## INCO - LABS (KSCC)

Paid up Capital K.D. 900,000

Accredited to ISO/IEC 17025: 2005



# شركة مختبرات إنكو الصناعية (ش.م.ك.م)

رأس المال المدفوع ٩٠٠،٠٠٠ دك

حاصل على الآيزو ٢٠٠٥: ١٧٠٢٥

فحوصات المواد ★ أبحاث التربـة ★ المساحــة ★ المعــايــرة ★ التقيـيــم الإنشائي ★ فحوصات البيئة ★ فحوصات الخوازيق Material Testing ★ Soil Investigation ★ Surveying ★ Calibration ★ Structural Evaluation ★ Environmental Testing ★ Piles Testing

# **COMPANY PROFILE**



P.O.Box 21073 Safat 13071, Kuwait Tel.: +965 2471 0780

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ص.ب. ۲۱۰۷۳ الصفاة ۱۳۰۷۱ - الكويت تليفون : ۲۲۷۱۰۷۸۰ ۹٦۵ ۲

فاكس : ۲۲۷۲۵۲۲ ٥٦٥+

ISO/IEC 17025:2005 TESTING CERT#2487.01 & 2487.02 CALIBRATION CERT # 2487.03

### TABLE OF CONTENTS

- 1 Introduction
- 2 Company Data
- 3 Quality Policy
- 4 ISO/IEC 17025 Accreditation
- 5 Company Activities
  - **5.1** Geotechnical Department
  - 5.2 Materials Department
  - 5.3 Survey Division
    - 5.3.1 Topographic Surveying
    - 5.3.2 Engineering Surveying
    - 5.3.3 Measured Building Survey
    - 5.3.4 Utilities Survey
    - 5.3.5 Stock Piles Quantity Survey
    - **5.3.6 Survey Project Management**
    - 5.3.7 GPS Satellite Positioning
    - 5.3.8 Hydrographic and Bathymetric Survey
    - 5.3.9 Arial Survey
    - 5.3.10 Survey Training
  - 5.4 Calibration
  - 5.5 Structural Evaluation
  - 5.6 Environmental Testing
- 6 Calibration of Equipment
- 7 Organization Chart
- 8 Listing of Projects Undertaken
  - 8.1 Soil Testing
    - 8.1.1 Soil Investigation
    - 8.1.2 Cone Penetration Testing
    - 8.1.3 Electrical Resistivity Testing
  - 8.2 Materials Testing
    - 8.2.1 Turnkey Materials Testing Projects
    - 8.2.2 Field Soil Compaction Testing
    - 8.2.3 Field Concrete Inspection

- 8.3 Survey
- 8.4 Environmental Testing
- 8.5 Structural Evaluation
- 9 Curriculum Vitae of Company Staff
- 10 Equipment Listing
  - 10.1 Field & Laboratory Equipment for Material Testing
    - 10.1.1 Equipment for Concrete & Aggregate testing
    - 10.1.2 Equipment for Soil Testing
    - 10.1.3 Equipment for Asphalt Testing
    - 10.1.4 Equipment for Chemical Testing
  - 10.2 Field Equipment for Geotechnical Investigation
    - 10.2.1 Drilling Rigs
    - **10.2.2** Coring Equipment
    - 10.2.3 Sampling Equipment
    - **10.2.4** Field Testing Equipment
  - 10.3 Survey Equipment
  - 10.4 Data Processing Equipment
- 11 Materials and Soil Tests Capability
  - 11.1 Soil Tests
  - 11.2 Soil-Cement Tests
  - 11.3 Concrete Tests ASTM Standard
  - 11.4 Concrete Tests BS Standard
  - 11.5 Natural Building Stone Tests
  - 11.6 Steel Tests
  - 11.7 Aggregates Tests ASTM Standards
  - 11.8 Aggregates Tests BS Standards
  - 11.9 Chemical test for Water Samples
  - 11.10 Chemical test for Cement, Cement Clinker
  - 11.11 Chemical test for Gypsum
- 12 International Professional Organizational Membership
- 13 Licenses and Registration Documents
  - 13.1 Commerce Department Certificate
  - 13.2 Municipality Approval Certificate
  - 13.3 MPW Approval & Calibration Report
  - 13.4 Other Governmental & Private Industries Certificates
- 14 Company Brochures

### 1 INTRODUCTION

**INCO-LABS** is a company registered in Kuwait, specializing in Materials and Soil Testing, Surveying, Structural Evaluation, Calibration and Environmental Testing. The company operates from purpose-built fully equipped laboratories and offices, at Subhan, in the State of Kuwait.

The senior staff of **INCO-LABS** are highly experienced professionals each with over 10 years experience in the fields of materials testing, soil investigation, surveying, geotechnical consultancy, structural evaluation, environmental testing and various fields of calibration such as force, pressure, electrical, mass, temperature, humidity, dimension and volumes, in order to fulfill the commitment of the Firm to provide quality engineering, laboratory testing and calibration services to clients. Skilled and experienced technical and administration staff support the professional staff.

