Specification

Geotechnical Site Investigation and Laboratory Testing

2023-04-19	A	Client Review	S. Grieve	A. Bodley	A. Bodley	S. Khizanishvili
Date	**Rev.**	**Status**	**Prepared By**	**Checked By**	**Approved By**	**Approved By**
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1. Introduction

1.1 Rich Metals Group Copper (RMGC) plans to construct a new tailings storage facility (TSF) near Bolnisi, located 80 km south-west of the Georgian capital Tbilisi. Hatch Ltd. (Hatch) has been retained by RMGC to conduct the detailed engineering for a new TSF and to specify the requirements for a geotechnical site investigation at the proposed site and laboratory testing on samples recovered from the site investigation.

1.2 This document specifies the requirements of the ***Contractor*** (see Section 2) to carry out the geotechnical field investigation for the new TSF site and laboratory testing on collected samples.

2. Definitions

2.1 For the purpose of this document, the following definitions will apply:

2.1.1 '***Owner***' refers to Rich Metals Group Copper (RMGC).

2.1.2 '***Contractor***' refers the engineering firm or geotechnical engineer commissioned to perform the geotechnical field investigation at the site and carry out the laboratory soil and rock testing.

2.1.3 '***Owner's Engineer*** 'refers to 'Hatch' who has been retained to assist in the design of the new TSF in the Bolnisi Mine site.

3. General

3.1 The objective of the geotechnical field investigation at the proposed TSF site (Site 1) is to characterize subsurface geological information (soils, rock and groundwater) to support the engineering design of the proposed new tailings storage facility including water conveyance structures, ponds and reclaim systems.

3.2 This document specifies the engineering requirements for the fieldwork and reporting of the geotechnical investigation to be carried out by the ***Contractor***.

3.3 The work under this contract shall consists of the supply and performance of all material, equipment and labour necessary to complete the geotechnical investigation program as specified herein. The location of the proposed new tailings storage facility and proposed geotechnical testing plan (borehole and test pit locations) will follow.

3.4 The selected ***Contractor*** must be capable of handling technical elements required to successfully complete the geotechnical campaign described herein within reasonable time limits while at the same time complying with statutory safety, health and environmental requirements.

3.5 The ***Contractor*** shall hold or secure all necessary permits and insurances and shall comply with the Statutory Laws and Regulations from the various levels of Government related to the execution of the scope of work under this assignment. In addition, the ***Contractor*** and their staff shall comply with the rules and instructions provided to them by the ***Owner*** or their representatives regarding both the execution of the work, including matters related to Safety, Health, and Environment. Non-compliance may result in the ***Contractor*** being denied property access, and, in serious cases, termination of the contract.

3.6 The ***Contractor*** shall submit their bid in strict compliance with the engineering requirements and attachments; any exceptions or deviations from these documents shall be clearly outlined in their proposal.

3.7 The order and timing of work is to be discussed and agreed with ***Owner*** and ***Owner's Engineer*** prior to undertaking the field work to ensure that data is made available to the project in a progressive manner and as anticipated by the ***Owner*** and ***Owner's Engineer***. Timing of work will depend on site conditions and planned construction activities.

3.8 The ***Contractor*** shall be experienced in geotechnical field investigations in projects with similar site conditions, project scale, and scope. The ***Contractor*** shall supply rotary/ diamond drilling equipment and hydraulic excavators that is in satisfactory working order and capable of executing the drilling, test pitting and sampling on schedule and without delay, as specified herein.

3.9 The ***Contractor*** shall be responsible to mobilize and demobilize the drilling crew, excavator operator and equipment which includes all measures necessary to transport, unload and load supplies and personnel. The ***Contractor*** shall be responsible for all handling, disassembly and assembly of the equipment to facilitate transport and responsible for the safety of the equipment while it is being transported.

