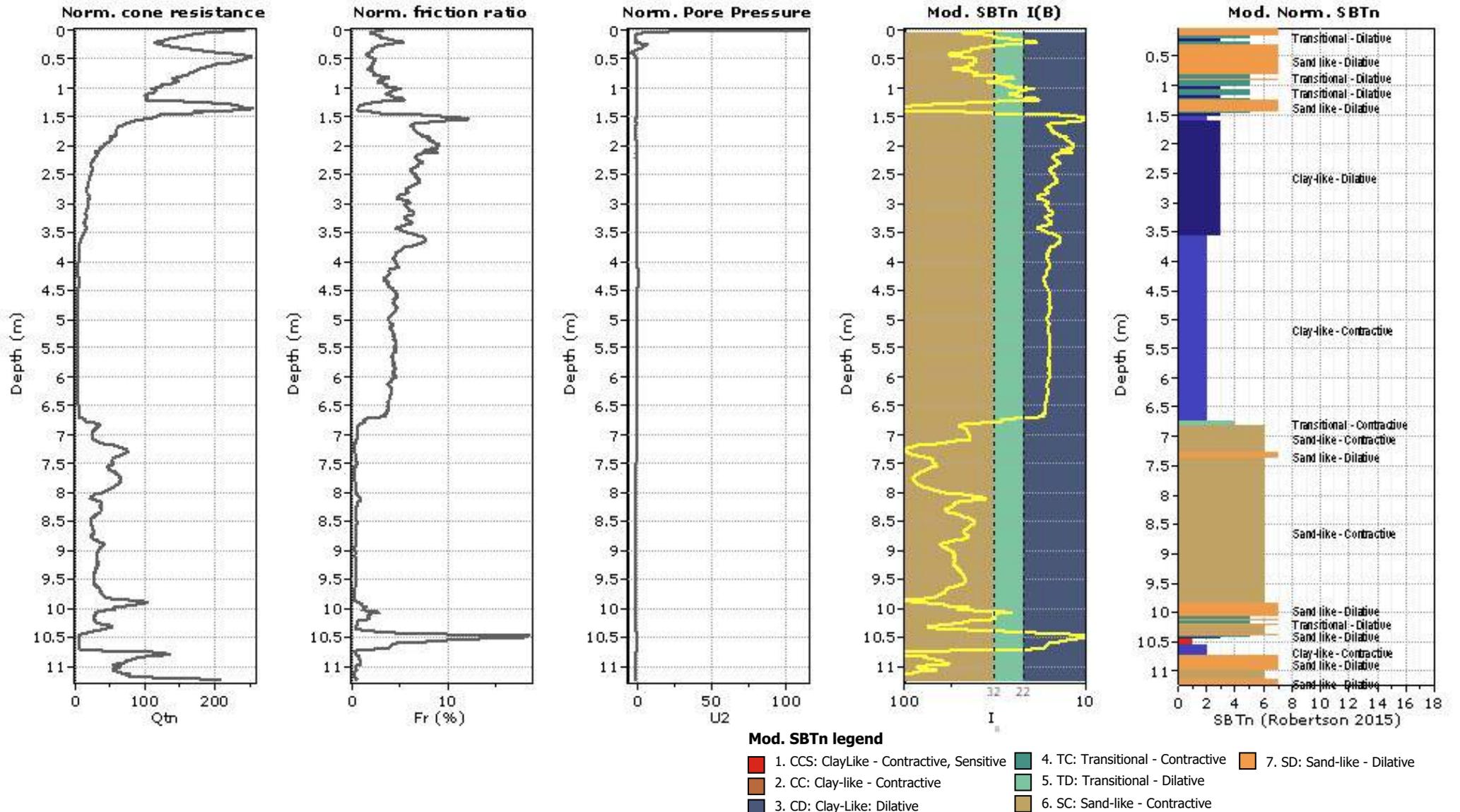
SBT legend

- | | | |
|---------------------------|------------------------------|-----------------------------------|
| 1. Sensitive fine grained | 4. Clayey silt to silty clay | 7. Gravely sand to sand |
| 2. Organic material | 5. Silty sand to sandy silt | 8. Very stiff sand to clayey sand |
| 3. Clay to silty clay | 6. Clean sand to silty sand | 9. Very stiff fine grained |

Project:
Location:



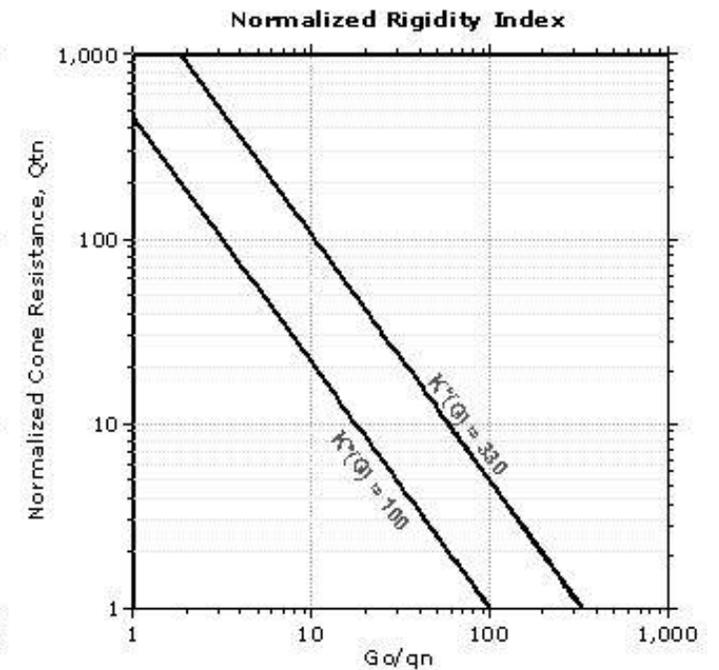
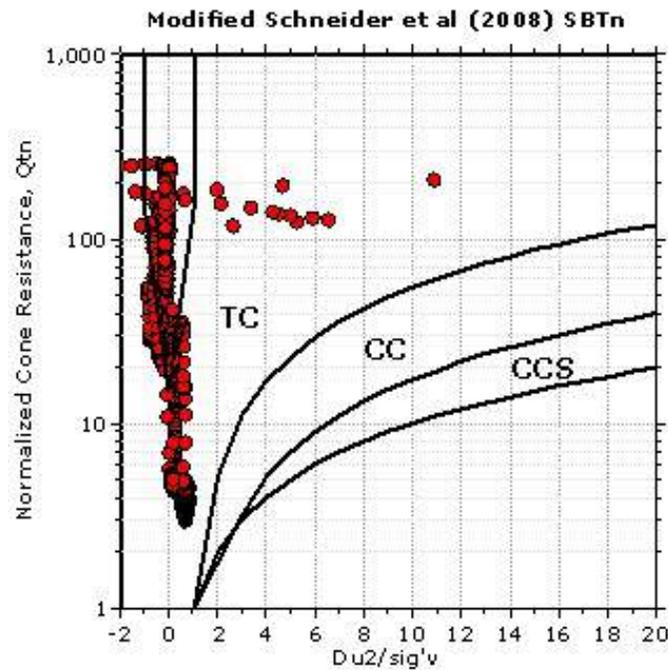
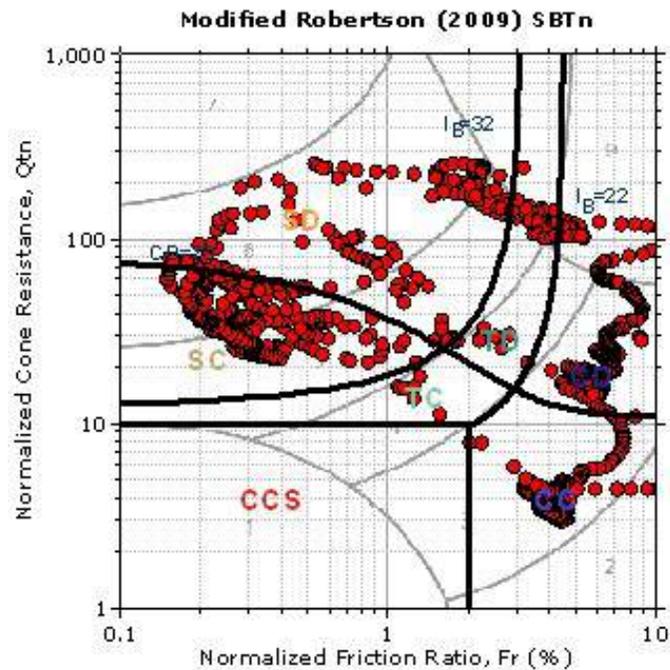
Project:
Location:



Project:

Location:

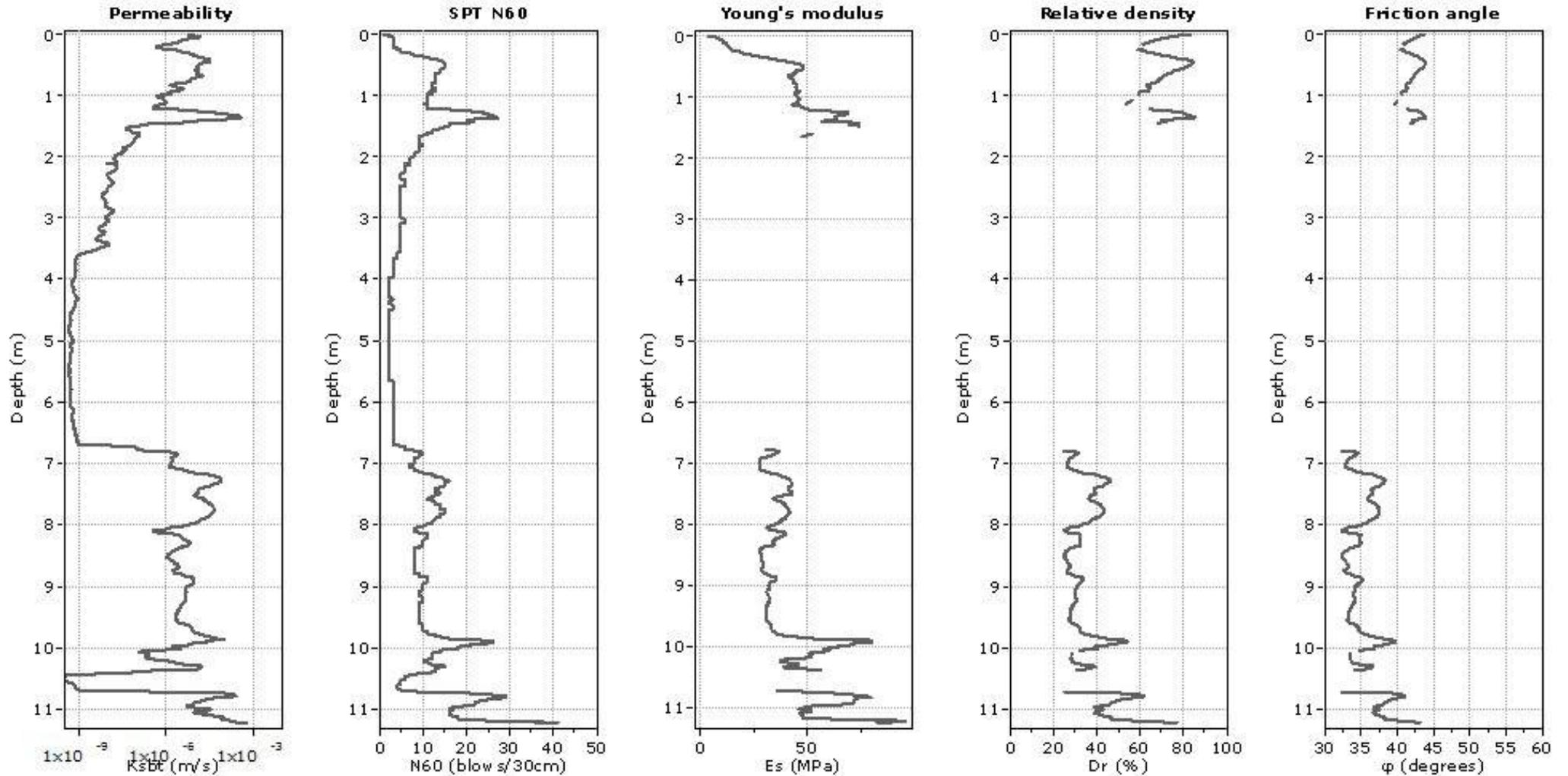
Updated SBTn plots



- CCS: Clay-like - Contractive - Sensitive
- CC: Clay-like - Contractive
- CD: Clay-like - Dilative
- TC: Transitional - Contractive
- TD: Transitional - Dilative
- SC: Sand-like - Contractive
- SD: Sand-like - Dilative

Project:

Location:



Calculation parameters

Permeability: Based on SBT_n

SPT N_{60} : Based on I_c and q_t

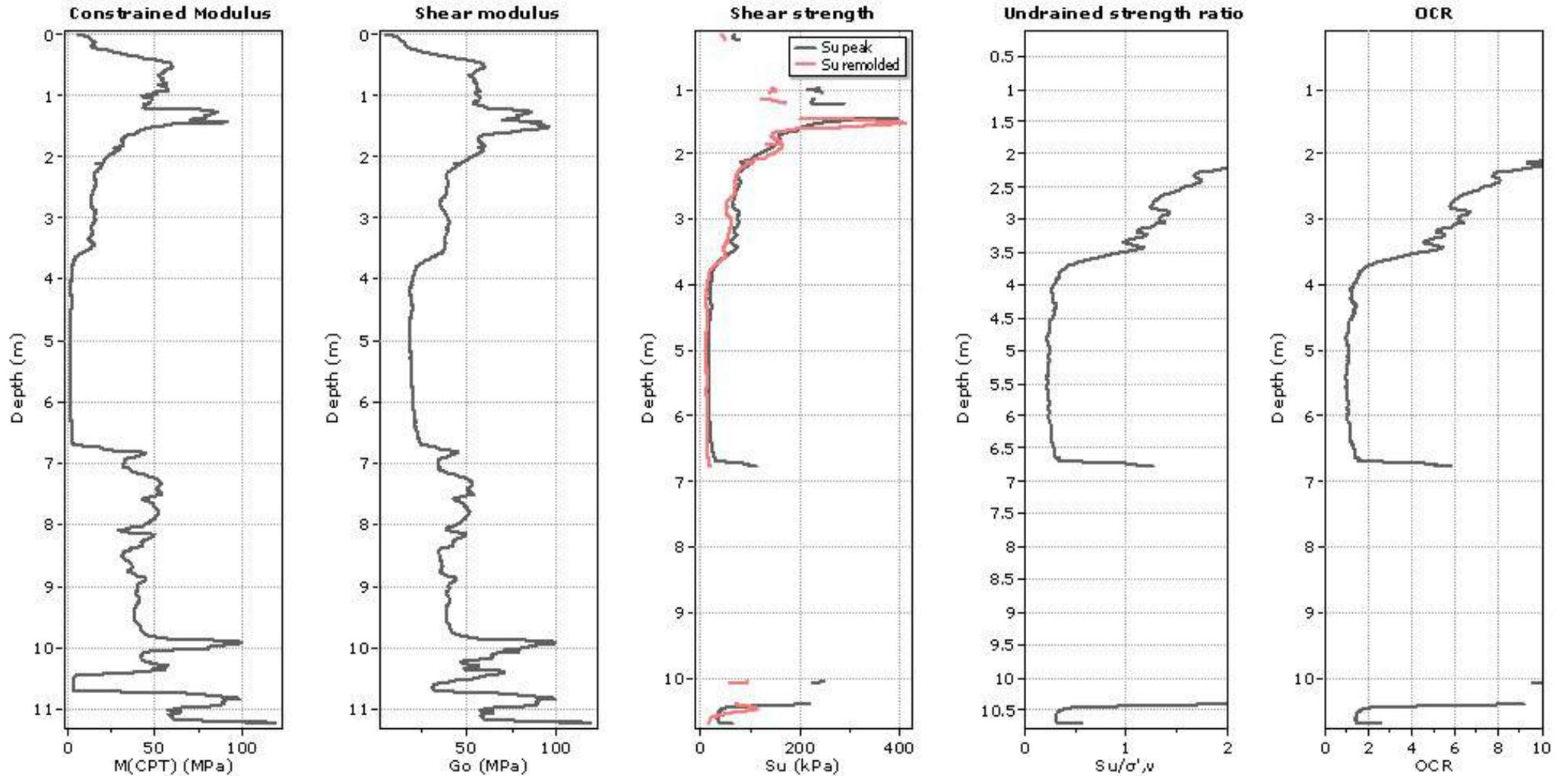
Young's modulus: Based on variable alpha using I_c (Robertson, 2009)

Relative density constant, C_D : 350.0

Phi: Based on Kulhavy & Mayne (1990)

● User defined estimation data

Project:
Location:



Calculation parameters

Constrained modulus: Based on variable *alpha* using I_c and Q_{tm} (Robertson, 2009)

Go: Based on variable *alpha* using I_c (Robertson, 2009)

Undrained shear strength cone factor for clays, N_{kt} : 14

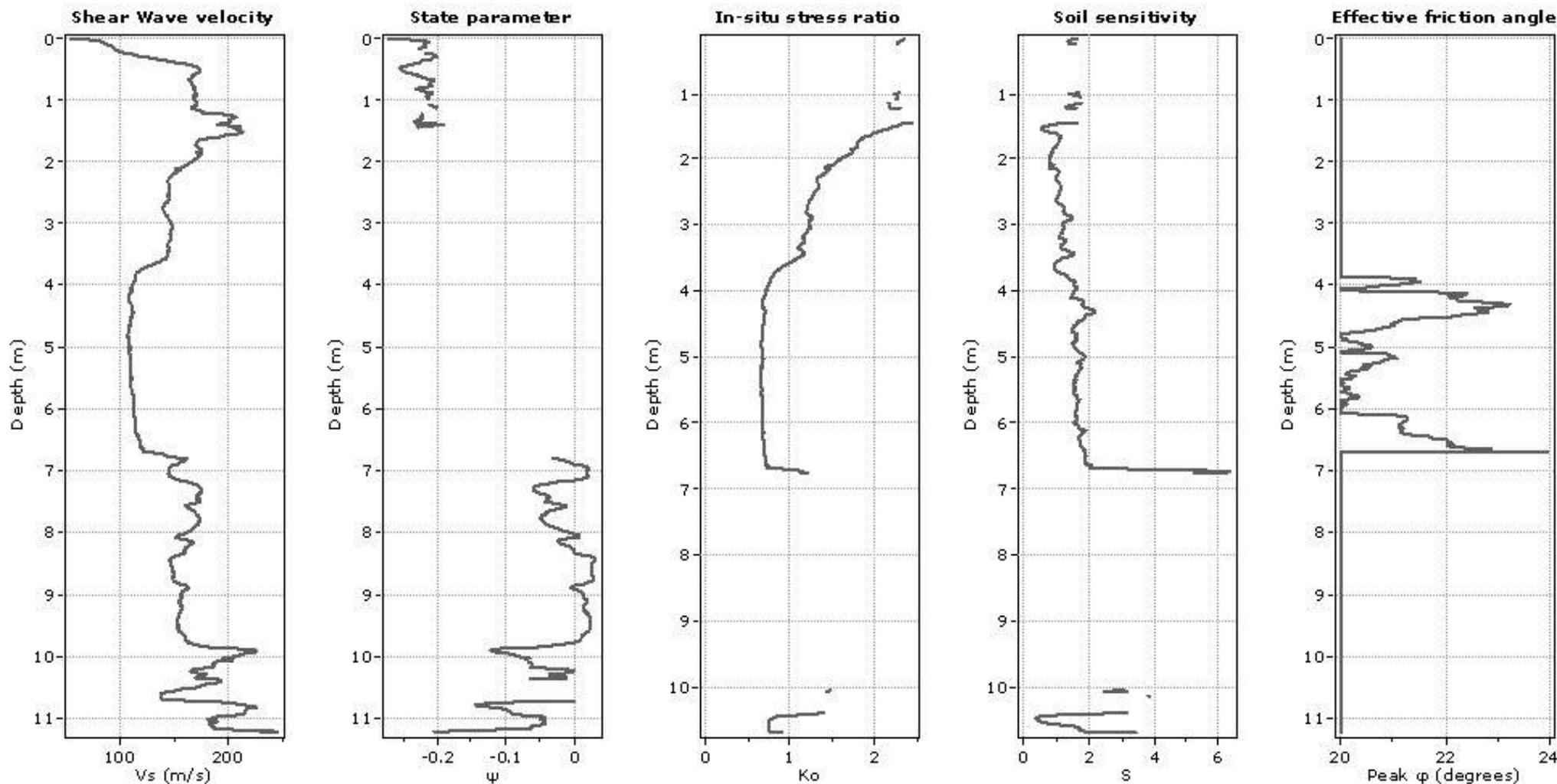
OCR factor for clays, N_{kt} : 0.33

● User defined estimation data

● Flat Dilatometer Test data

Project:

Location:



Calculation parameters

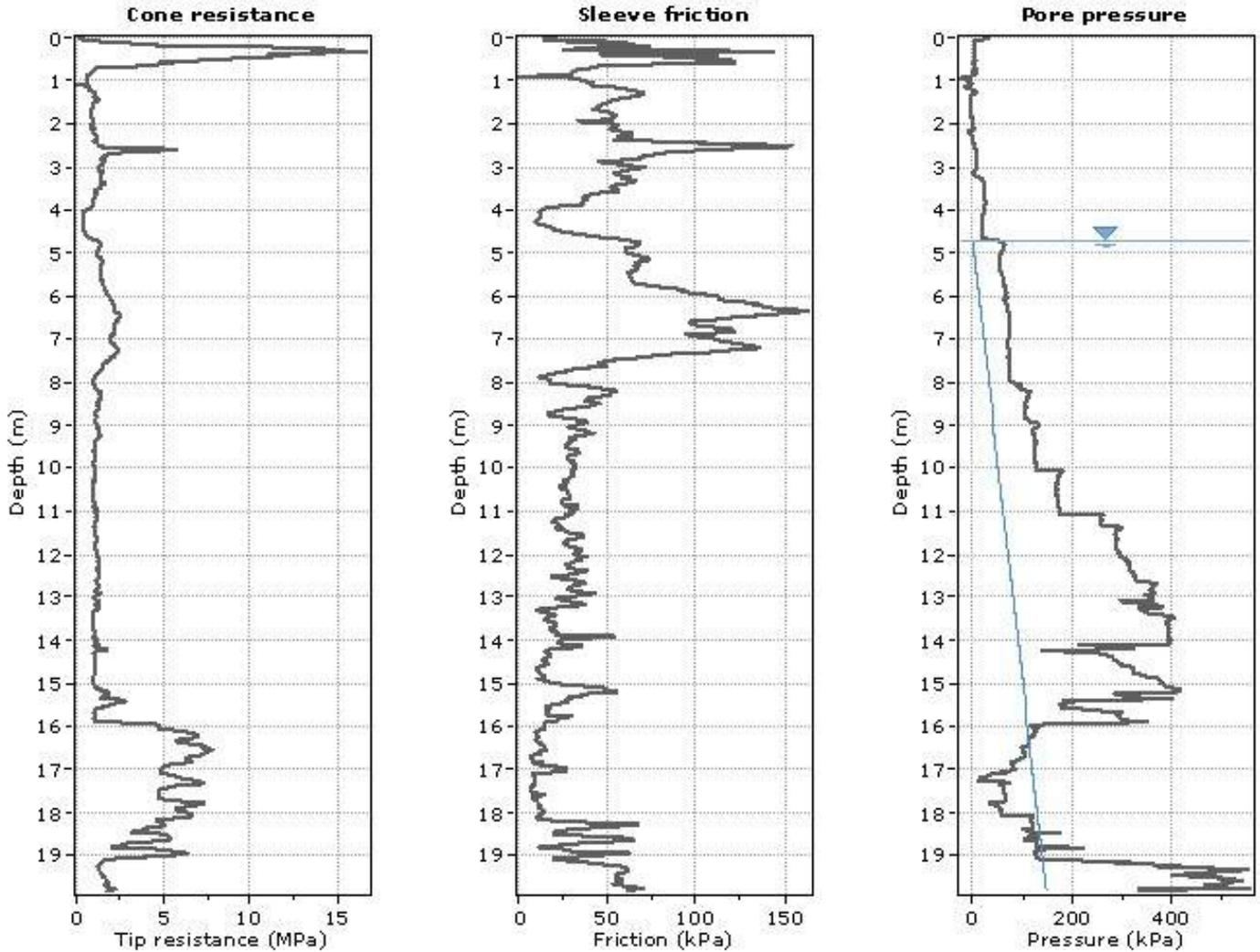
Soil Sensitivity factor, N_s : 7.00

—●— User defined estimation data

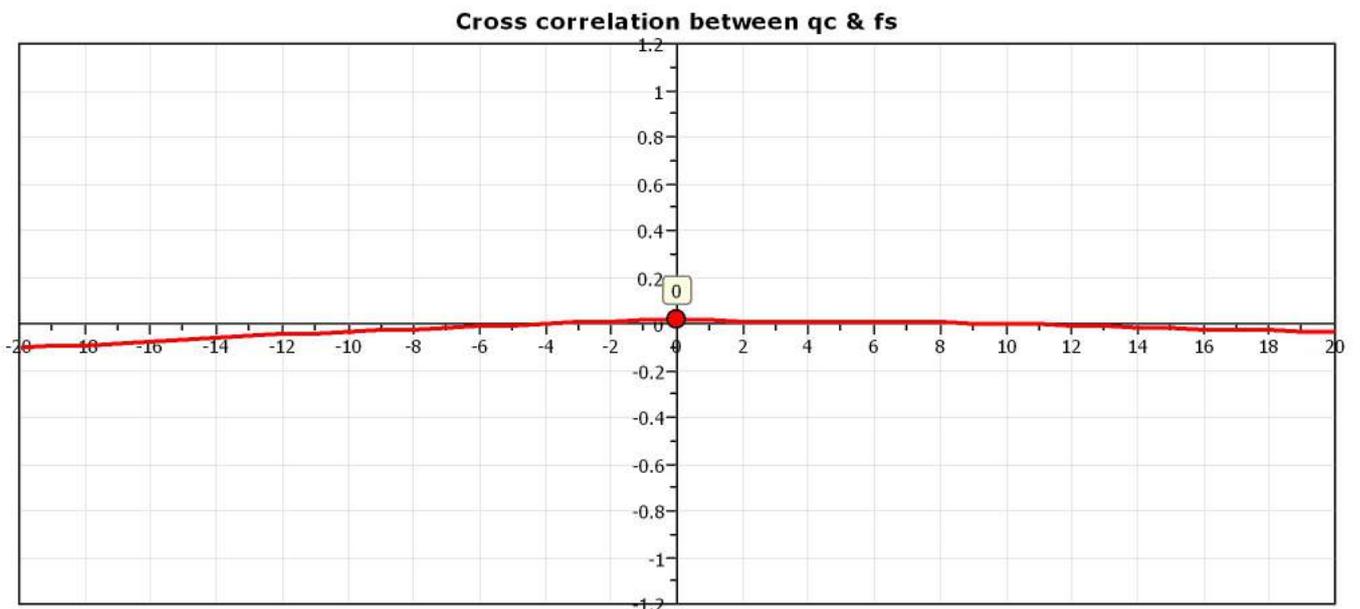
034033P203

Project:

Location:



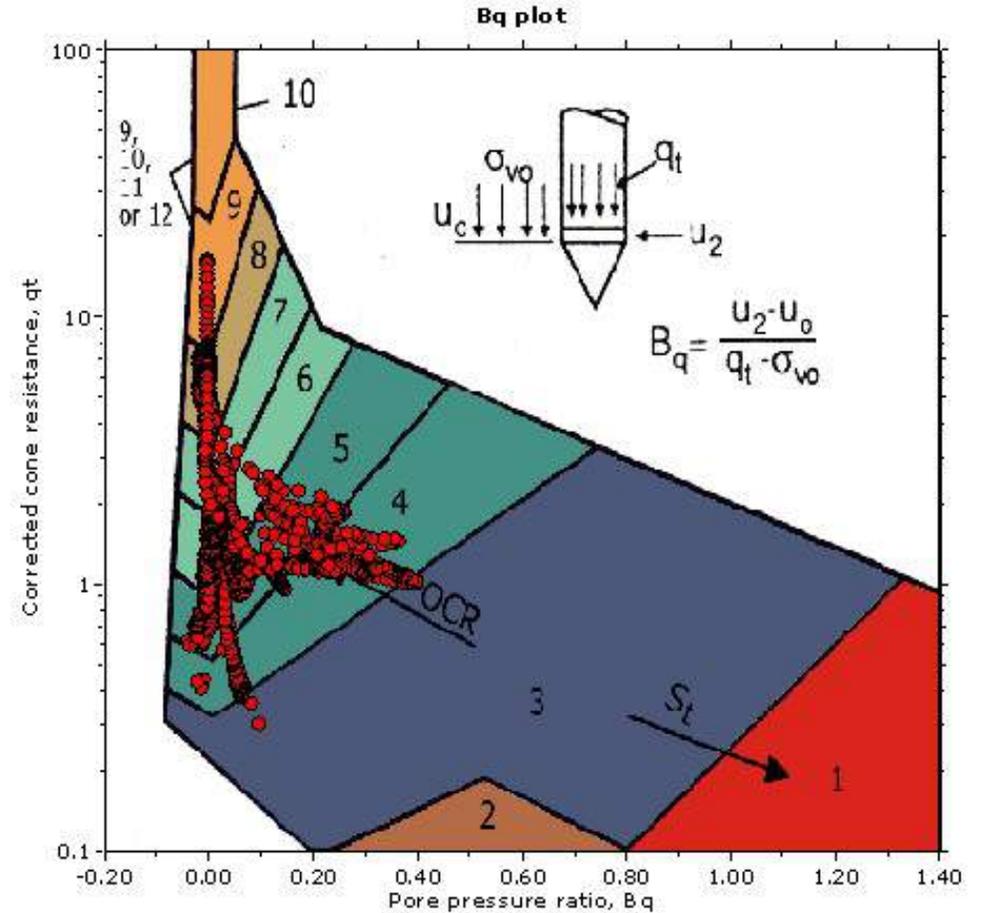
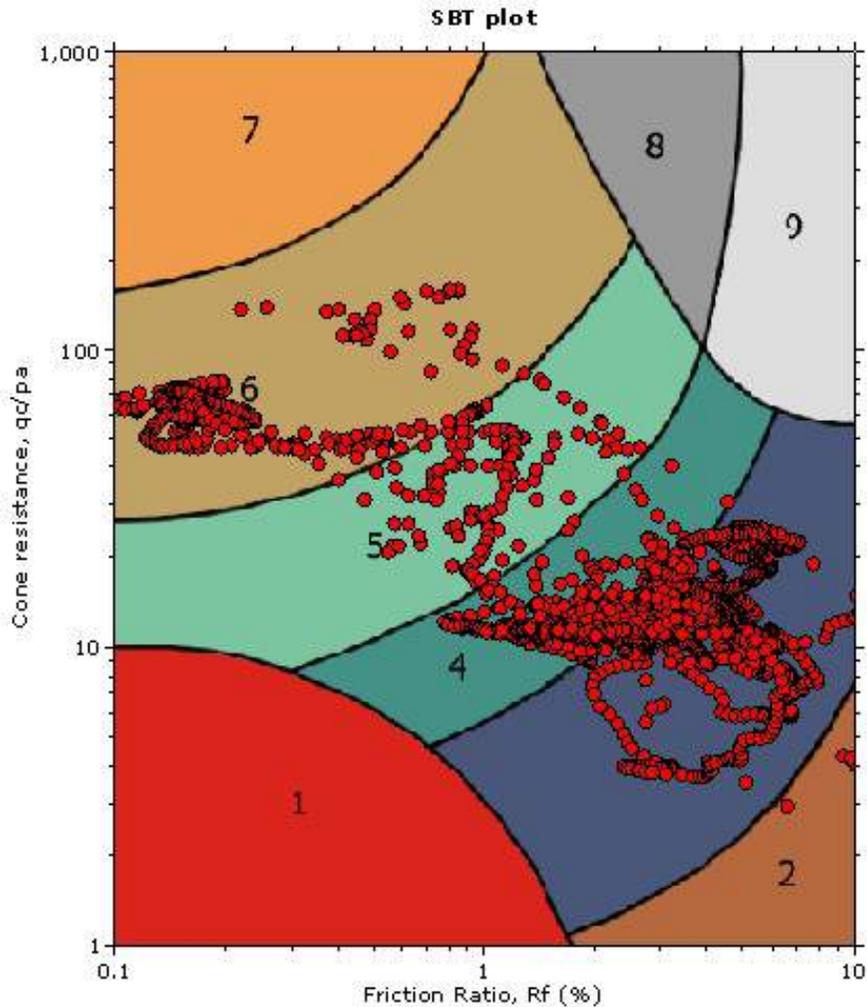
The plot below presents the cross correlation coefficient between the raw qc and fs values (as measured on the field). X axes presents the lag distance (one lag is the distance between two successive CPT measurements).