The Directors and Management of **INCO-LABS** have established three prime objectives:

- To provide quality work
- To provide results in a timely manner
- \* To keep fees to clients at reasonable levels by carrying out work using cost-effective methods.

To accomplish the above objectives, **INCO-LABS** has invested and continuing in investment in laboratory equipment, drilling rigs, data processing equipment, and engineering software packages to efficiently and effectively run its operations.

**INCO-LABS** is capable of undertaking work in the following disciplines:

- \* Soil investigation, onshore and offshore
- \* Soil and materials testing performed in-situ and in the laboratory
- \* Geotechnical consultancy
- \* Hydrogeological studies
- Soil Erosion studies
- \* Environmental testing and consultancy
- \* Topographic and Engineering Surveying
- \* Calibration of equipment
- Structural evaluation of concrete and steel buildings

### 2 COMPANY DATA

FIRM NAME: INCO-LABS (KSCC)

**ACTIVITIES:** Testing Materials – Soil Investigation -

Surveying Calibration - Structural Evaluation -

**Environmental Testing-Piles Testing** 

**ADDRESS:** P. O. Box 21073,

Safat 13071,

Kuwait.

**LOCATION:** Plot No. 151,

Street No. 101, Block No. 1

North Subhan, Kuwait

**TELEPHONE**: (965) 2471 0780 - 24752330

(965) 2471 6520 - 24752320

(965) 2473 8824

**FACSIMILE**: (965) 2471 6526

**E-MAIL:** info@inco-lab.com

**WEB SITE:** www.inco-lab.com

**PRINCIPAL MEMBERS** 

OF FIRM:

Eng. Abdullah A. Al-Obaidan

Chairman

Eng. Abdulaziz A. Al-Obaidan

Chief Executive Officer

YEAR ESTABLISHED: 1996

**NUMBER OF EMPLOYEES:** 150 (as of December 2014)

### 3 QUALITY POLICY

The quality system of **INCO-LABS** is comprised of all of the policies in the Quality Manual and referenced documents. It has been established to guide the staff in the performance of good laboratory practices.

Our quality system objectives:

- (a) to maintain compliance to ISO/IEC 17025: 2017 requirements,
- (b) to maintain the trust of our clients, and
- (c) to be used as a productive tool for continuous improvement.

The purpose of the quality system is to help fulfill the mission and objectives of **INCO-LABS**. All **INCO-LABS** staff concerned with testing activities are required to implement and follow the policies contained within the Quality Manual, and to all referenced documents. Each staff member must be alert to problems that could compromise the quality of technical work performed. Problems or sources of error must be reported to the General Manager or his designee.

**INCO-LABS** has obtained the ISO/IEC 17025:2017 requirements for the Competence of Testing and Calibration Laboratories. The management of the Company has taken the decision to apply the requirements of ISO/IEC 17025:2017 in order to ensure the quality of testing and maintain the **TRUST** between the firm and its clients.

### 4 ISO/IEC 17025:2017 ACCREDITATION

**INCO-LABS** is accredited by American Association for Laboratory Accreditation (A2LA) for technical competence in the field of Geotechnical and Construction Materials Testing (Certificates No. 2487.01 & 2487.02) in accordance with recognized International Standard ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration Laboratories.

Accredited Tests: ASTM C29, C40, C117, C127, C128, C136, C142, C289, D422, D698, D1452, D1556, D1557, D1586, D2217, D2419, D4318, AASHTO T164(97) & T230-68(93), BS 1377:Part3:1990, Section 3, 5, 6, 7 & 9, BS 1377:Part9:1990, Section 3.3, BS 1881:Part 102(83), 107(83), 108(83), 114(83), 116(83), 120(83), 122(83) &124(88), BS 812 Part 111(90), 106(85), 110(90), 112(90), 117(88) & 118(88).

The testing equipments of **INCO-LABS** are periodically calibrated by National Institute for Standards (NIS) based in Egypt, as approved metrology laboratory in the Middle East by National Institute of Standards and Technology (NIST) based in U.S.A.

**INCO-LABS** is participating in Proficiency Testing programs provided by AASHTO Materials Reference Laboratory (AMRL) for soil and aggregates testing, and Cement and Concrete Reference Laboratory (CCRL) for concrete testing, both based in U.S.A. **INCO-LABS** participation in Proficiency Testing programs is essential to maintain the quality of testing by comparing the tests result among laboratories from all around the world.



### SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

INCO-LABS
Plot No. 151, Block No.1
Street No. 101
North Subhan, Safat, KUWAIT 13071
Abdulaziz A. Al-Obaidan Phone: 00965-4752330

### **GEOTECHNICAL**

Valid To: December 31, 2025 Certificate Number: 2487.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to accreditation is granted to this laboratory at the location listed above as well as the one satellite laboratory location listed below to perform the following tests:

**Test Description** 

<u>rest Wethou(s)</u>	Test Description
ASTM D698	Moisture-Density Relations (Standard Proctor)
ASTM D854	Specific Gravity of Soil
ASTM D1452*	Soil Investigation and Sampling by Auger
ASTM D1556*	Density and Unit Weight of Soil in Place by the Sand-Cone
	Method
ASTM D1557	Laboratory Compaction Characteristics of Soil Using
	Modified Effort (2,700kN-m/m <sup>3</sup> )
ASTM D1883	California Bearing Ratio (CBR)
ASTM D2216	Natural Moisture Content in Soil
ASTM D2419	Sand Equivalent Value of Soils and Fine Aggregate
ASTM D3080	Direct Shear of Soils
ASTM D4318	Liquid Limit, Plastic Limit, and Plasticity Index of Soils
ASTM D7928	Standard Test Method for Particle-Size Distribution
	(Gradation) of Fine-Grained Soils Using the Sedimentation
	(Hydrometer) Analysis
BS 1377-7 Part 4	Direct Shear of Soils

Page 1 of 3

Test Method(s)

This accreditation covers testing/calibration performed at the main laboratory listed above, and the following satellite laboratory listed below:

### **INCO-LABS**

### Plot No. 75B, 14<sup>th</sup> Street, Block 1 Subhan Area, KUWAIT

Abdulaziz A. Al-Obaidan Phone: 00965-4752330

Geotechnical (Soil)	<b>Test Description</b>
ASTM C40	Organic Impurities in Fine Aggregates for Concrete
ASTM C289	Potential Alkali-Silica Reactivity of Aggregates (Chemical
	Method)
ASTM D1452*	Soil Investigation and Sampling by Auger
ASTM D1586*	Penetration Test & Split Barrel Sampling of
	Soil/Determination
ASTM D2487	Classification of Soils for Engineering Purposes (Unified Soil
	Classification System)
ASTM D4719*	Pressure Meter Testing
ASTM D5778*	Cone Penetration Testing (CPT)
BS 812: Part117: 1988	Chloride Salts for Aggregate
BS 812: Part 118: 1988	Sulfate Content for Aggregates
BS 1377: Part 3: 1990, 3	Determination of Organic Matter Content
BS 1377: Part 9*: 1990, 3.3	Penetration Resistance Using the Split Barrel Sampler (The
	Standard Penetration Test SPT)
BS 1377: Part 3: 1990, 5	Determination of Sulphate Content of Soil and Water
BS 1377: Part 3: 1990, 7	Determination of the Chloride Content
BS 1377: Part 3: 1990, 9	Determination of pH Value
BS 1377: Part 3: 1990, 6	Calcium Carbonate
BS 1377: Part 3: 1990, 4	Loss on Ignition
BS1881: Part 124: 2015	Methods of Analysis of Hardened Concrete:
	Aggregate/Cement Ration for Hardened Concrete Sulfate for
	Hardened Concrete Chloride for Hardened Concrete

### **Geotechnical (Water) Test Description**

ASTM D511	Calcium (Ca) Hardness; Magnesium (Mg) Hardness
ASTM D1126	Total Hardness (as CaCO3)
ASTM D3875	Carbonate (CO3); Bi-Carbonate (HCO3)
ASTM D5907	Total Suspended Solids (TSS)
BS 6068	Chemical Oxygen Demand (COD)
BS 1377: Part 3: 1990, 5.3	Sulphate Content of Water
BS 1377: Part 3: 1990, 7.2	Chloride Content of Water
BS 1377: Part 3: 1990, 8.1	Total Dissolved Solids (TDS) in Water
BS 1377: Part 3: 1990	pH Value of Water
$317^{\text{SM}}$	Potassium (K)
$320^{\mathrm{SM}}$	Sodium (Na)
422 <sup>SM</sup>	Dissolved Oxygen (DO)

Page 2 of 3

Standard Methods for the Examination of Water and Wastewater; Fourteenth Edition

\* This laboratory performs field testing activities for these tests.



# **Accredited Laboratory**

A2LA has accredited

**INCO-LABS** 

Safat, KUWAIT

for technical competence in the field of

# Geotechnical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017

General requirements for the competence of testing and calibration laboratories. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system

(refer to joint ISO-ILAC-IAF Communiqué dated April 2017).



Presented this 30th day of January 2024.

Mr. Trace McInturff, Vice President, Accreditation Services

For the Accreditation Council Certificate Number 2487.01

Valid to December 31, 2025



### SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

INCO-LABS
Plot No. 151, Block No.1
Street No. 101
North Subhan, Safat, KUWAIT 13071
Abdulaziz A. Al-Obaidan Phone: 00965-4752330

### CONSTRUCTION MATERIALS TESTING

Valid To: December 31, 2025 Certificate Number: 2487.02

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to accreditation is granted to this laboratory at the location listed:

<b>Test Method:</b>	Test Description:
Aggregates:	
ASTM C29	Bulk Density ("Unit Weight") and Voids in Aggregate
ASTM C40	Organic Impurities in Fine Aggregates for Concrete
ASTM C88	Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
ASTM C117	Materials Finer than 75-µm (No. 200) Sieve in Mineral Aggregates by Washing
ASTM C127	Density, Relative Density (Specific Gravity), and Absorption of Coarse Aggregate
ASTM C128	Density, Relative Density (Specific Gravity), and Absorption of Fine Aggregate
ASTM C131	Standard Test Method for Resistance to Degradation of Small- Size Coarse Aggregate by Abrasion and Impact in the Los Angles Machine
ASTM C136	Sieve Analysis of Fine and Coarse Aggregates
ASTM C142	Clay Lumps and Friable Particles in Aggregates
ASTM C289	Potential Alkali-Silica Reactivity of Aggregates (Chemical Method)
ASTM C1252	Standard Test Methods for Uncompacted Void Content of Fine Aggregate (as Influenced by Particle Shape, Surface Texture, and Grading)
ASTM D75	Standard Practice for Sampling Aggregates
ASTM D2419	Sand Equivalent Value of Soils and Fine Aggregate
ASTM D4791	Standard Test Method for Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate
ASTM D5444	Standard Test Method for Mechanical Size Analysis of Extracted Aggregate
ASTM D5821	Standard Test Method for Determining the Percentage of Fractured Particles in Coarse Aggregate

(A2LA Cert. No. 2487.02) 01/30/2024

Page 1 of 5

Test Method:	Test Description:		
ASTM D6928	Standard Test Method for Resistance of Coarse Aggregate to		
	Degradation by Abrasion in the Micro-Deval Apparatus		
ASTM D7428	Resistance of Fine Aggregate to Degradation by Abrasion in the		
	Micro-Deval Apparatus		
AASHTO T164 (Method B only)	Test for Quantitative Extraction of Asphalt Binder from Hot		
	Mix Asphalt		
AASHTO T230-68: 1993 (Method B)	Compaction of Bituminous Aggregate		
AASHTO T304 Method A	Standard Method of Test for Uncompacted Void Content of		
	Aggregate		
AASHTO T335	Standard Method of Test for Determining the Percentage of		
A A CLUTO TO	Fracture in Course Aggregate Standard Method of Test for Mechanical Analysis of Extracted		
AASHTO T30	Aggregate		
BS 812: Part 111: 1990	Ten Percent Fine Values		
BS 812: Part 106: 1990	Shell Content in Coarse Aggregate		
BS 812: Part 110: 1990	Determination of Crushing Value		
BS 812: Part 110: 1990 BS 812: Part 112: 1990	Aggregate Impact Value (AIV)		
BS 812: Part 117: 1988	Chloride Salts for Aggregate		
BS 812: Part 117: 1988 BS 812: Part 118: 1988	Sulfate Content for Aggregates		
BS 812: Part 118: 1988	Surface Content for Aggregates		
Asphalt:			
ASTM D546	Standard Test Method for Sieve Analysis of Mineral Filler for		
7161111 23 10	Asphalt Paving Mixtures		
ASTM D979	Standard Practice for Sampling Bituminous Paving Mixtures		
ASTM D2041	Standard Test Method for Theoretical Maximum Specific		
	Gravity and Density of Asphalt Mixtures		
ASTM D3203	Standard Test Method for Percent Air Voids in Compacted		
	Asphalt Mixtures		
ASTM D3549	Standard Test Method for Thickness or Height of Compacted		
ACTM DAGG	Asphalt Mixture Specimens		
ASTM D4867	Standard Test Method for Effect of Moisture on Asphalt Concrete Paving Mixtures		
ASTM D5361	Standard Practice for Sampling Compacted Asphalt Mixtures for		
7.01111 0.001	Laboratory Testing		
ASTM D6925	Standard Test Method for Preparation and Determination of the		
	Relative Density of Asphalt Mix Specimens by Means of the		
	Superpave Gyratory Compactor		
ASTM D6926	Standard Practice for Preparation of Asphalt Mixture Specimens		
1 GEN 1 D COOF	Using Marshall Apparatus		
ASTM D6927	Standard Test Method for Marshall Stability and Flow of		
AASHTO R68	Asphalt Mixtures  Propagation of Asphalt Mixtures by moons of Marshall		
AASHIU KU8	Preparation of Asphalt Mixtures by means of Marshall Apparatus		
ASTM D6433	Standard Practice for Roads and Parking Lots Pavement		
1101111 D0733	Condition Index Surveys		
ASTM D6648	Standard Test Method for Determining the Flexural Creep		
	Stiffness of Asphalt Binder Using the Bending Beam Rheometer		
	(BBR)		
ASTM D7175	Standard Test Method for Determining the Rheological		
	Properties of Asphalt Binder Using a Dynamic Shear Rheometer		
	(DSR)		