4. Quality

4.1 The ***Contractor*** shall submit a copy of its operating procedures to the ***Owner's Engineer*** for review.

4.2 The ***Contractor*** shall include a qualified geotechnical engineer or engineering geologist to monitor and supervise the field work, direct the drilling operations, confirm the borehole and test pit locations, log the soil and rock samples retrieved from the boreholes and test pits, direct piezometer and standpipe installation, observe the change of groundwater levels, complete packer or falling head permeability tests, and conduct in-situ testing, including:

4.2.1 Verify that the drilling and testing equipment, on arrival at the site, conforms to the technical requirements of this specification.

4.2.2 Verify that the drilling rig is set up at the designated location as shown on the drawings.

4.2.3 Verify that drilling and sampling procedures used by the ***Contractor*** throughout the progress of the work conform to this specification.

4.2.4 Verify that the subsurface materials are appropriately identified and documented on field logs and site records.

4.2.5 Verify that the standpipe piezometers are in proper working condition prior to demobilizing from the site.

4.2.6 Verify that results of all field tests are adequately documented on the field logs or site records.

4.2.7 Verify that grouting procedures used by the ***Contractor*** conform to this specification.

4.2.8 Confirm that grouting details at each boring is documented on the field logs.

5. Standards and References

5.1 A list of applicable standards for the geotechnical field investigation is presented in Table 5-1.

Table 5-1: List of Applicable Standards for Geotechnical Site Investigation

Test	Standard	Title
Procedure for Geotechnical Investigation	ASTM D6151	Standard Practice for Using Hollow-Stem Auger for Geotechnical Exploration and Soil Sampling
	ASTM D2113	Standard Practice for Rock Core Drilling and Sampling of Rock for Site Investigation
	ASTM D5434	Standard Guide for Field Logging of Subsurface Explorations of Soil and Rock
	ASTM D4220	Standard Practices for Preserving and Transporting Soil Samples
	ASTM D1587	Standard Practice for Thin-Walled Tube Sampling of Fine-Grained Soils for Geotechnical Purposes
	ASTM D5079	Standard Practices for Preserving and Transporting Rock Core Samples
Standard Penetration Test	ASTM D1586	Standard Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soil
Falling Head Permeability	BSI 5930	Code of Practice for Site Investigations
Packer Testing	ASTM D4630	Standard Test Method for Determining Transmissivity and Storage Coefficient for Low-Permeability Rocks by In Situ Measurement Using the Constant Head Injection Test
Field Vane Test	ASTM D2573	Standard Test Method for Field Vane Shear Test in Cohesive Soil

6. Site Geology

6.1 The site geology comprises intercalated meta-volcanic and meta-sedimentary type rocks. The site of the existing TSF is situated on volcanic breccia's comprising tuff, andesite lavas transitioning to basaltic type lavas. Interbedded sandstone and tuffaceous conglomerate beds are also present at the site. A basalt and tuff quarry has been opened and used to source rockfill materials for construction of the existing TSF embankment.

7. Execution Procedure

7.1 General

7.1.1 The estimated location and number of boreholes and test pits is provided in Appendix A – Geotechnical Investigation Plan.

7.1.2 Drilling and excavated depths provided in this document are preliminary and for budgetary purposes only. Actual depths shall be confirmed during the campaign based on actual field observations and core interpretation.

7.1.3 The ***Owner*** will provide access to the proposed borehole locations and clear the working area.

7.1.4 The ***Contractor*** shall construct the access to the water supply, where required.

7.1.5 All boreholes shall be backfilled by the ***Contractor*** according to the applicable standards.

7.1.6 The ***Contractor*** shall mobilize a geotechnical engineer or engineering geologist to the site for the duration of the investigation. All geotechnical site investigations shall be carried out under the direction of a qualified geotechnical engineer or engineering geologist.

7.1.7 The work on the drill hole shall be executed during a 10-12 hour day shift until the hole is complete in all respects. The ***Contractor*** shall be responsible for all lighting, generators, etc. required in order to continue drilling operations and make-up lost time. At all times during all drilling operations, a drill crew consisting of at least one experienced driller and one offsider shall be available.