Project:

Location:

SBT - Bq plots



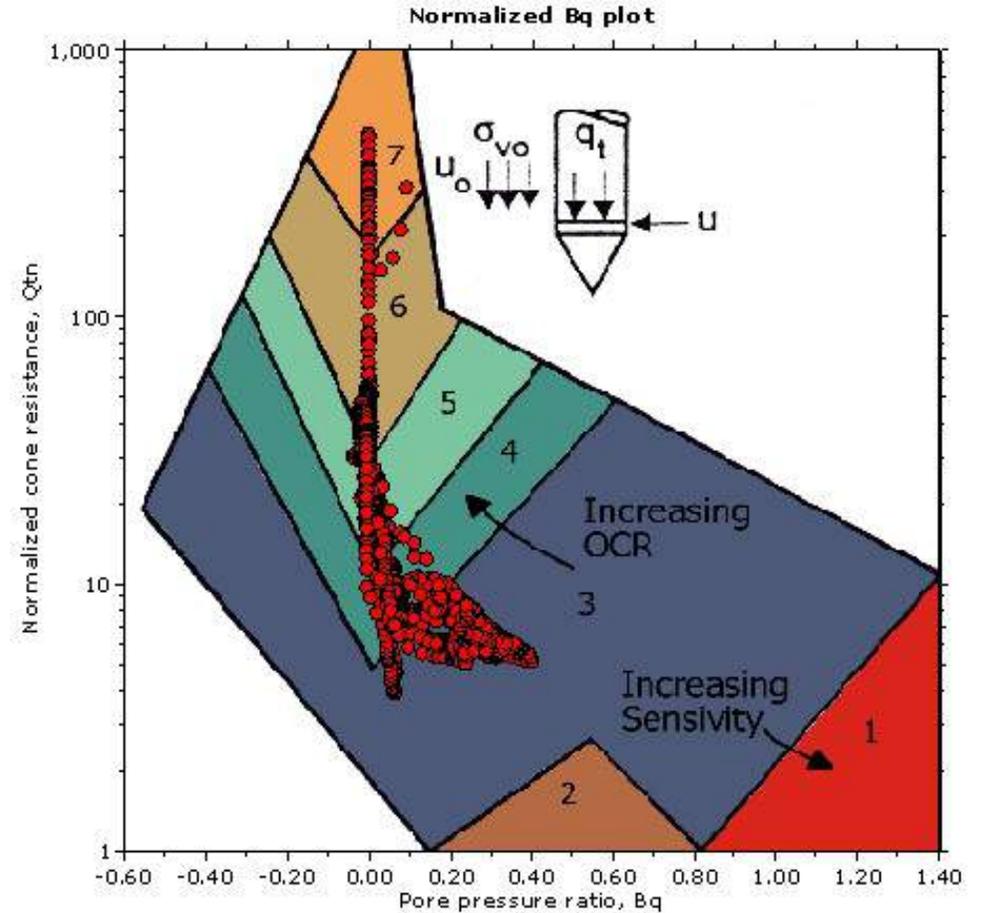
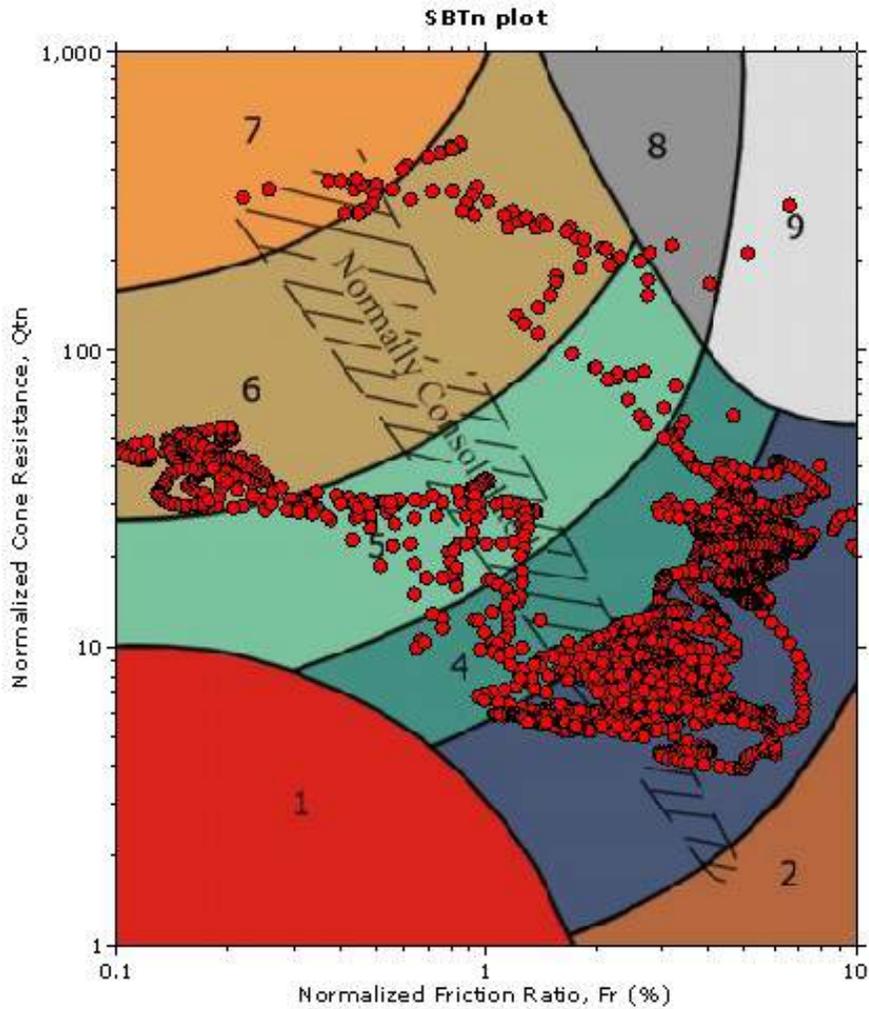
SBT legend

- | | | |
|---------------------------|------------------------------|-----------------------------------|
| 1. Sensitive fine grained | 4. Clayey silt to silty clay | 7. Gravely sand to sand |
| 2. Organic material | 5. Silty sand to sandy silt | 8. Very stiff sand to clayey sand |
| 3. Clay to silty clay | 6. Clean sand to silty sand | 9. Very stiff fine grained |

Project:

Location:

SBT - Bq plots (normalized)



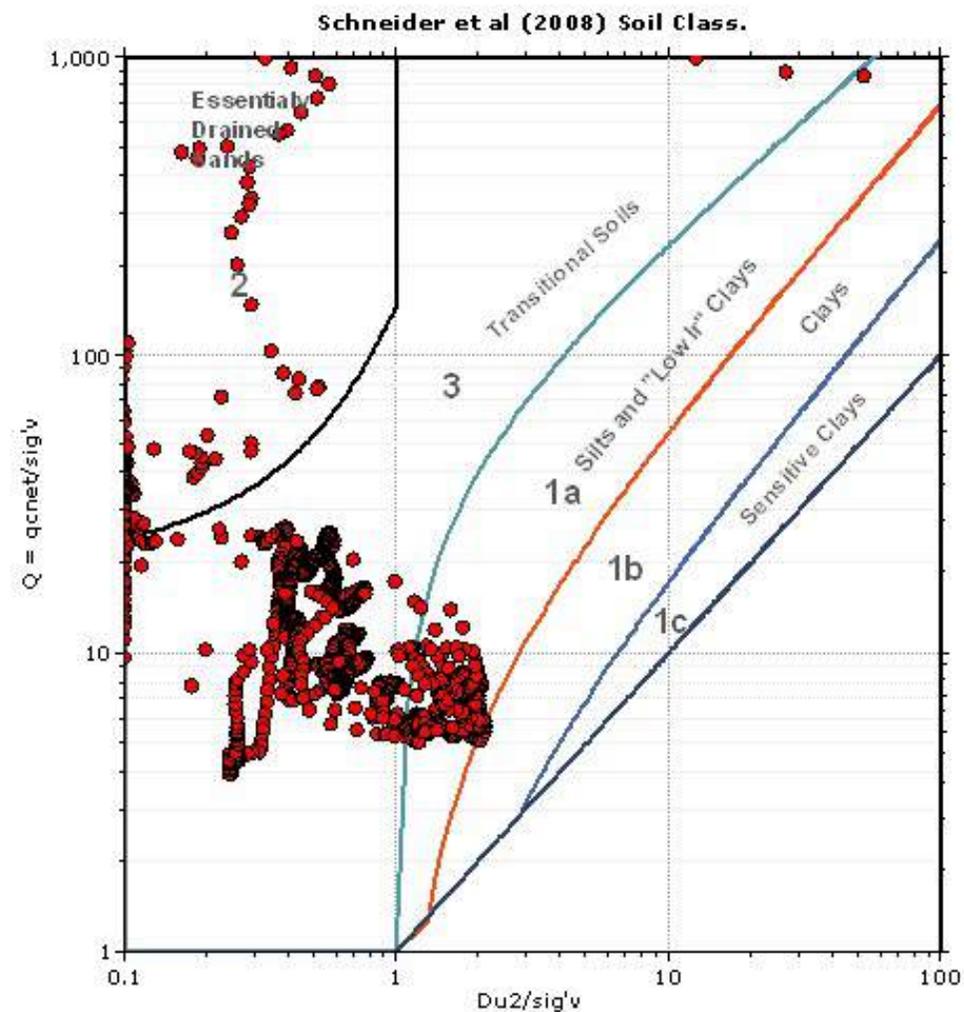
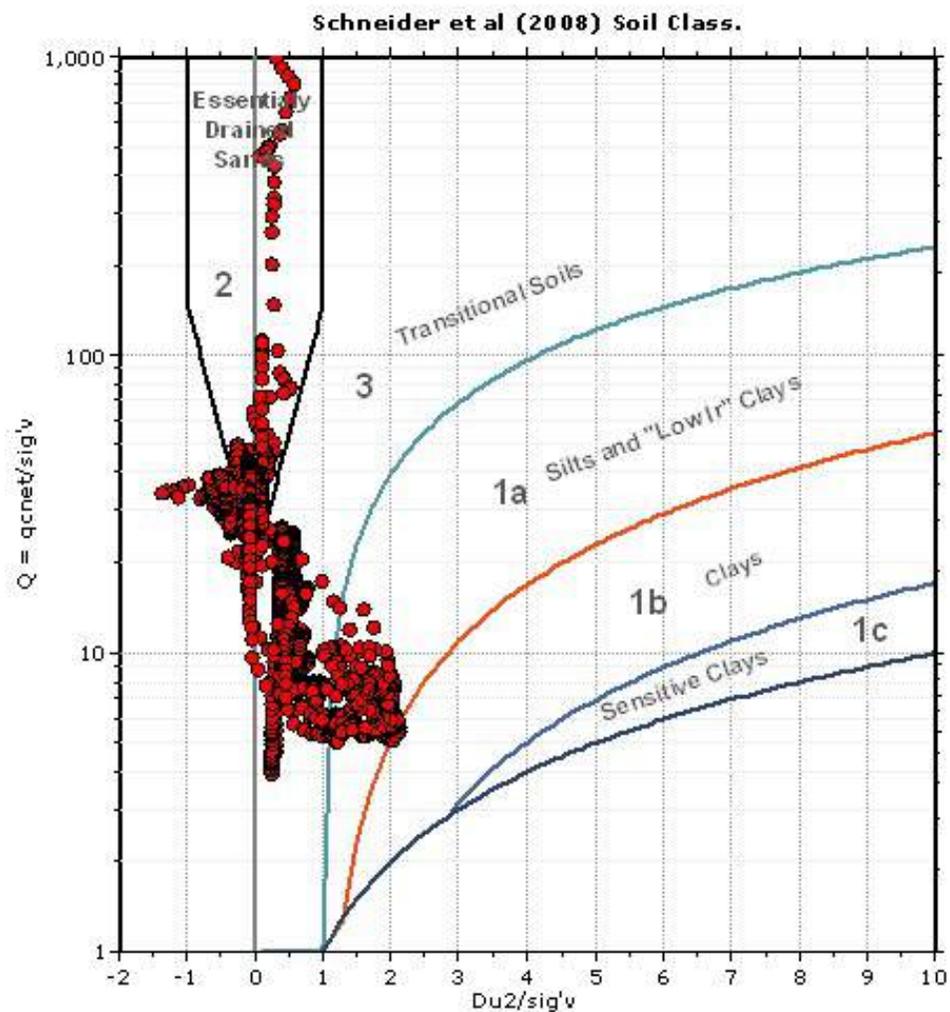
SBTn legend

- | | | |
|--|---|---|
| ■ 1. Sensitive fine grained | ■ 4. Clayey silt to silty clay | ■ 7. Gravely sand to sand |
| ■ 2. Organic material | ■ 5. Silty sand to sandy silt | ■ 8. Very stiff sand to clayey sand |
| ■ 3. Clay to silty clay | ■ 6. Clean sand to silty sand | ■ 9. Very stiff fine grained |

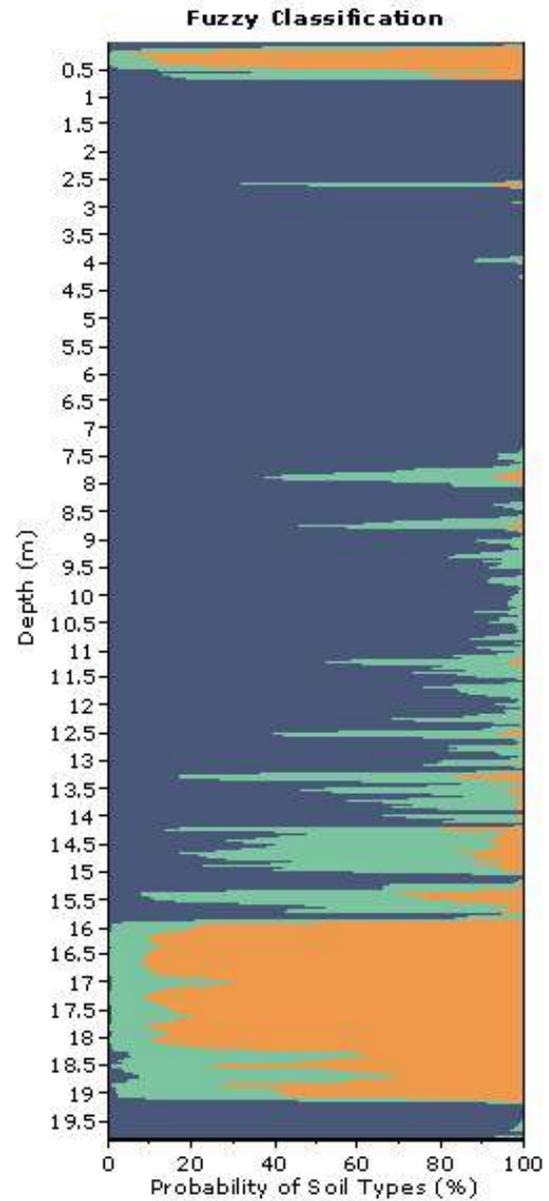
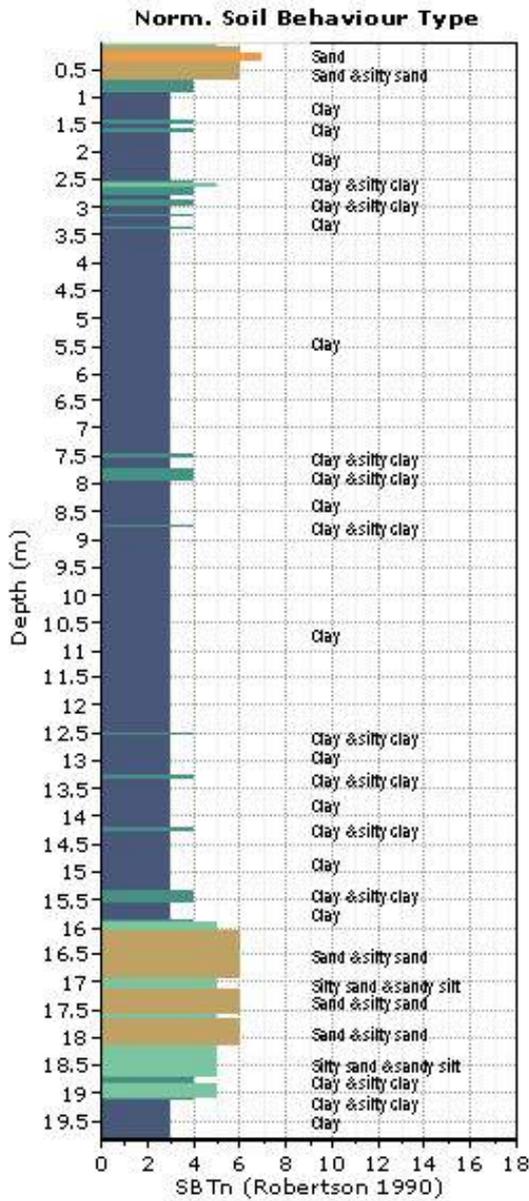
Project:

Location:

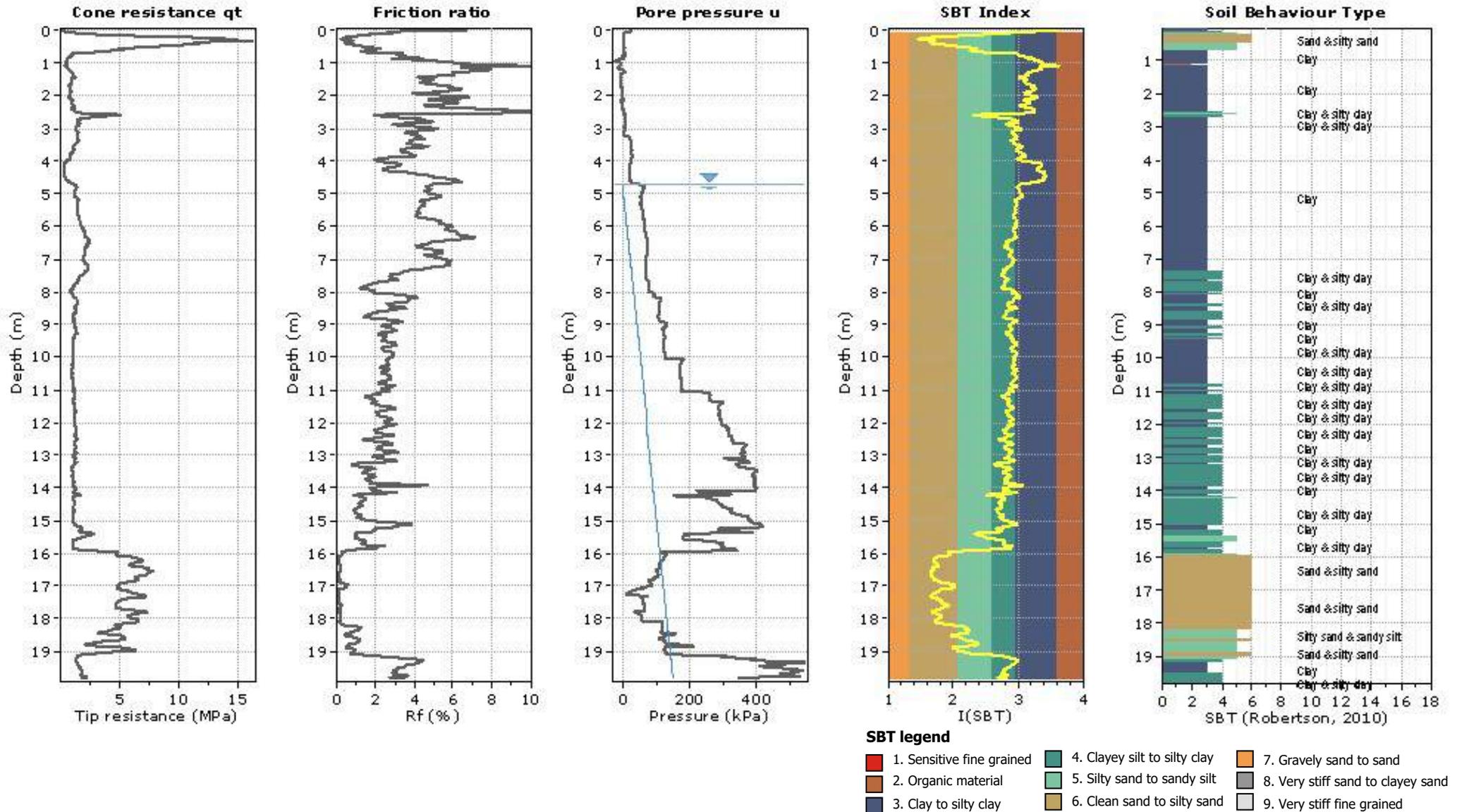
Bq plots (Schneider)



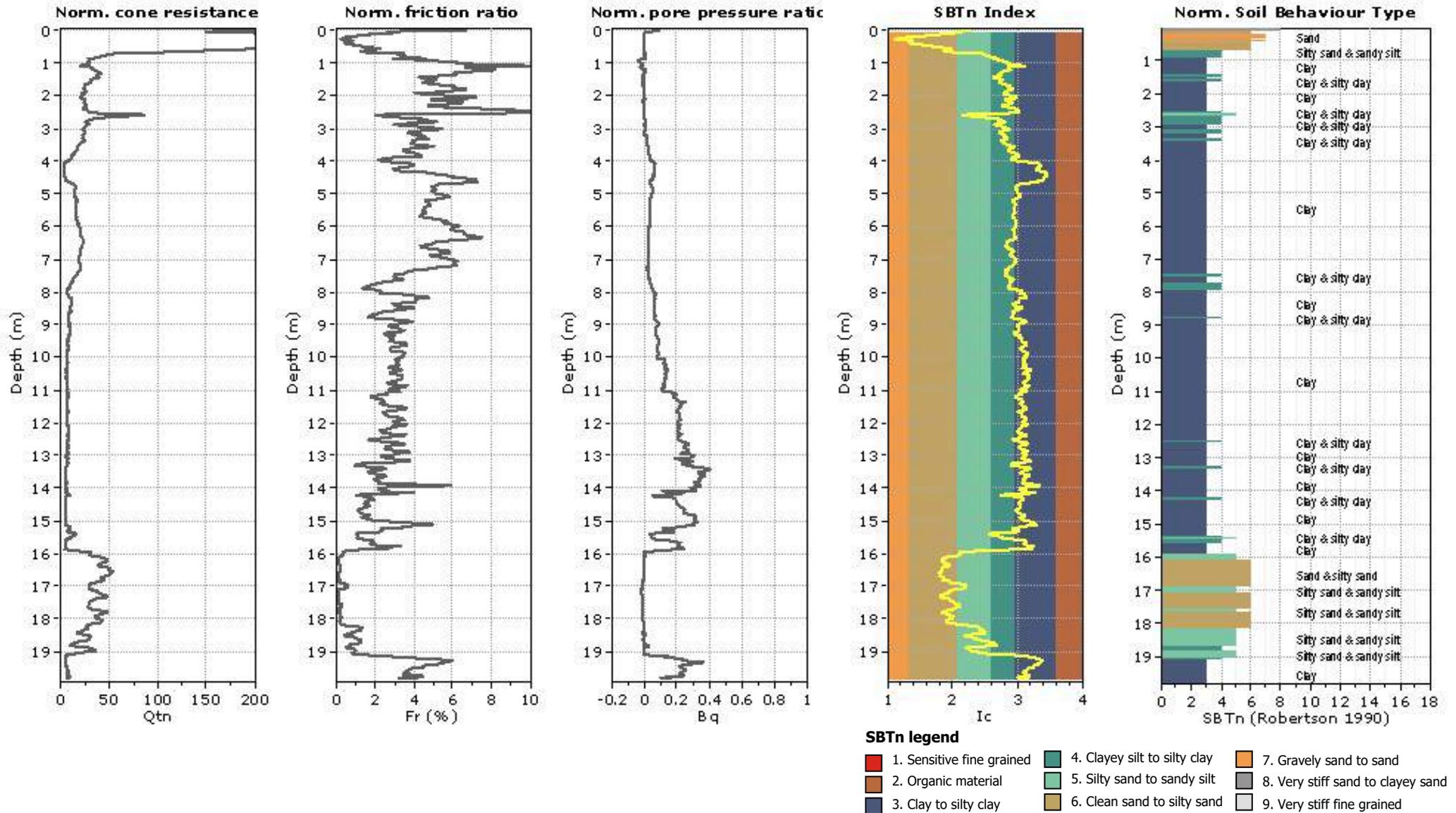
Project:
Location:



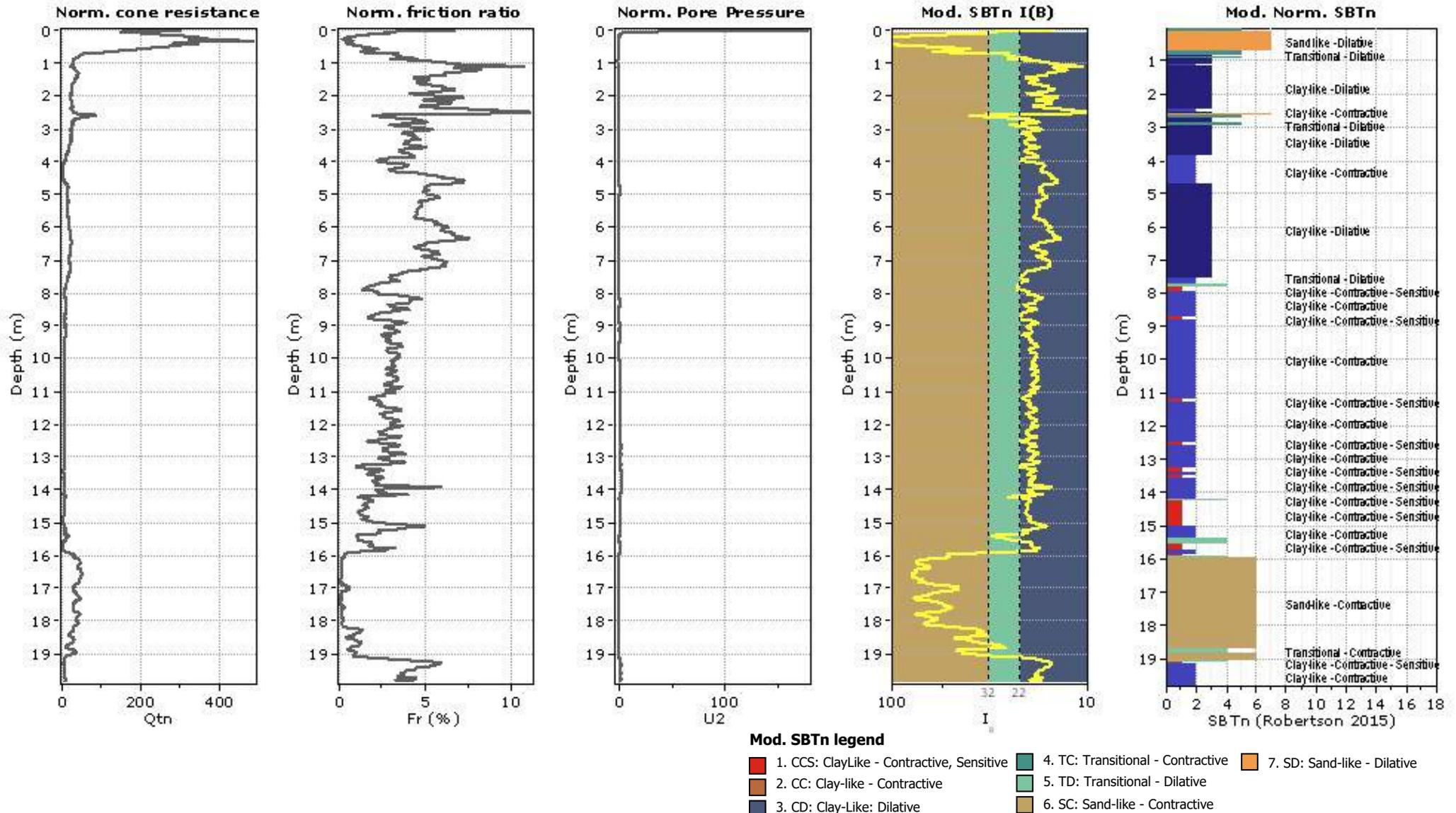
Project:
Location:



Project:
Location:



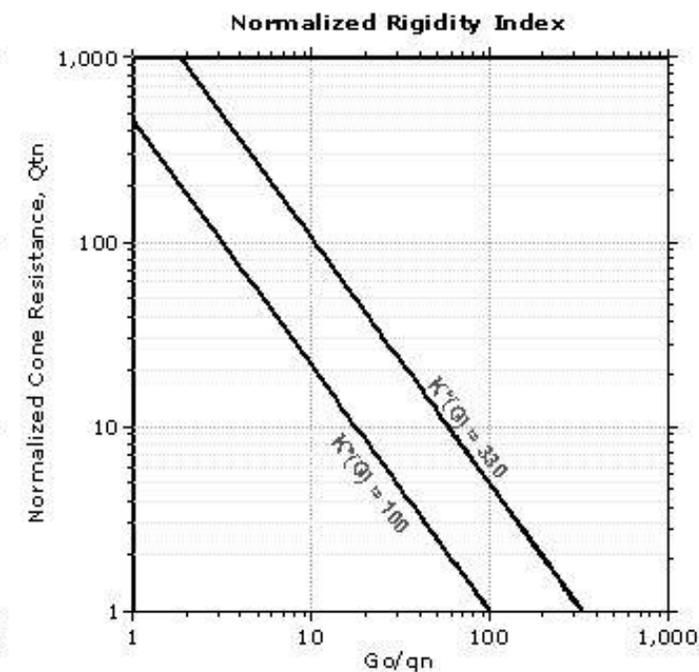
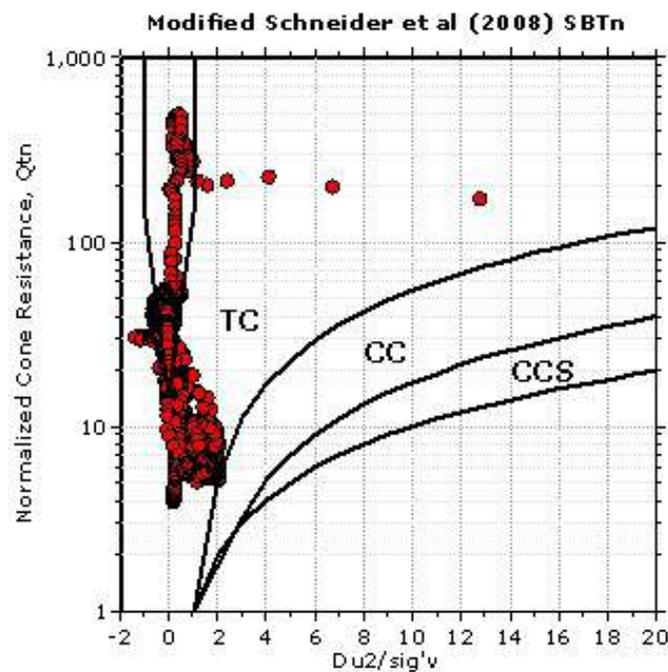
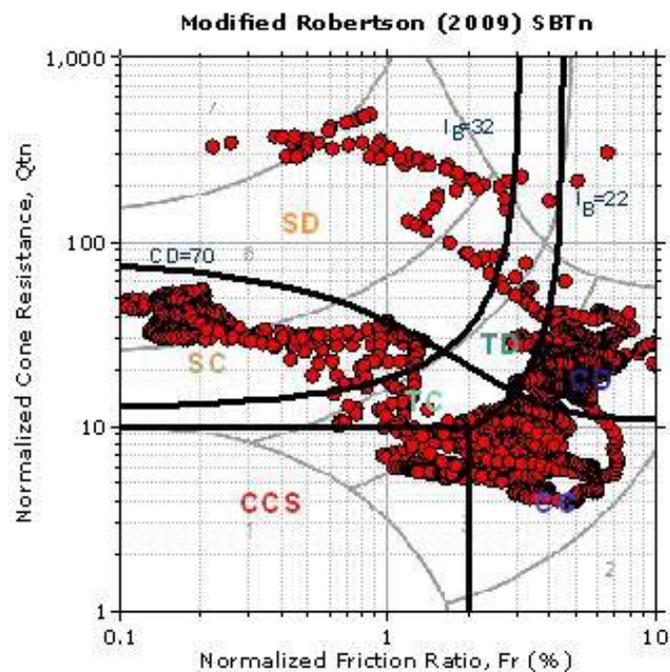
Project:
Location:



Project:

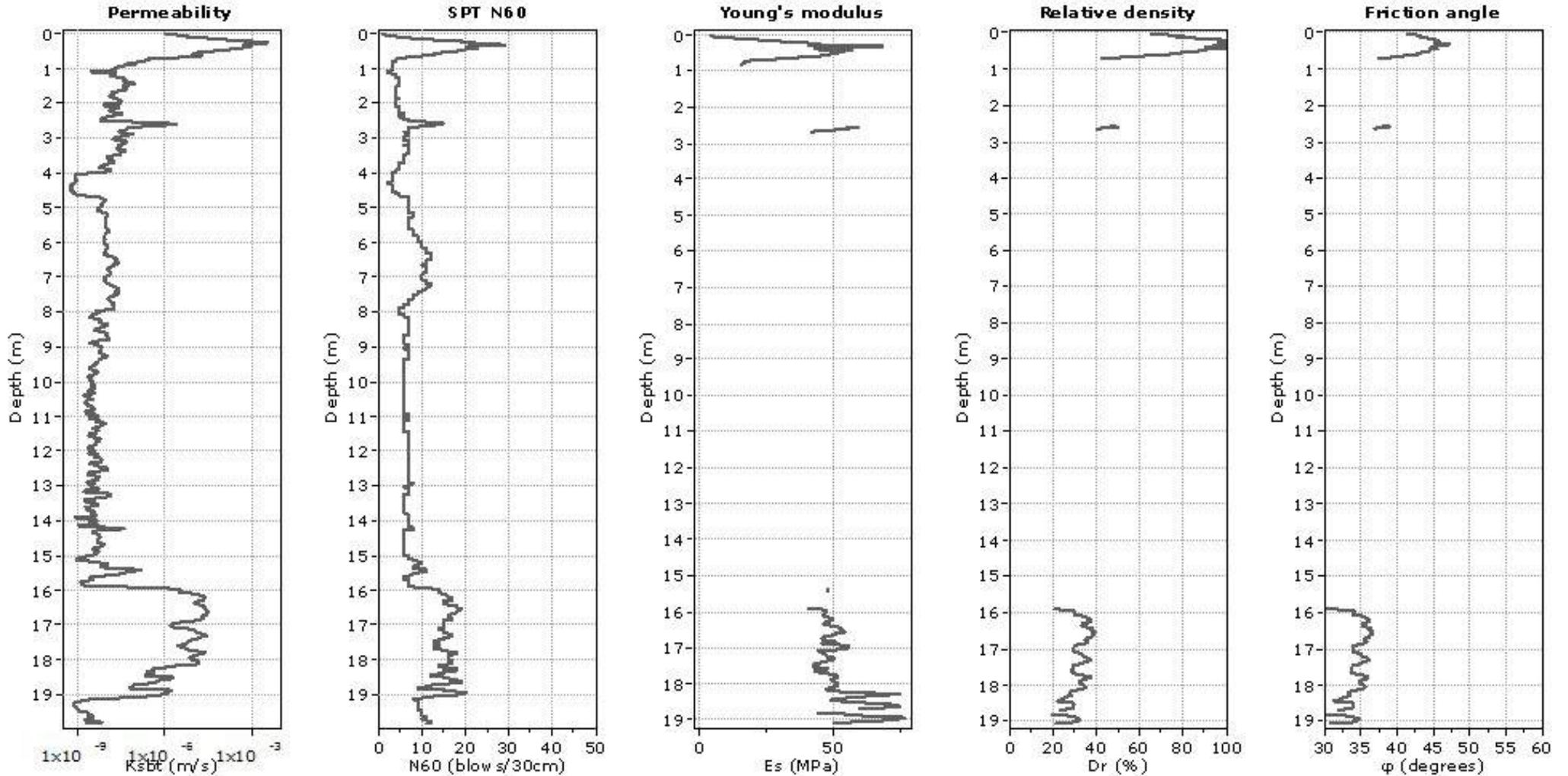
Location:

Updated SBTn plots



- CCS: Clay-like - Contractive - Sensitive
- CC: Clay-like - Contractive
- CD: Clay-like - Dilative
- TC: Transitional - Contractive
- TD: Transitional - Dilative
- SC: Sand-like - Contractive
- SD: Sand-like - Dilative

Project:
Location:



Calculation parameters

Permeability: Based on SBT_n

SPT N_{60} : Based on I_c and q_t

Young's modulus: Based on variable alpha using I_c (Robertson, 2009)

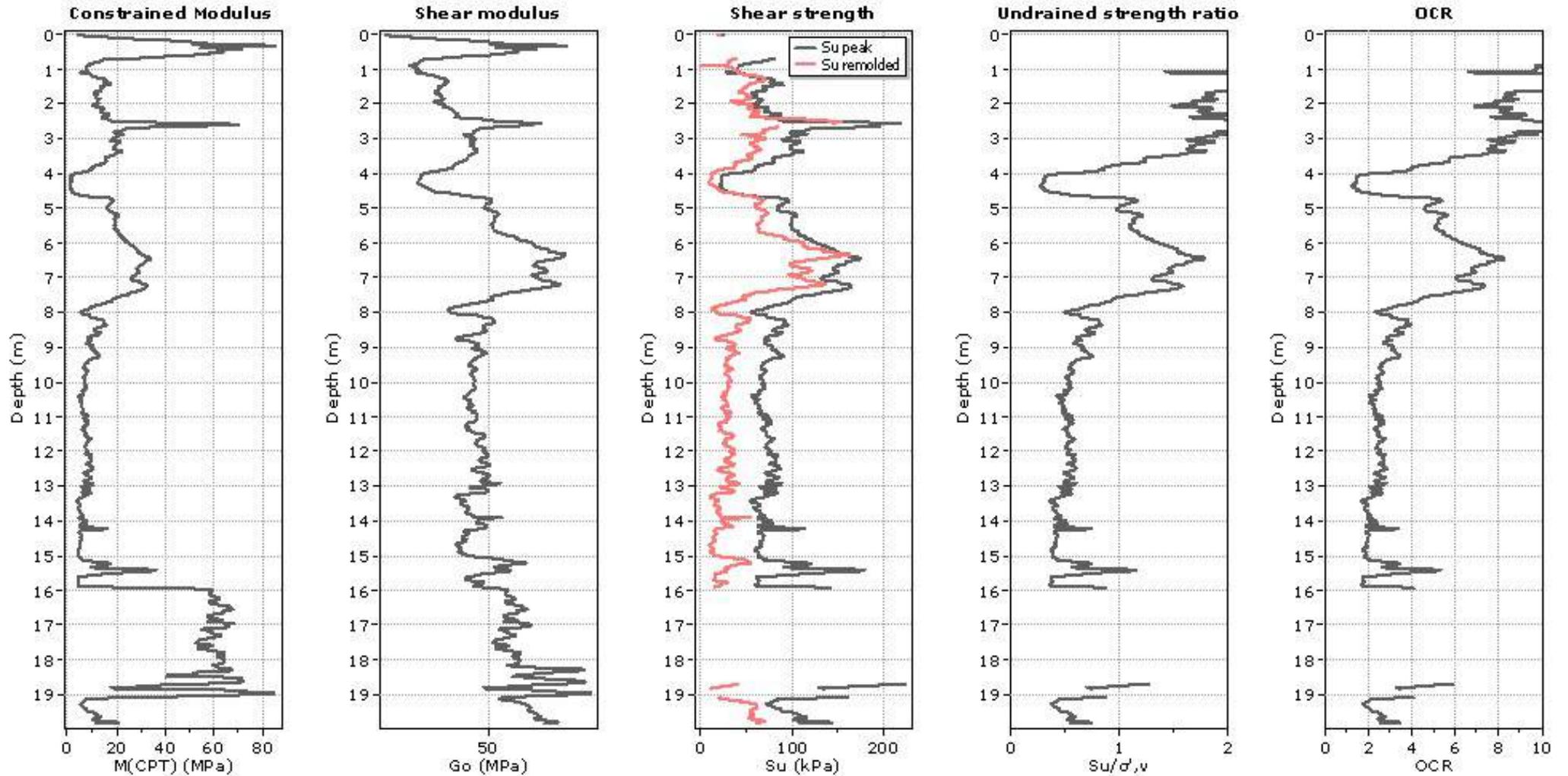
Relative density constant, C_{Dr} : 350.0

Phi: Based on Kulhavy & Mayne (1990)

● User defined estimation data

Project:

Location:



Calculation parameters

Constrained modulus: Based on variable α using I_c and Q_{tm} (Robertson, 2009)

Go: Based on variable α using I_c (Robertson, 2009)

Undrained shear strength cone factor for clays, N_{kt} : 14

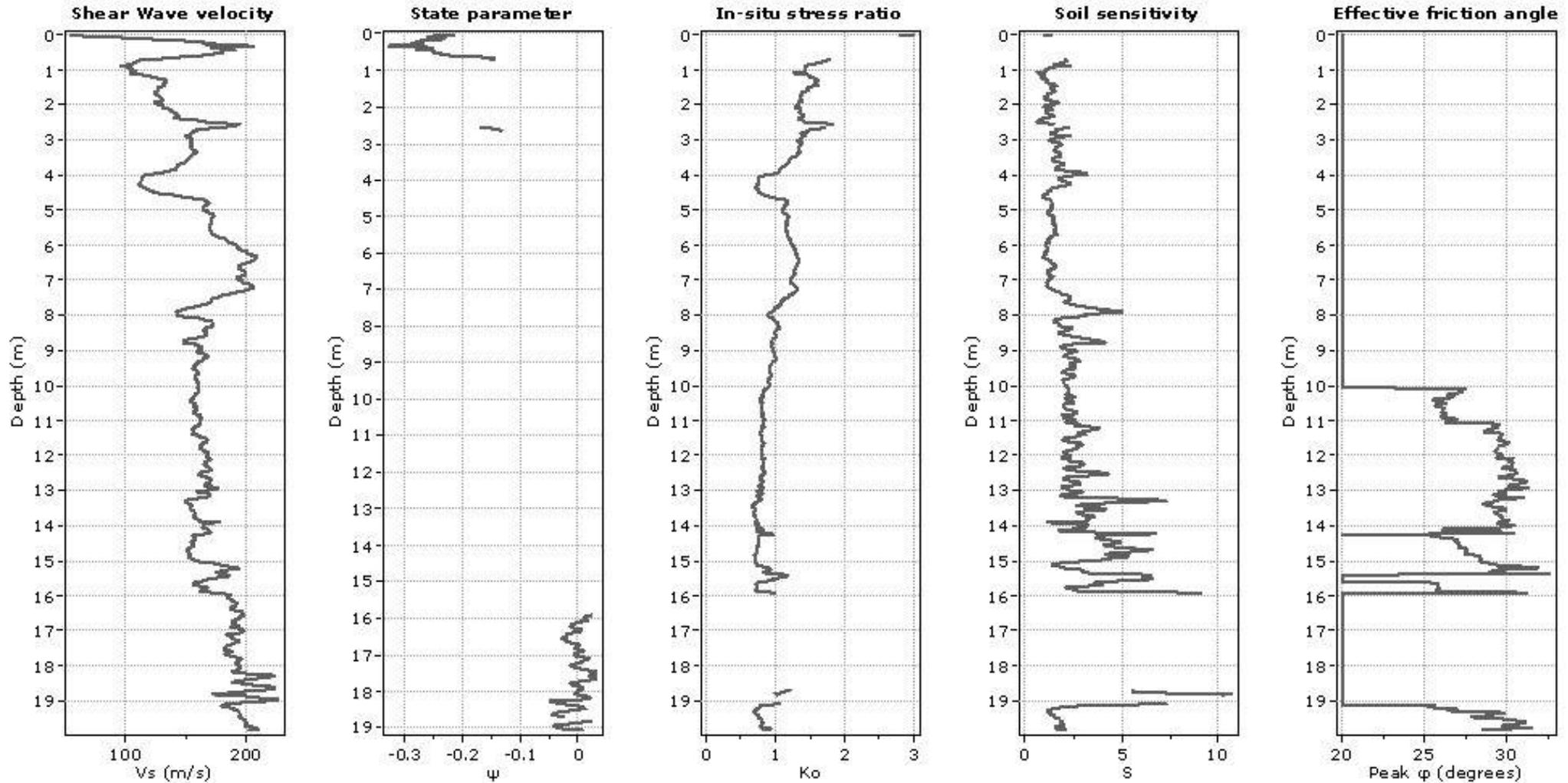
OCR factor for clays, N_{kt} : 0.33

● User defined estimation data

● Flat Dilatometer Test data

Project:

Location:



Calculation parameters

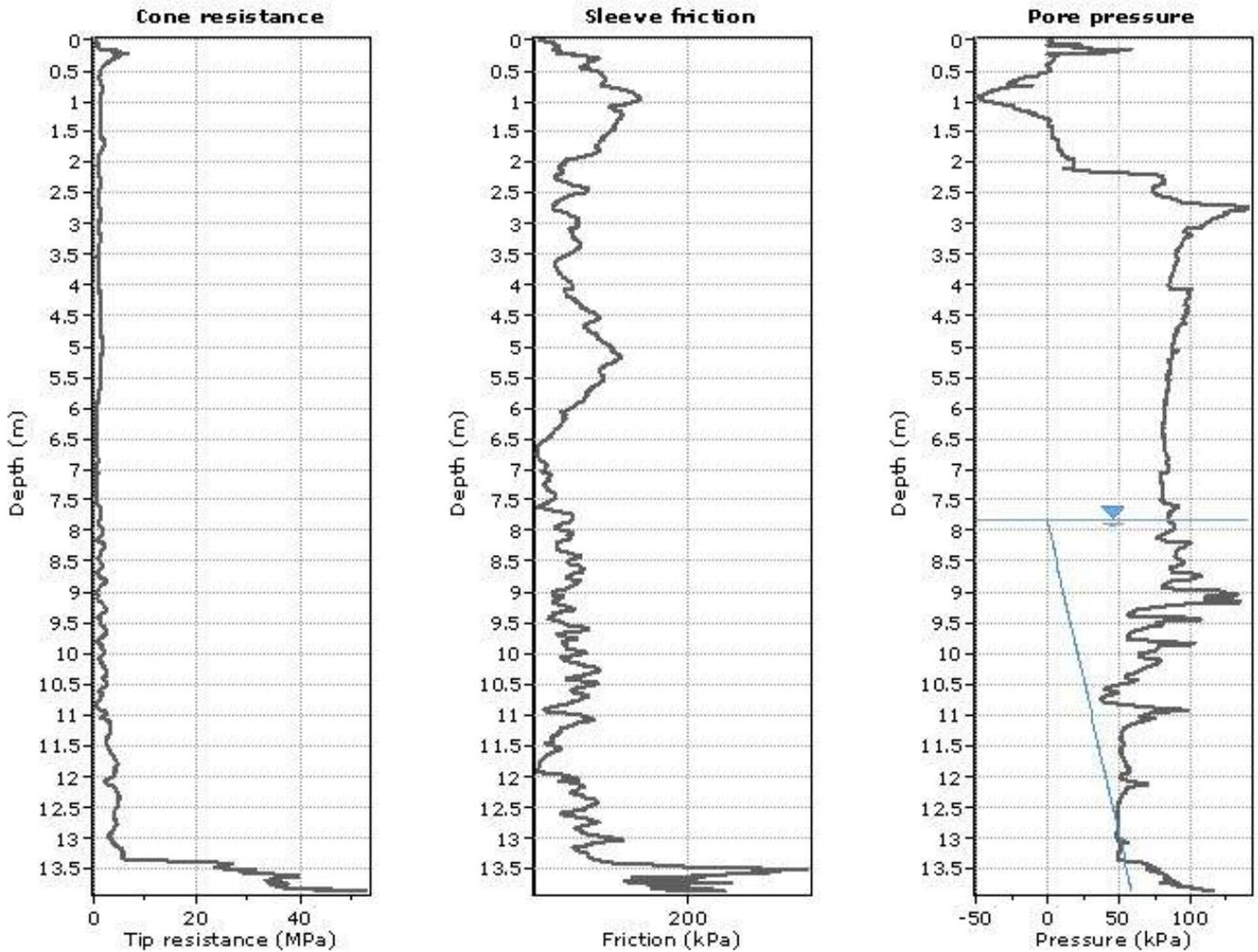
Soil Sensitivity factor, N_s : 7.00

—●— User defined estimation data

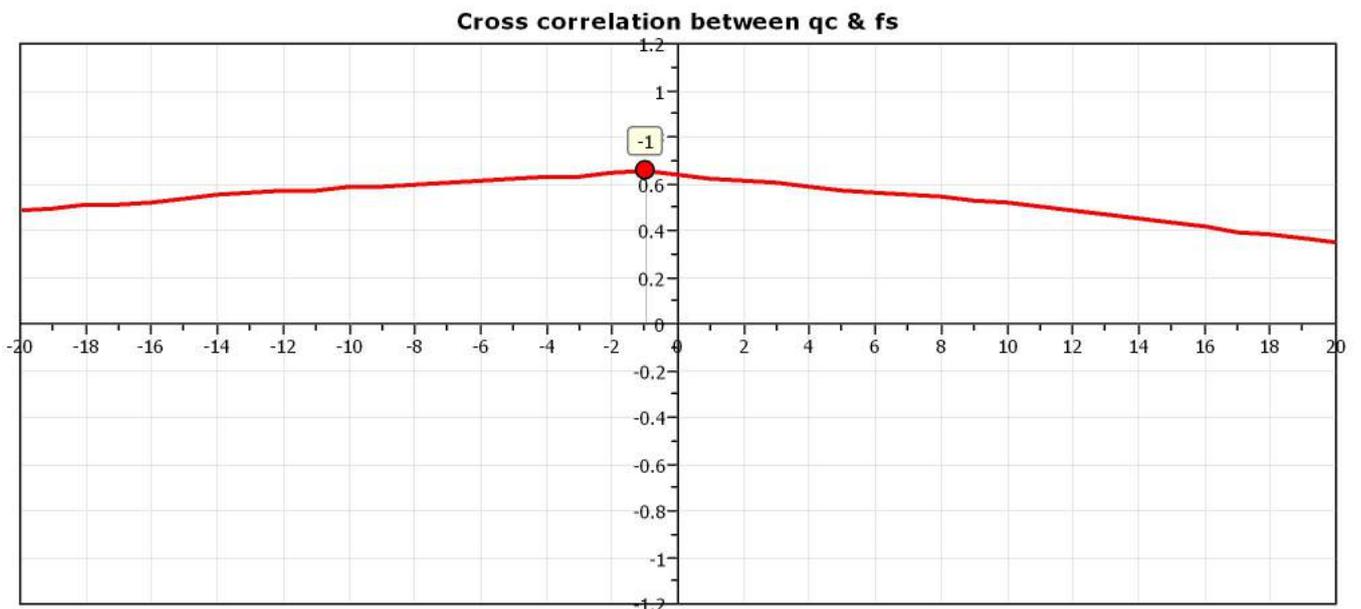
034033P204

Project:

Location:



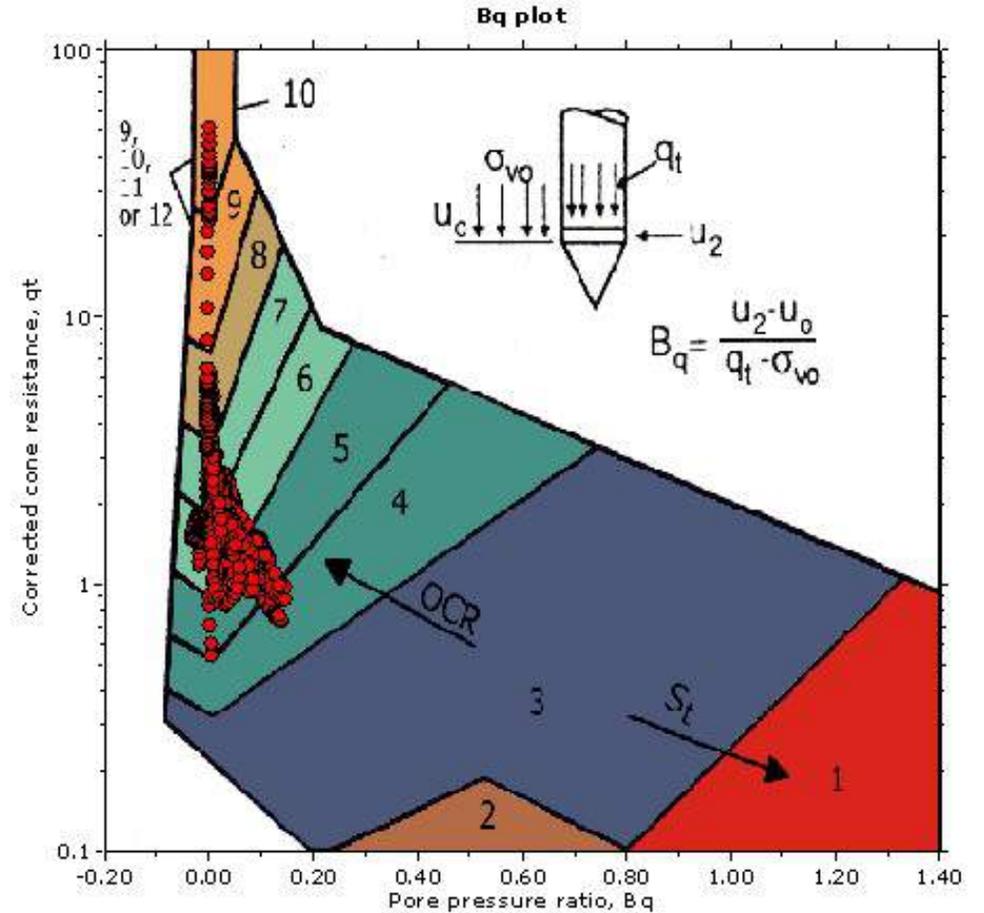
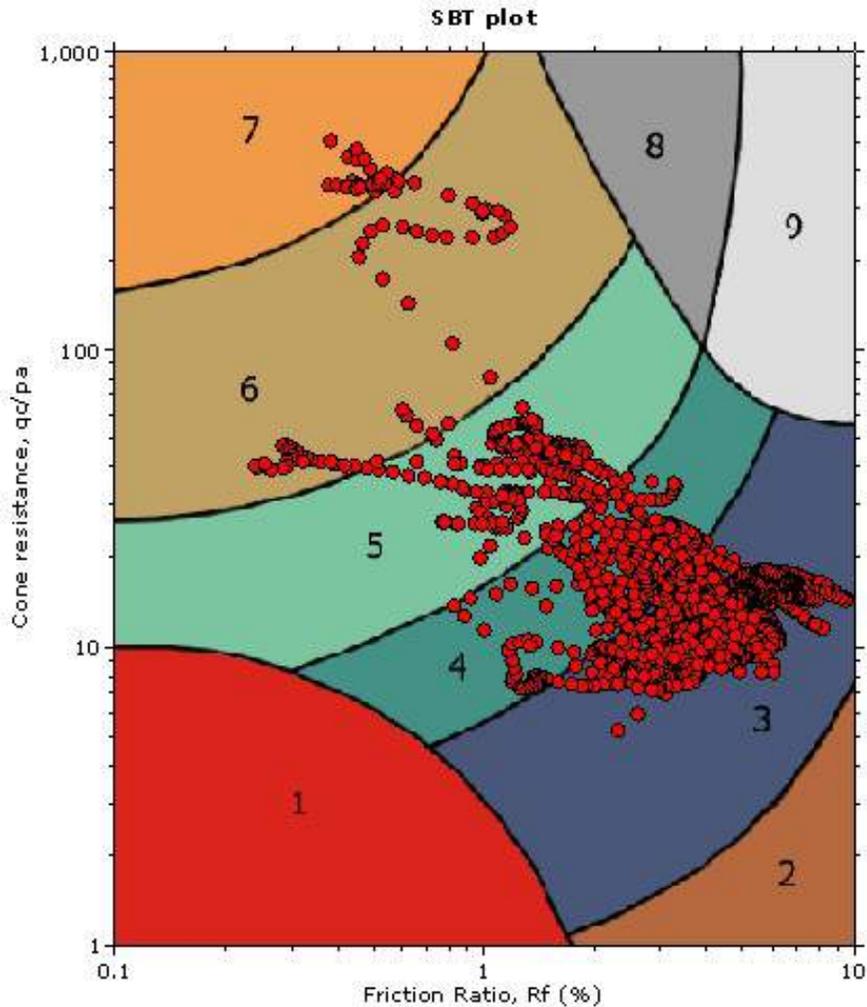
The plot below presents the cross correlation coefficient between the raw q_c and f_s values (as measured on the field). X axes presents the lag distance (one lag is the distance between two successive CPT measurements).



Project:

Location:

SBT - Bq plots



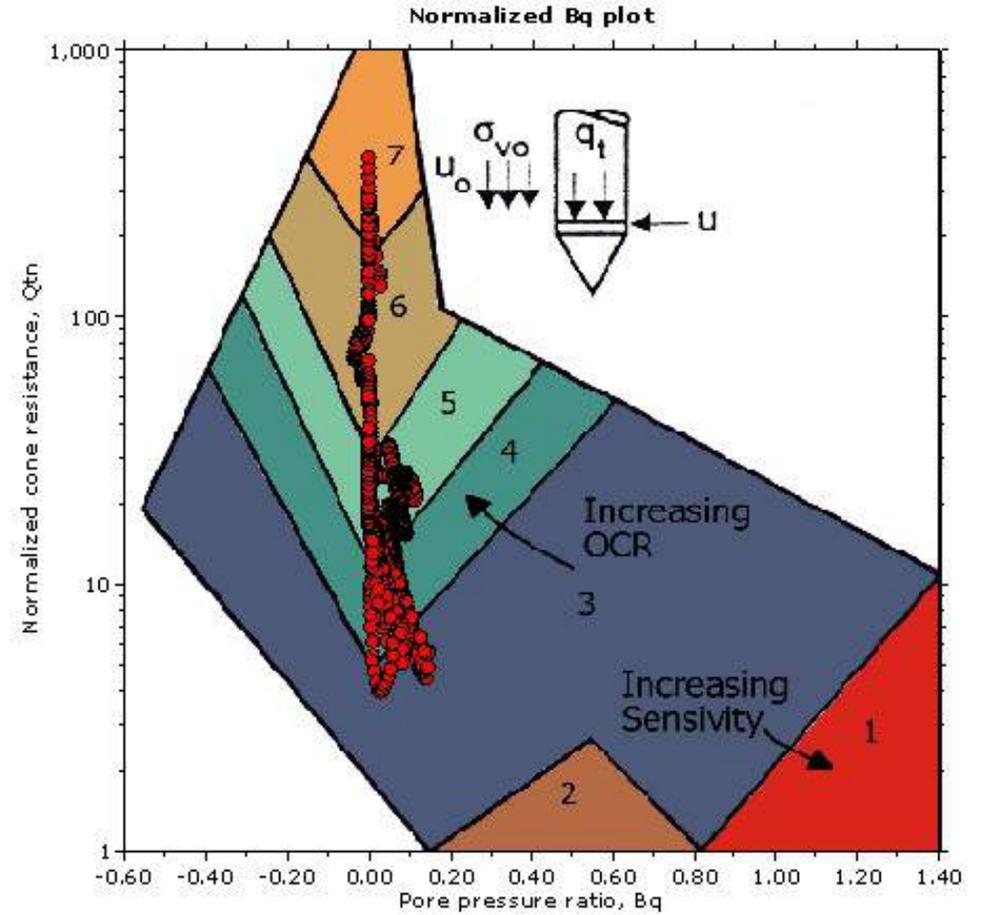
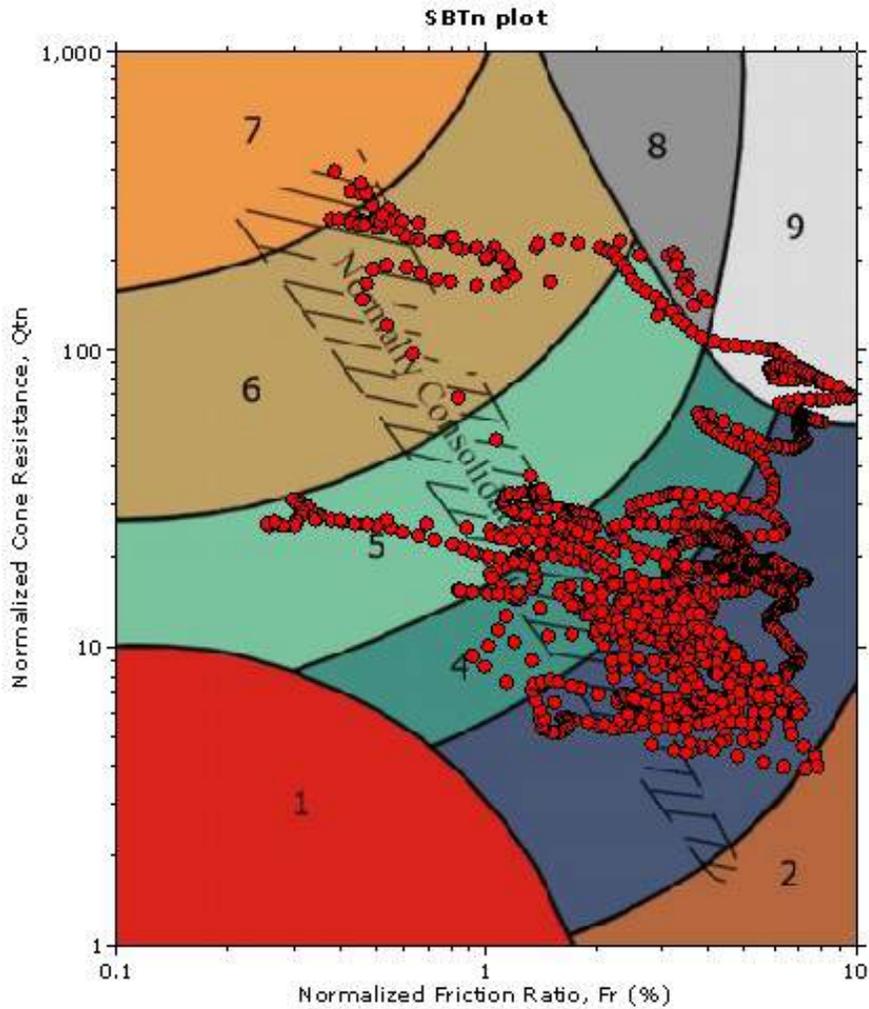
SBT legend

- | | | |
|---------------------------|------------------------------|-----------------------------------|
| 1. Sensitive fine grained | 4. Clayey silt to silty clay | 7. Gravely sand to sand |
| 2. Organic material | 5. Silty sand to sandy silt | 8. Very stiff sand to clayey sand |
| 3. Clay to silty clay | 6. Clean sand to silty sand | 9. Very stiff fine grained |

Project:

Location:

SBT - Bq plots (normalized)



SBTn legend

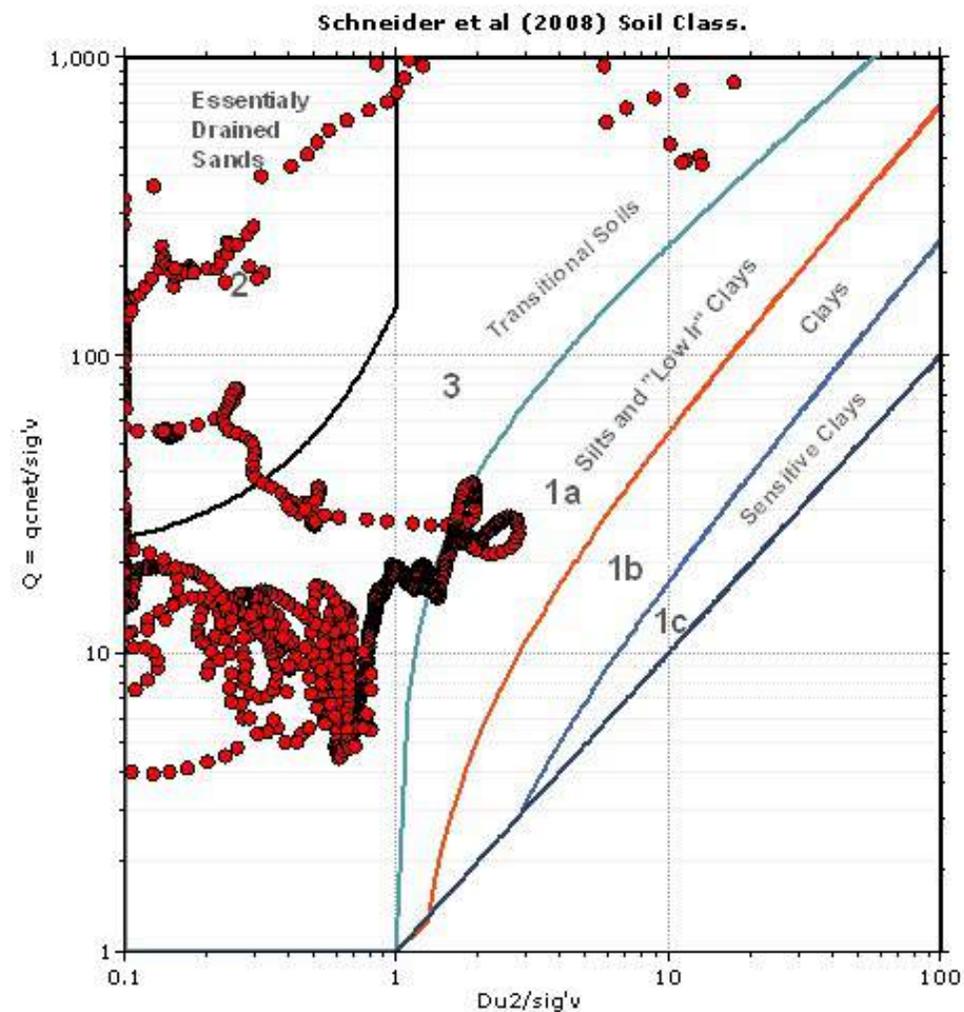
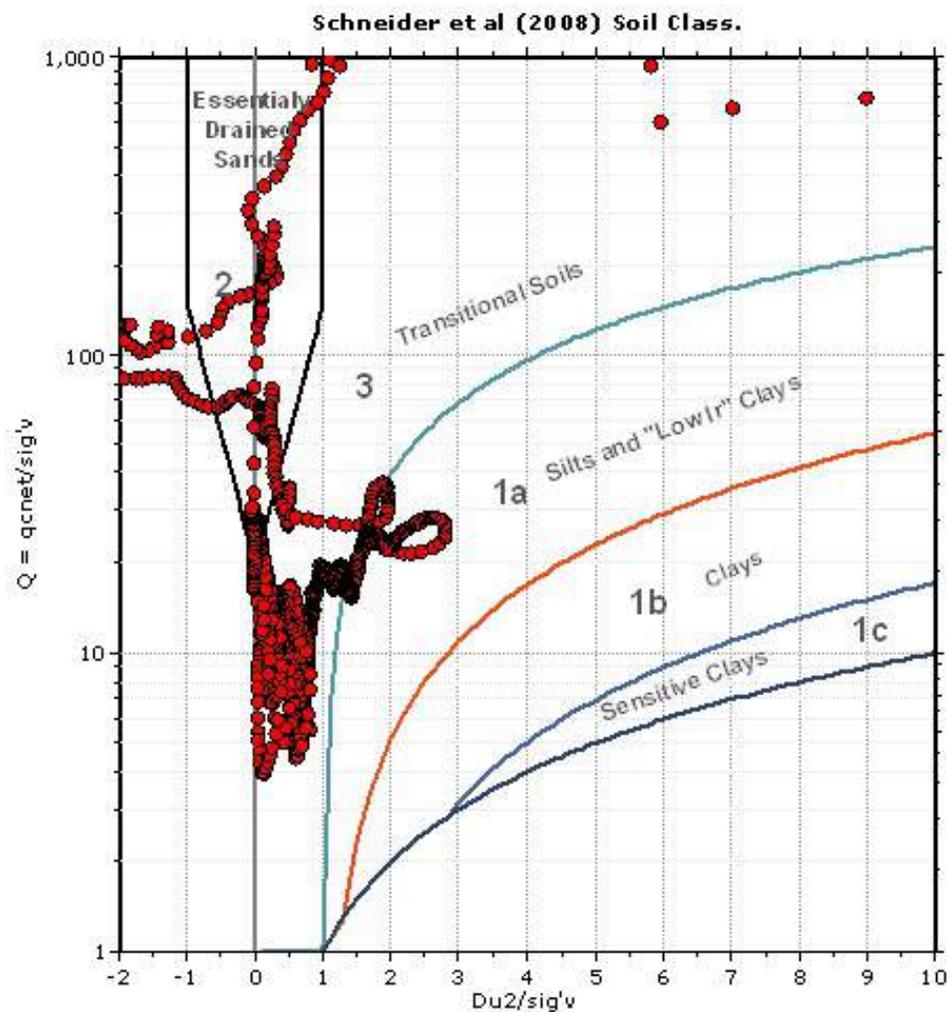
- | | | |
|---------------------------|------------------------------|-----------------------------------|
| 1. Sensitive fine grained | 4. Clayey silt to silty clay | 7. Gravely sand to sand |
| 2. Organic material | 5. Silty sand to sandy silt | 8. Very stiff sand to clayey sand |
| 3. Clay to silty clay | 6. Clean sand to silty sand | 9. Very stiff fine grained |



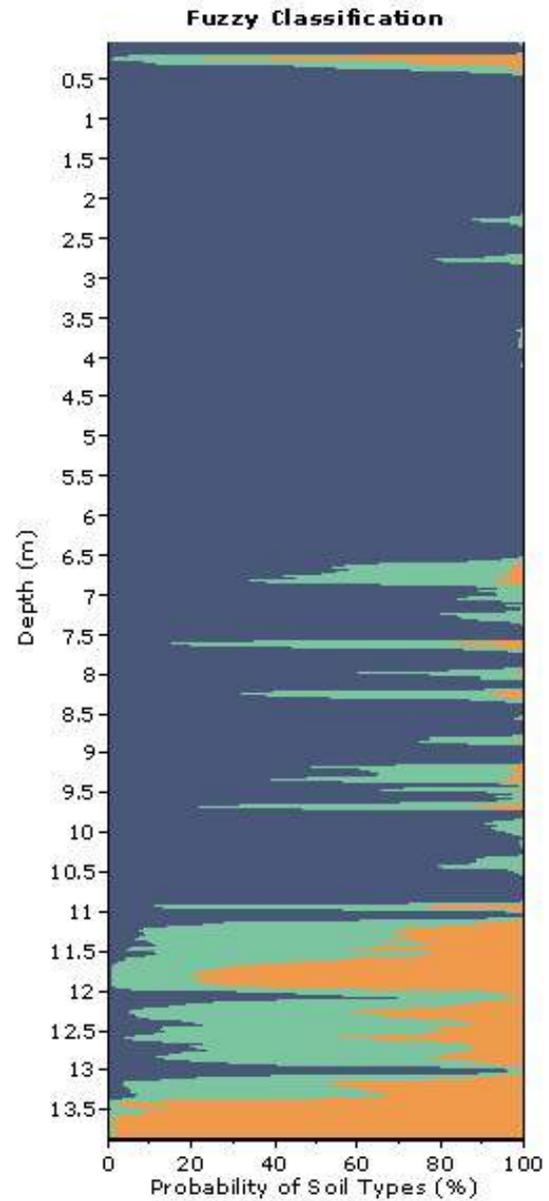
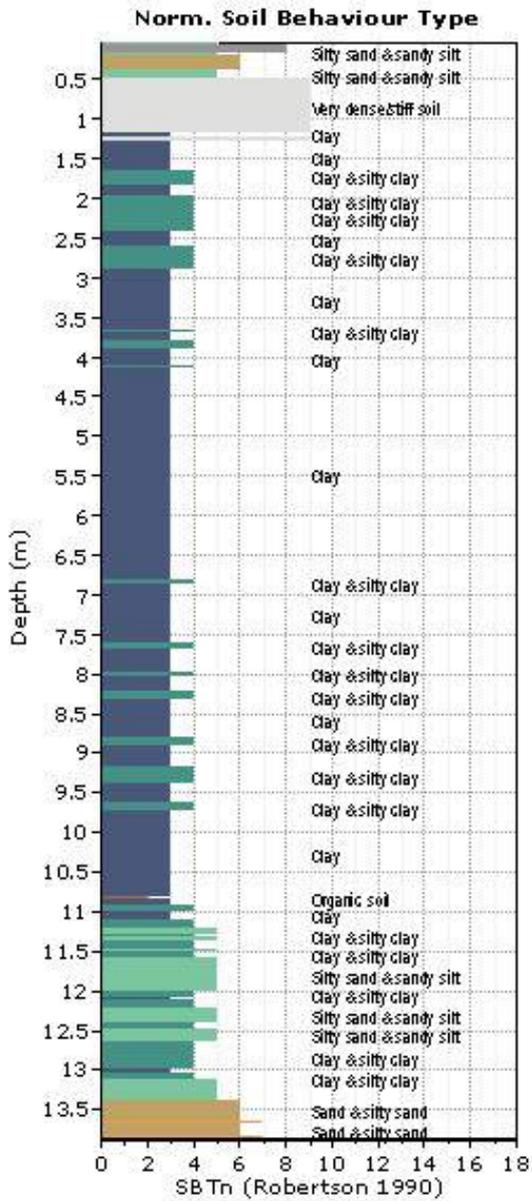
Project:

Location:

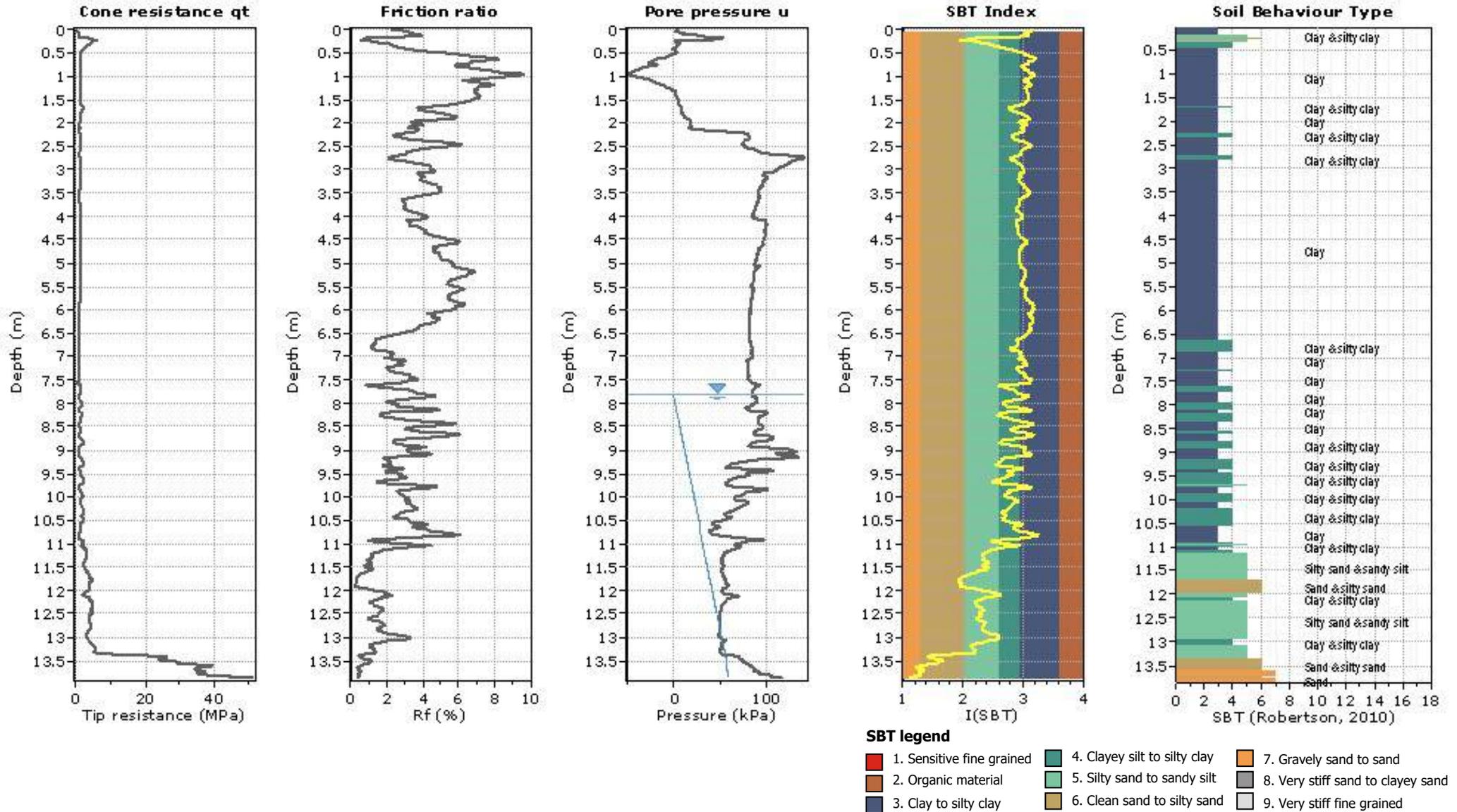
Bq plots (Schneider)



Project:
Location:

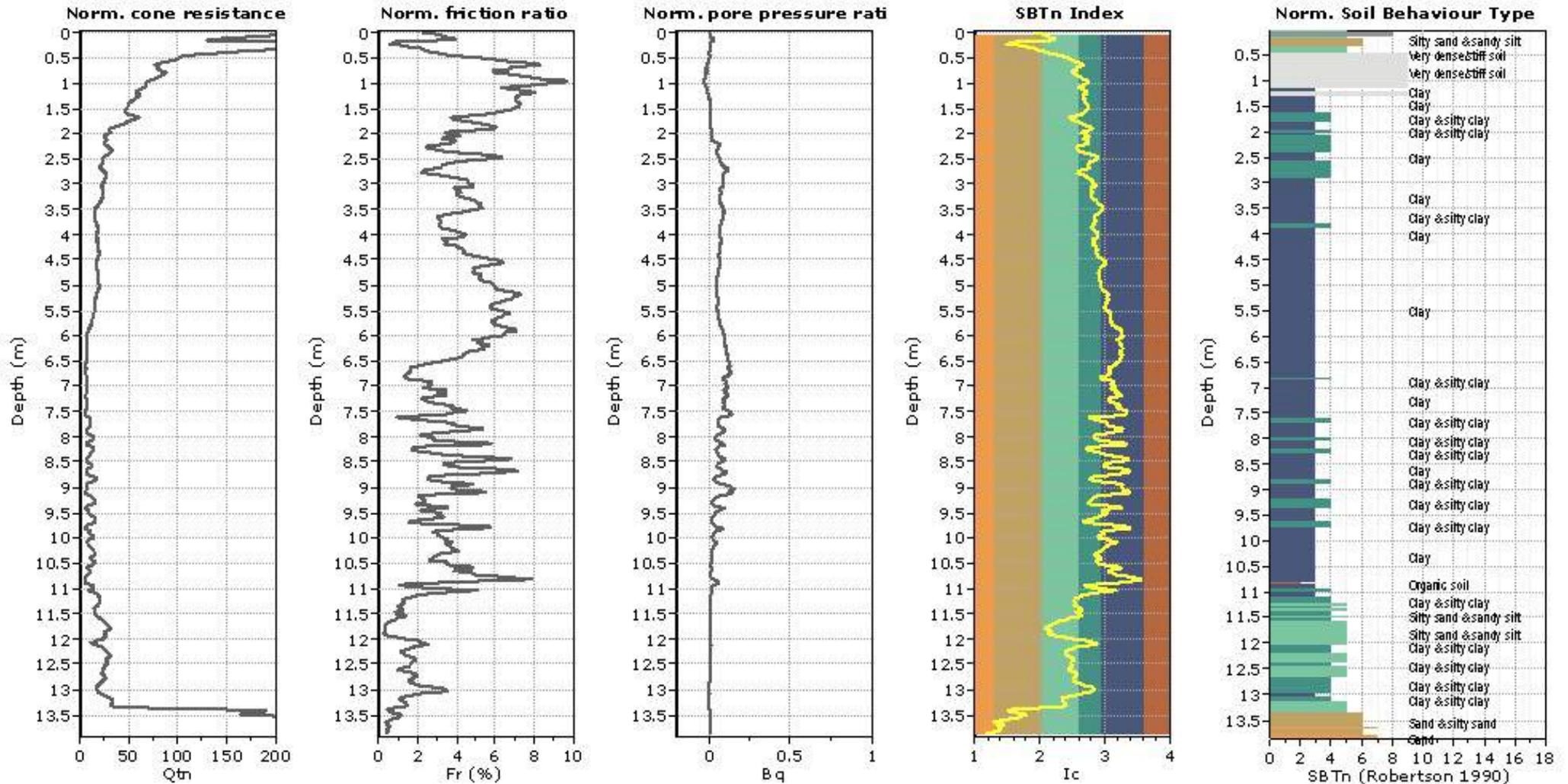


Project:
Location:



Project:

Location:

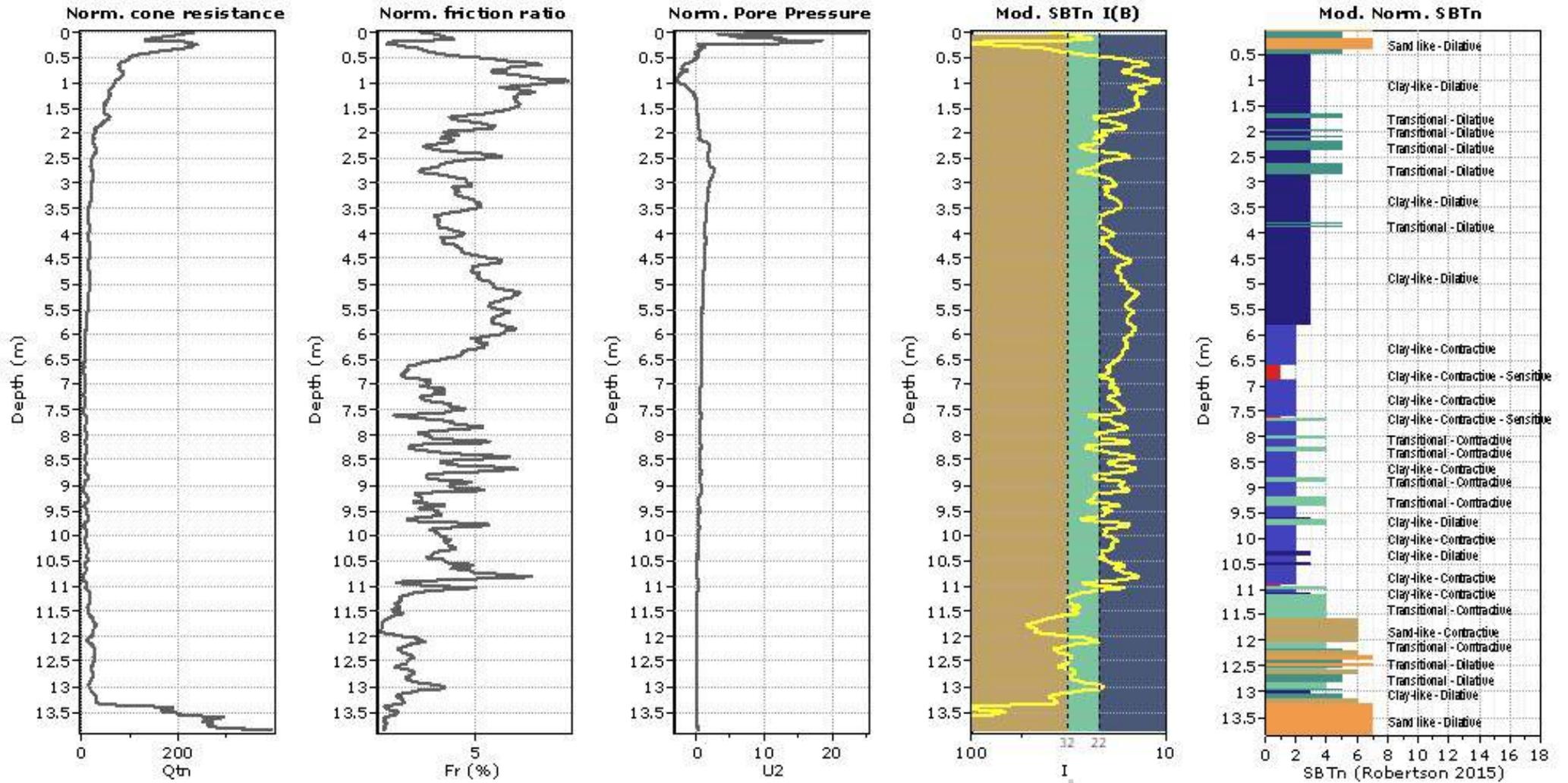


SBTn legend

- | | | |
|---------------------------|------------------------------|-----------------------------------|
| 1. Sensitive fine grained | 4. Clayey silt to silty clay | 7. Gravely sand to sand |
| 2. Organic material | 5. Silty sand to sandy silt | 8. Very stiff sand to clayey sand |
| 3. Clay to silty clay | 6. Clean sand to silty sand | 9. Very stiff fine grained |

Project:

Location:

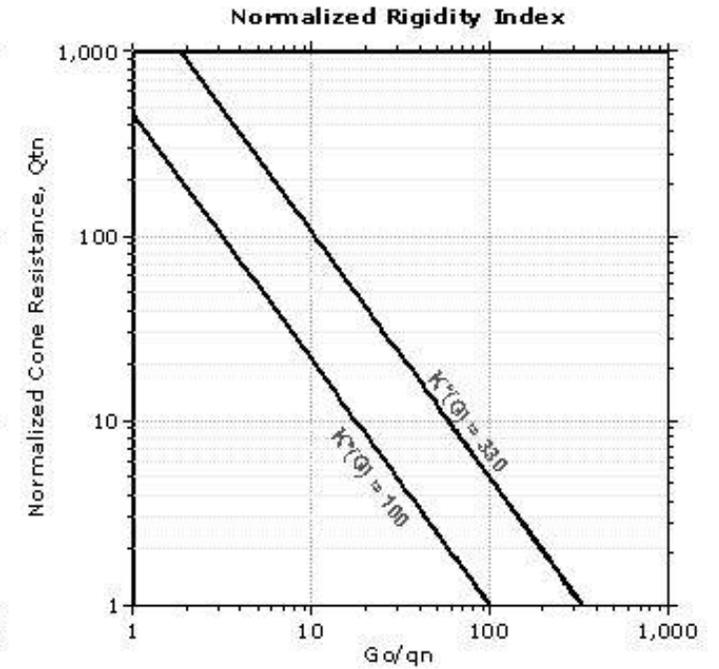
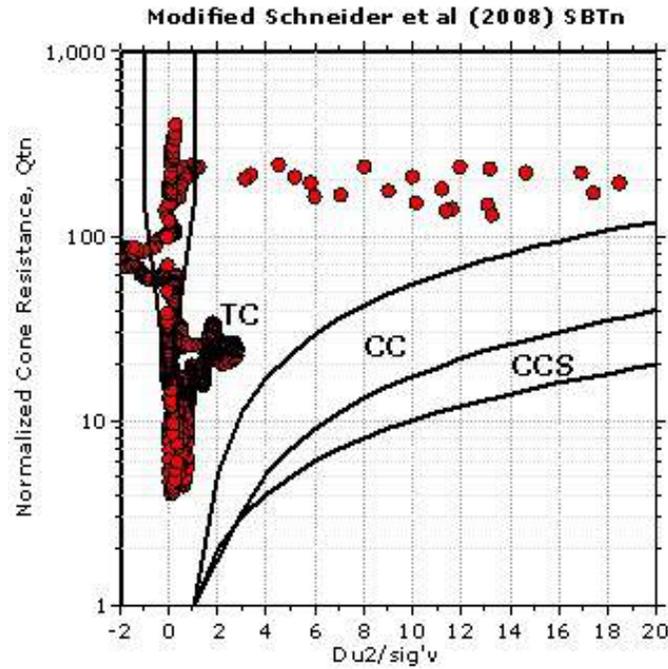
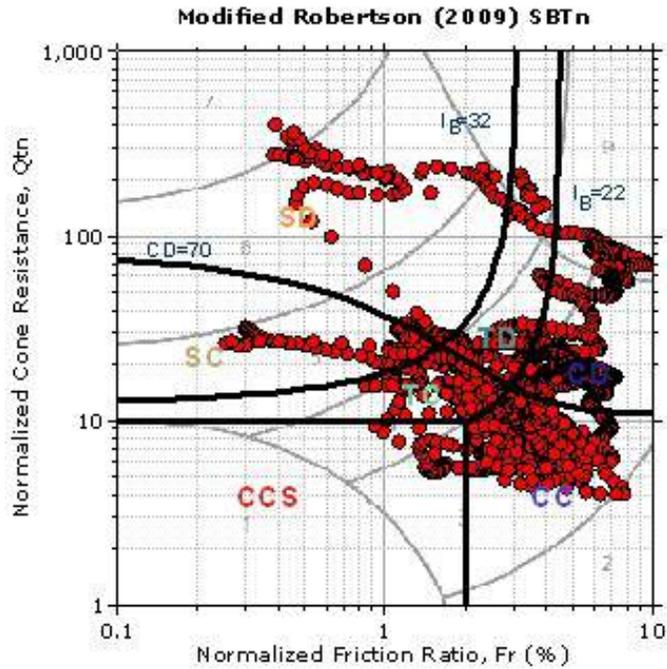


Mod. SBTn legend

- | | | |
|---|-----------------------------------|-----------------------------|
| 1. CCS: ClayLike - Contractive, Sensitive | 4. TC: Transitional - Contractive | 7. SD: Sand-like - Dilative |
| 2. CC: Clay-like - Contractive | 5. TD: Transitional - Dilative | |
| 3. CD: Clay-Like: Dilative | 6. SC: Sand-like - Contractive | |

Project:
Location:

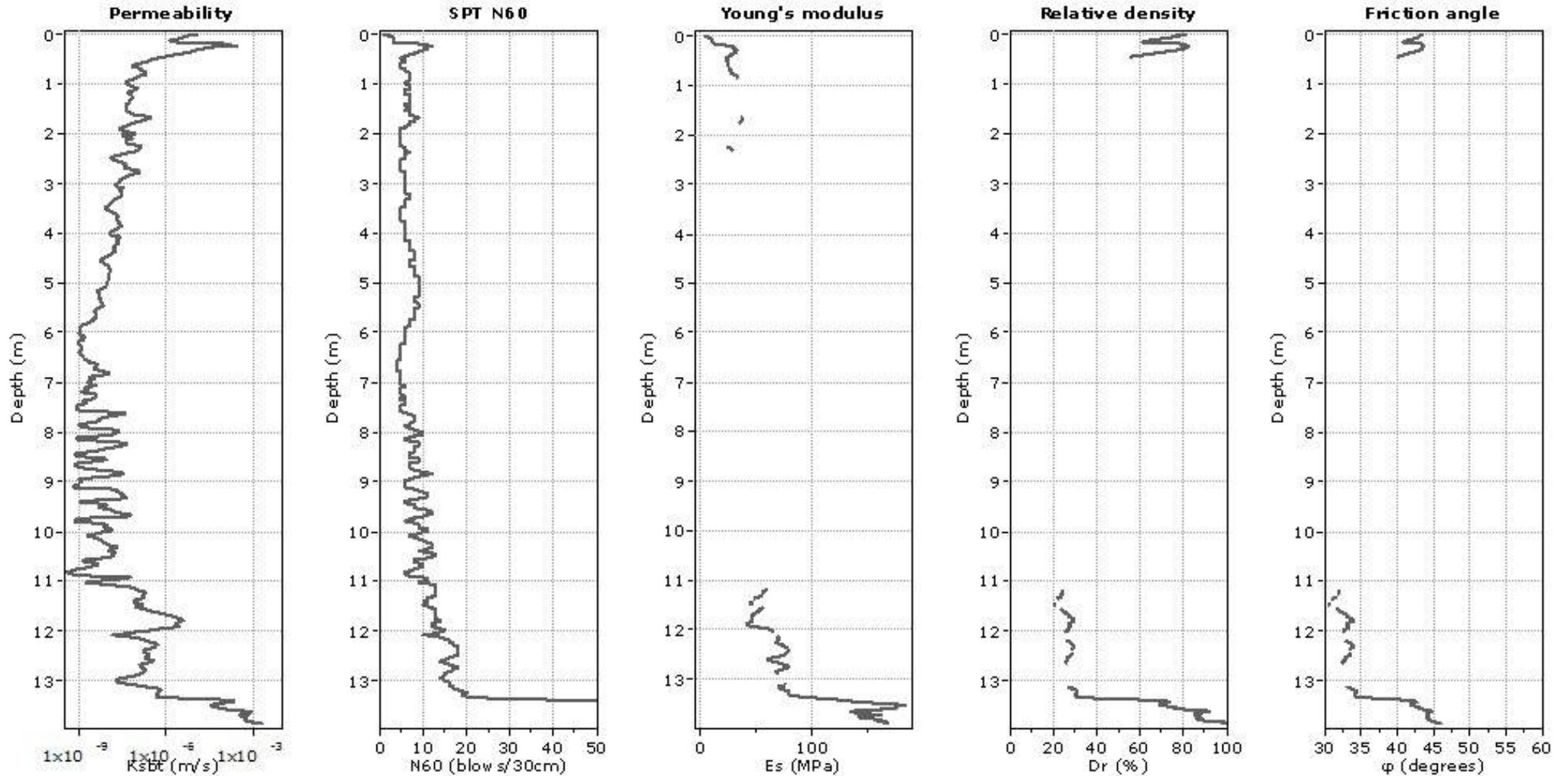
Updated SBTn plots



- CCS: Clay-like - Contractive - Sensitive
- CC: Clay-like - Contractive
- CD: Clay-like - Dilative
- TC: Transitional - Contractive
- TD: Transitional - Dilative
- SC: Sand-like - Contractive
- SD: Sand-like - Dilative

Project:

Location:



Calculation parameters

Permeability: Based on SBT_n

SPT N₆₀: Based on I_c and q_t

Young's modulus: Based on variable alpha using I_c (Robertson, 2009)

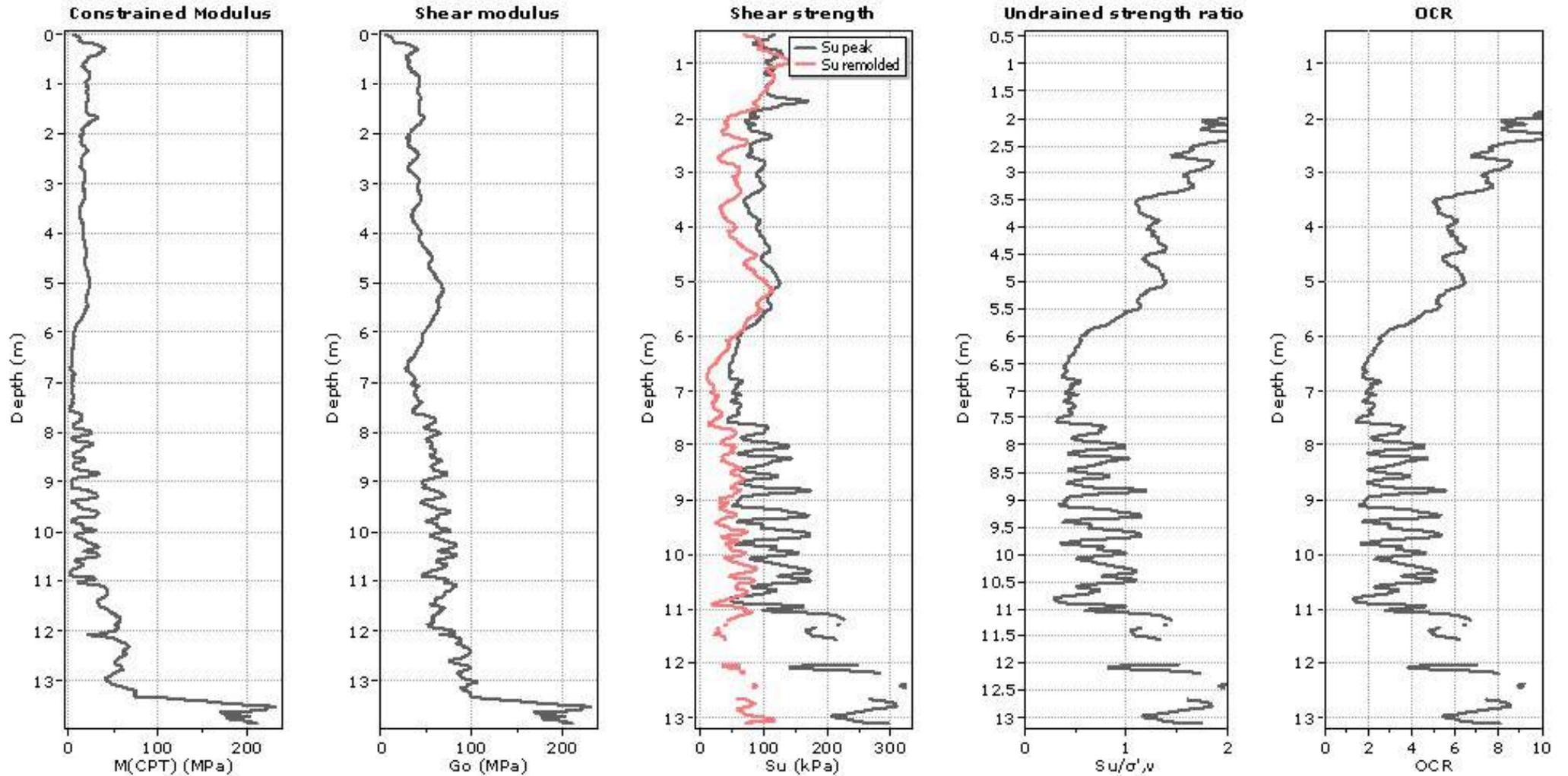
Relative density constant, C_D: 350.0

Phi: Based on Kulhavy & Mayne (1990)

● — User defined estimation data

Project:

Location:



Calculation parameters

Constrained modulus: Based on variable α using I_c and Q_{tm} (Robertson, 2009)

Go: Based on variable α using I_c (Robertson, 2009)

Undrained shear strength cone factor for clays, N_{kt} : 14

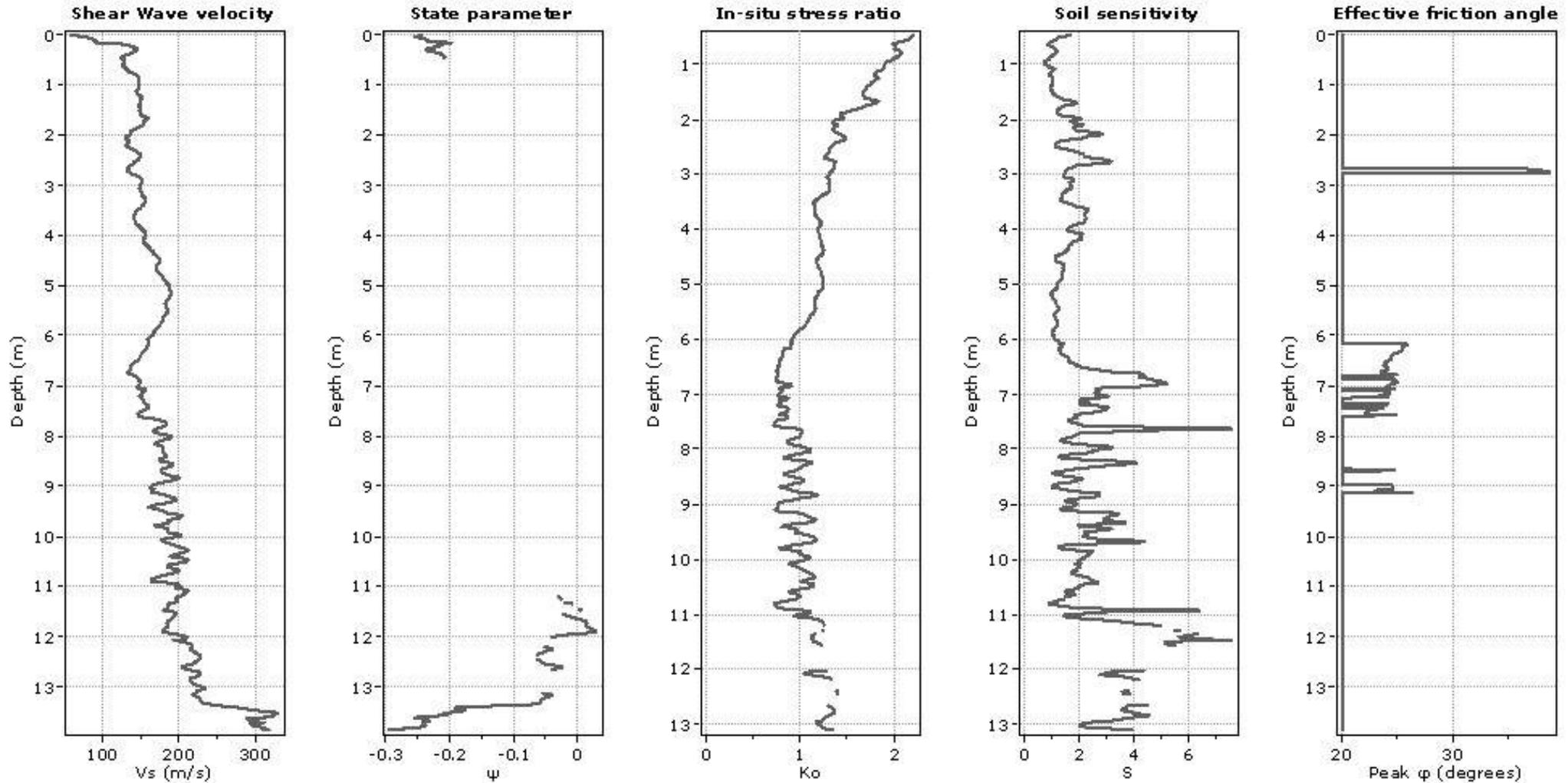
OCR factor for clays, N_{kt} : 0.33

● User defined estimation data

● Flat Dilatometer Test data

Project:

Location:



Calculation parameters

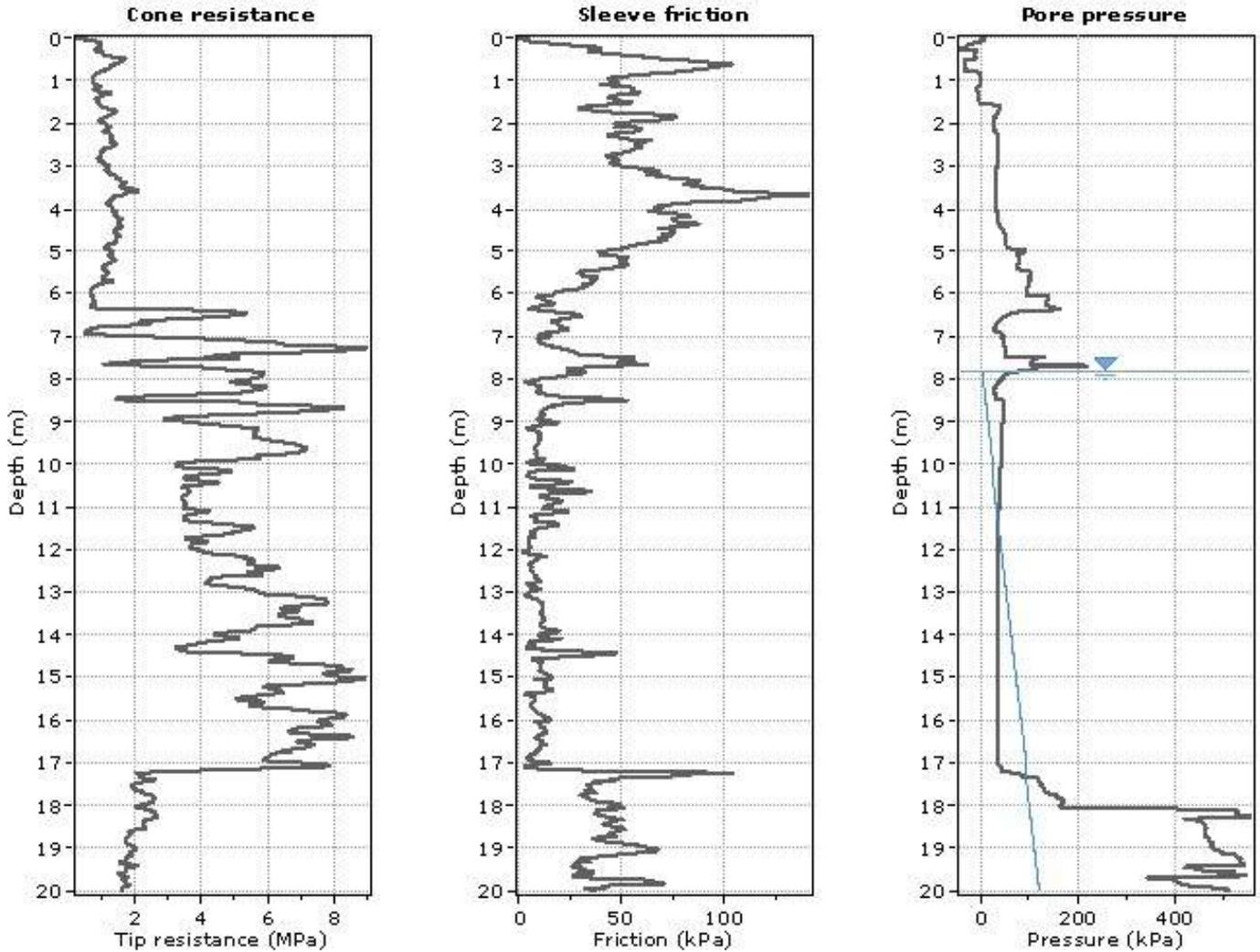
Soil Sensitivity factor, N_s : 7.00

—●— User defined estimation data

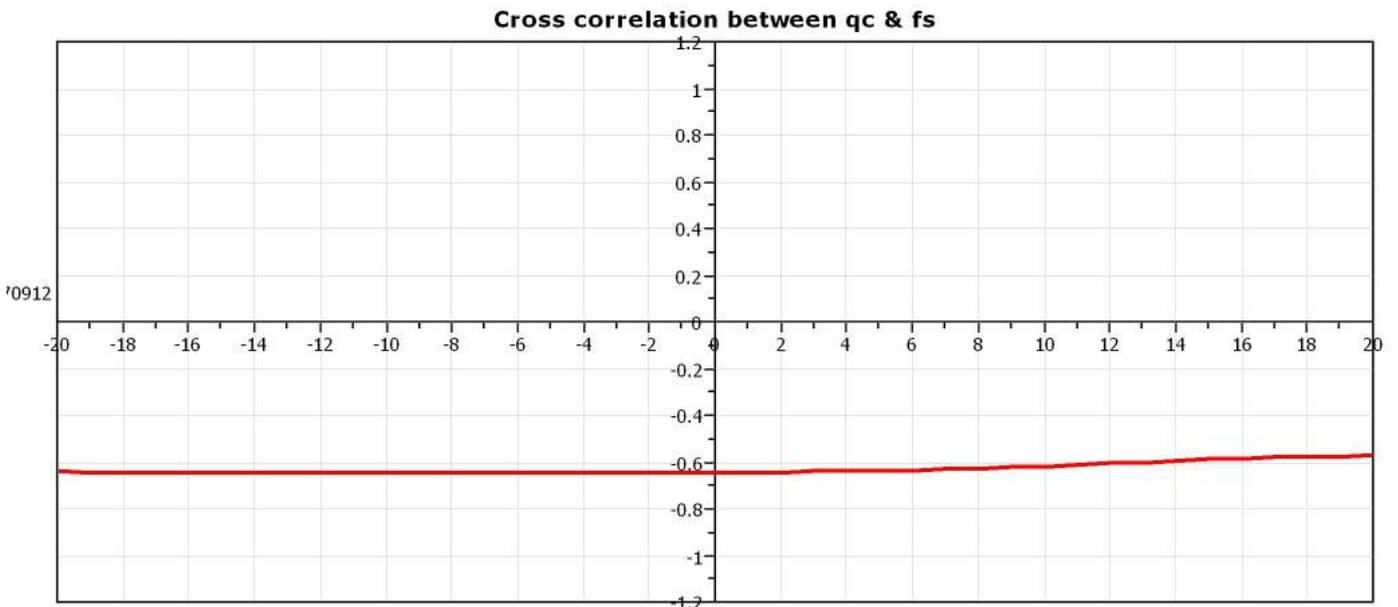
034033P205

Project:

Location:



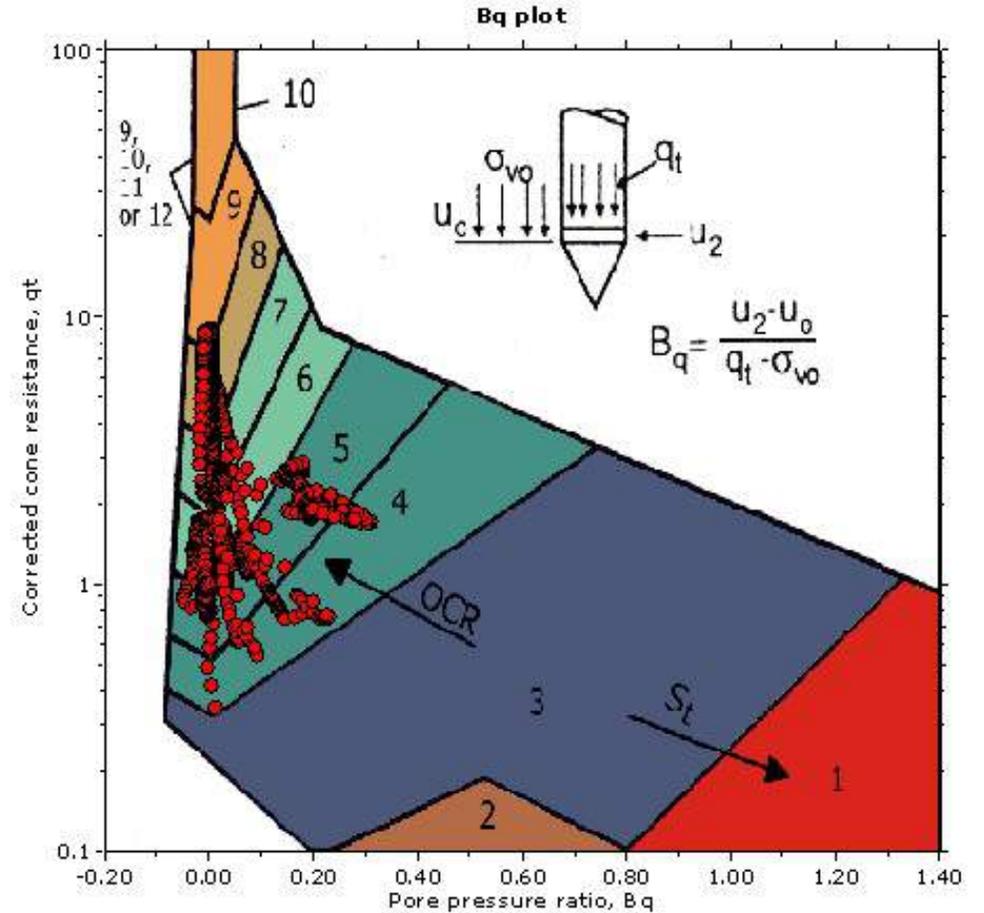
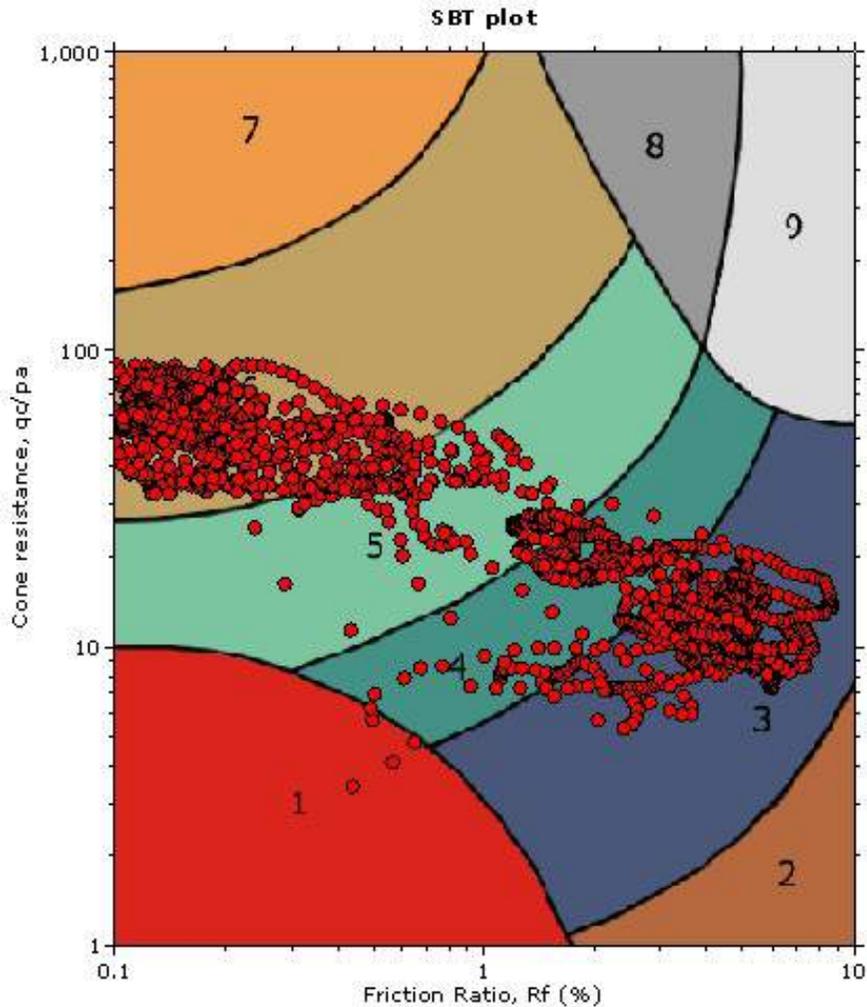
The plot below presents the cross correlation coefficient between the raw qc and fs values (as measured on the field). X axes presents the lag distance (one lag is the distance between two successive CPT measurements).