Test Method:	Test Description:		
ASTM D7405	Standard Test method of Test for Multi Stress Creep Recovery		
ASTALD / 103	(MSCR) test of Asphalt binder using a Dynamic Shear		
	Rheometer (DSR)		
ASTM D8239	Performance Graded Asphalt Binder Using Multiple Stress		
	Creep Recovery (MSCR)		
ASTM D6373	Standard Specifications for Performance –Graded Asphalt		
	Binder		
AASHTO T313	Standard Test Method for Determining the Flexural Creep		
	Stiffness of Asphalt Binder Using the Bending Beam Rheometer		
	(BBR)		
AASHTO T315	Standard Test Method for Determining the Rheological		
	Properties of Asphalt Binder Using a Dynamic Shear Rheometer		
	(DSR)		
AASHTO T350	Standard Test method of Test for Multi Stress Creep Recovery		
	(MSCR) test of Asphalt binder using a Dynamic Shear		
AASHTO R29	Rheometer (DSR)  Standard Practice for Grading or Verifying the Performance		
AASIIIU K29	Standard Practice for Grading or Verifying the Performance Grade (PG) of an Asphalt Binder		
AASHTO M332	Performance Graded Asphalt Binder Using Multiple Stress		
MISTITO WISSE	Creep Recovery (MSCR)		
AASHTO M320	Standard Specifications for Performance –Graded Asphalt		
1113111 6 141320	Binder		
AASHTO R30	Mixture Conditioning of Hot-ix Asphalt (HMA)		
AASHTO R35, MS-2	Standard Practice for Superpave Volumetric Design for Asphalt		
	Mixtures (Superpave MIX Design)		
ASPHALT INSTITUTE MS-2	Asphalt Mix design (HMA)		
AASHTO M323	Standard Specifications for Superpave Volumetric Mix Design		
AASHTO T37	Standard Method of Test for Sieve Analysis of Mineral Filler for		
	Hot Mix Asphalt		
AASHTO T166	Bulk Specific Gravity of Compacted Hot Mix Asphalt (HMA)		
A A CLUTTO TOOO	Using Saturated Surface-Dry Specimens		
AASHTO T209	Standard Method of Test for Theoretical Maximum of Specific		
AASHTO T245	Gravity (Gmm) and Density of Asphalt Mixtures  Standard Method of Test for Resistance to Plastic Flow of		
AASH10 1245			
AASHTO T283	Asphalt Mixtures Using Marshall Apparatus Standard Method of Test for Resistance of Compacted Asphalt		
14 MIII O 1203	Mixtures to Moisture-Induced Damage		
AASHTO T312	Standard Method of Test for Preparing and Determining the		
	Density of Asphalt Mixture Specimens by Means of the		
	Superpave Gyratory Compactor		
AASHTO T329	Standard Method of Test for Moisture Content of Asphalt		
	Mixtures by Oven Method		
AASHTO T324	Standard Method of Test for Hamburg Wheel-Track Testing of		
	Compacted Asphalt Mixtures		
QCS 2014 SEC. 06 Part 05, CL 5.3.3	Retained Stability, Lost Stability (Per ASTM D6926, D6927)		
Paragraph 16; CRD -C 652-95			
Bituminous :			
AASHTO T164 : (Method B)	Test for Quantitative Extraction of Asphalt Binder from Hot		
(1.10 mod 2)	Mix Asphalt		

Test Method:	Test Description:			
ASTM D5	Standard Test Method for Penetration of Bituminous Materials			
ASTM D36	Standard Test Method for Softening Point of Bitumen (Ring- and-Ball Apparatus)			
ASTM D70	Standard Test Method for Density of Semi-Solid Asphalt Binder (Pycnometer Method)			
ASTM D88	Standard Test Method for Saybolt Viscosity			
ASTM D92	Standard Test Method for Flash and Fire Points by Cleveland Open Cup Tester			
ASTM D113	Standard Test Method for Ductility of Asphalt Materials			
ASTM D2872	Standard Test Method for Effect of Heat and Air on a Moving Film of Asphalt (Rolling Thin-Film Oven Test)			
ASTM D4402	Standard Test Method for Viscosity Determination of Asphalt at Elevated Temperatures Using a Rotational Viscometer			
ASTM D5546	Standard Test Method for Solubility of Asphalt Binders in Toluene by Centrifuge (Withdrawn 2017)			
ASTM D6521	Standard Practice for Accelerated Aging of Asphalt Binder Using a Pressurized Aging Vessel (PAV)			
ASTM D7173	Standard Practice for Determining the Separation Tendency of Polymer from Polymer-Modified Asphalt			
AASHTO R28	Standard Practice for Accelerated Aging of Asphalt Binder Using a Pressurized Aging Vessel (PAV)			
AASHTO T48	Standard Method of Test for Flash Point of Asphalt Binder by Cleveland Open Cup			
AASHTO T49	Standard Method of Test for Penetration of Bituminous Materials			
AASHTO T53	Standard Method of Test for Softening Point of Bitumen (Ring-and-Ball Apparatus)			
AASHTO T228	Standard Test Method of Test for Specific Gravity of Semi- Solid Asphalt Materials			
AASHTO T240	Standard Method of Test for Effect of Heat and Air on a Moving Film of Asphalt Binder (Rolling Thin-Film Oven Test)			
AASHTO T316	Standard Method of Test for Viscosity Determination of Asphalt Binder Using Rotational Viscometer			
Concrete:				
ASTM C39	Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens			
ASTM C78	Standard Test Method for Flexural Strength of Concrete (Using Simple Beam with Third-Point Loading)			
ASTM C109	Compressive Strength of Hydraulic Cement Mortars			
ASTM C143	Slump of Hydraulic-Cement Concrete			
ASTM C1064	Temperature of Freshly Mixed Hydraulic-Cement Concrete			
BS 1881: Part 102: 1983*	Determination of Slump			
BS 1881: Part 107: 1983*	Density of Fresh Concrete			
BS 1881: Part 108: 1983*	Test Cubes from Fresh Concrete			
BS 1881: Part 114: 1983	Method for Determination of Density of Hardened Concrete			
BS 1881: Part 116: 1983	Compressive Strength of Concrete Cubes			
BS 1881: Part 120: 1983	Compressive Strength of Concrete Cores			