7.1.8 The ***Owner's Engineer*** shall be consulted for approval of any modifications to the drilling program.

7.1.9 The ***Contractor*** shall collect and transport all samples to a storage area specified by the ***Owner*** or their representative.

7.1.10 The ***Contractor*** shall clean and dispose of all waste and excess materials according to instructions provided by the ***Owner***.

7.2 Scope of Work

7.2.1 The field program will be conducted by the ***Contractor*** at the proposed new tailings storage facility location (Site 1). As a minimum, the field program will comprise of the following:

- Complete 23 shallow test pits. Test pits shall be excavated from the existing ground surface to a maximum depth of 5 m (or excavator reach).
- Drilling 17 boreholes from the existing ground surface to a maximum depth of 70 m within the valley of the proposed tailings stack and surrounding areas.
- Packer Testing and/or falling head permeability testing to be completed in 9 boreholes, focusing on testing major joint structures or changes in rock lithology's (i.e,. contact between Tuff and intrusive rock).
- Install Standpipe Piezometers in 7 boreholes.
- Soil sampling, rock core logging and field testing. For granular materials encountered, split-spoon sampling and SPT tests shall be completed. If soft to firm cohesive soil layers are encountered, undisturbed thin-wall samples (Shelby Tubes) shall be collected along with conducting field vane shear tests (peak and residual).

7.3 Schedule

7.3.1 The work is expected to begin in Summer 2023 and the ***Contractor*** is expected to mobilize within one (1) week following award of the contract. The ***Contractor*** shall coordinate with the ***Owner*** or their representative for a suitable commencement date.

7.3.2 The ***Contractor*** shall allow for site orientation time and confirm with the ***Owner*** the required health, safety and environment training for the geotechnical field investigation program.

7.4 Test Pits

7.4.1 The locations of the proposed test pits at the TSF site are summarized in Table 7-1. All of the test pit locations are shown on drawing H353218-0000-229-270-1000, Rev A, which is included in Appendix A. The test pit depths specified herein are presented for quotation purposes only. Final locations and numbers will be provided by the ***Owner's Engineer*** prior to commencement of the program. The test pitting is assumed to be carried out on a time and materials basis.

Table 7-1: Proposed Test Pits

TP ID	Coordinates WGS84 UTM	
	Easting	Northing
TP23-01	452,435	4,580,919
TP23-02	452,581	4,581,243
TP23-03	452,729	4,581,418
TP23-04	452,877	4,581,443
TP23-05	452,877	4,581,293
TP23-06	452,879	4,580,994
TP23-07	453,025	4,581,468
TP23-08	453,025	4,581,169
TP23-09	453,173	4,581,343
TP23-10	453,178	4,581,040
TP23-11	453,321	4,581,518
TP23-12	453,294	4,581,296
TP23-13	453,310	4,581,069
TP23-14	453,469	4,581,244
TP23-15	453,470	4,581,095
TP23-16	453,552	4,581,568
TP23-17	453,604	4,581,419
TP23-18	453,617	4,580,970
TP23-19	453,574	4,580,867
TP23-20	453,691	4,580,750
TP23-21	453,777	4,581,558
TP23-22	453,777	4,581,259
TP23-23	453,947	4,581,420

7.4.2 Excavate the test pits from existing ground surface to a maximum depth of 5 m (or excavator reach if refusal is not achieved within the 5 m maximum depth). The excavation shall be wide enough to safely excavate to the final depth.

7.4.3 Record observations of the type of soil or rock encountered and unit thicknesses within the test pit. Log the overburden and rock interface if exposed and note any features such as fissures, voids, cavities or structure within the soil or rock units.

7.4.4 The level of difficulty while excavation is in progress should be annotated on the field logs.

7.4.5 Photograph each test pit and the spoil pile remaining after excavation. Ensure the spoil pile is adequate distance from the edge of the pit to prevent collapse of the pit side wall.