Project:

Location:

SBT - Bq plots



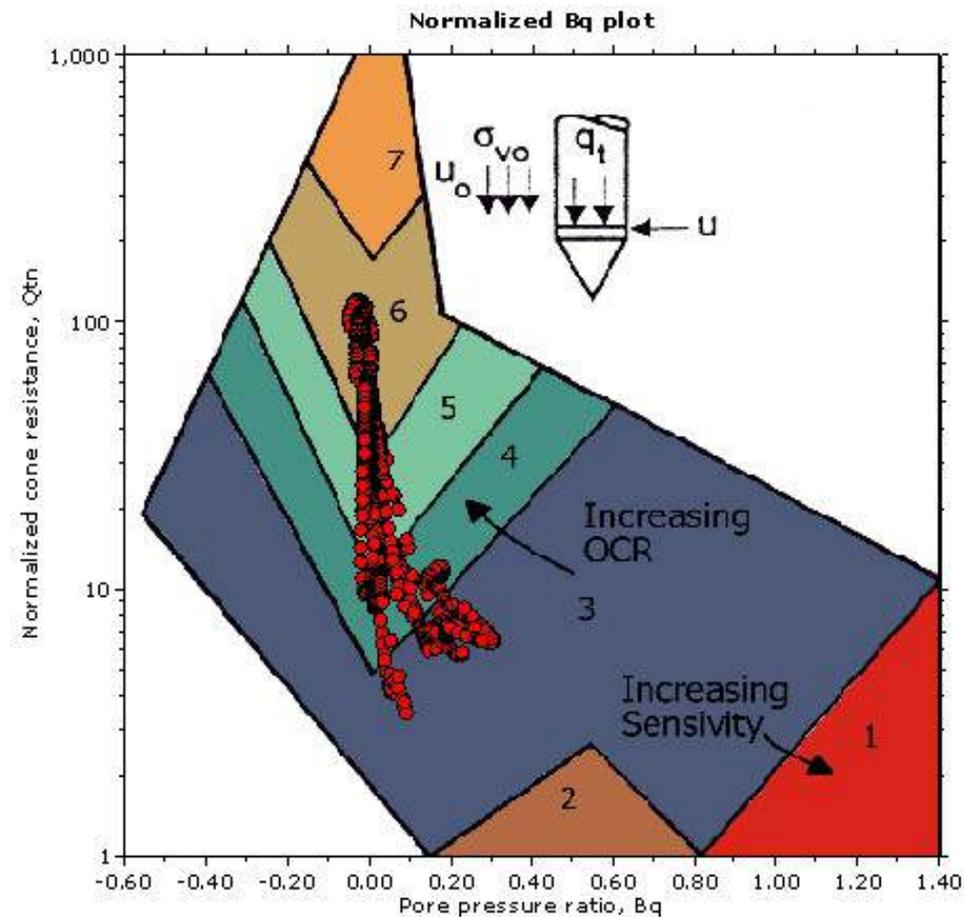
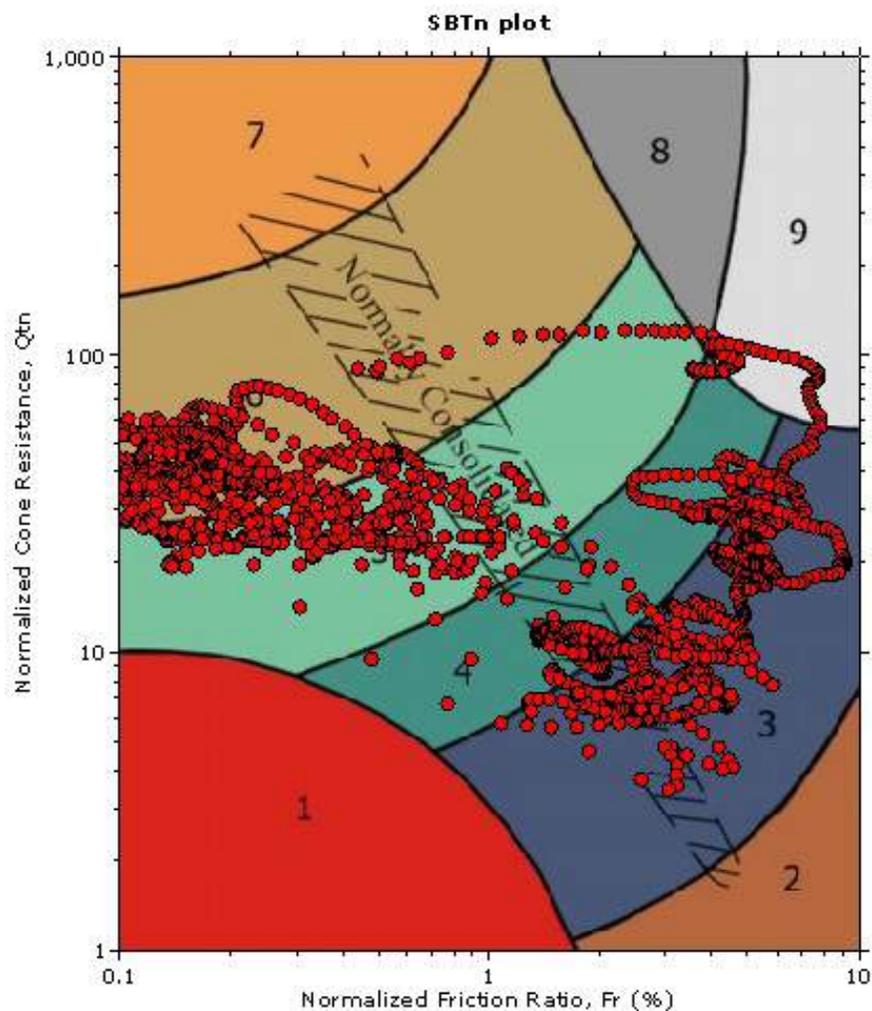
SBT legend

- | | | |
|---------------------------|------------------------------|-----------------------------------|
| 1. Sensitive fine grained | 4. Clayey silt to silty clay | 7. Gravely sand to sand |
| 2. Organic material | 5. Silty sand to sandy silt | 8. Very stiff sand to clayey sand |
| 3. Clay to silty clay | 6. Clean sand to silty sand | 9. Very stiff fine grained |

Project:

Location:

SBT - Bq plots (normalized)



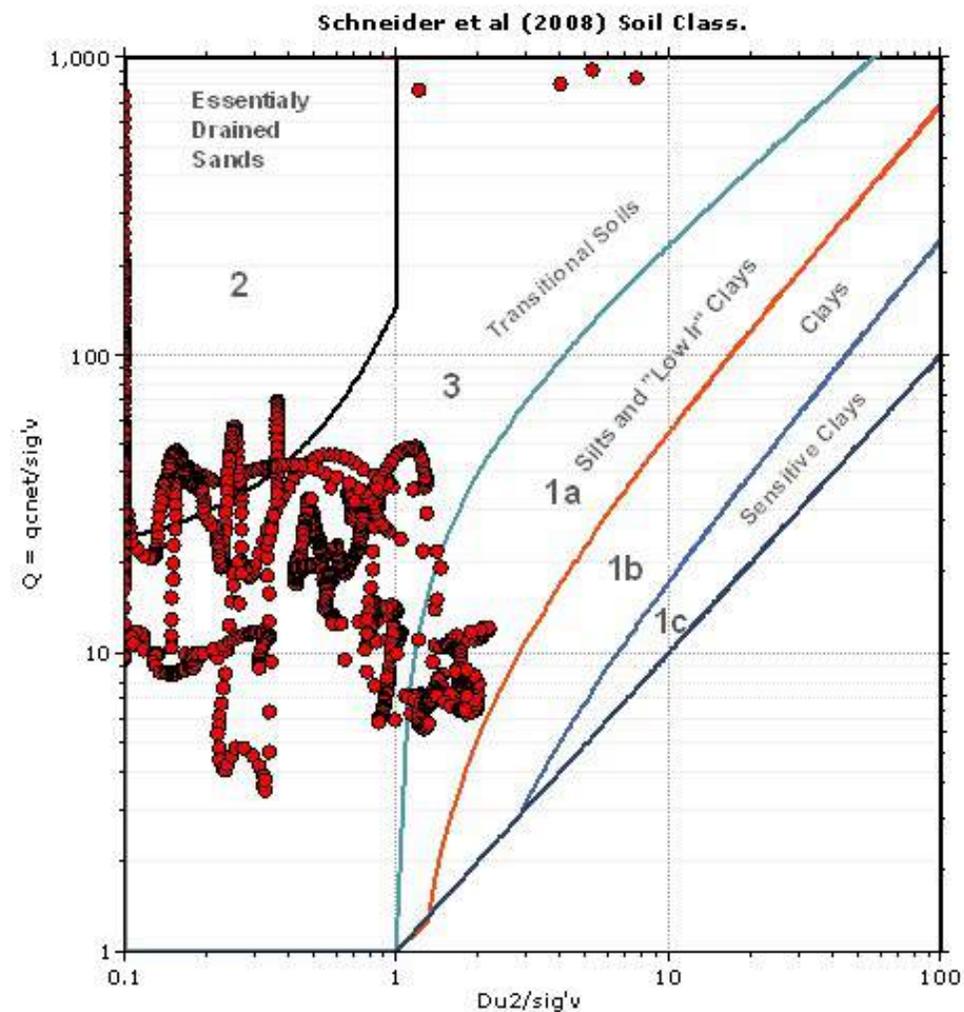
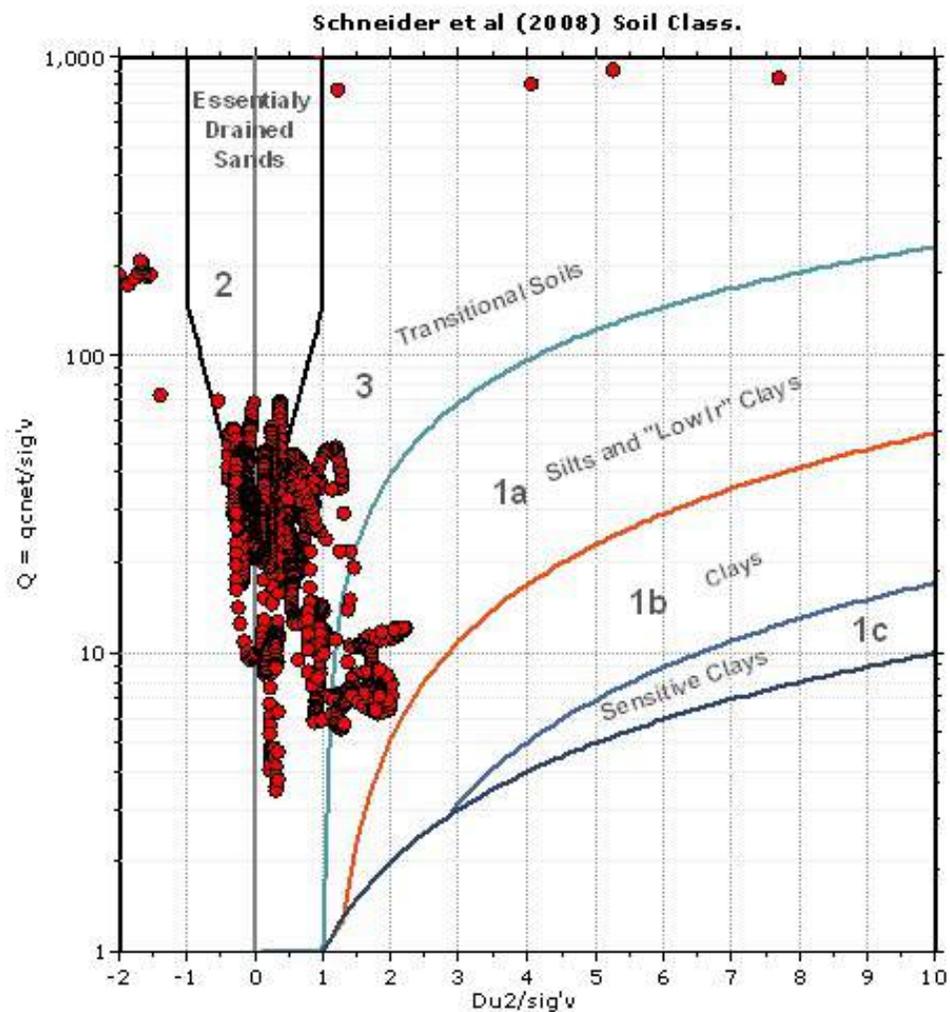
SBTn legend

- | | | |
|---------------------------|------------------------------|-----------------------------------|
| 1. Sensitive fine grained | 4. Clayey silt to silty clay | 7. Gravely sand to sand |
| 2. Organic material | 5. Silty sand to sandy silt | 8. Very stiff sand to clayey sand |
| 3. Clay to silty clay | 6. Clean sand to silty sand | 9. Very stiff fine grained |

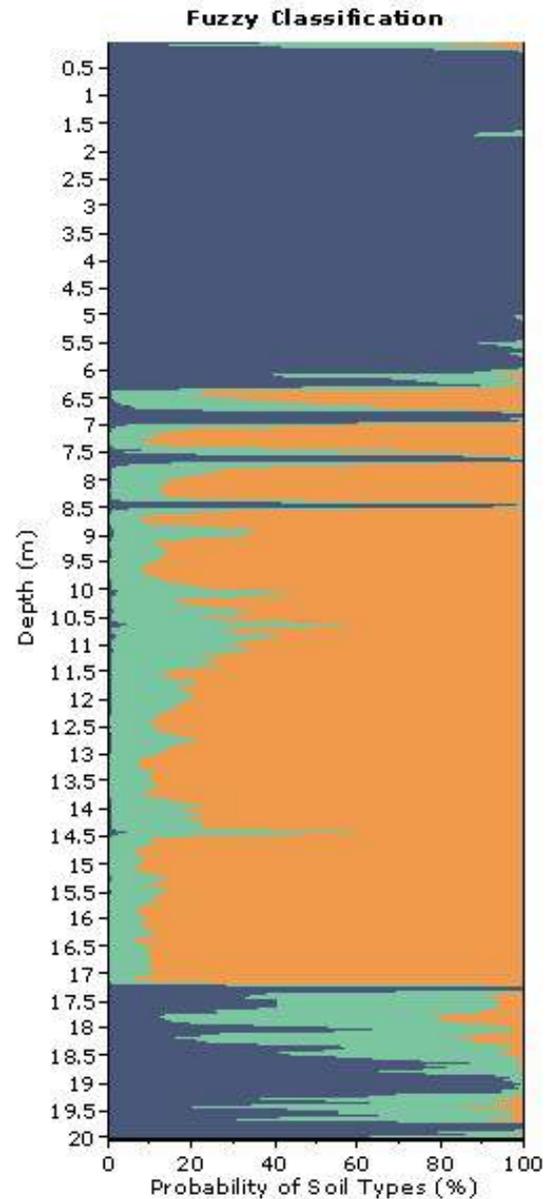
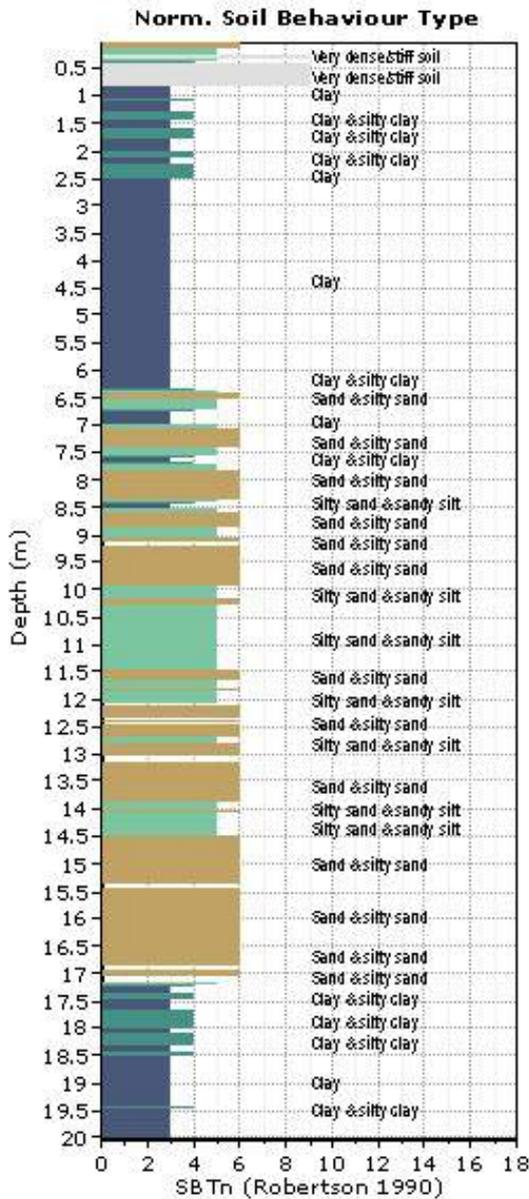
Project:

Location:

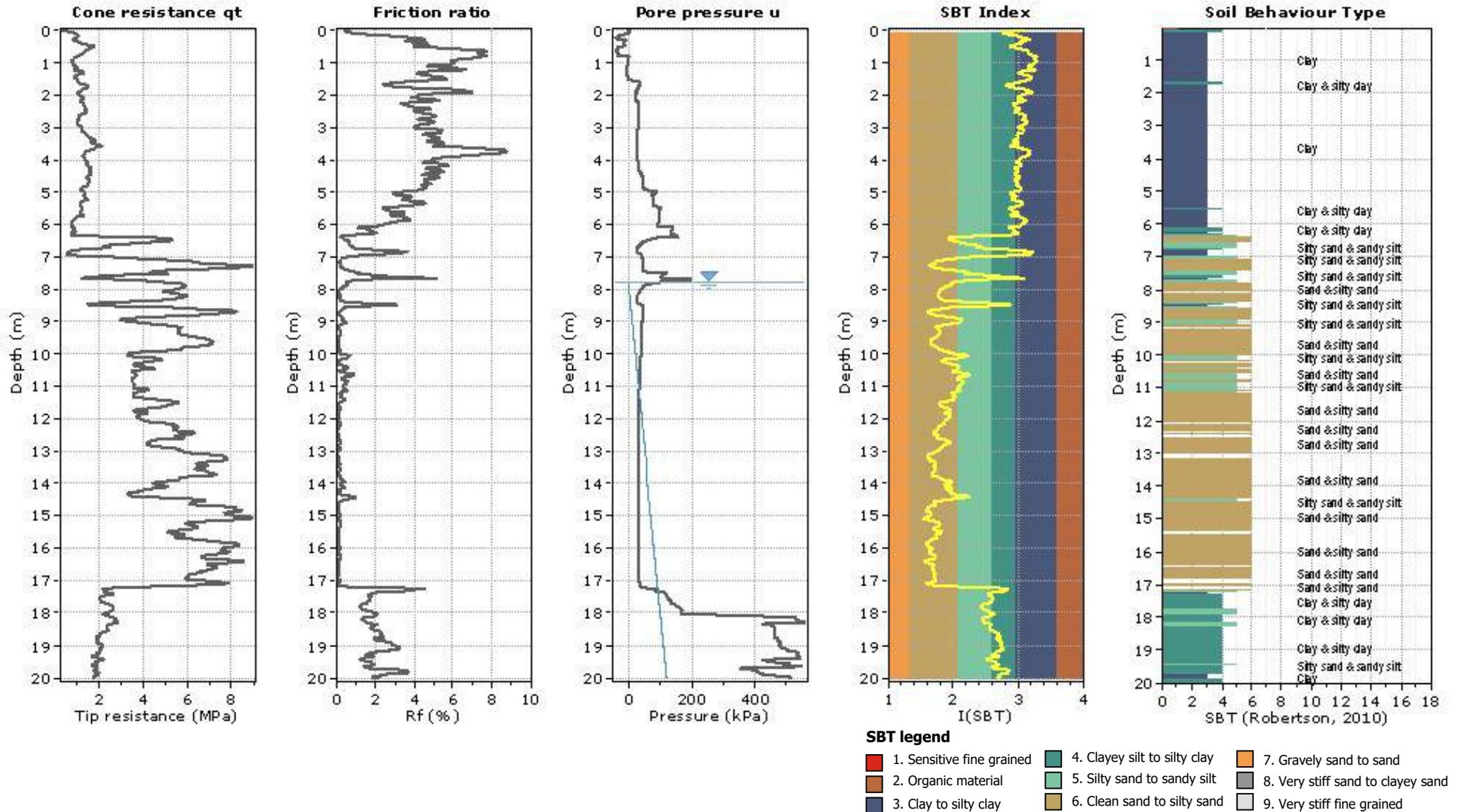
Bq plots (Schneider)



Project:
Location:

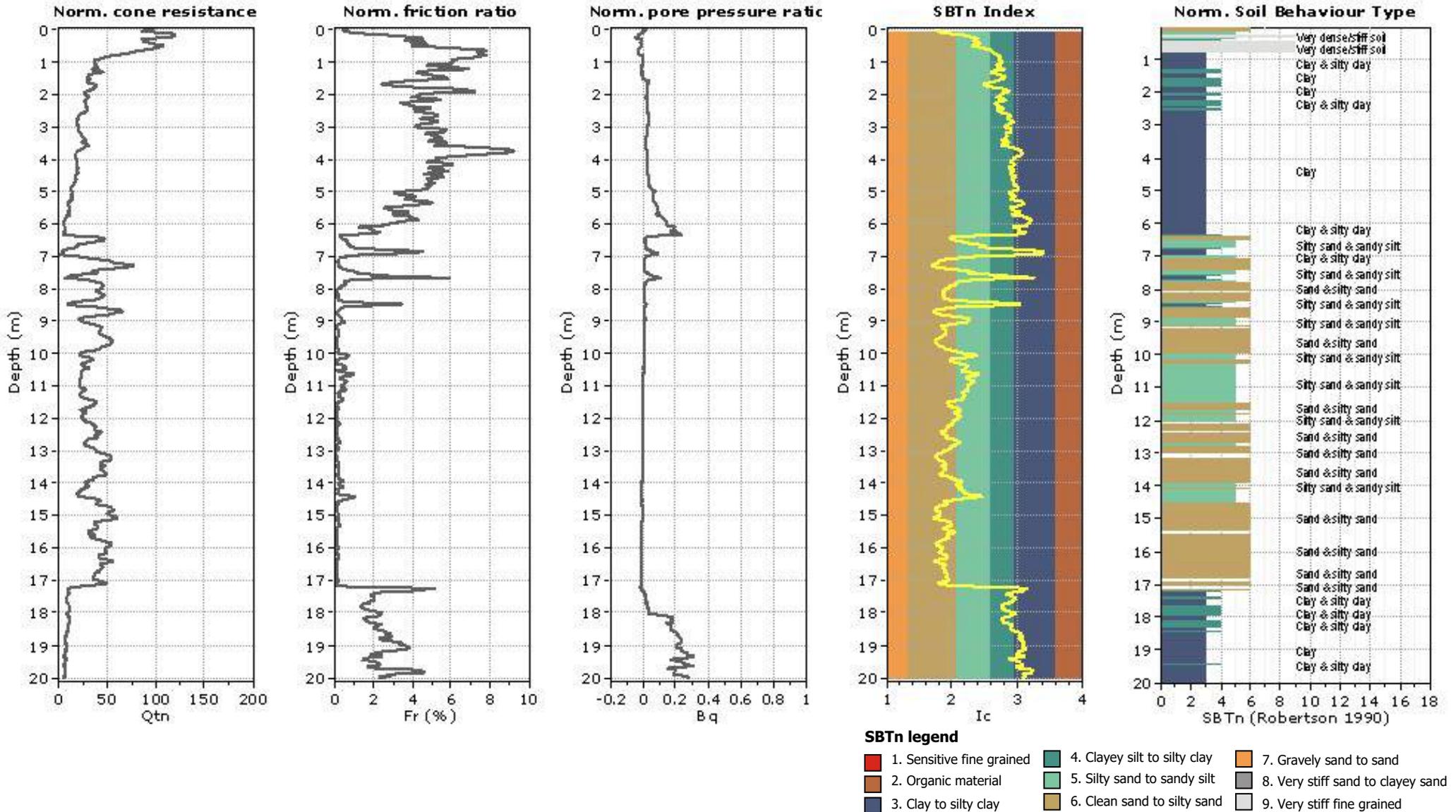


Project:
Location:

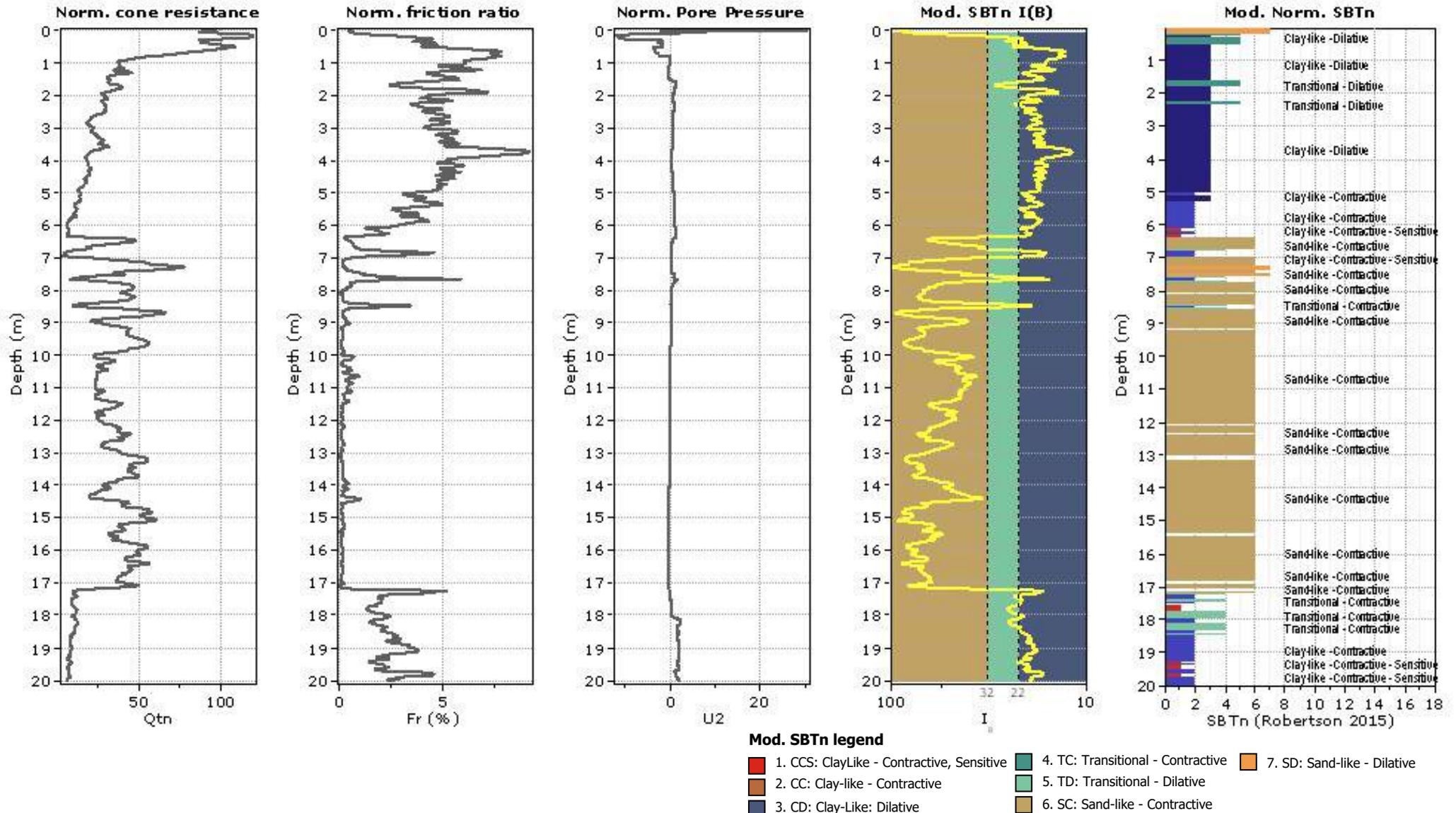


Project:

Location:



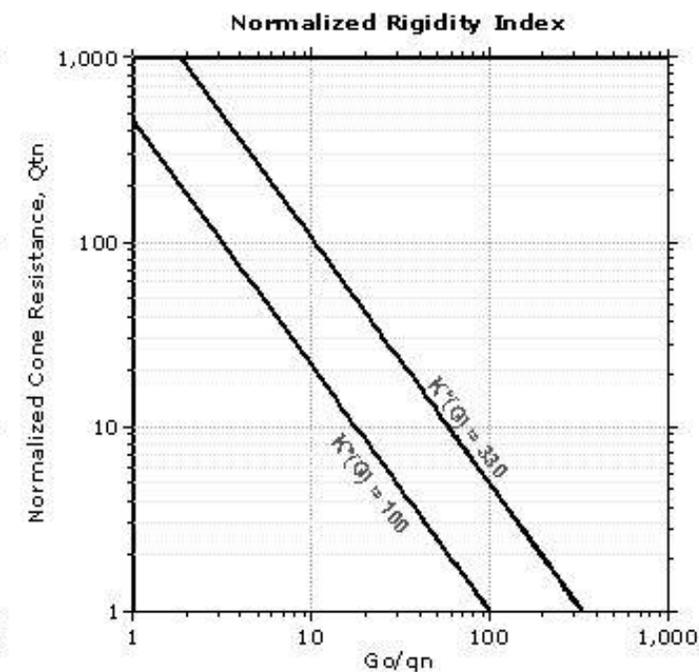
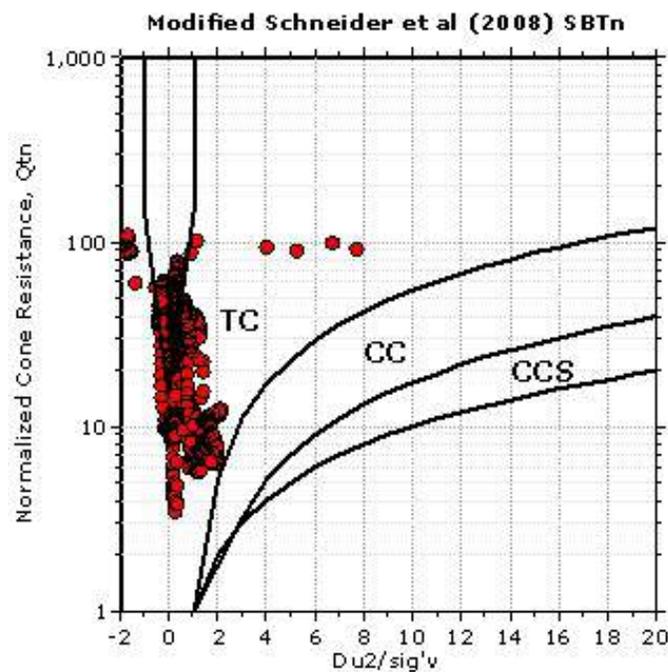
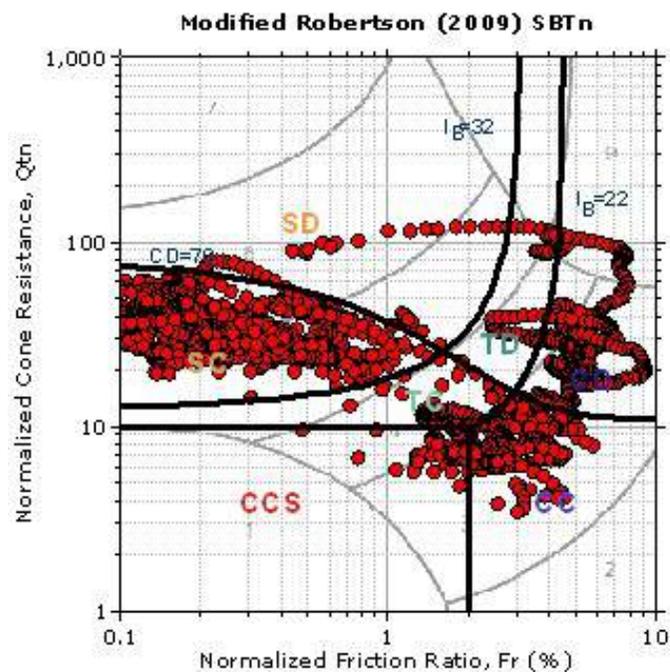
Project:
Location:



Project:

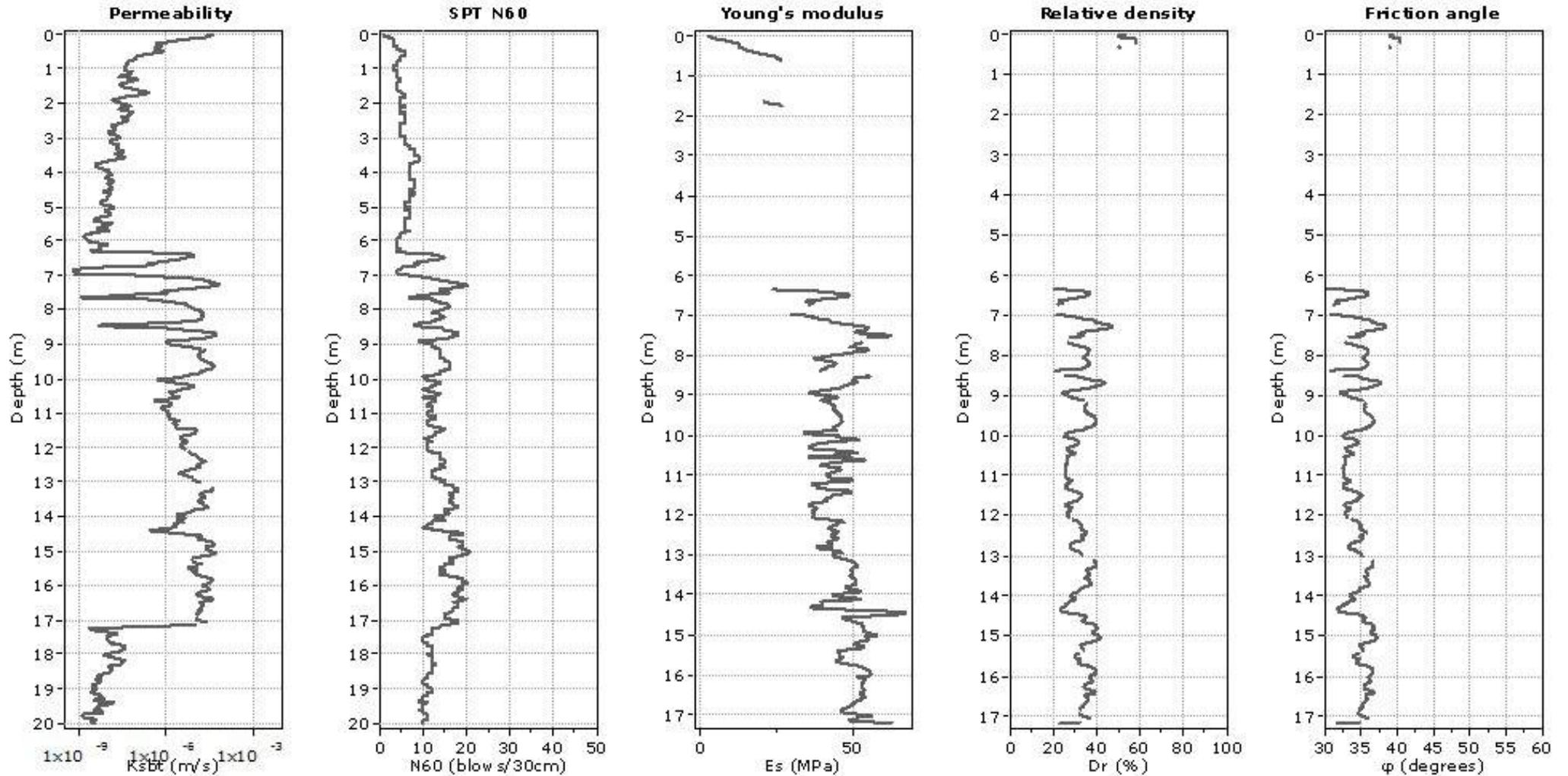
Location:

Updated SBTn plots



- CCS: Clay-like - Contractive - Sensitive
- CC: Clay-like - Contractive
- CD: Clay-like - Dilative
- TC: Transitional - Contractive
- TD: Transitional - Dilative
- SC: Sand-like - Contractive
- SD: Sand-like - Dilative

Project:
Location:



Calculation parameters

Permeability: Based on SBT_n

SPT N_{60} : Based on I_c and q_t

Young's modulus: Based on variable alpha using I_c (Robertson, 2009)

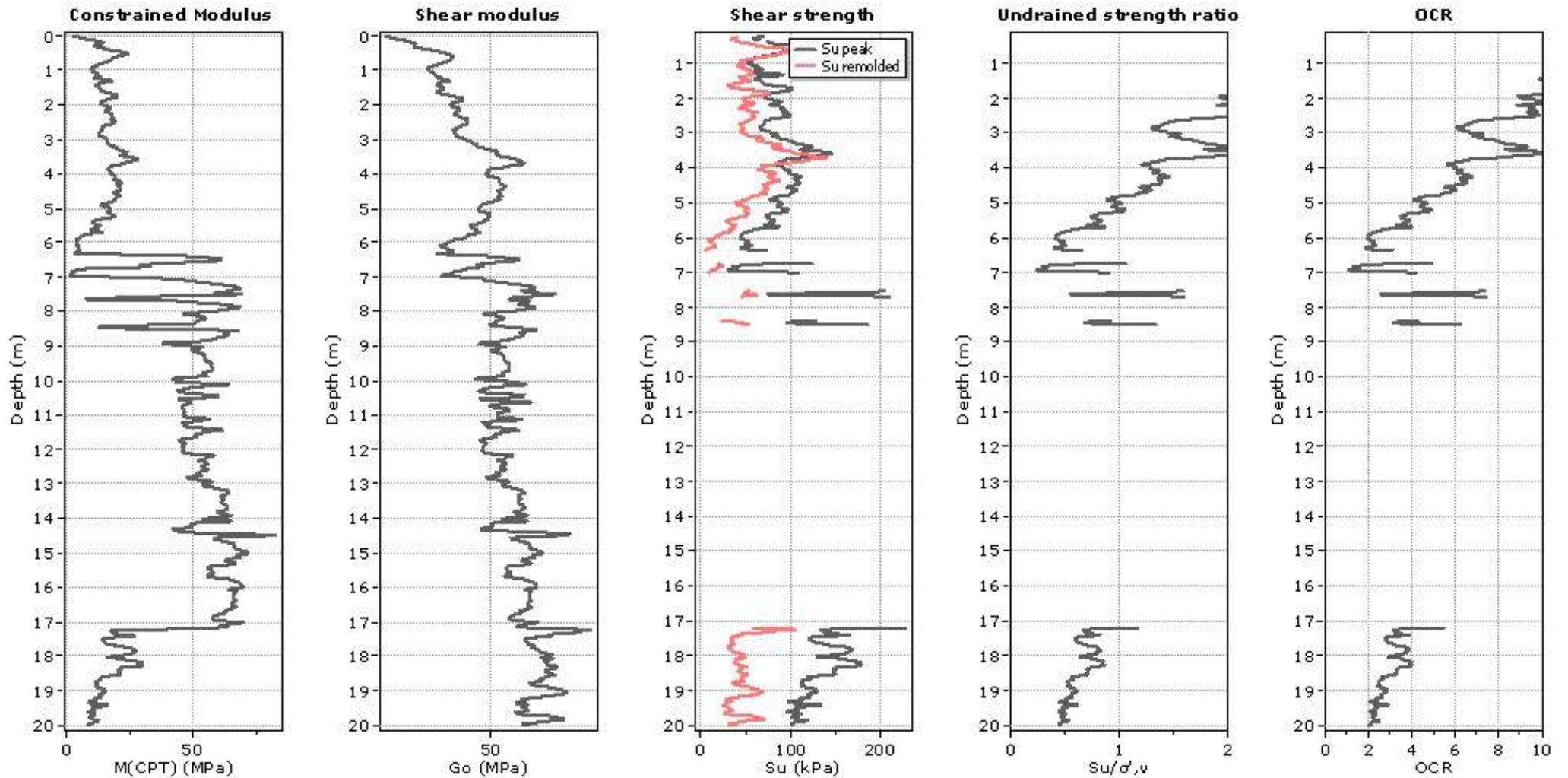
Relative density constant, C_{Dr} : 350.0

Phi: Based on Kulhavy & Mayne (1990)

● User defined estimation data

Project:

Location:



Calculation parameters

Constrained modulus: Based on variable *alpha* using I_c and Q_{tm} (Robertson, 2009)

Go: Based on variable *alpha* using I_c (Robertson, 2009)

Undrained shear strength cone factor for clays, N_{kt} : 14

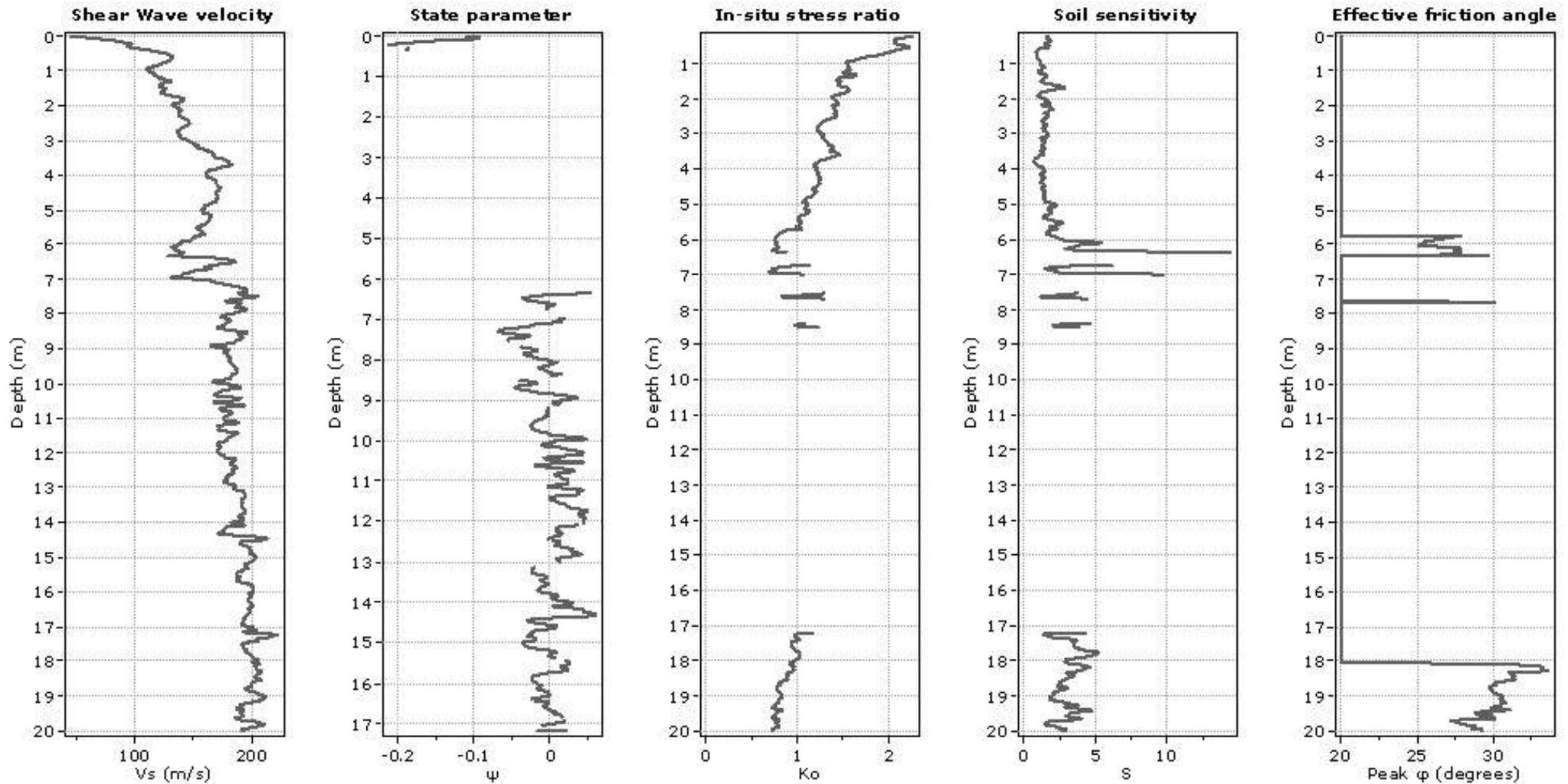
OCR factor for clays, N_{kt} : 0.33

● User defined estimation data

● Flat Dilatometer Test data

Project:

Location:



Calculation parameters

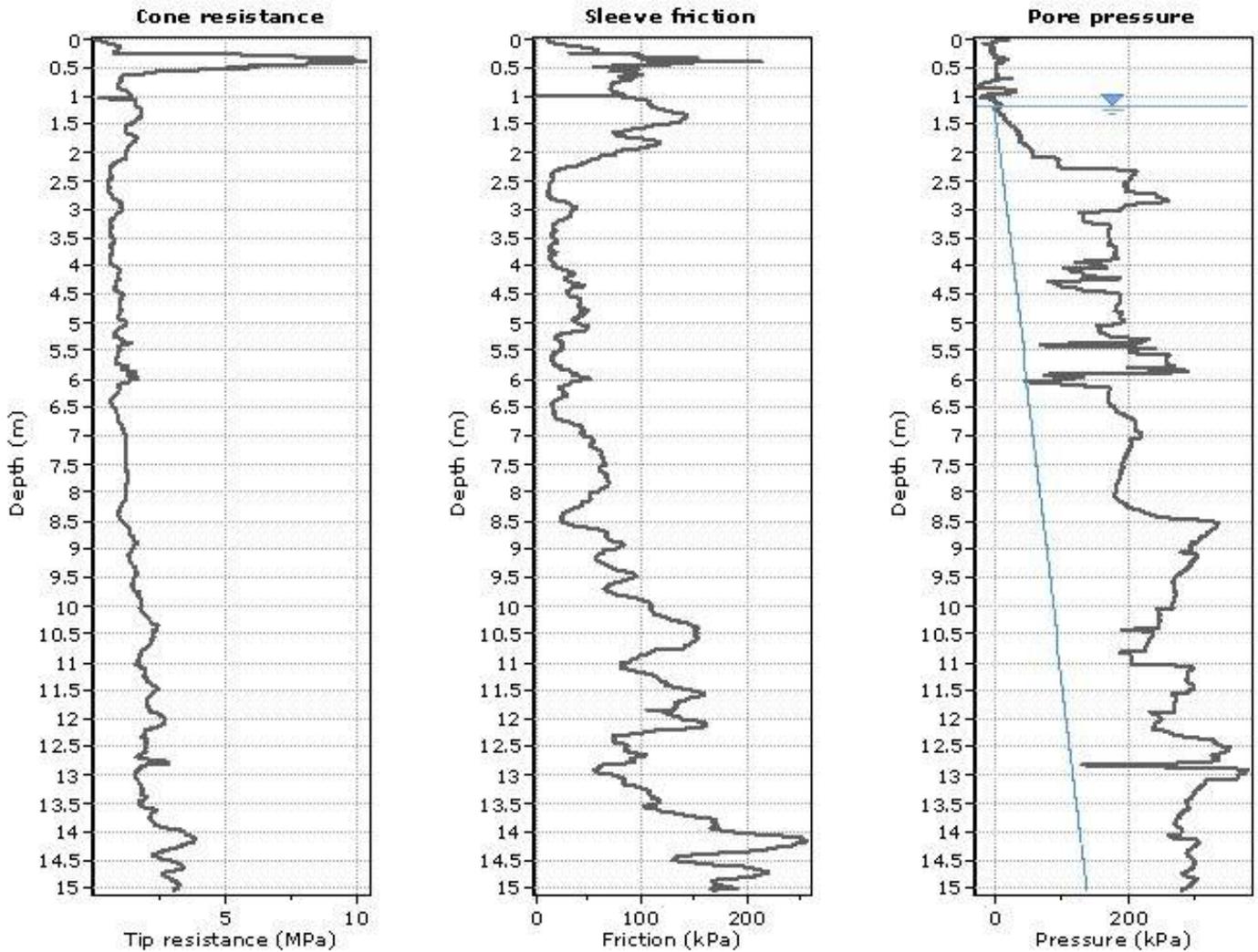
Soil Sensitivity factor, N_s : 7.00

—●— User defined estimation data

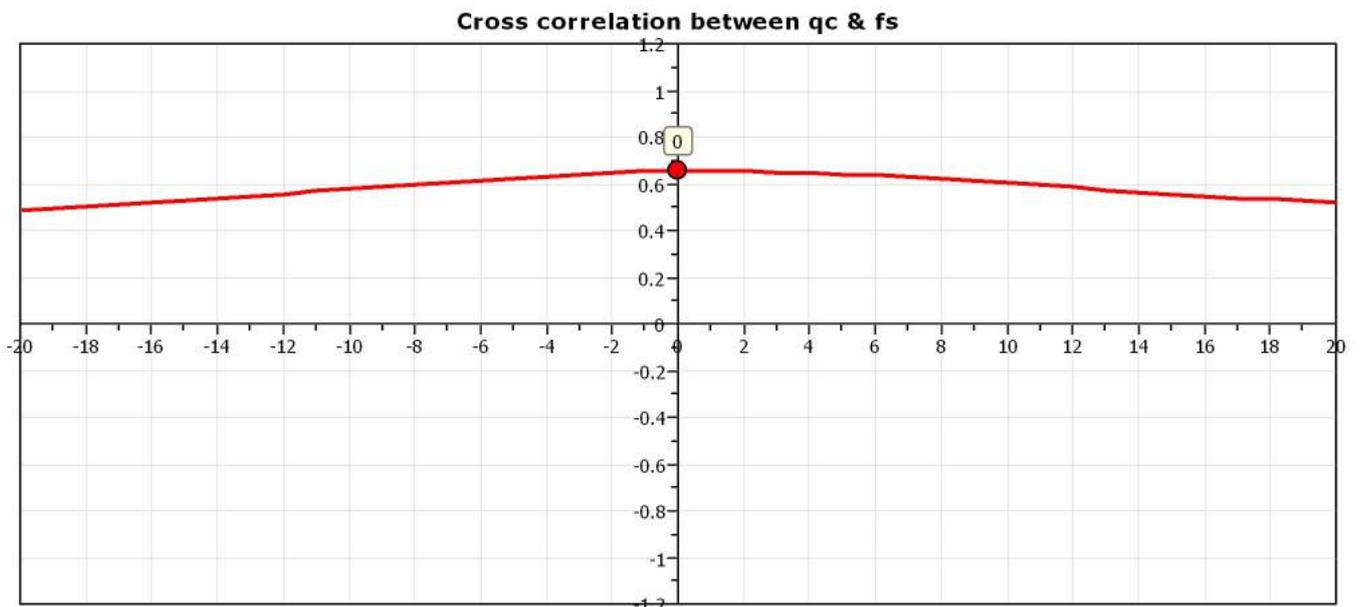
034033P206

Project:

Location:



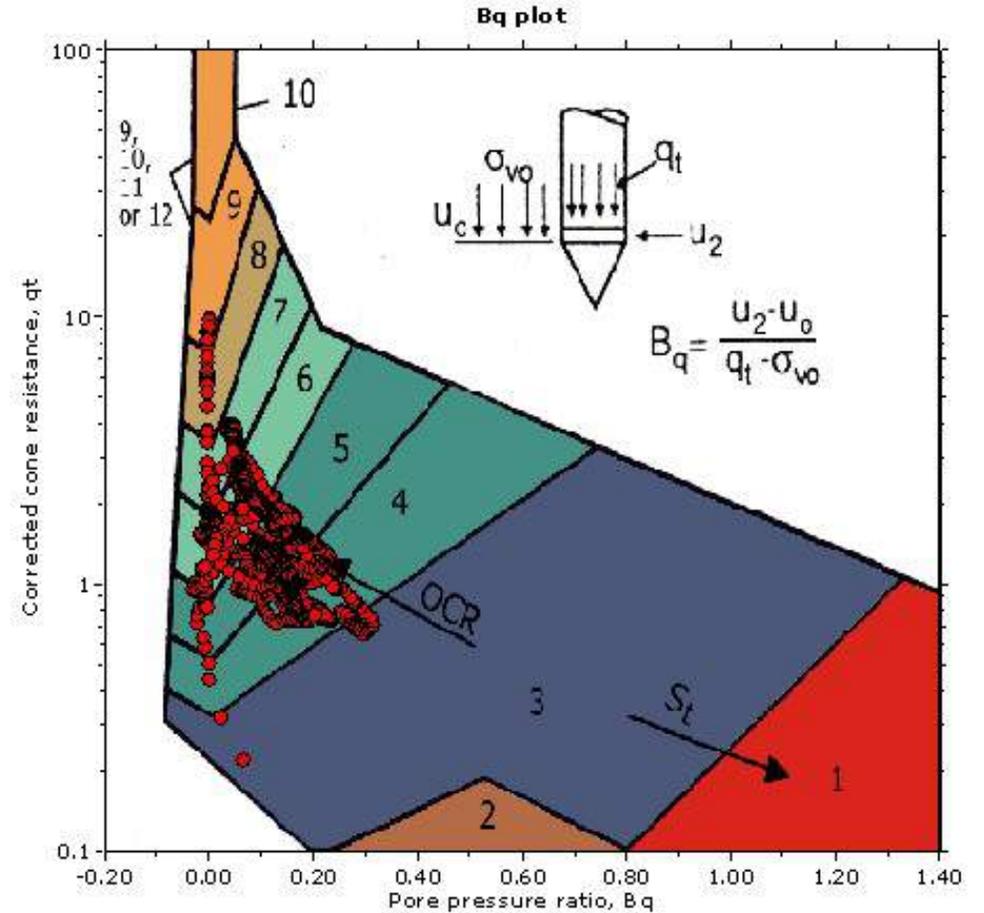
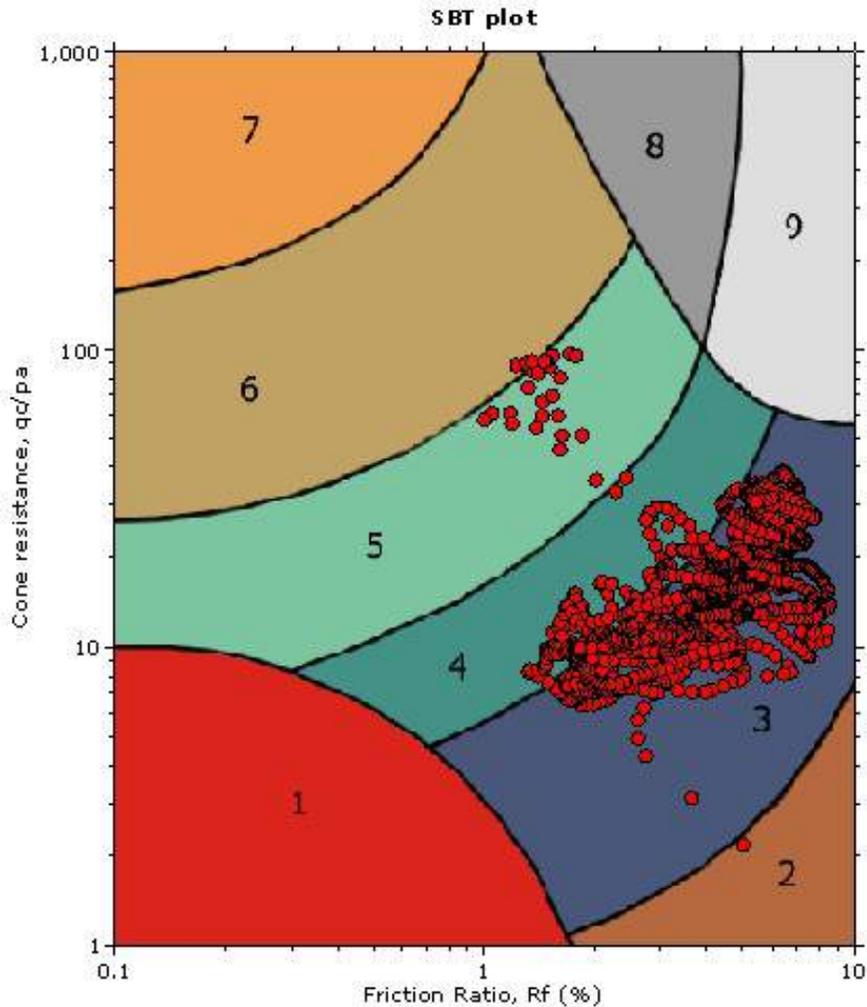
The plot below presents the cross correlation coefficient between the raw q_c and f_s values (as measured on the field). X axes presents the lag distance (one lag is the distance between two successive CPT measurements).



Project:

Location:

SBT - Bq plots



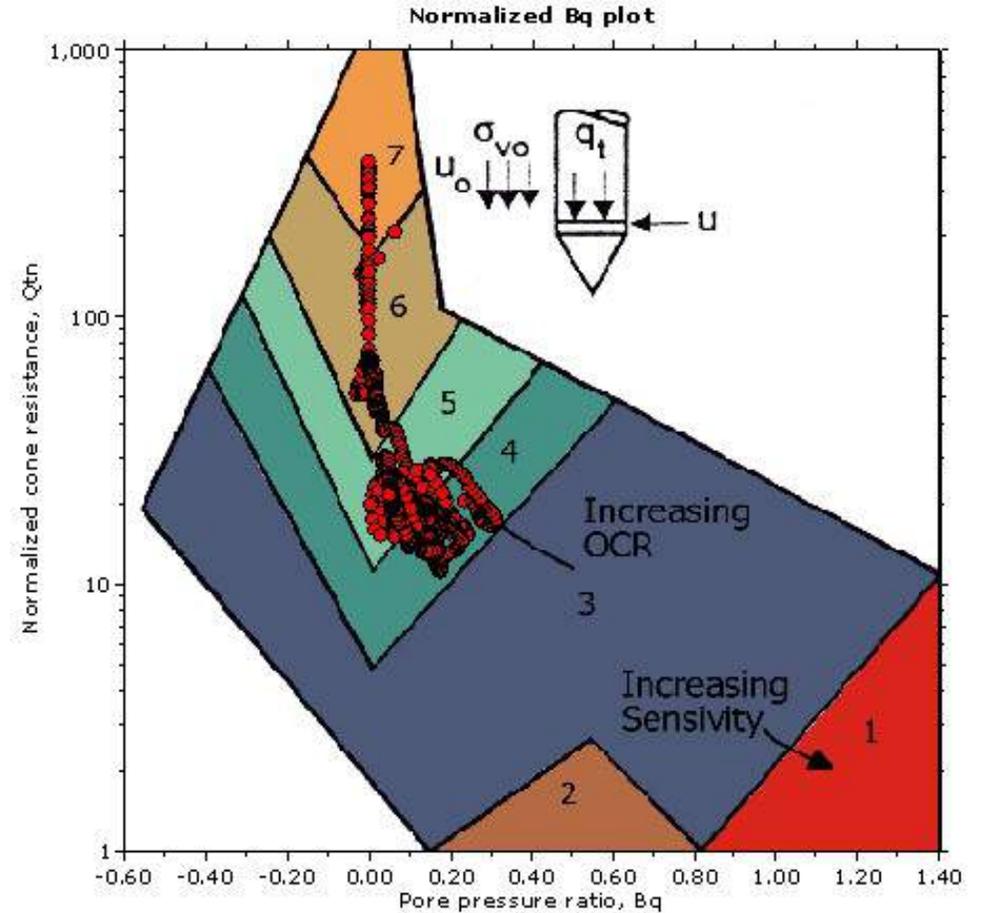
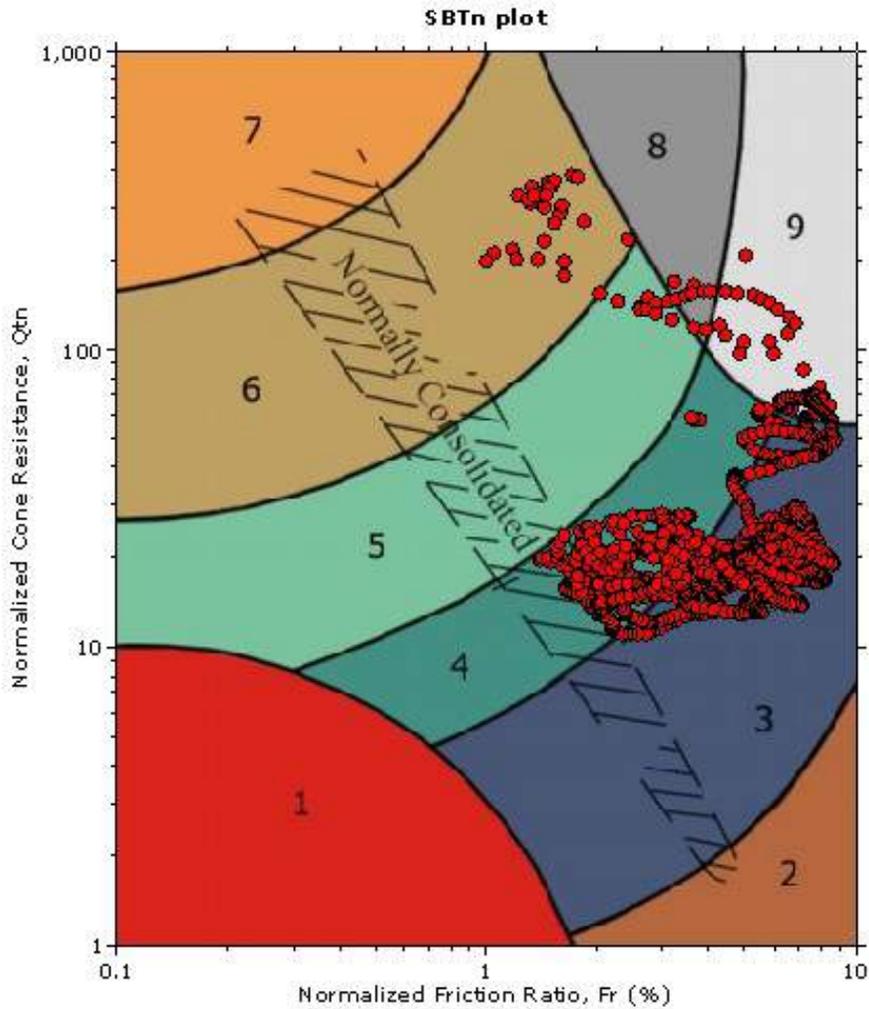
SBT legend

- | | | |
|---------------------------|------------------------------|-----------------------------------|
| 1. Sensitive fine grained | 4. Clayey silt to silty clay | 7. Gravely sand to sand |
| 2. Organic material | 5. Silty sand to sandy silt | 8. Very stiff sand to clayey sand |
| 3. Clay to silty clay | 6. Clean sand to silty sand | 9. Very stiff fine grained |

Project:

Location:

SBT - Bq plots (normalized)



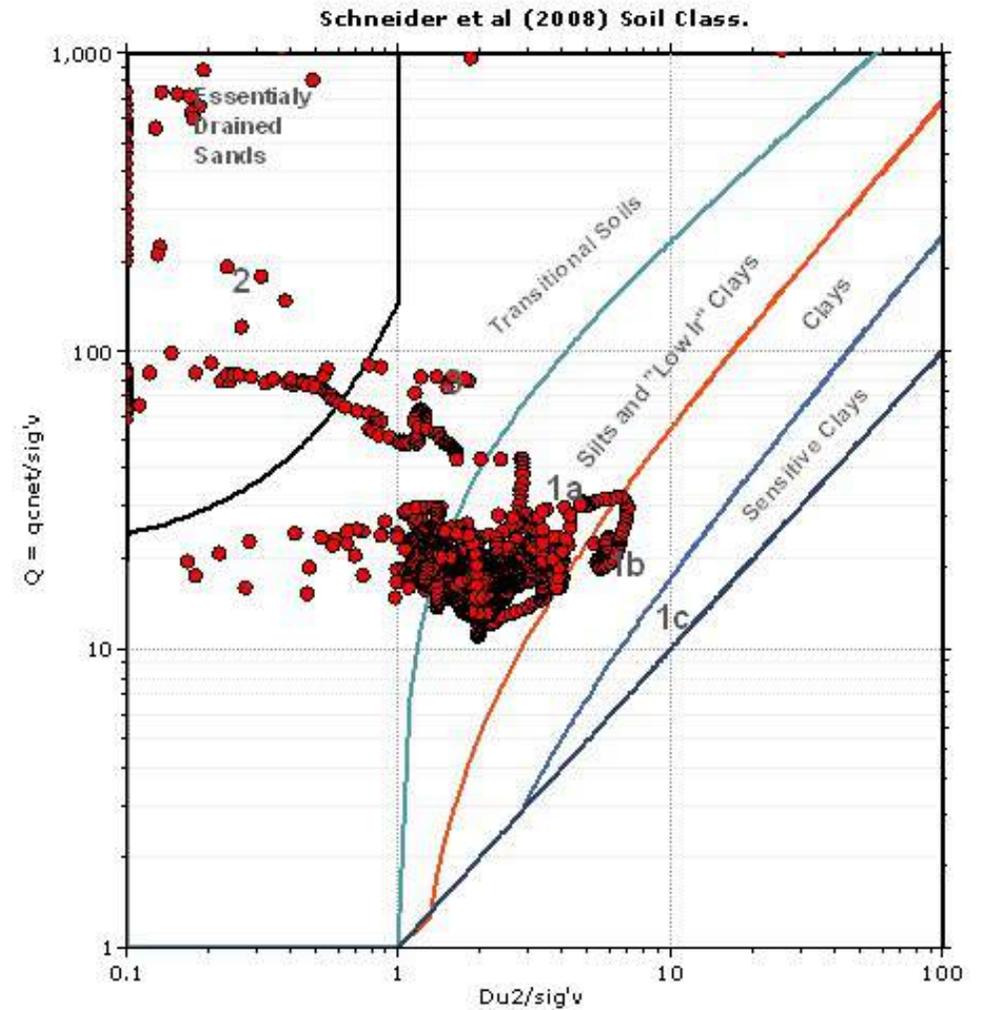
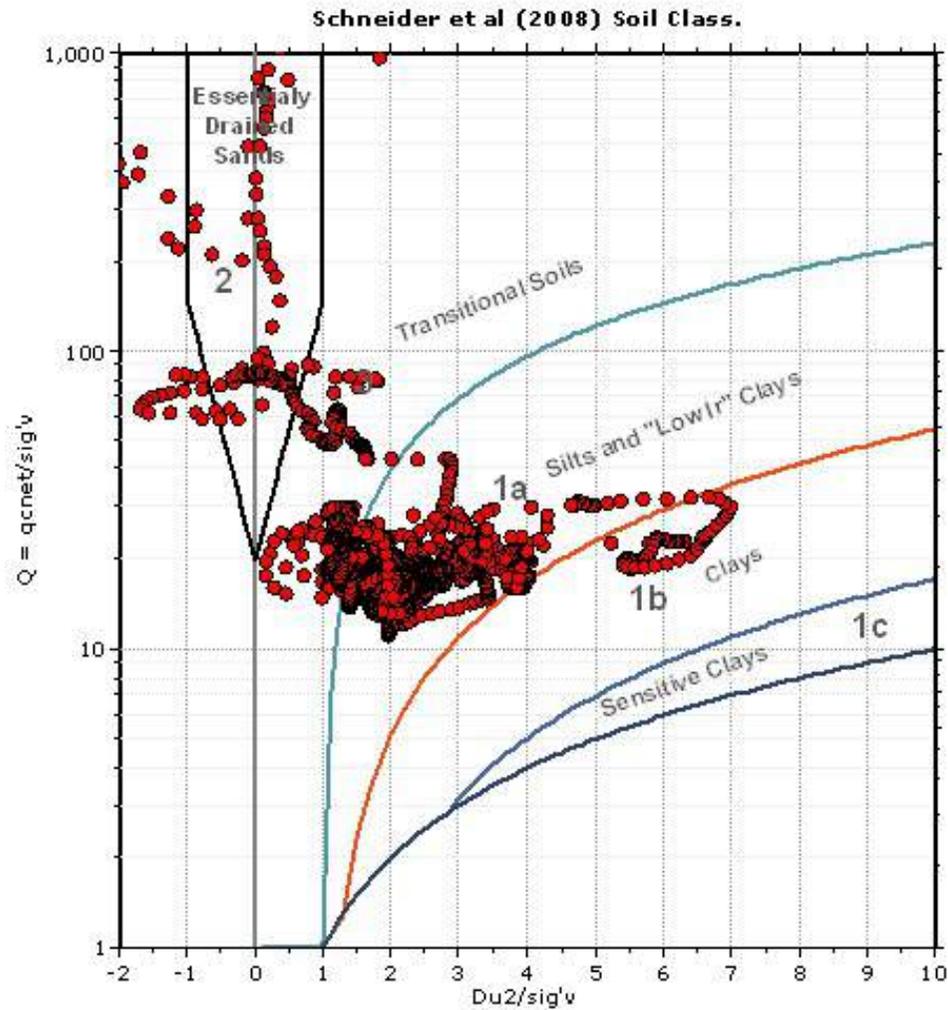
SBTn legend

- | | | |
|---------------------------|------------------------------|-----------------------------------|
| 1. Sensitive fine grained | 4. Clayey silt to silty clay | 7. Gravely sand to sand |
| 2. Organic material | 5. Silty sand to sandy silt | 8. Very stiff sand to clayey sand |
| 3. Clay to silty clay | 6. Clean sand to silty sand | 9. Very stiff fine grained |

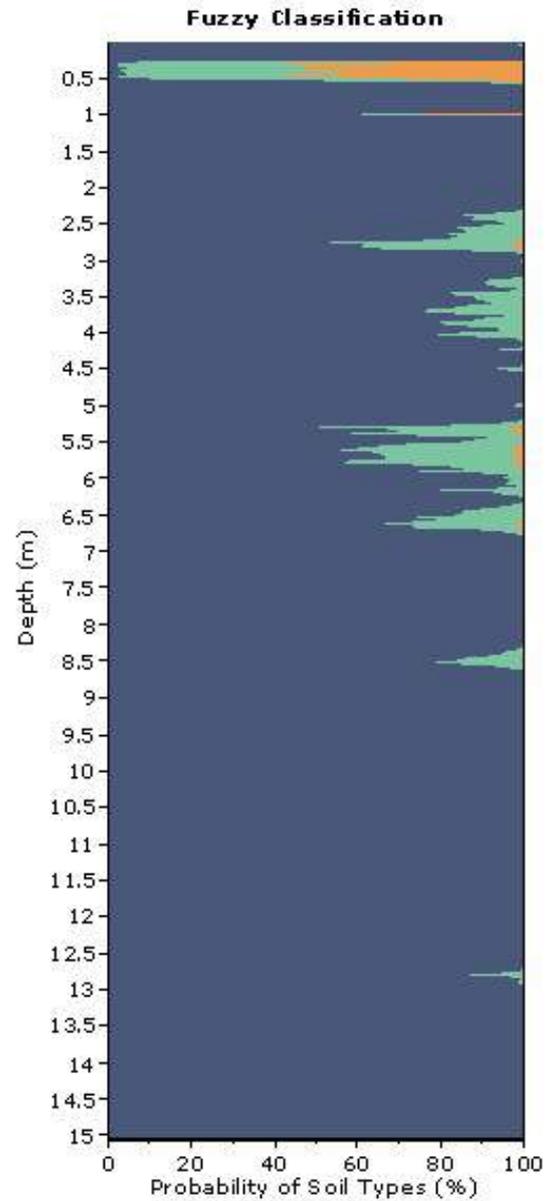
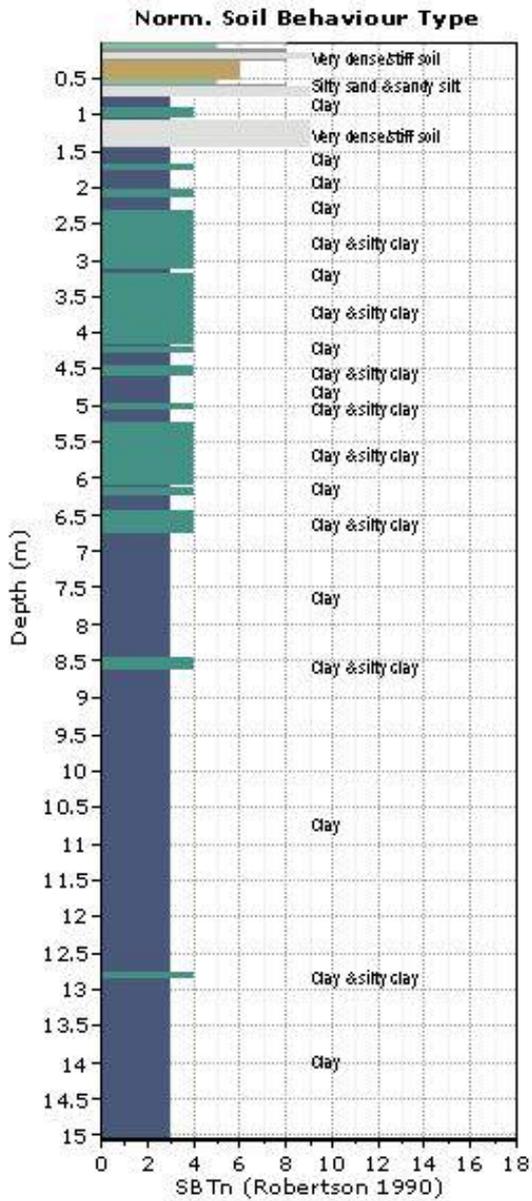
Project:

Location:

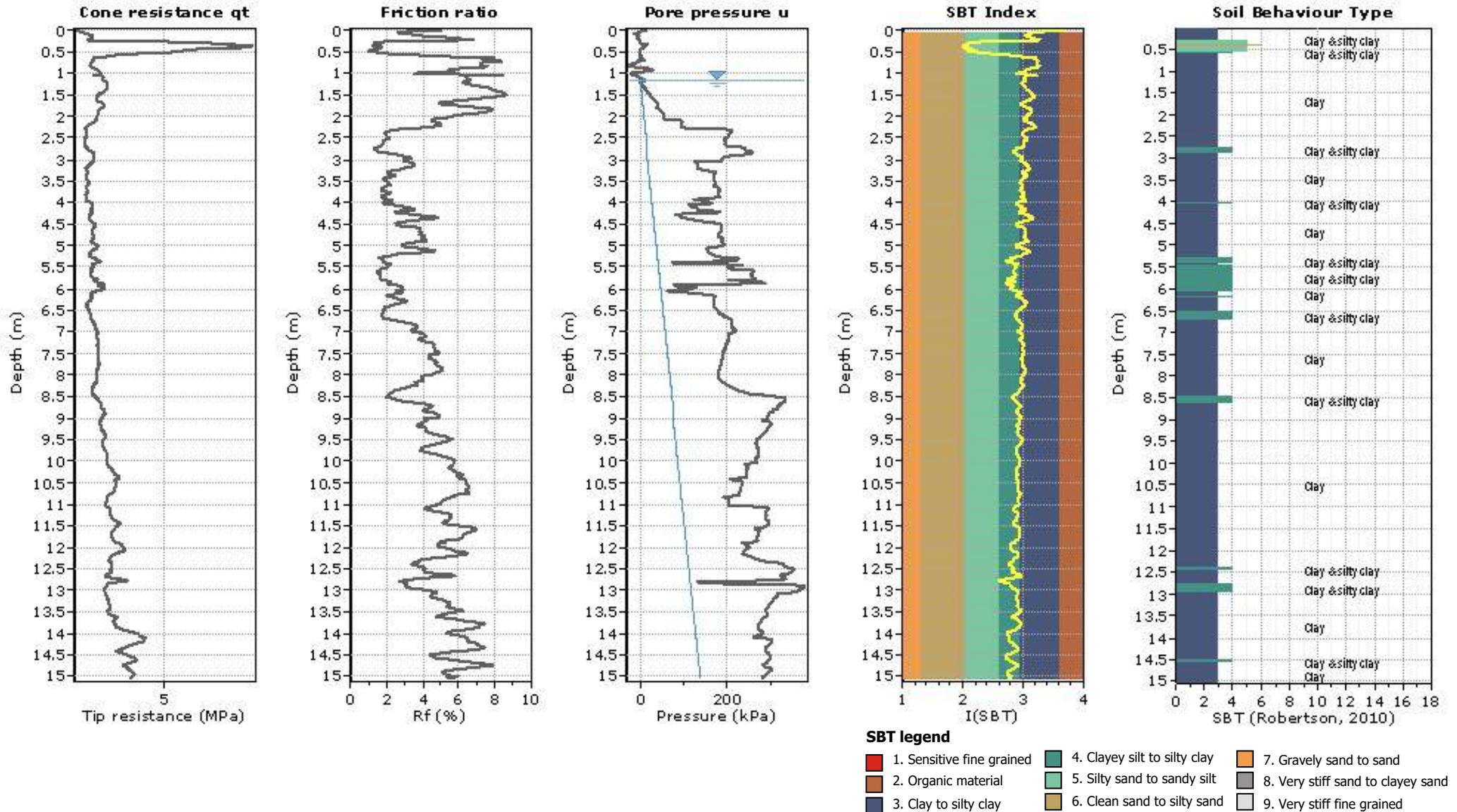
Bq plots (Schneider)



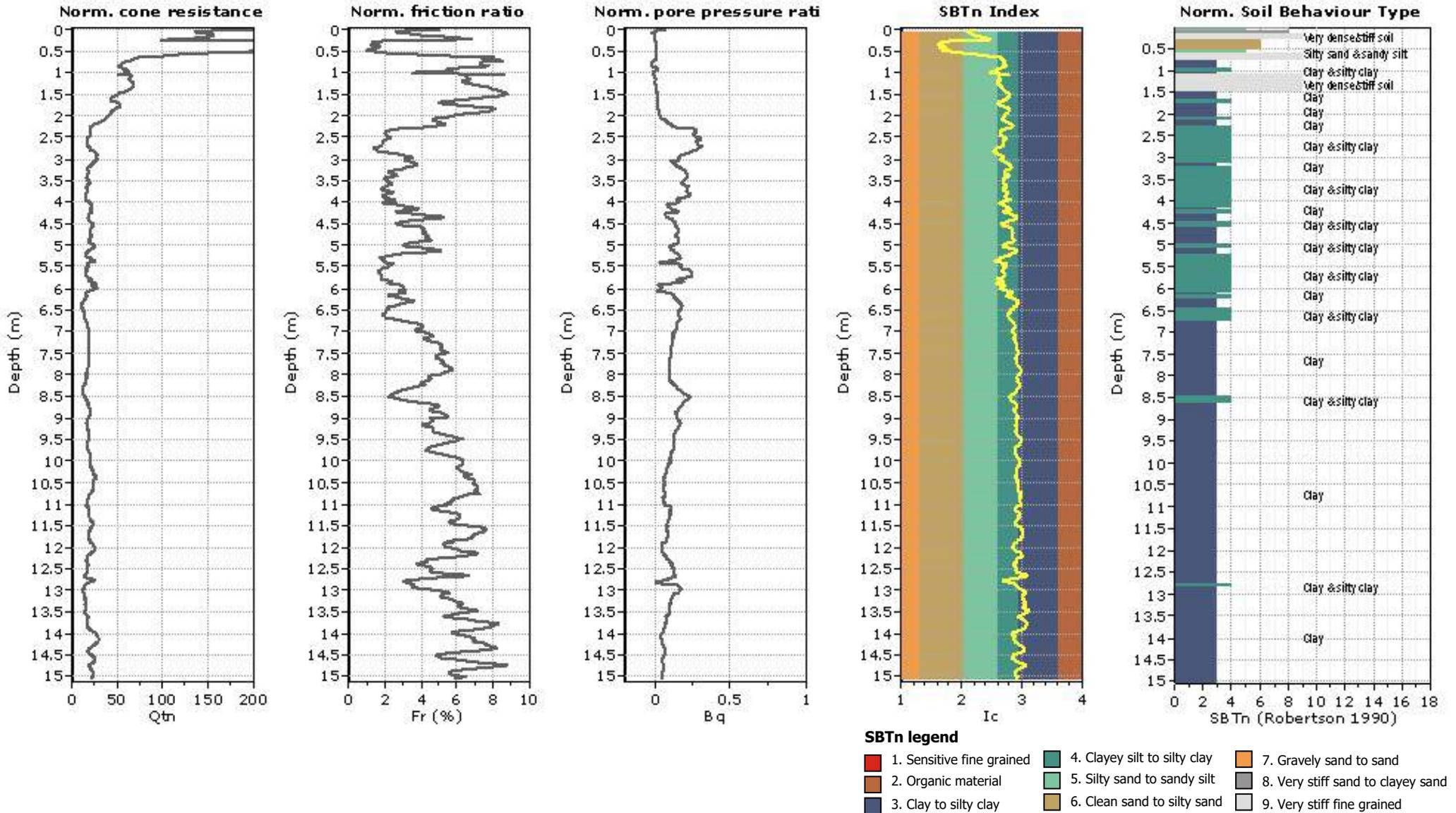
Project:
Location:



Project:
Location:

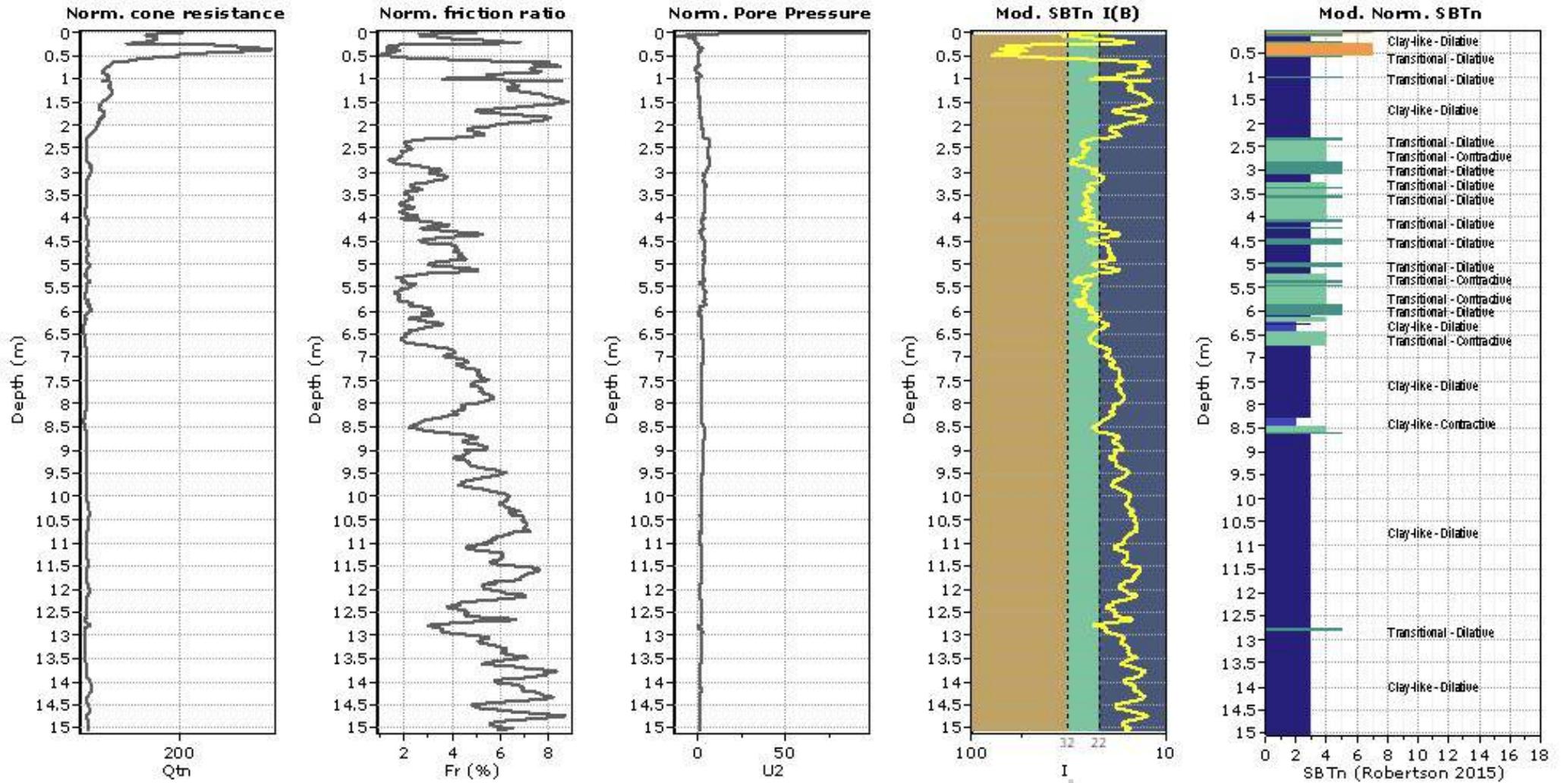


Project:
Location:



Project:

Location:



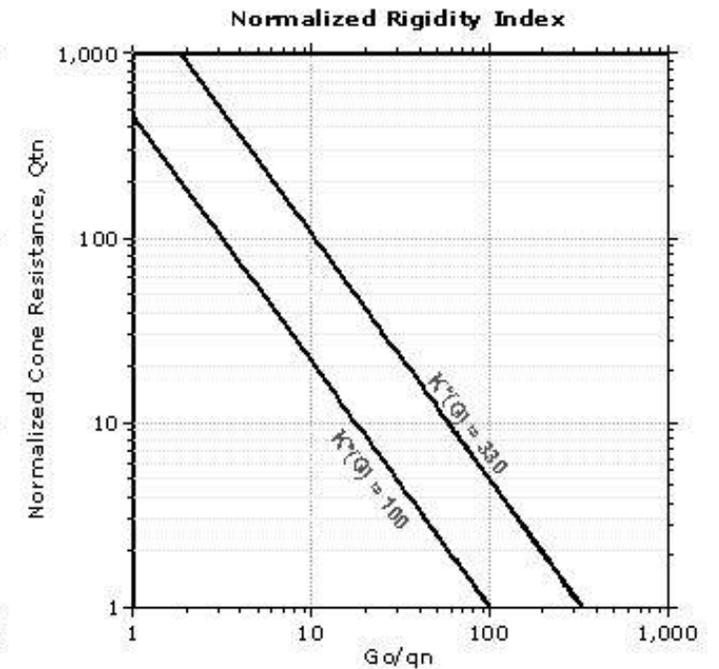
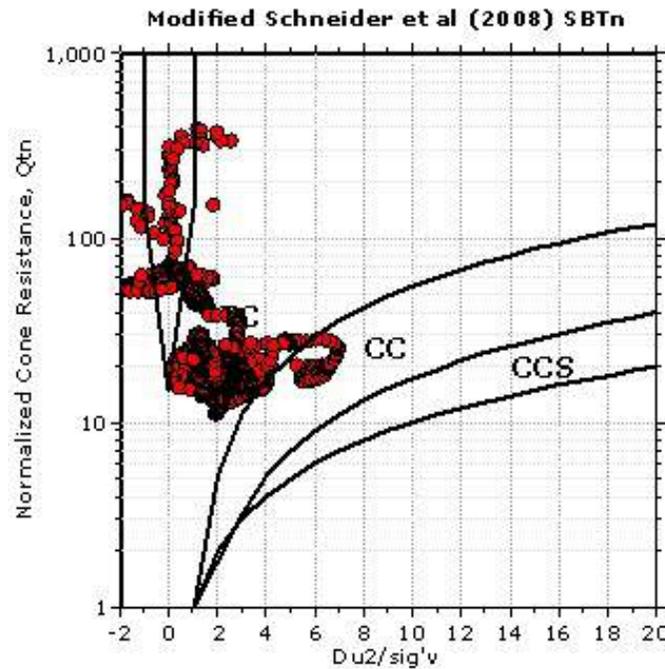
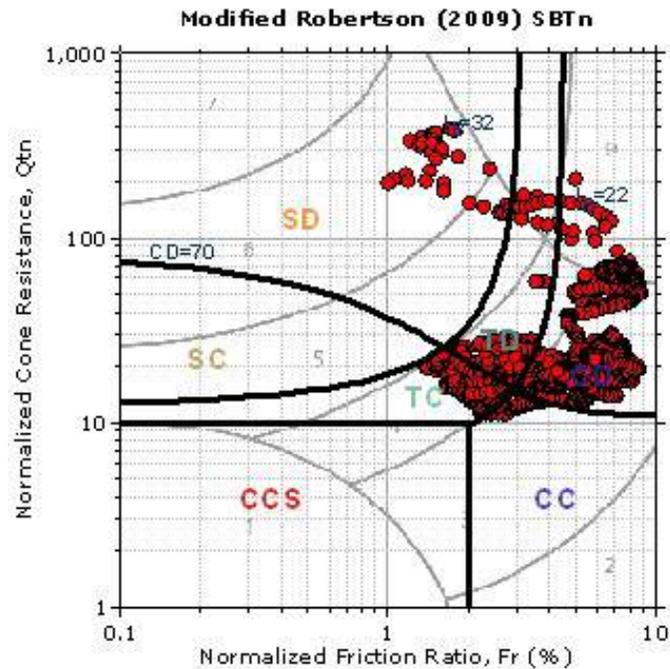
Mod. SBTn legend

- | | | |
|--|--|---|
| ■ 1. CCS: ClayLike - Contractive, Sensitive | ■ 4. TC: Transitional - Contractive | ■ 7. SD: Sand-like - Dilative |
| ■ 2. CC: Clay-like - Contractive | ■ 5. TD: Transitional - Dilative | |
| ■ 3. CD: Clay-Like: Dilative | ■ 6. SC: Sand-like - Contractive | |

Project:

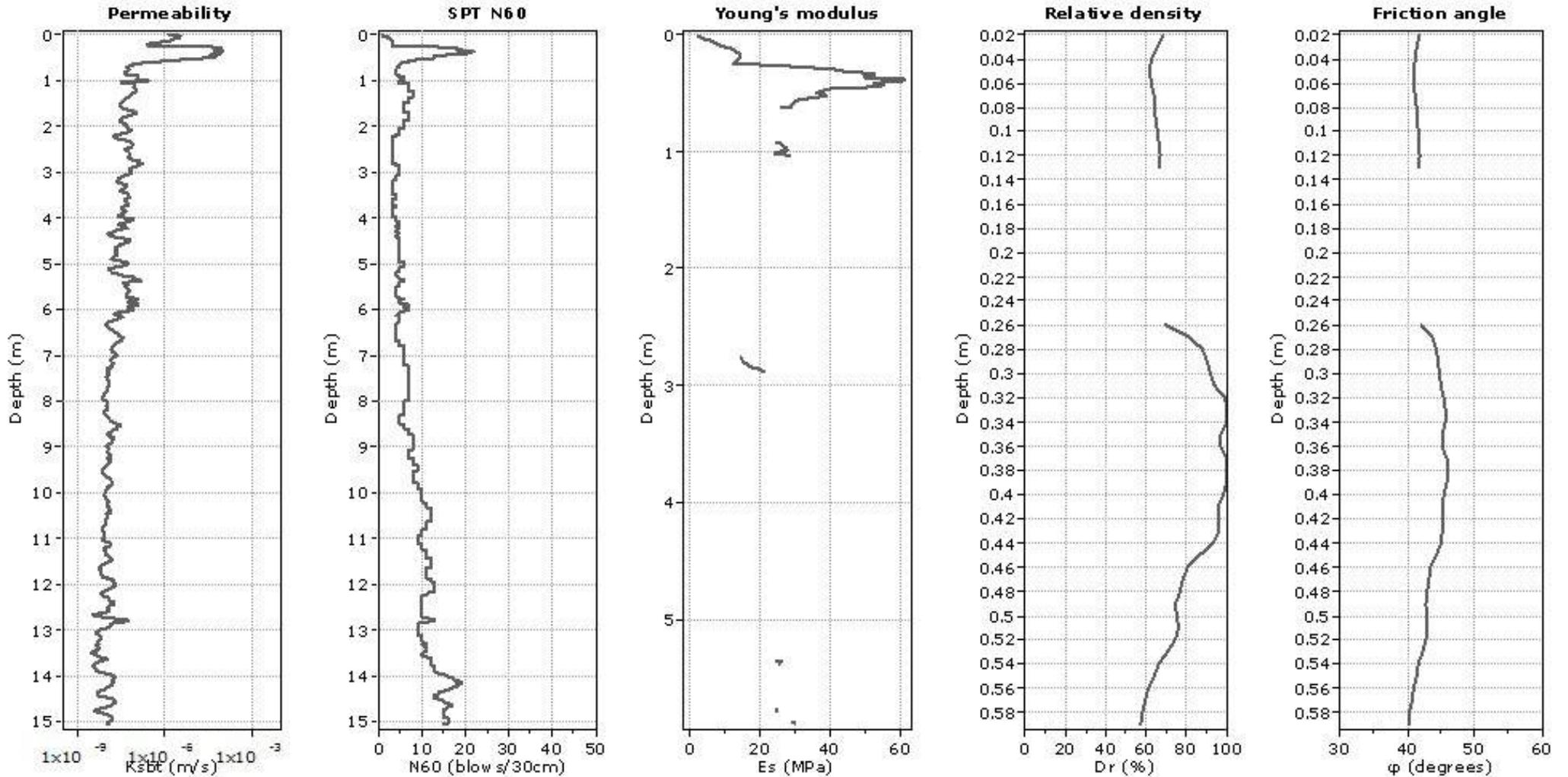
Location:

Updated SBTn plots



- CCS: Clay-like - Contractive - Sensitive
- CC: Clay-like - Contractive
- CD: Clay-like - Dilative
- TC: Transitional - Contractive
- TD: Transitional - Dilative
- SC: Sand-like - Contractive
- SD: Sand-like - Dilative

Project:
Location:



Calculation parameters

Permeability: Based on SBT_n

SPT N_{60} : Based on I_c and q_t

Young's modulus: Based on variable alpha using I_c (Robertson, 2009)

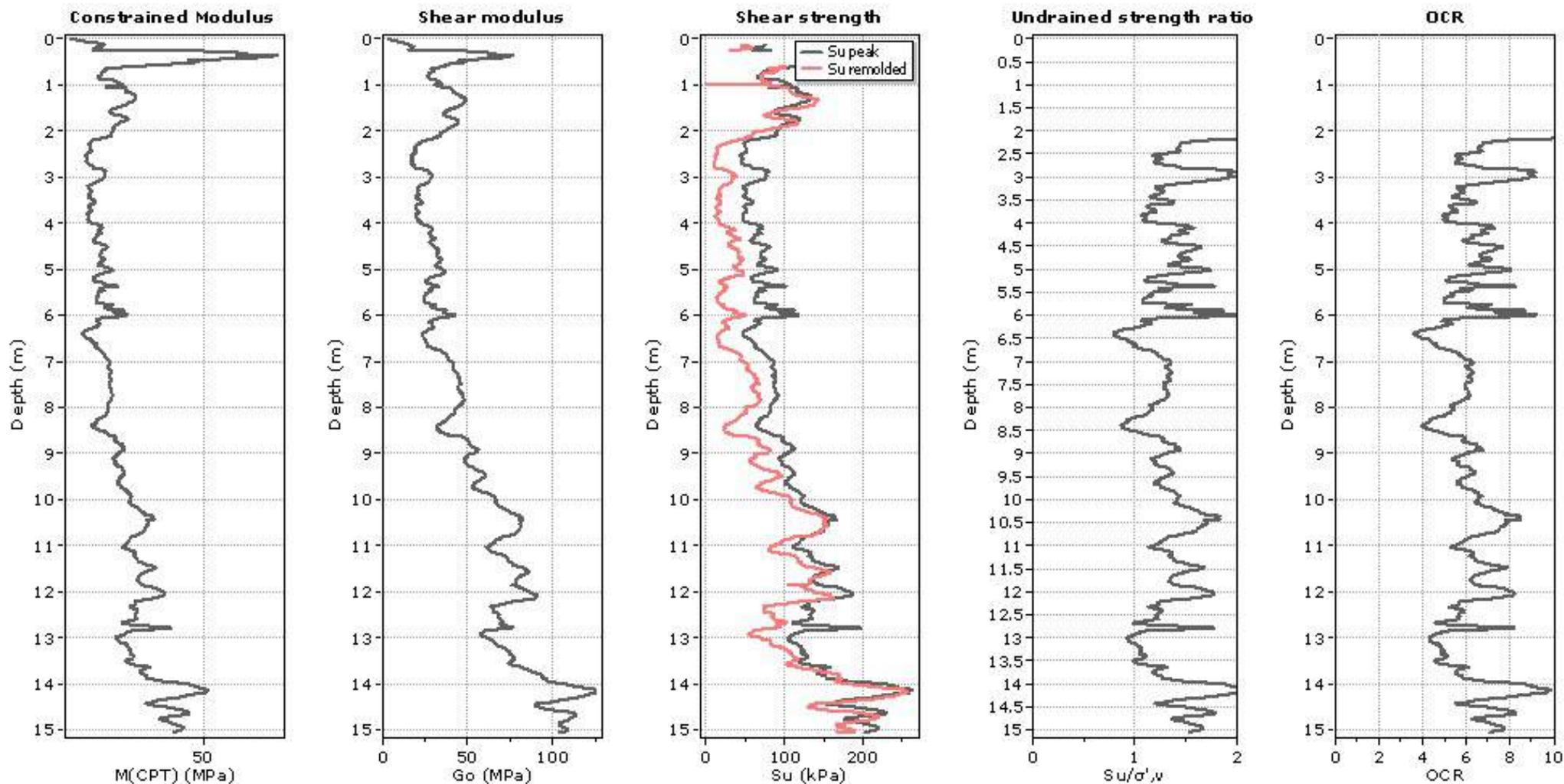
Relative density constant, C_D : 350.0

Phi: Based on Kulhavy & Mayne (1990)

● — User defined estimation data

Project:

Location:



Calculation parameters

Constrained modulus: Based on variable α using I_c and Q_{tm} (Robertson, 2009)

Go: Based on variable α using I_c (Robertson, 2009)

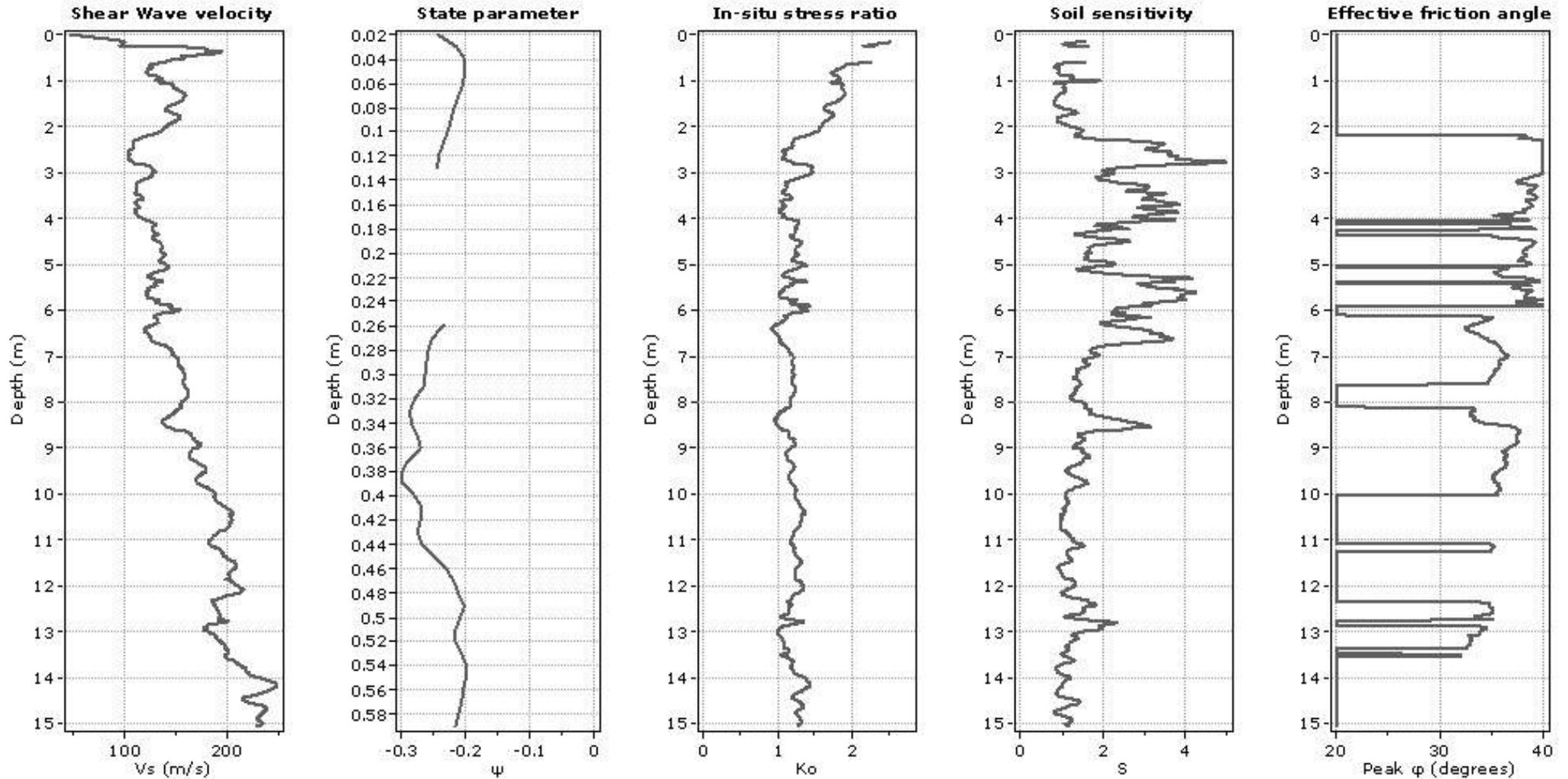
Undrained shear strength cone factor for clays, N_{kt} : 14

OCR factor for clays, N_{kt} : 0.33

● User defined estimation data

● Flat Dilatometer Test data

Project:
Location:



Calculation parameters

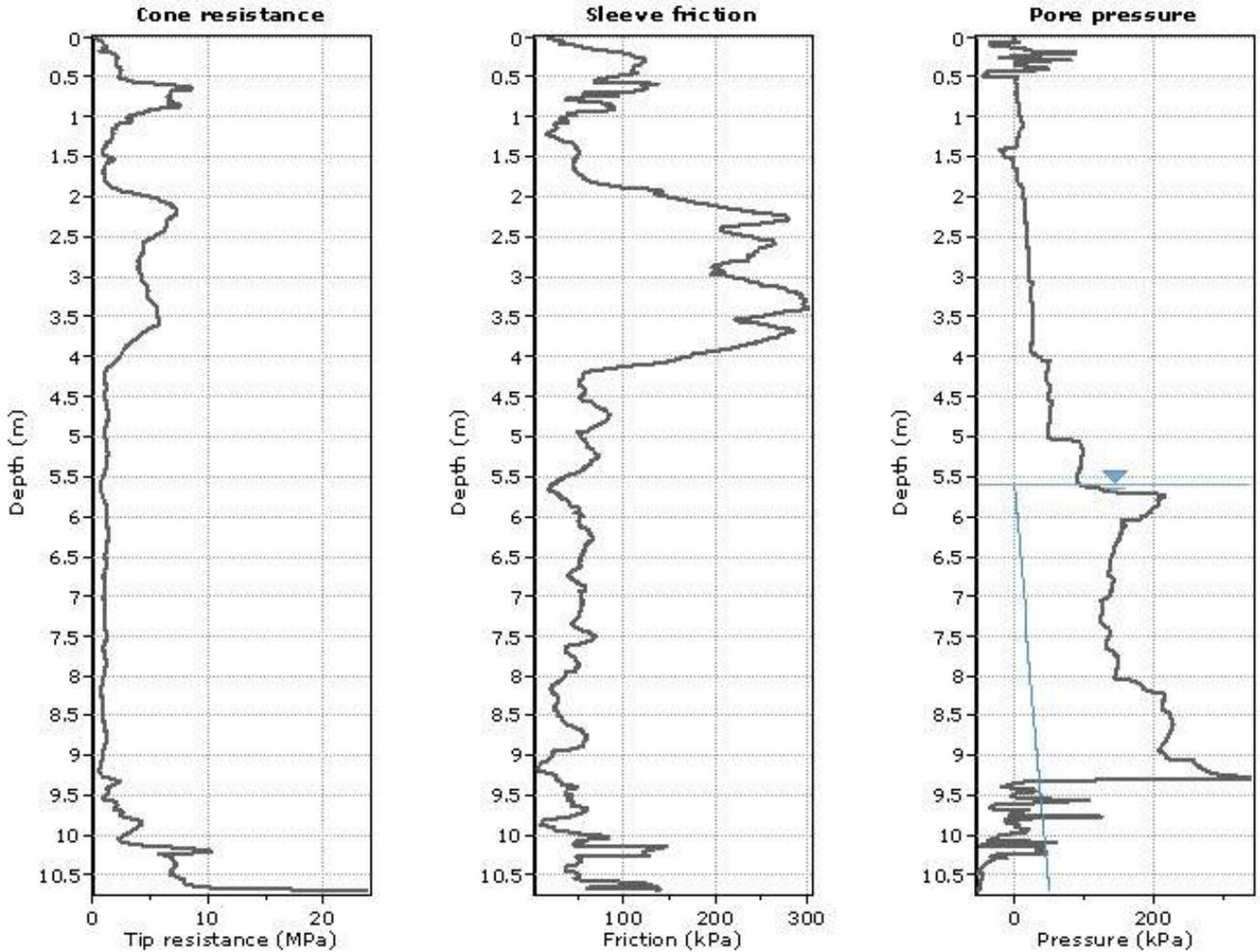
Soil Sensitivity factor, N_s : 7.00

—●— User defined estimation data

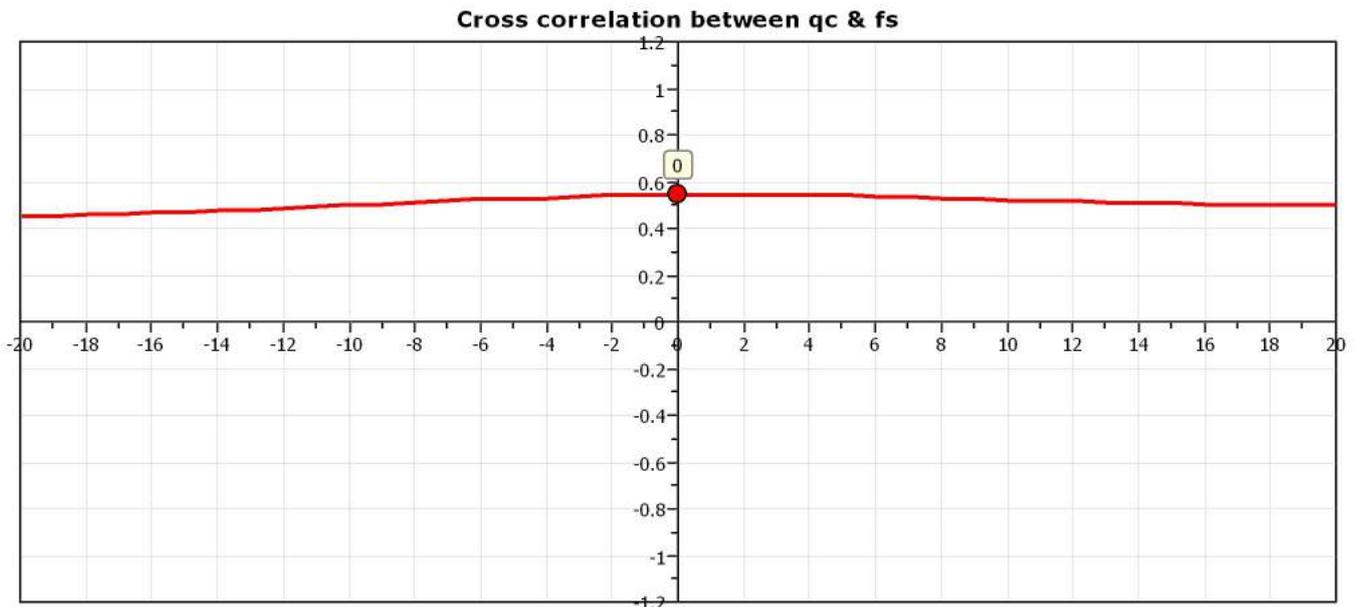
034033P207

Project:

Location:



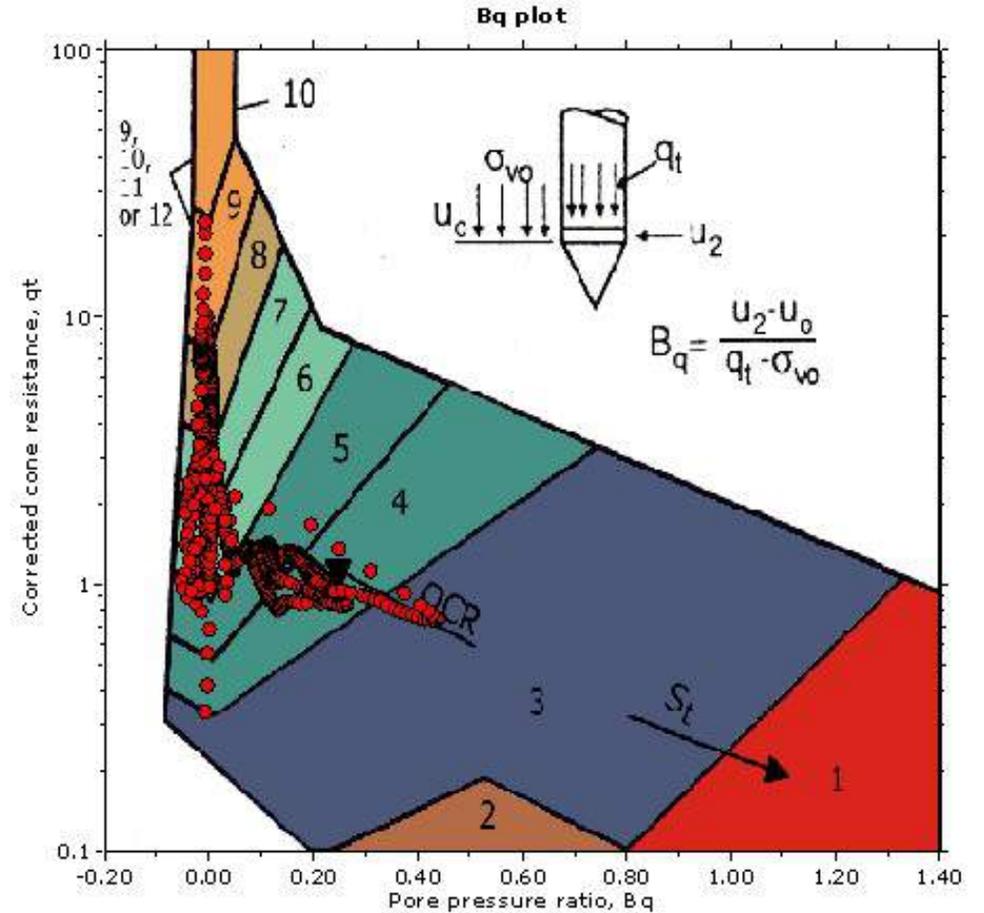
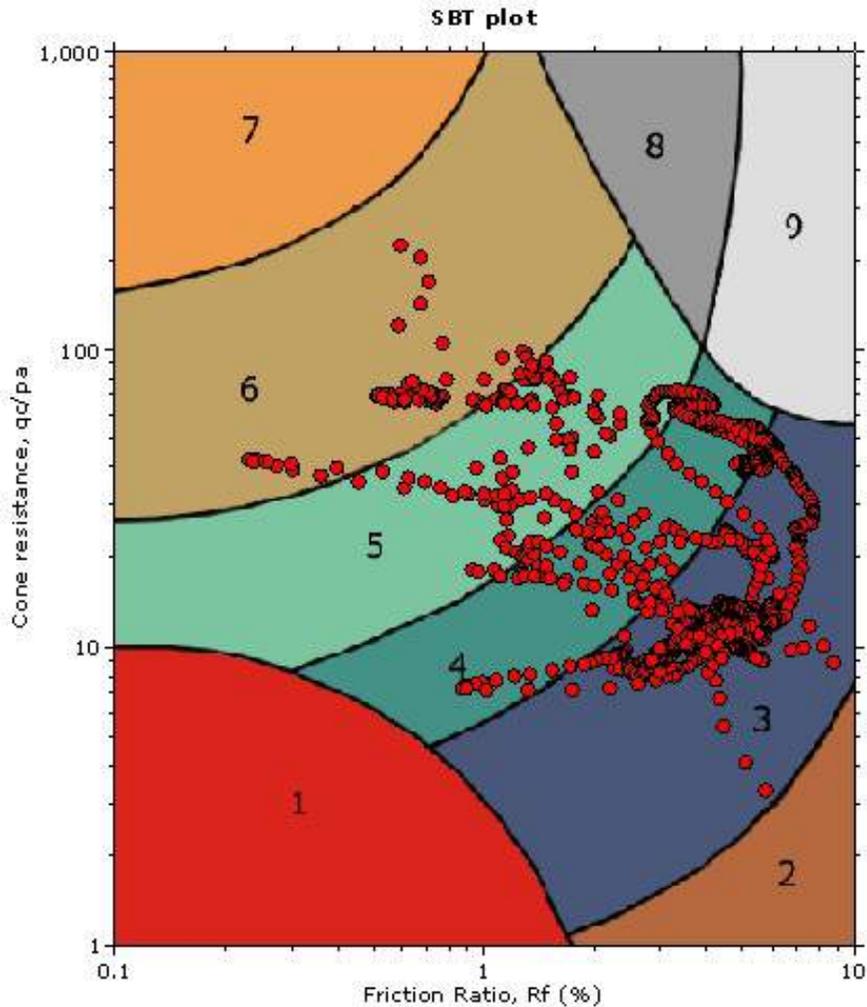
The plot below presents the cross correlation coefficient between the raw qc and fs values (as measured on the field). X axes presents the lag distance (one lag is the distance between two successive CPT measurements).



Project:

Location:

SBT - Bq plots



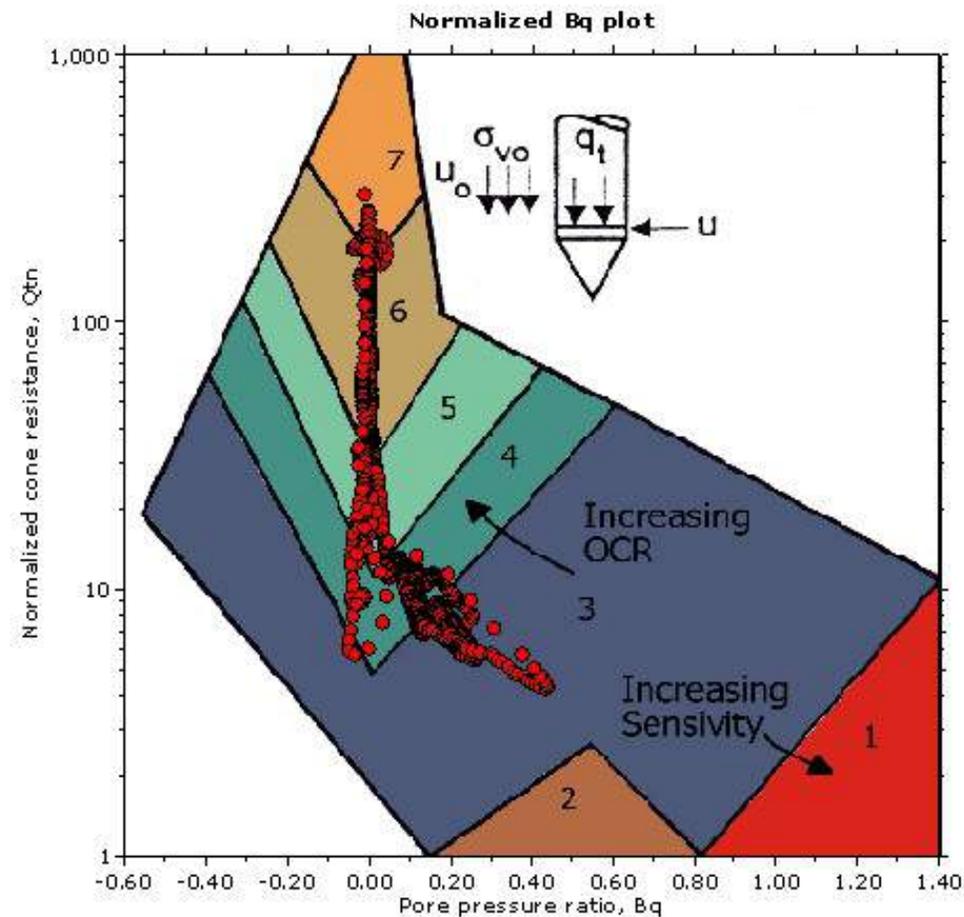
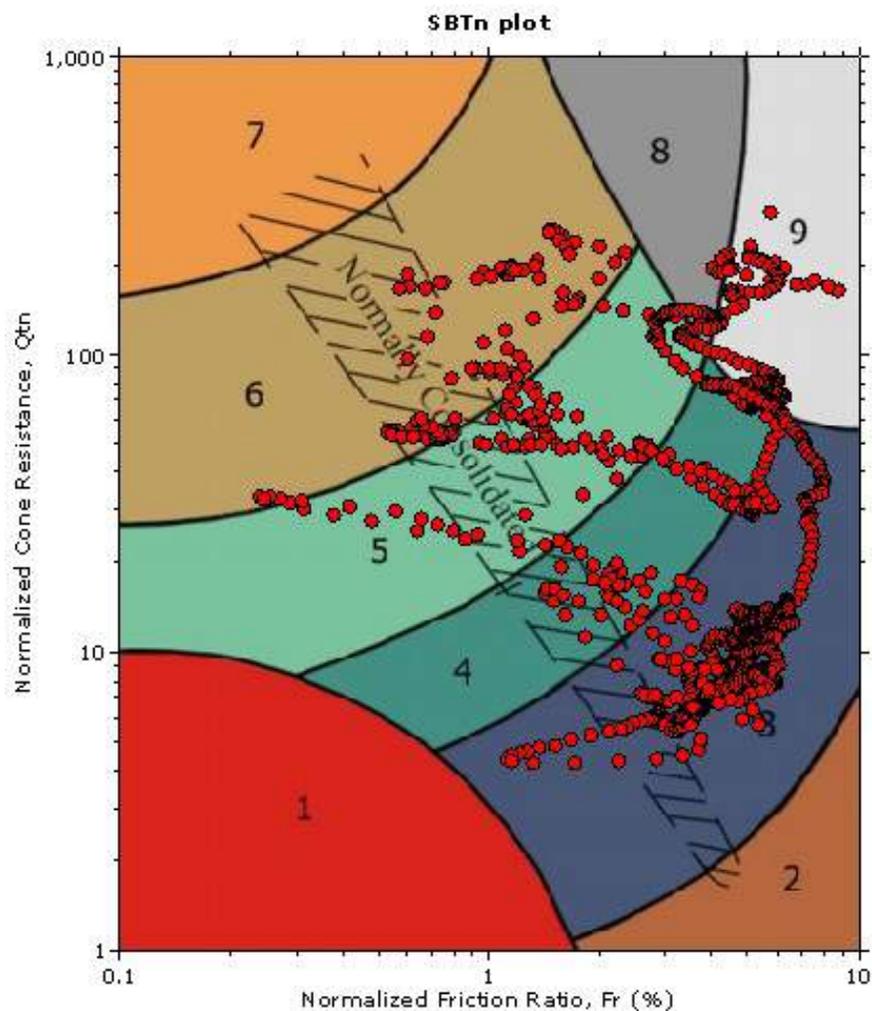
SBT legend

- | | | |
|---------------------------|------------------------------|-----------------------------------|
| 1. Sensitive fine grained | 4. Clayey silt to silty clay | 7. Gravely sand to sand |
| 2. Organic material | 5. Silty sand to sandy silt | 8. Very stiff sand to clayey sand |
| 3. Clay to silty clay | 6. Clean sand to silty sand | 9. Very stiff fine grained |

Project:

Location:

SBT - Bq plots (normalized)



