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SOIL FRACTURING ASSESSMENT CHECKLIST

The purpose of this document is to summarize all pertinent data that has been obtained at the site for which fracturing has been proposed. This data is used to design the fracture strategy for the site or to recommend field work that should be carried out prior to fracture design. *This information is confidential and is the property of Frac Rite Environmental Ltd. for their use in assessing candidate sites for soil fracturing and/or injection of treatment amendments.* PLEASE RETURN COMPLETED CHECKLIST TO US AT FAX: (403) 265-5648.

1. SITE DETAILS

Site Location: _____

Site Description: _____

(e.g. Historical use, operational or non-operational site, existing site infrastructure, source of contaminants, etc.)

2. SITE STRATIGRAPHY AND LITHOLOGICAL DESCRIPTION

STRATIGRAPHY	SOIL TYPE	SOIL CONSISTENCY	(use number key from below)
Description of 1st geologic unit:	<input type="checkbox"/>	<input type="checkbox"/>	Thickness: _____
Description of 2nd geologic unit:	<input type="checkbox"/>	<input type="checkbox"/>	Thickness: _____
Description of 3rd geologic unit:	<input type="checkbox"/>	<input type="checkbox"/>	Thickness: _____
Description of 4th geologic unit:	<input type="checkbox"/>	<input type="checkbox"/>	Thickness: _____
Description of 5th geologic unit:	<input type="checkbox"/>	<input type="checkbox"/>	Thickness: _____
Description of 6th geologic unit:	<input type="checkbox"/>	<input type="checkbox"/>	Thickness: _____

- key: **SOIL TYPE**
- 1 Low Plastic Clay
 - 2 High Plastic Clay
 - 3 Silt
 - 4 Silty/Clayey Sand
 - 5 Glacial Till
 - 6 Other (specify above)

- key: **SOIL CONSISTENCY**
- 1 **Very Soft** - extrudes between fingers when squeezed, $T_u < 12$ kPa, $N \approx 0$ to 2
 - 2 **Soft** - molded by light finger pressure, $T_u = 12$ to 25 kPa, $N \approx 2$ to 4
 - 3 **Firm** - molded by strong finger pressure, $T_u = 25$ to 50 kPa, $N \approx 4$ to 8
 - 4 **Stiff** - indented by thumb, $T_u = 50$ to 100 kPa, $N \approx 8$ to 15
 - 5 **Very Stiff** - indented by thumb nail $T_u = 100$ to 200 kPa, $N \approx 15$ to 30
 - 6 **Hard** - difficult to indent with thumb nail $T_u = > 200$ kPa, $N > 30$

DEPOSITIONAL STRUCTURE (check applicable box)

- Massive Structureless soil
- Homogeneous Soil of uniform composition and color
- Heterogeneous Soil of non-uniform, variable composition or color
- Stratified or Layered Differing soils or visible variations in soil constituents arranged in layers ranging in thickness from 1/4 in. to several inches or more.
- Laminated or Varved Closely spaced, regularly alternating thin layers of differing soils/texture

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3. HYDROGEOLOGIC CHARACTERISTICS (check applicable boxes)

Ground Water Table at _____ depth Perched Ground Water Table at _____ depth

Unconfined Aquifer Confined Aquifer

Hydraulic Conductivity _____ Grain Size Distribution (please provide)

Hydraulic Gradient and Direction of Groundwater Flow: _____

Depth to bedrock (if applicable): _____

PLEASE PROVIDE REPRESENTATIVE BOREHOLE LOGS FOR ALL GEOLOGIC UNITS AFFECTED

4. CONTAMINANT CHARACTERIZATION AND FRACTURE ZONE

Plume: PLEASE PROVIDE SITE PLAN IF POSSIBLE

Approximate Dimensions of Contaminant Area: _____

Subsurface Distribution of Contaminants (specify vertical depth range): _____

Media Contaminated: (check applicable boxes)

Soil Groundwater Bedrock

Contaminants requiring Remediation (check applicable boxes)

LNAPL (Specify - i.e.: condensate, gasoline, fuel oil, etc.) _____

DNAPL (Specify - i.e.: TCE, DCE, creosote, etc.) _____

Other (Please specify) _____

Target Fracture Interval (check applicable boxes)

Unsaturated Zone At or Near Ground Water Table Only Saturated Zone

Fracture Applications (check applicable boxes)

Vapor/Residual Phase Soil Remediation Liquid Contaminant Recovery

Ground Water Recovery and Treatment Injection of Treatment Amendments*

* Pls list: _____

Hydraulic Control

Soil De-watering for Geotechnical Applications

5. PRESENCE OF SUBGRADE STRUCTURES

(check applicable boxes)

Non-Engineered Fill

Existing Wells (for water supply, monitoring, remediation, etc.)

Engineered Fill

Underground Utility Corridors/Pipelines

Underground Structures

Other: _____

Footings