7.4.6 Carry out sampling with appropriate field testing at nominal 1 m intervals or as required to characterize the soils intersected. Label, store and protect all samples in airtight, weatherproof containers for further laboratory testing and characterization.

7.4.7 Note groundwater levels as either inflow or outflow and approximate depth. Also note the degree of inflow as either low, medium or high flow.

7.4.8 Backfill all test pits after completion using materials and procedures approved by the ***Owner***.

7.5 Boreholes

7.5.1 The locations, estimated depths, testing, sampling and installations required for the proposed boreholes are summarized in Table 7-2. The borehole locations are shown on drawing H353218-0000-229-270-1000, Rev A in Appendix A. The soil boring interval and depth specified herein are presented for quotation purposes only. Final locations and numbers will be provided by the ***Owner's Engineer*** prior to commencement of the program.

Table 7-2: Proposed Boreholes

BH ID	Coordinates WGS84 UTM		Estimated Drilling Depth (m)		Overburden Sampling	Permeability Testing (Section 7.6)	Standpipe Piezometer (Section 7.7)
	Easting	Northing	Overburden	Bedrock			
BH23-01	452,280	4,581,174	10	50	x	x	
BH23-02	452,286	4,581,043	10	60	x	x	x
BH23-03	452,297	4,580,887	10	50	x	x	
BH23-04	452,433	4,581,218	5	50	x		
BH23-05	452,434	4,581,068	10	60	x	x	x
BH23-06	452,581	4,581,093	10	60	x		
BH23-07	452,637	4,580,987	5	50	x		
BH23-08	452,729	4,581,268	5	40	x		
BH23-09	452,729	4,581,119	10	60	x	x	x
BH23-10	452,877	4,581,144	10	60	x		
BH23-11	453,025	4,581,318	5	50	x	x	x
BH23-12	453,028	4,581,018	5	50	x		
BH23-13	453,167	4,581,421	5	40	x		
BH23-14	453,173	4,581,194	10	50	x	x	x
BH23-15	453,415	4,581,383	5	40	x	x	x
BH23-16	453,432	4,580,967	5	40	x	x	x
BH23-17	453,764	4,581,454	5	40	x		
Totals	**-**	**-**	**125**	**850**	**17**	**9**	**7**

7.5.2 Overburden drilling shall be carried out with a rotary drill using hollow-stem continuous-flight augers or mud-rotary drilling techniques, whichever is deemed most effective and available at the site.

7.5.3 The proposed borehole co-ordinates are approximate and may be moved within a 10 m diameter of the location to improve access. Provided that the final borehole location is within a 10 m zone from the reference co-ordinates, approval to change the borehole locations is not required. Where the final location of the proposed borehole collar varies by greater than 10 m from the proposed site, this shall be confirmed in writing with the ***Owner's Engineer*** and agreed upon before proceeding.

7.5.4 Soil sampling shall be performed using 76 mm (nominal) OD Shelby tube (ASTM D1587) or in conjunction with Standard Penetration Tests (SPT) using a 50 mm (nominal) OD split-spoon sampler (ASTM D1586). The SPT and soil sampling shall start from the ground surface and at intervals of 1 m in the top 5 m of the borehole. Below 5 m depth, SPT and soil samples shall be taken at 1.5 m intervals unless refusal or changes of soil type are intersected.

7.5.5 Where soft to firm cohesive soil layers are encountered, undisturbed thin-wall samples (Shelby Tubes) shall be collected along with field shear vane strength test (peak and residual).

7.5.6 As a guideline rock coring shall commence after three consecutive SPT refusals are achieved or where drilling rates indicate very slow progress through hard strata.