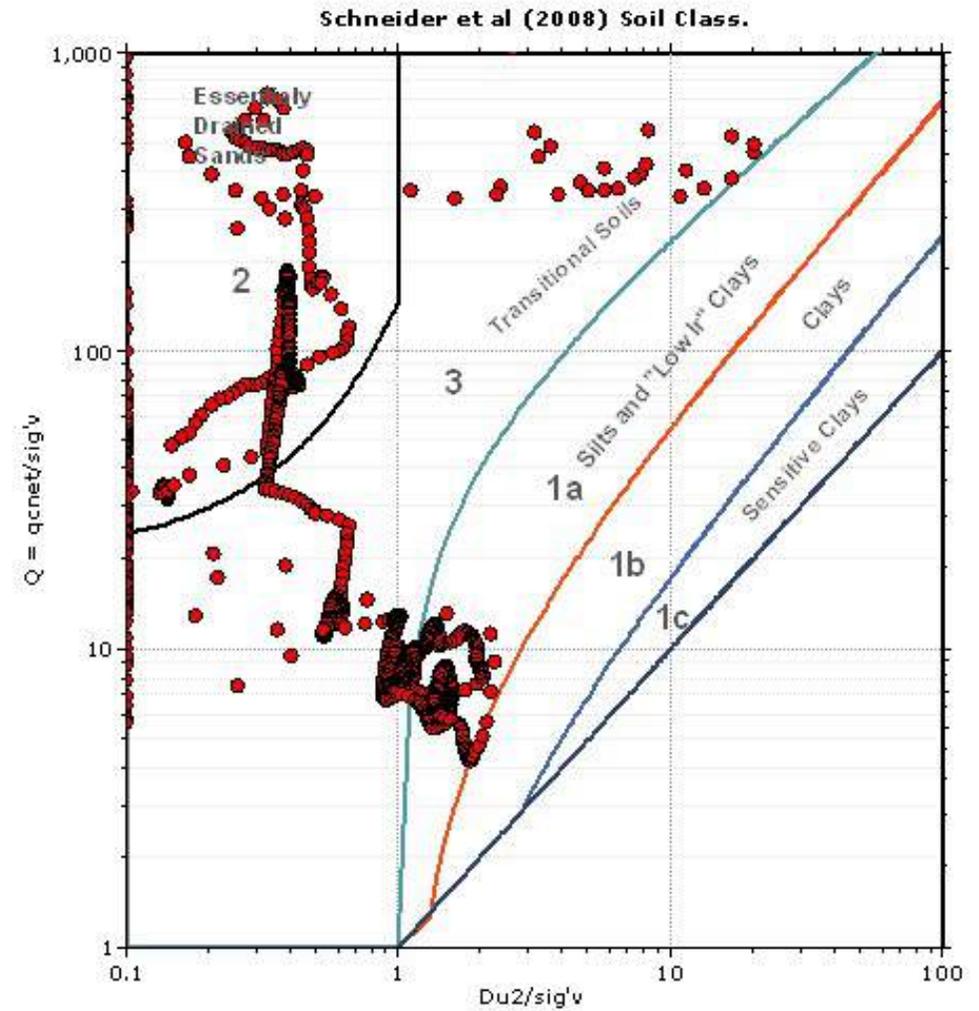
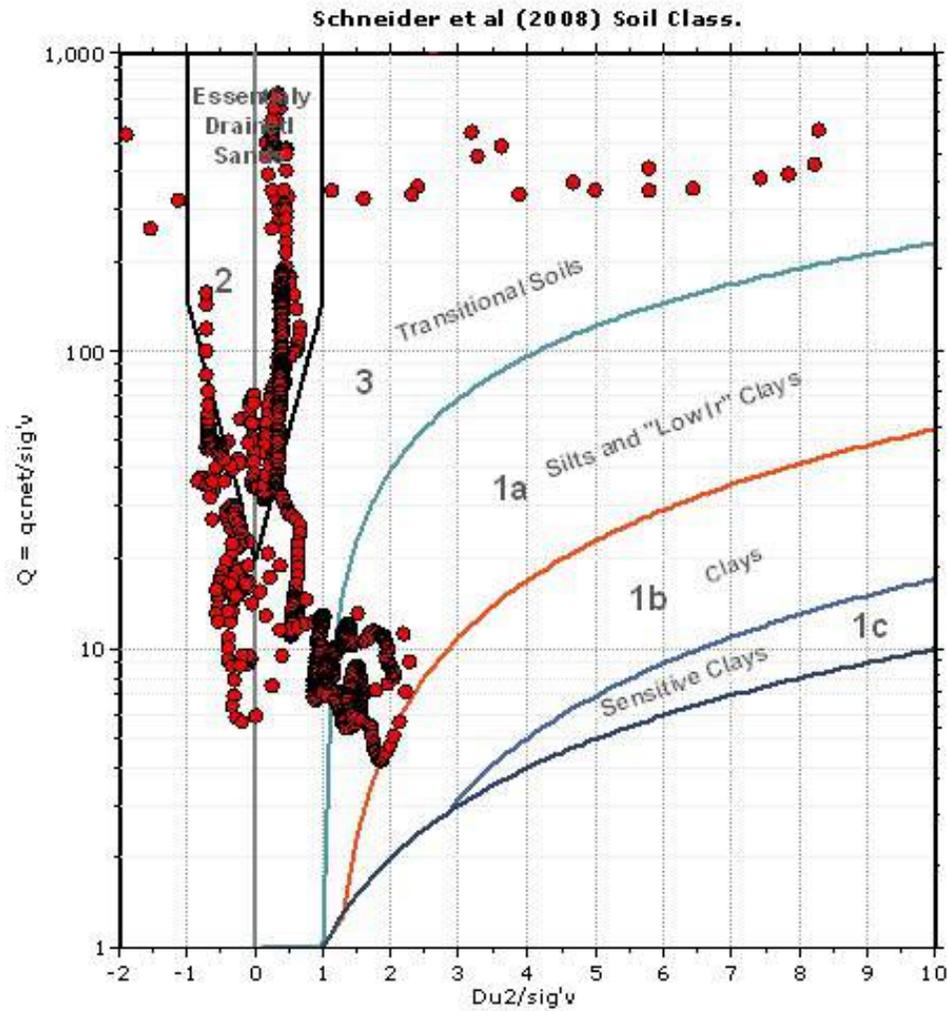
SBTn legend

- | | | |
|--|---|---|
| ■ 1. Sensitive fine grained | ■ 4. Clayey silt to silty clay | ■ 7. Gravely sand to sand |
| ■ 2. Organic material | ■ 5. Silty sand to sandy silt | ■ 8. Very stiff sand to clayey sand |
| ■ 3. Clay to silty clay | ■ 6. Clean sand to silty sand | ■ 9. Very stiff fine grained |

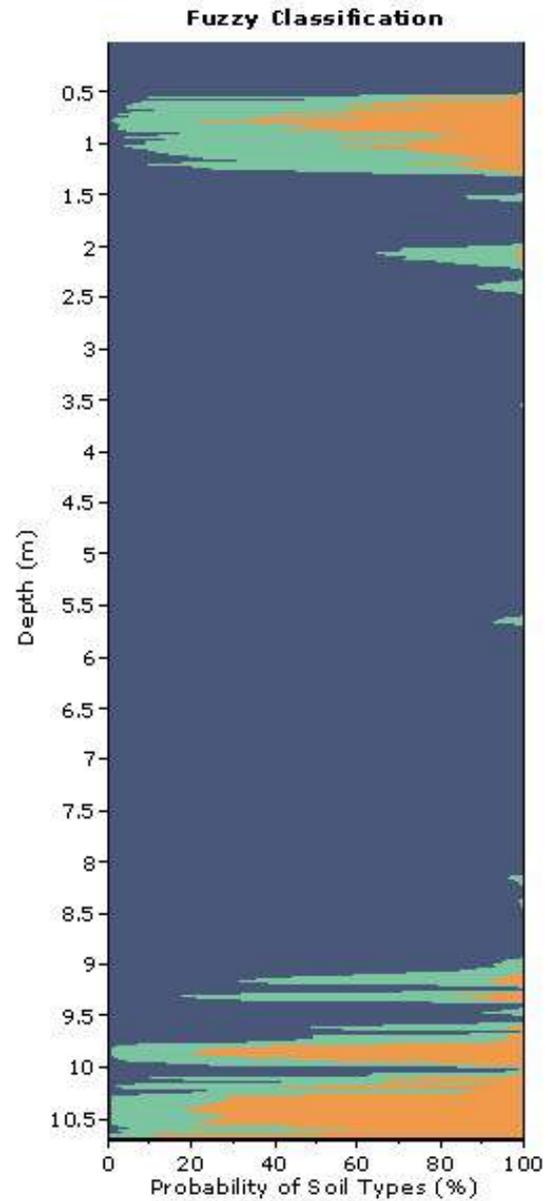
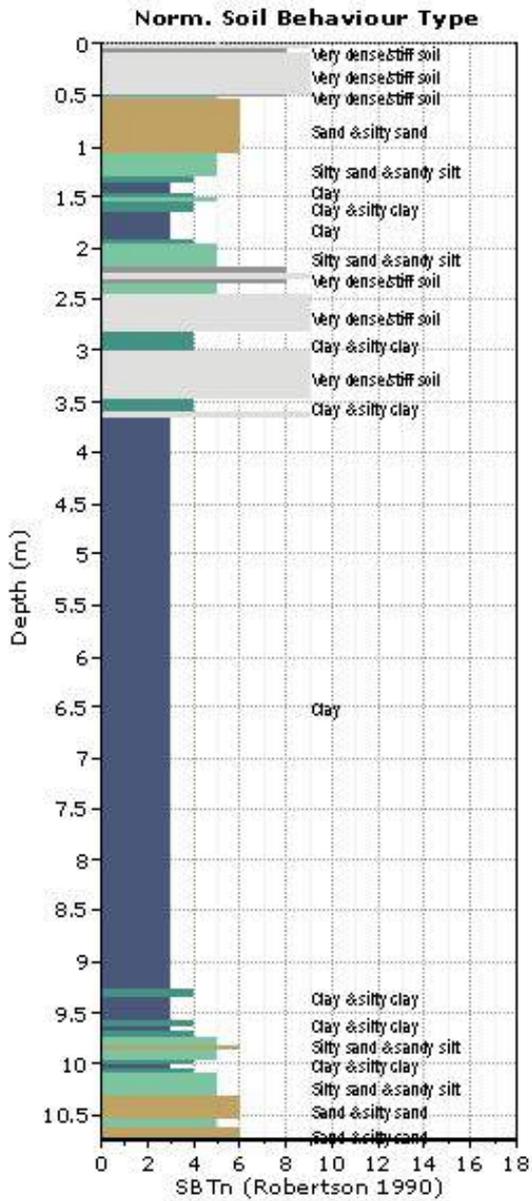
Project:

Location:

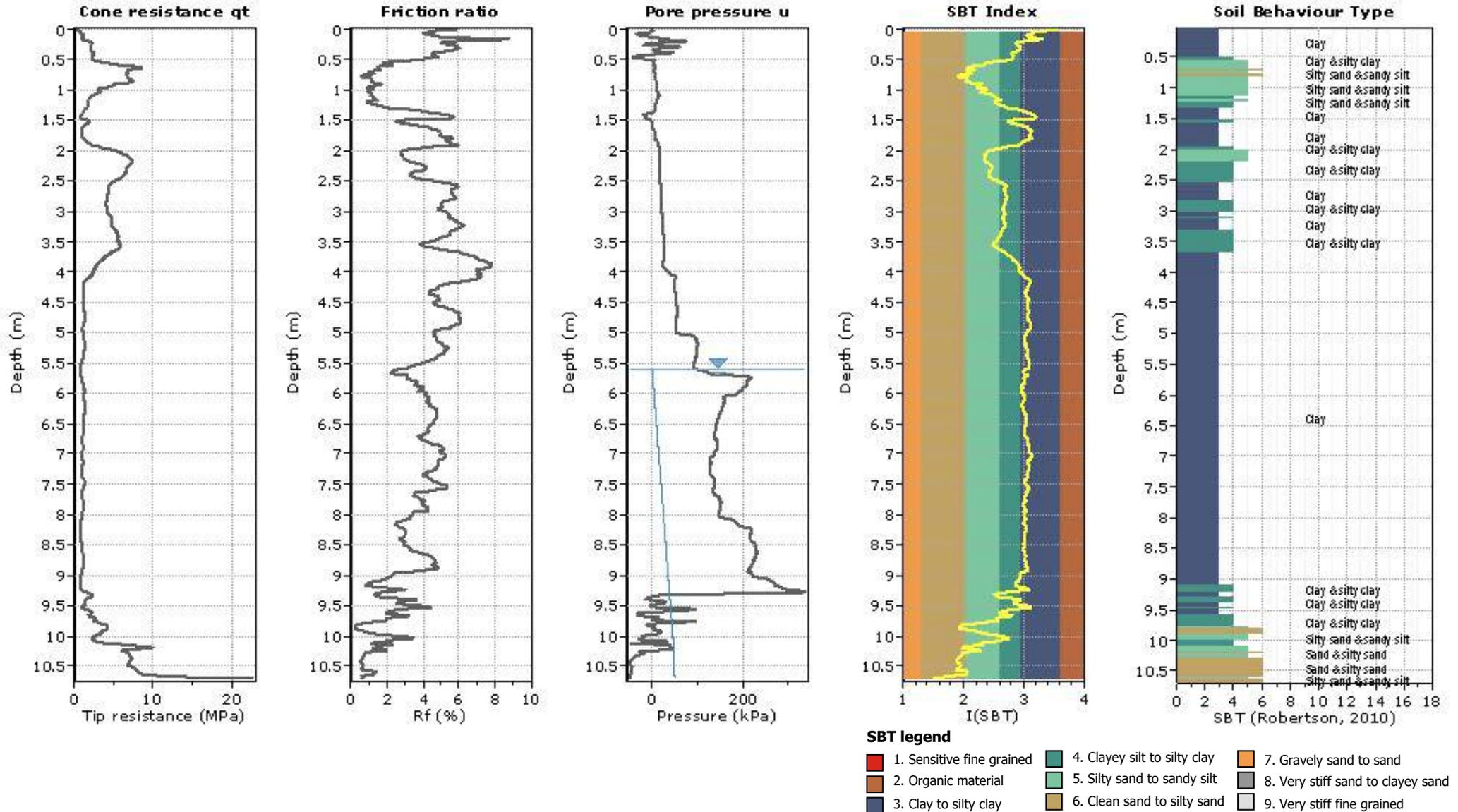
Bq plots (Schneider)



Project:
Location:

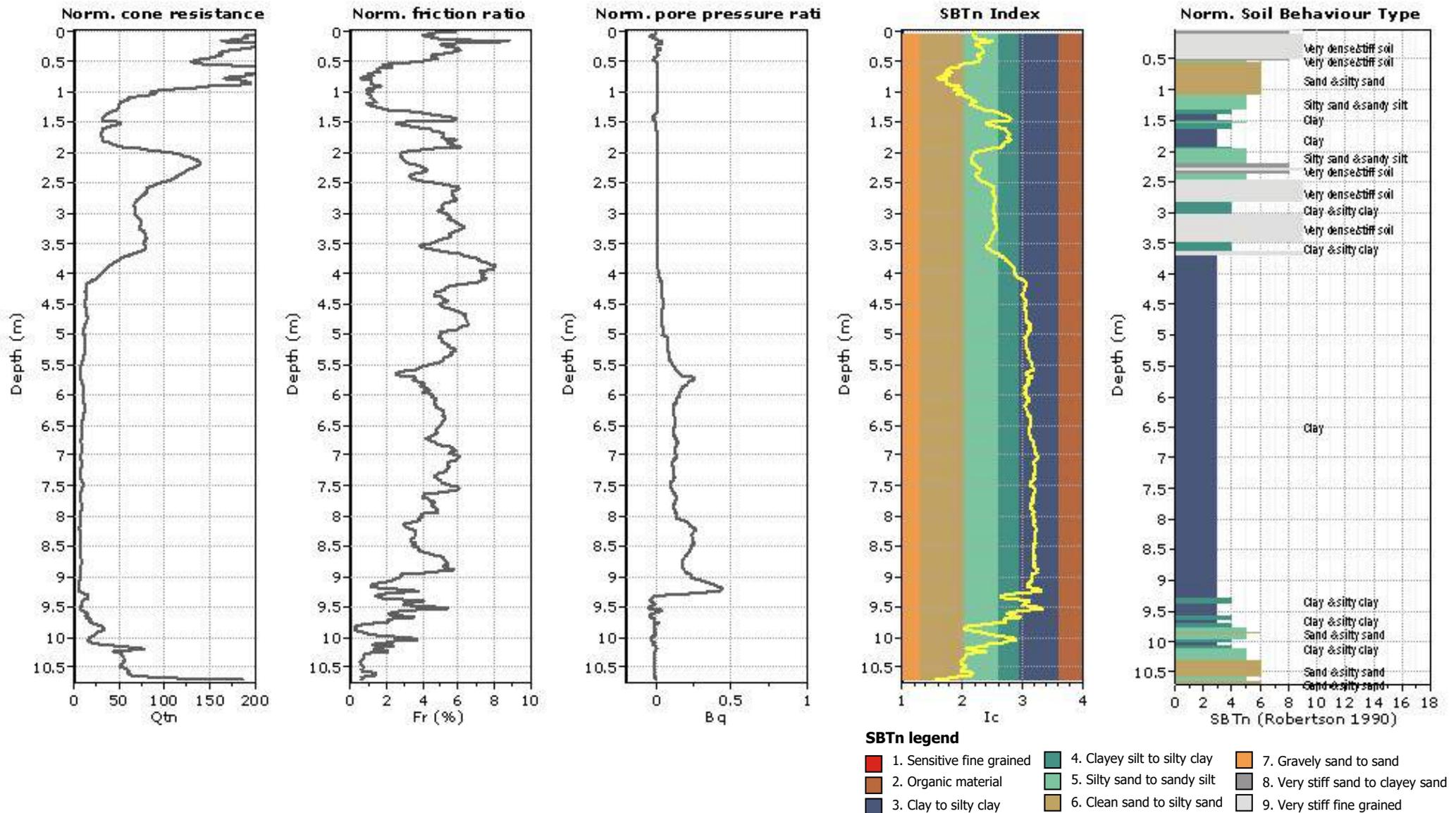


Project:
Location:



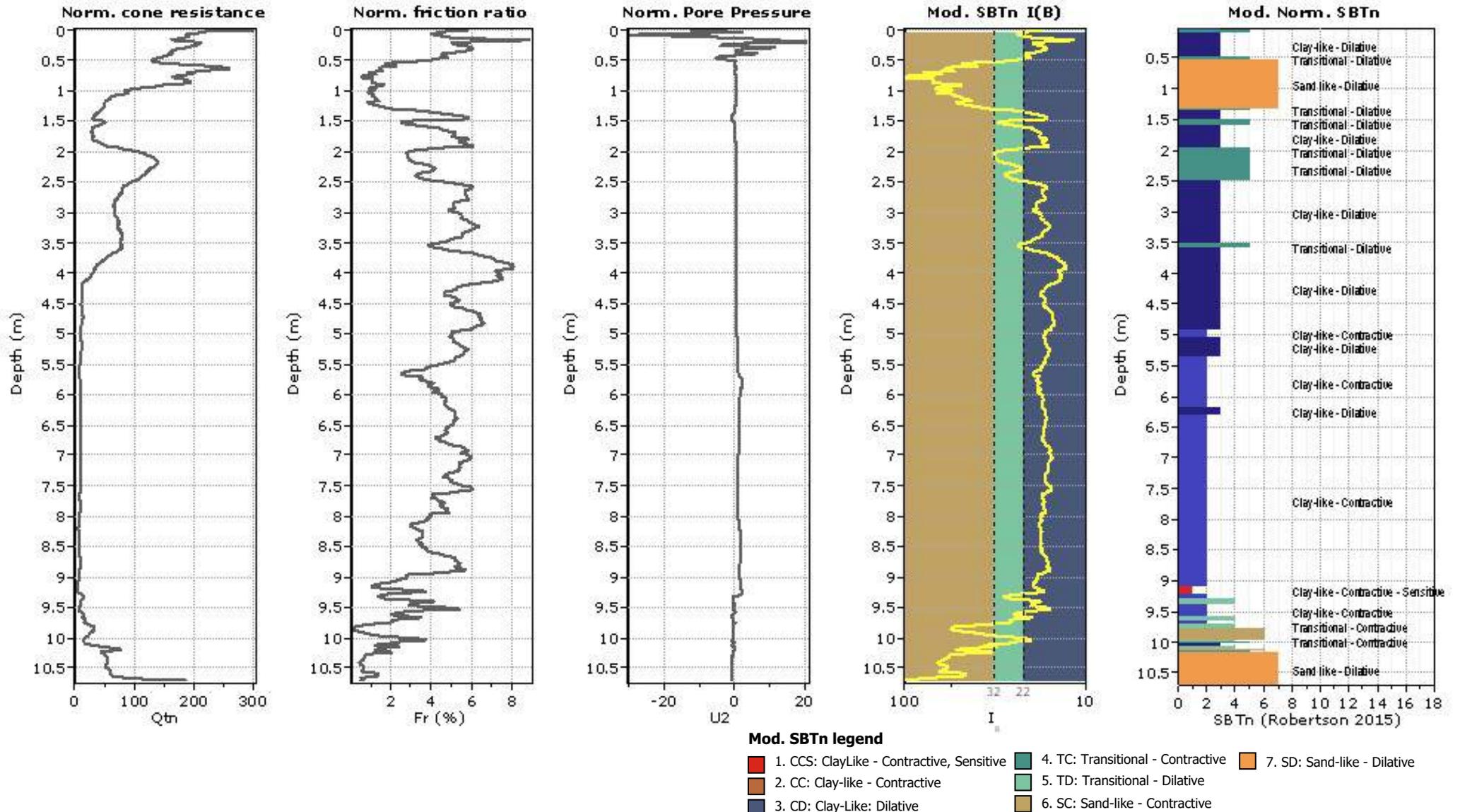
Project:

Location:



Project:

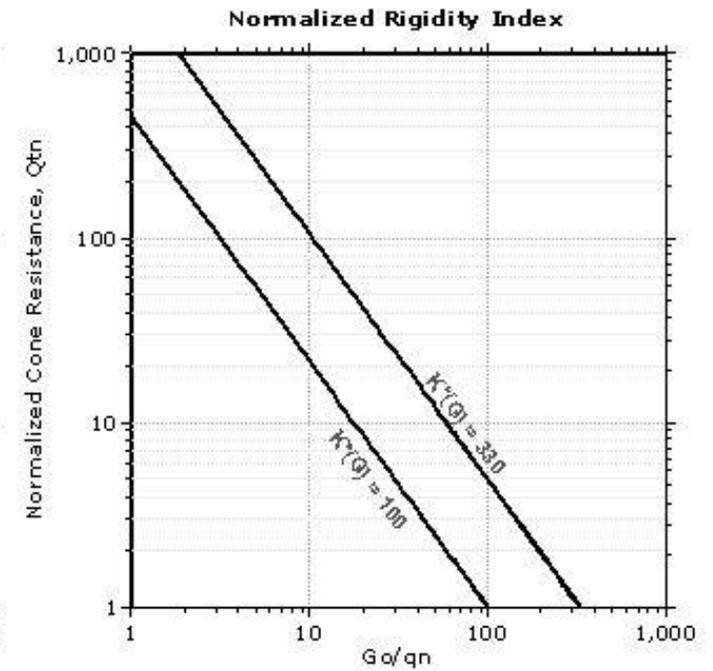
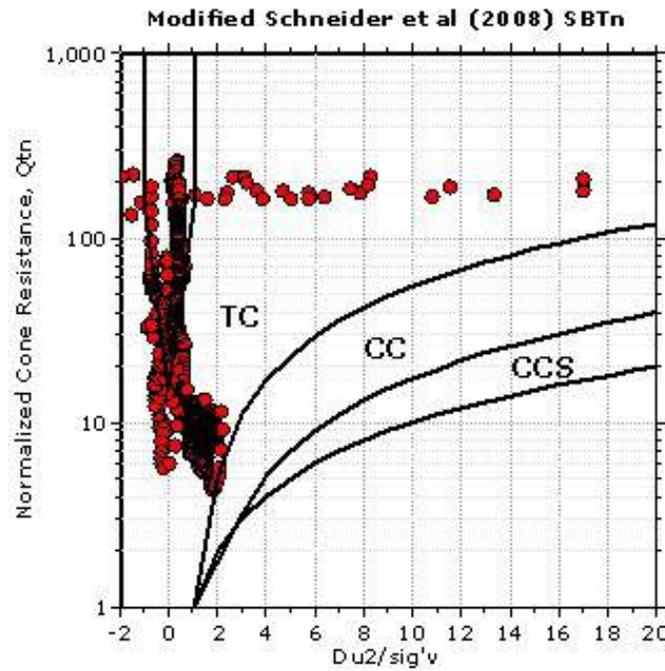
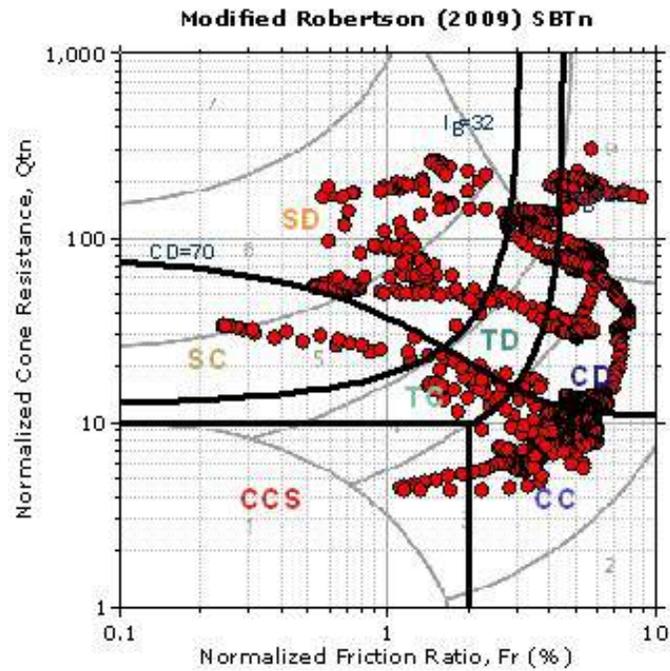
Location:



Project:

Location:

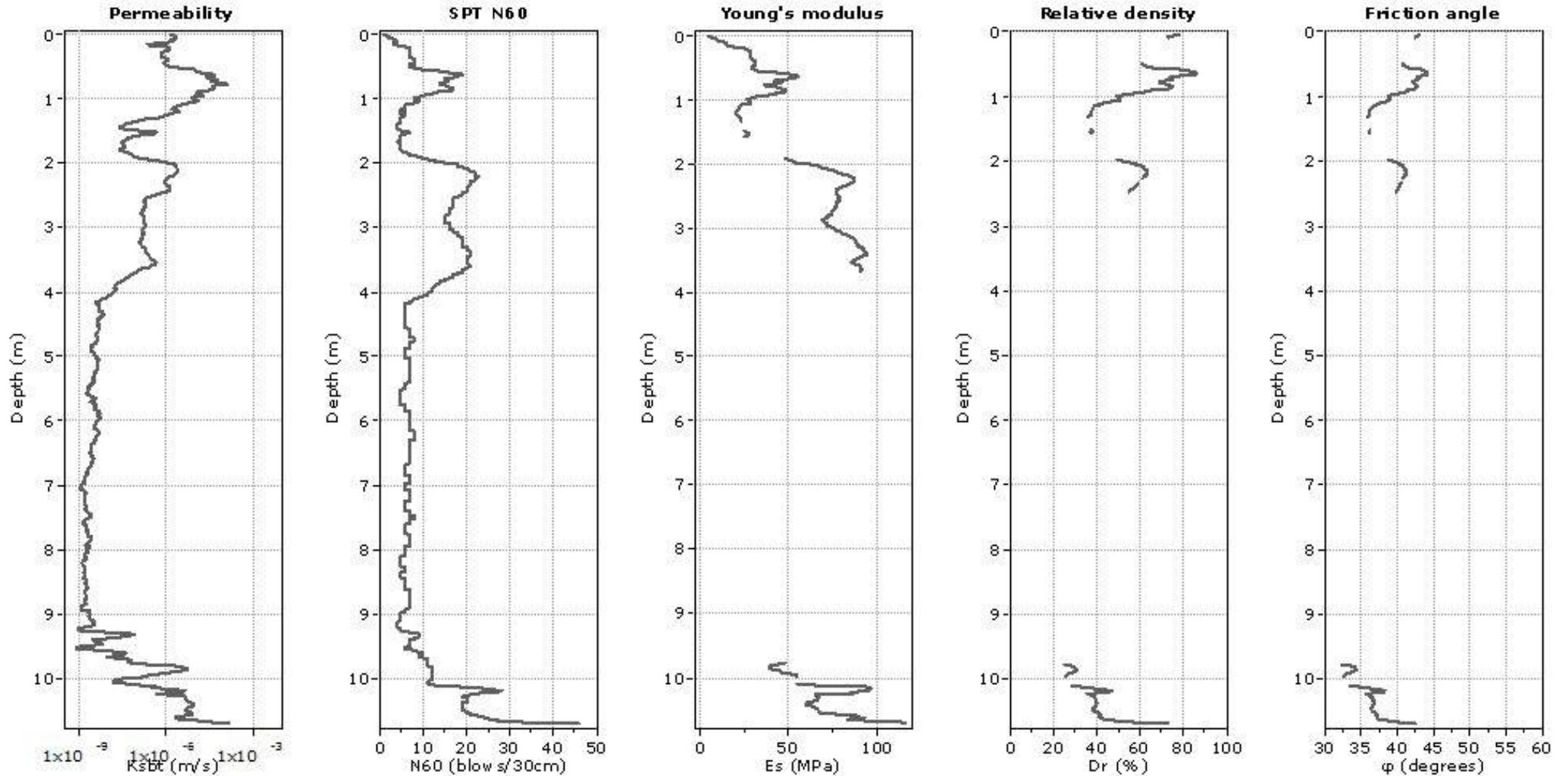
Updated SBTn plots



- CCS: Clay-like - Contractive - Sensitive
- CC: Clay-like - Contractive
- CD: Clay-like - Dilative
- TC: Transitional - Contractive
- TD: Transitional - Dilative
- SC: Sand-like - Contractive
- SD: Sand-like - Dilative

Project:

Location:



Calculation parameters

Permeability: Based on SBT_n

SPT N_{60} : Based on I_c and q_t

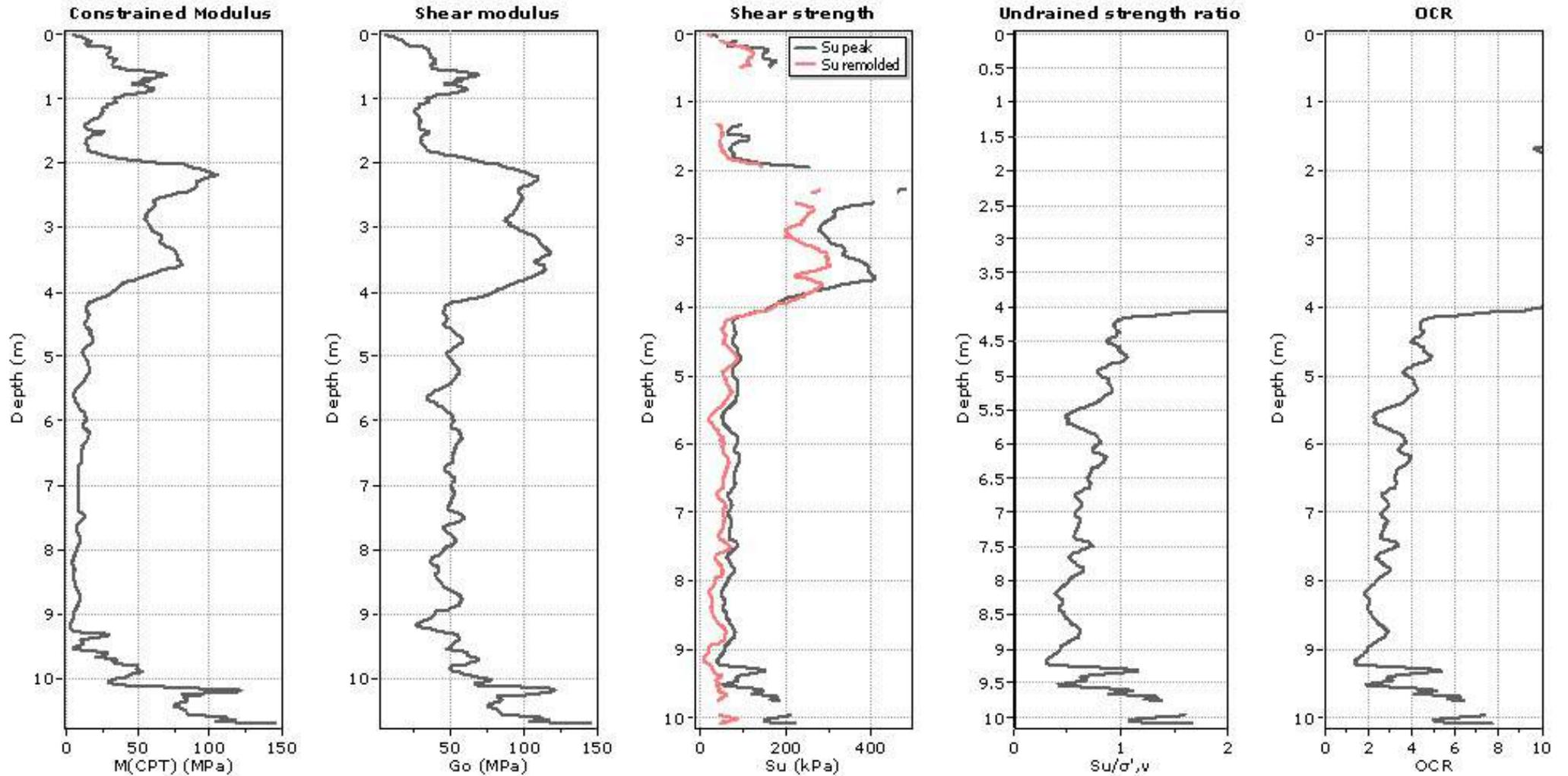
Young's modulus: Based on variable alpha using I_c (Robertson, 2009)

Relative density constant, C_{Dr} : 350.0

Phi: Based on Kulhavy & Mayne (1990)

● — User defined estimation data

Project:
Location:



Calculation parameters

Constrained modulus: Based on variable *alpha* using I_c and Q_{tm} (Robertson, 2009)

Go: Based on variable *alpha* using I_c (Robertson, 2009)

Undrained shear strength cone factor for clays, N_{kt} : 14

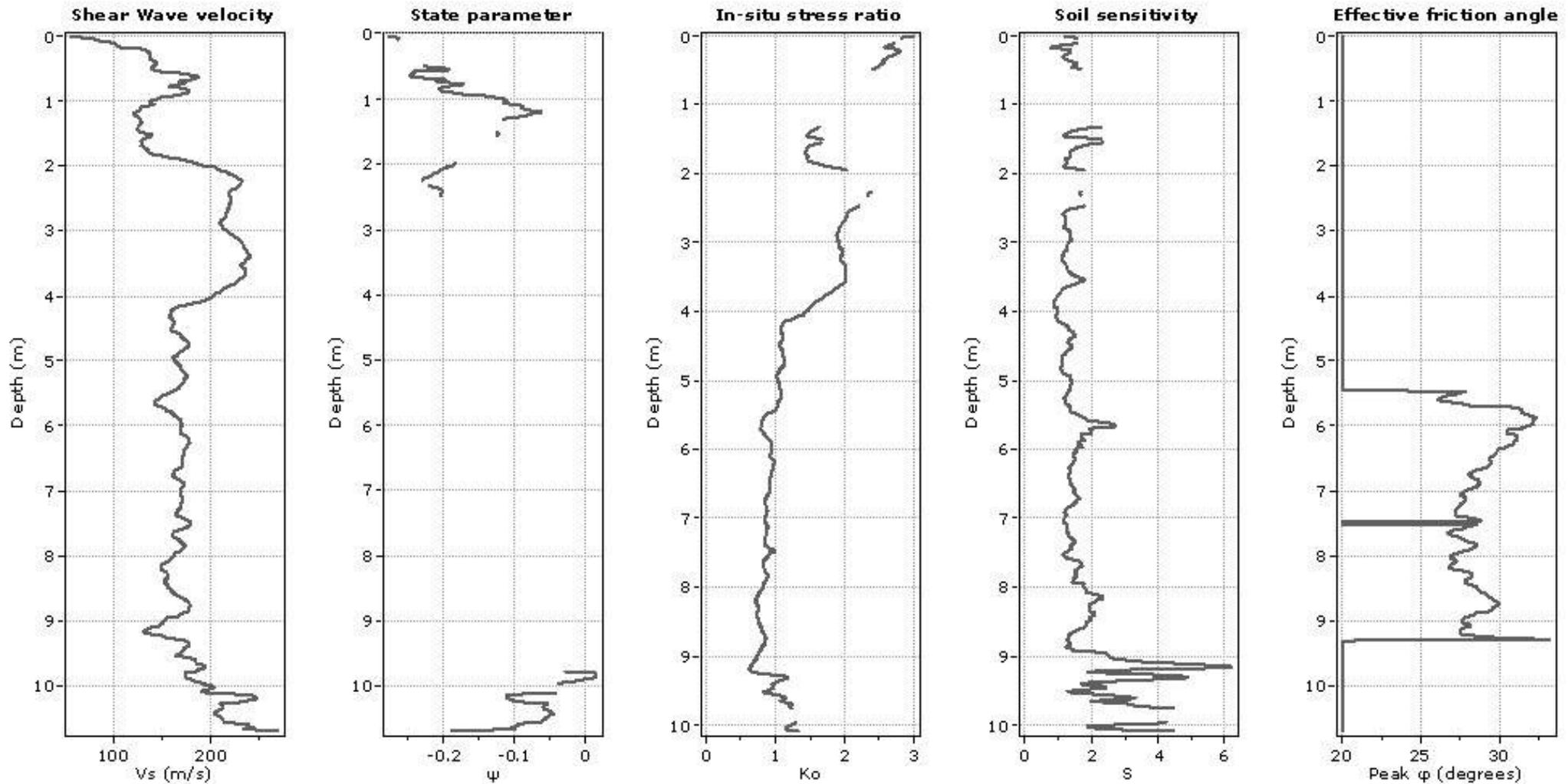
OCR factor for clays, N_{kt} : 0.33

● User defined estimation data

● Flat Dilatometer Test data

Project:

Location:



Calculation parameters

Soil Sensitivity factor, N_s : 7.00

—●— User defined estimation data