<b>Test Method:</b>	<b>Test Description:</b>		
BS 1881: Part 122: 2011	Water Absorption		
BS 1881: Part 124: 2015	Methods of Analysis of Hardened Concrete: Aggregate/Cement		
	Ratio for Hardened Concrete Sulfate for Hardened Concrete		
	Chloride for Hardened Concrete		
Geotechnical:			
ASTM D4945	Standard Test Method for High Strain Dynamic Testing for		
	Deep Foundations		
ASTM D5882	Standard Test Method for Low Strain Integrity Testing of Piles		
ASTM D6760	Standard Test Methods for Integrity Testing of Concrete Deep		
	Foundations by Ultrasonic Cross-hole Testing		
Steel:			
ASTM A370	Mechanical Testing of Steel Products		
ASTM A615	Mechanical Testing of Steel Products - Bending		
Stone:			
ASTM C97	Absorption & Bulk Specific Gravity of Dimension Stone		
ASTM C99	Modulus of Rupture of Granite		
ASTM C170	Compressive Strength of Dimension Stone		
ASTM C880	Flexural Strength of Dimension Stone		

<sup>\*</sup>This laboratory performs field testing activities for these tests.



# **Accredited Laboratory**

A2LA has accredited

**INCO-LABS** 

Safat, KUWAIT

for technical competence in the field of

## **Construction Materials Testing**

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017

General requirements for the competence of testing and calibration laboratories. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system

(refer to joint ISO-ILAC-IAF Communiqué dated April 2017).



Presented this 30th day of January 2024.

Mr. Trace McInturff, Vice President, Accreditation Services For the Accreditation Council

Certificate Number 2487.02

Valid to December 31, 2025



### SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

INCO-LABS
Plot No. 151, Block No.1
Street No. 101
North Subhan, Safat, Kuwait 13071

Abdulaziz A. Al-Obaidan Phone: 00965-24752330

### **CALIBRATION**

Valid To: December 31, 2025 Certificate Number: 2487.03

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following calibrations<sup>1, 8</sup>:

### I. Dimensional

Parameter/Equipment	Range	CMC <sup>2, 4</sup> (±)	Comments
Calipers –			
Digital	Up to 600 mm	15 μm	JIS B7515, caliper checker 600 mm, gauge blocks set
Vernier 0.02 mm 0.05 mm	Up to 600 mm Up to 600 mm	15 μm 30 μm	Grade (0)
Height Gauge –			
Digital 0.001 mm 0.01 mm	Up to 600 mm	12 μm 15 μm	JIS 7517, gauge blocks set Grade (0), caliper checker 600 mm
Vernier 0.02 mm 0.05 mm	Up to 600 mm Up to 600 mm	15 μm 30 μm	
Micrometers –			
External Depth	Up to 100 mm Up to 100 mm	1.5 μm 1.5 μm	JIS 7502 , gauge blocks set Grade (0)

(A2LA Cert. No. 2487.03) 01/30/2024

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Page 1 of 16

Parameter/Equipment	Range	CMC <sup>2, 4</sup> (±)	Comments	
Dial Indicator	Up to 50 mm	3 μm	JIS B 7503 , BS EN ISO 463 gauge blocks set Grade (0) or	
	Up to 100 mm	4 μm	dial gauge calibrator	
Linear Variable Displacement Transducer (LVDT)	Up to 50 mm	3 μm	Gauge block set (Grade (0) 8845A DMM	
Feeler Gauge	(0.05 to 5) mm	3 μm	JIS B7524, digital micrometer or digital indicator	
Test Sieve (Aperture)	(0.06 to 125) mm	5 μm	ASTM E11	
Profile Projector <sup>3</sup>	Up to 200 mm	3 μm	JIS 7184, gauge blocks set Grade (0)	
Universal Measuring Machine – Dial Calibrator	Up to 50 mm	0.6 μm	In-house method based on instruction manual Gauge blocks set grade (0)	
Coating Thickness Gauge	Up to 1000 μm	4 μm	In house method based on BS EN ISO 2178, 2808 & instruction manual, standard thickness foil set	
Steel Rule	Up to 1000 mm	30 μm	In-house method based on JIS 7516, profile projector	