7.5.7 Rock coring shall be carried out in all boreholes. Rock coring will be carried out using as a minimum HQ-3 (triple-tube) wireline core barrels (96.3 mm OD and 60.3 mm ID) as per the Diamond Core Drilling Manufacturer's Association, ASTM D2113 and ASTM D5876. Water-based drilling fluid mixed with bentonite clay, synthetic polymer fluid (Quick Gel) may be used (if required) as drilling fluid during the rock coring operations. Polymer shall be such that it quickly degrades and doesn't impact packer testing results.

7.5.8 The depth and interval of core loss during rock drilling shall be clearly recorded on the field logs and core boxes.

7.5.9 Rock Quality Designation (RQD) shall be recorded.

7.5.10 During operations, periodic Point Load Index (PLI) testing on rock core samples shall be carried out to provide indicative rock strengths. If portable PLI equipment is not available, representative core samples of Moderately Weathered (MW) to Fresh (Fr) Rock from each different geological unit shall be taken to the laboratory for testing.

7.5.11 If advancement of the casing becomes problematic, the hole shall be backfilled and another hole drilled within a 1 m distance from the abandoned hole.

7.5.12 Conduct water level readings in each borehole during drilling, at the completion of drilling and 24 hours after the completion of the borehole. Measure groundwater levels each day before work commences where boreholes are continued overnight.

7.5.13 After 48 hours from completion of drilling and confirmation of stable groundwater levels in the open boreholes, carry out falling head or packer testing in the specified boreholes. The location of these boreholes will be provide prior to commencing the filed investigation.

7.5.14 Label, store and protect all samples in airtight, weatherproof containers for further testing and characterization.

7.6 Falling Head and Packer Testing

7.6.1 Falling head and packer testing shall be carried out in the specified boreholes. The location of these boreholes will be provided prior to commencing the field investigation.

7.6.2 The falling head testing shall be carried out to determine the in-situ permeability of the overburden soils along the alignment of the tailings embankment.

7.6.3 Single packer testing shall be carried out in rock to determine the Lugeon values for the rock joints and defects. The packer interval shall be determined by the ***Contractor*** during drilling operations based on the results from field logs.

7.6.4 Should the ***Contractor*** want to perform double packer testing after completion of the boreholes, the methodology shall first be approved by the ***Owner's Engineer*** prior to proceeding with the test.

7.7 Piezometer Installation

7.7.1 The standpipe piezometers are used to determine the groundwater regime and if there is any seasonal fluctuations that should be considered in the design.

7.7.2 The piezometers shall be installed in the required boreholes One or two standpipe piezometers are installed in any specified borehole, one is placed within bedrock near the base of the borehole and the other one is placed within the overburden soil.

7.7.3 The standpipes shall be 32 mm diameter PVC Triloc flush-coupled tubing with a slotted screen type piezometer tip at the bottom. A sand filter shall be placed around the piezometer and capped with a bentonite seal. The sand shall be clean, of uniform and coarse gradation. The bentonite shall be in a pellet form.

7.7.4 Grout capping of piezometer boreholes shall be carried out progressively using a tremie pipe by the ***Contractor***. Backfill grout mix shall be as follows:

- 110 L water
- 5.5 L powdered bentonite
- Two (2) bags cement

7.8 Survey

7.8.1 Test locations may be located using a hand held GPS unit with a horizontal accuracy to approximately 5 m.

7.8.2 After the tests have been completed, the collar locations (easting and northing) and elevations shall be surveyed using a differential GPS or total station. The as-completed test locations shall be surveyed to a horizontal accuracy of less than 0.5 m with a vertical accuracy to less than 0.1 m.

7.8.3 All co-ordinates are to be presented in the World Geodetic Grid (WGS84) system and projected onto the Universal Transverse Mercator (UTM). The vertical datum shall be as per the datum used for previous geotechnical or geological investigative work at the site. This will be confirmed by the ***Owner*** prior to commencing the final survey.

