



WORK INSTRUCTIONS FOR ENGINEERS

Compiled by : _____ GKH

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OP-3-30. CHECKLIST FOR BOREHOLE TESTING

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30.0 CHECKLIST FOR BOREHOLE TESTING

No.	CHECKLIST ITEMS	ACKNOWLEDGED BY	CHECKED BY	
		S.I. Contractor	G&P GEOTECHNICS SDN BHD (G&P)	
1.0	EQUIPMENT APPRAISAL	SIGNATURE	YES	NO
1.1	Casing: <ul style="list-style-type: none"> NW (I.D 76mm, O.D 89mm) HW (I.D 101mm, O.D 115mm) 		<input type="checkbox"/>	<input type="checkbox"/>
1.2	Rod: <ul style="list-style-type: none"> AW (O.D 44mm) Drill rods in standard length (e.g. 3.0m, 1.5m, 1.0m). 		<input type="checkbox"/>	<input type="checkbox"/>
1.3	Split Spoon: <ul style="list-style-type: none"> Driving shoe is in good condition (not dented). Sample head has a ball check valve. 		<input type="checkbox"/>	<input type="checkbox"/>
1.4	Undisturbed Sampling Tube: <ul style="list-style-type: none"> U60 (I.D 60mm) U75 (I.D 75mm) UD tube and cutting edge are free from surface irregularities (dents, rust, etc.) 		<input type="checkbox"/>	<input type="checkbox"/>
1.5	REMARKS:			
2.0	STANDARD PENETRATION TEST (SPT)	SIGNATURE	YES	NO
2.1	General procedures: <ul style="list-style-type: none"> Borehole advances by rotary wash boring method. (Note: percussive drilling is not allowed) SPT to be carried out below casing. Keep borehole water level equal to or higher than elevation of groundwater for silty and sandy soils to prevent 'boiling'. Marked clearly and accurately the interval for seating and test drive with chalk. The seating drive is inclusive of initial penetration under dead weight of the split spoon, rods, and hammer. Record the blow counts in the field borehole log. Second attempt to retrieve sample with retainer in the split spoon for granular soil if there is no recovery during the initial attempt. Store collected sample under cover from direct sunlight. Supervisor to carry out immediate logging of sample. Daily measurement of water level (morning and evening) 		<input type="checkbox"/>	<input type="checkbox"/>

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	<ul style="list-style-type: none"> Supervisor and driller to endorse field borehole log. Backfill of borehole with suitable material (specify type of material: _____). 		<input type="checkbox"/>	<input type="checkbox"/>
2.2	REMARKS:			
3.0	UNDISTURBED SAMPLING	SIGNATURE	YES	NO
3.1	General procedures: <ul style="list-style-type: none"> Minimum 500mm clearance of wash boring after SPT to obtain undisturbed sample (UD), e.g. SPT from 1.5m to 1.95m and UD at 2.5m. Use only tube dimensions: U60 or U75. UD tube and cutting edge are free from surface irregularities (dents, rust, etc.) Tube advance by continuous and steady motion. Seal UD tube with non-shrinking microcrystalline wax. Store UD sample under cover from direct sunlight. 		<input type="checkbox"/>	<input type="checkbox"/>
3.2	Transportation: <ul style="list-style-type: none"> Sampler tubes lifted slowly and placed with care on board the transport. Sampler tubes rested on transport's seat cushion. 		<input type="checkbox"/>	<input type="checkbox"/>
3.3	REMARKS:			
4.0	ROCK CORING	SIGNATURE	YES	NO
4.1	General Procedures: <ul style="list-style-type: none"> Determine coring depth when lowering down rods and core barrel. Coring by using triple tube core barrel (NMLC) for minimum 54mm dia. rock core. Drillers to stay close at machine. Less than 50% core recovery, the following run reduce to 0.5m coring length. 		<input type="checkbox"/>	<input type="checkbox"/>
4.2	Extraction and Storage of Cores: <ul style="list-style-type: none"> Remove cores from barrel by hydraulic pressure. Place cores in standard core box. Show core loss by spacer. 		<input type="checkbox"/>	<input type="checkbox"/>

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	<ul style="list-style-type: none"> • Store core box under cover from rain and sunlight. • Photograph cores in core box with legible information. 		<input type="checkbox"/>	<input type="checkbox"/>
4.3	REMARKS:			
5.0	VANE SHEAR TEST (VST)	SIGNATURE	YES	NO
5.1	Equipment: <ul style="list-style-type: none"> • Vane type: Geonor/Acker • Vane diameter: 50mm/65mm (for Geonor Vane) 		<input type="checkbox"/>	<input type="checkbox"/>
5.2	Calibration: <ul style="list-style-type: none"> • Calibration certificate for equipment (last calibration must be within 3 months). • Calibration chart for vane. (Note: Testing cannot proceed without the certificate)		<input type="checkbox"/>	<input type="checkbox"/>
5.3	General Procedures: <ul style="list-style-type: none"> • Torque head measuring instrument firmly secured against movement with respect to ground level. • Applicable vane size (for Geonor Vane): 55mm X 110mm for S_{uv}= 50 to 100 kPa; 65mm X 130mm for S_{uv}= 0 to 60 kPa. • Vane to rotate at a rate of 6 degrees/min. • Elapse time of 5 minutes before remoulding test. 		<input type="checkbox"/>	<input type="checkbox"/>
5.4	REMARKS:			
	NOTE: Once this copy is signed, the above guidelines have been clearly defined and understood by the contractor. Therefore, there shall be no problems in repeating the testing procedures for the borehole without the presence of G&P representation.			