## II. Dimensional Testing/Calibration<sup>1</sup>

Parameter/Equipment	Range	CMC <sup>2</sup> (±)	Comments
Linear Measurement <sup>7</sup> – Steel Ball, CBR Mold, Proctor Molds, Marshal mold, Cube Molds, Molds Mortar Cube,	Up to 50 mm	1 μm	Universal measuring machine, gauge blocks-POLO
Slump Cone & Tamper	Up to 200 mm	5 μm	Profile projector & hand tools (micrometers, dial indicator)
	Up to 600 mm	30 μm	Hand tools (calipers & height gauge, steel rules)

### III. Electrical – DC/Low Frequency

Parameter/Equipment	Range	CMC <sup>2, 6</sup> (±)	Comments
DC Voltage – Generate	(0 to 330) mV 3 mV to 3 V (3 to 30) V (30 V to 300) V (300 to 1000) V	$\begin{array}{c} 28 \; \mu V/V + 1.5 \; \mu V \\ 18 \; \mu V/V + 4.2 \; \mu V \\ 21 \; \mu V/V + 56 \; \mu V \\ 28 \; \mu V/V + 770 \; \mu V \\ 28 \; \mu V/V + 5.1 \; mV \end{array}$	Multi-product calibrator
DC Current – Generate	(0 to 300) μA (0.3 to 3) mA (3 to 30) mA (30 to 300) mA (0.3 to 1) A (1 to 3) A (3 to 10) A (10 to 20) A	$240 \ \mu A/A + 6 \ nA \\ 130 \ \mu A/A + 30 \ nA \\ 130 \ \mu A/A + 340 \ nA \\ 130 \ \mu A/A + 3.5 \ \mu A \\ 360 \ \mu A/A + 90 \ \mu A \\ 560 \ \mu A/A + 420 \ \mu A \\ 720 \ \mu A/A + 1.6 \ mA \\ 1.8 \ mA/A + 11 \ mA$	Multi-product calibrator
DC Power – Generate	9 μW to 300 W 9 mW to 3 kW 90 mW to 20 kW	0.20 mW/W + 1.8 nW 0.33 mW/W + 2.9 µW 0.81 mW/W + 73 µW	Multi-product calibrator

Page 3 of 16

Parameter/Range	Frequency	CMC <sup>2, 6</sup> (±)	Comments
AC Voltage – Generate			
(10 to 100) mV	(10 to 45) Hz 45 Hz to 10 kHz (10 to 20) kHz (20 to 50) kHz (50 to 100) kHz (100 to 500) kHz	$\begin{array}{c} 0.31 \ mV/V + 1.1 \ \mu V \\ 0.20 \ mV/V + 0.84 \ \mu V \\ 0.10 \ mV/V + 1.1 \ \mu V \\ 0.37 \ mV/V + 1.4 \ \mu V \\ 0.90 \ mV/V + 2.8 \ \mu V \\ 1.9 \ mV/V + 2.6 \ \mu V \end{array}$	Multi-product calibrator
(0.1 to 1) V	(10 to 45) Hz 45 Hz to 10 kHz (10 to 20) kHz (20 to 50) kHz (50 to 100) kHz (100 to 500) kHz	$\begin{array}{c} 0.41 \ mV/V + 36 \ \mu V \\ 0.25 \ mV/V + 22 \ \mu V \\ 0.43 \ mV/V + 40 \ \mu V \\ 0.41 \ mV/V + 35 \ \mu V \\ 3.7 \ mV/V + 0.36 \ mV \\ 3.6 \ mV/V + 0.32 \ mV \end{array}$	
(1 to 10) V	(10 to 45) Hz 45 Hz to 10 kHz (10 to 20) kHz (20 to 50) kHz (50 to 100) kHz	0.43 mV/V + 0.38 mV 0.25 mV/V + 0.23 mV 0.36 mV/V + 0.32 mV 1.3 mV/V + 1.3 mV 1.1 mV/V + 0.75 mV	
(10 to 100) V	(10 to 45) Hz 45 Hz to 10 kHz (10 to 20) kHz (20 to 50) kHz (50 to 100) kHz	0.25 mV/V + 2.3 mV 0.32 mV/V + 2.9 mV 0.37 mV/V + 3.3 mV 3.1 mV/V + 29 mV 3.1 mV/V + 29 mV	
(100 to 1000) V	45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz	0.33 mV/V + 30 mV 0.39 mV/V + 36 mV 0.40 mV/V + 36 mV	