7.9 Backfilling Open Boreholes

7.9.1 All boreholes shall be completely backfilled using a grout mixture comprising 96% Type 50 Portland cement and 4% Bentonite mixed to a specific gravity of 1.7. The ***Contractor*** shall pump the grout into the borehole through a pipe inserted into the bottom of the hole (tremie method) to prevent excessive surface settlement. The upper 0.5 m of the borehole shall be backfilled with native soil or cuttings from the borehole drilling activities.

8. Sample Storage and Delivery

8.1 All soil samples shall be placed in sealed plastic bags or containers. Each sample shall be labelled with the Project name, project number, borehole number, sample number, sample depth, blow counts (if applicable) and date. The Contractor shall furnish all necessary materials to retain and store soil samples (e.g., plastic bags, zip ties, etc.).

8.2 The rock cores recovered from each core run shall be placed in a labelled wooden or plastic core box (ASTM D2113 and ASTM D4220). The core boxes shall be labelled with the Project name, project number, borehole number, sample number, sample depth and date. After each core box has been filled, a high resolution digital colour photograph shall be taken (refer example in Figure 8-1). Any core loss shall be clearly marked within the core boxes using red foam or timber spacers with an equivalent length to the loss. The rock cores will be wrapped as per ASTM D5079 in order to preserve the moisture content of the rock and limit potential degradation. The rock cores may be further examined and logged by an experienced geologist or geotechnical engineer in the laboratory.

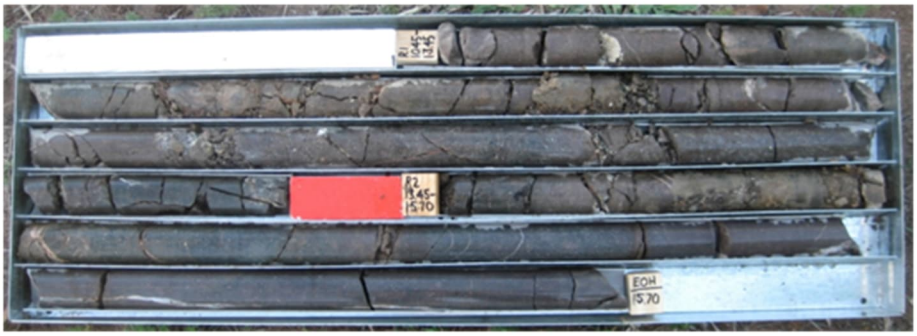

Figure 8-1: Example of Rock Core Photo with Core Loss

8.3 The soil and rock samples will be preserved and transported to a geotechnical laboratory by the ***Owner*** for further examination and testing. All core boxes and unused soil samples shall remain at the ***Owner's*** designated storage area.

9. Required Equipment

9.1 The ***Contractor*** shall provide the necessary equipment in good operating order, including equipment for transport of workers and transport of drilling equipment.

9.2 The excavator used to complete test pits shall be track mounted and capable of navigating in steep vegetated terrain. The excavator shall be maintained in good working order and shall have sufficient fuel to ensure continuous operation for the investigation duration.

9.3 The drill rig shall be a man portable track or skid-mounted type drill rig or equivalent for drilling in steep vegetated terrain. The drill shall be maintained in good working order and shall have sufficient spare parts, drilling bits, supplies and fuel to ensure continuous operation as required. It shall be equipped to retrieve overburden and rock core samples by standard geotechnical methods such as split-spoon samplers.

9.4 Soft ground conditions may exist at the ground surface of the site.

9.5 The ***Contractor*** shall provide the following items:

9.5.1 Sufficient hollow-stem augers with a casing size 108 mm for 40 m depth.

9.5.2 All necessary equipment and tools to permit retrieval of overburden samples and standard penetration tests (SPTs). SPTs shall be carried out in accordance with ASTM D1586.

9.5.3 Shelby tubes (76 mm OD and 70 mm ID) for undisturbed soil sampling (up to 30 samples).

9.5.4 Wax for sealing the Shelby tube samples.

9.5.5 Replacement shoes for split-barrel/split-spoon samplers equipped with butterfly trap for sampling loose granular soils.

9.5.6 HQ-3 triple-tube wireline core barrel (96.3 mm OD and 60.3 mm ID), parts and accessories to core up to 50 m.

9.5.7 Packer testing equipment.

9.5.8 Standpipe piezometers.

9.5.9 Field shear vane equipment.

9.5.10 All materials for backfilling and sealing the boreholes.

9.5.11 Material to restrict movement of washed cuttings during drilling operation such as mud trays or bunded sumps, if necessary.

9.5.12 Protective equipment including personal protective equipment (PPE).

9.5.13 Portable combustible gas tester.

9.5.14 Bentonite Pellets (Hole Plug and/or Pel Plug) (50 lb. bags/containers).

9.5.15 Portland cement for completing grout backfilling to surface.

9.5.16 Any other equipment, spare parts and materials required to complete the specified geotechnical investigation of the site.

10. Laboratory Testing

10.1 Geotechnical laboratory testing shall be completed on selected samples obtained from the geotechnical site investigation selected by the Owner with the Owner Engineer's approval to better categorize the in-situ soil/rock materials. The numbers and type of tests to be completed on collected samples is outlined in Table 10-1. The list and numbers provided is considered preliminary and to be used for budgetary purposes only. Upon completion of the

geotechnical site investigation, the list will be updated and further detailed by the Owner's Engineer, based on the collected samples from the investigation.

Table 10-1: Summary of Proposed Geotechnical Laboratory Testing

Test	Standard (or accepted equivalent)	Estimated Number of Tests
Soil Tests		
Moisture Content [1]	ASTM D2216	50
Specific Gravity	ASTM D854	12
Particle Size Analysis	ASTM D6913	40
Hydrometer Analysis - Fines Content (< 75µm)	ASTM D7928	20
Atterberg Limits	ASTM D4318	10
Undrained Isotropic Consolidated (CIU) Triaxial Tests	ASTM D4767	4
Pinhole Dispersion (Dispersibility)	ASTM D4221	4
Falling Head Permeability	ASTM D5084	10
Standard Compaction Test	ASTM D698	15
California Bearing Ratio (CBR)	ASTM D4429	8
Oedometer (One Dimensional Consolidation)	ASTM D2435	4
Soil Chemistry	ALS	4
Rock Tests		
Rock Density	ASTM D7263	10
Uniaxial Compressive Strength of Rock	ASTM D7012	20
Point Load Index	ASTM D5731	20
Rock Durability	ASTM D4644	5
Chemical (pH, sulfate, chloride)	ALS	4

Note:
1. Moisture content of collected samples shall be measured as soon as practical upon sample arrival to the laboratory.

11. Reporting

11.1 All submitted documentations shall be written in English.

11.2 Upon completion of the fieldwork, the ***Contractor*** shall submit draft borehole logs and approximate as-drilled locations for review by the ***Owner's Engineer***.

11.3 As a minimum, the Contractor shall submit a Factual Geotechnical Investigation Report including the following:

- Site Description
- Site Geology
- Description of site investigations including sampling procedures and field test methodologies.
- Summary of Subsurface Conditions

- Summary of Groundwater Levels
- Summary of Filed Testing Carried Out
- Summary of Laboratory Testing
- Borehole and Test Pit Completed Location Plan
- Borehole and Test Pit Logs
- Piezometer Installation Records
- Laboratory Testing Certificates.

11.4 The Contractor shall submit one copy of the draft Laboratory Testing Report, in Portable Document Format (PDF), for review two (2) weeks after completion of the geotechnical laboratory tests.

11.5 The Contractor Shall submit raw data of laboratory testing (in .xls format) to the Owner and Owner's Engineer.

11.6 Within two (2) weeks following the receipt of comments and confirmation of the draft Laboratory Testing Report, the Contractor shall submit one electronic copy, in PDF format, of the complete Final Laboratory Testing Report.

END OF SECTION

Appendix A

Geotechnical Investigation Plan