Parameter/Range	Frequency	CMC <sup>2, 6</sup> (±)	Comments
AC Current – Generate			
(29 to 100) μA	(10 to 20) Hz (20 to 45) Hz 45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz (10 to 30) kHz	3.2 mA/A 2.8 mA/A 2.8 mA/A 5.4 mA/A 12 mA/A 28 mA/A	Multi-product calibrator
(0.1 to 1) mA	(10 to 20) Hz (20 to 45) Hz 45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz (10 to 30) kHz	$\begin{array}{c} 2.0 \text{ mA/A} + 0.16 \mu\text{A} \\ 1.6 \text{ mA/A} + 0.12 \mu\text{A} \\ 2.7 \text{ mA/A} + 0.24 \mu\text{A} \\ 18 \text{ mA/A} + 1.7 \mu\text{A} \\ 13 \text{ mA/A} + 1.1 \mu\text{A} \\ 18 \text{ mA/A} + 1.7 \mu\text{A} \end{array}$	
(1 to 10) mA	(10 to 20) Hz (20 to 45) Hz 45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz (10 to 30) kHz	$\begin{array}{c} 1.4 \text{ mA/A} + 1.1  \mu\text{A} \\ 1.3 \text{ mA/A} + 1.1  \mu\text{A} \\ 1.0 \text{ mA/A} + 0.74  \mu\text{A} \\ 1.3 \text{ mA/A} + 1.1  \mu\text{A} \\ 4.5 \text{ mA/A} + 3.0  \mu\text{A} \\ 5.7 \text{ mA/A} + 3.7  \mu\text{A} \end{array}$	
(10 to 100) mA	(10 to 20) Hz (20 to 45) Hz 45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz (10 to 30) kHz	1.4 mA/A + 13 μA 0.77 mA/A + 6.3 μA 0.79 mA/A + 6.6 μA 1.9 mA/A + 18 μA 7.3 mA/A + 67 μA 9.5 mA/A + 87 μA	
(0.1 to 1) A	10 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz	0.83 mA/A + 74 μA 8.8 mA/A + 860 μA 38 mA/A + 3.7 mA	
(1 to 2) A	10 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz	0.93 mA/A + 0.10 mA 7.0 mA/A + 1.2 mA 29 mA/A + 5.7 mA	
(2 to 10) A	(45 to 100) Hz 100 Hz to 1 kHz (1 to 5) kHz	1.2 mA/A + 1.9 mA 1.7 mA/A + 2.9 mA 42 mA/A + 80 mA	
(10 to 20) A	(45 to 100) Hz 100 Hz to 1 kHz (1 to 5) kHz	2.6 mA/A + 14 mA 2.8 mA/A + 13 mA 35 mA/A + 1.4 mA	

Parameter/Equipment	Range	CMC <sup>2, 6</sup> (±)	Comments
Resistance – Generate	$\begin{array}{c} (0\ \ to\ 10)\ \Omega \\ (10\ to\ 30)\ \Omega \\ (30\ to\ 100)\ \Omega \\ (100\ to\ 300)\ \Omega \\ 300\ \Omega\ to\ 1\ k\Omega \\ (1\ to\ 3)\ k\Omega \\ (3\ to\ 10)\ k\Omega \\ (10\ to\ 30)\ k\Omega \\ (30\ to\ 100)\ k\Omega \\ (100\ to\ 300)\ k\Omega \\ (100\ to\ 30)\ M\Omega \\ (3\ to\ 10)\ M\Omega \\ (10\ to\ 30)\ M\Omega \\ (30\ to\ 100)\ M\Omega \\ (30\ to\ 100)\ M\Omega \\ (300\ to\ 1000)\ M\Omega \\ (300\ to\ 1000)\ M\Omega \\ (300\ to\ 1000)\ M\Omega \\ \end{array}$	$\begin{array}{c} 97\;\mu\Omega/\Omega+2\;m\Omega\\ 36\;\mu\Omega/\Omega+150\;\mu\Omega\\ 34\;\mu\Omega/\Omega+260\;\mu\Omega\\ 38\;\mu\Omega/\Omega+1.7\;m\Omega\\ 35\;\mu\Omega/\Omega+5.6\;m\Omega\\ 36\;\mu\Omega/\Omega+18\;m\Omega\\ 36\;\mu\Omega/\Omega+62\;m\Omega\\ 36\;\mu\Omega/\Omega+62\;m\Omega\\ 36\;\mu\Omega/\Omega+75\Omega\\ 90\;\mu\Omega/\Omega+180\;m\Omega\\ 36\;\mu\Omega/\Omega+180\;m\Omega\\ 36\;\mu\Omega/\Omega+19\;\Omega\\ 370\;\mu\Omega/\Omega+19\;k\Omega\\ 370\;\mu\Omega/\Omega+19\;k\Omega\\ 370\;\mu\Omega/\Omega+19\;k\Omega\\ 370\;\mu\Omega/\Omega+19\;k\Omega\\ 370\;\mu\Omega/\Omega+19\;k\Omega\\ 370\;\mu\Omega/\Omega+19\;k\Omega\\ 370\;\mu\Omega/\Omega+10\;k\Omega\\ 370\;\mu\Omega/\Omega+10\;k\Omega$	Multi-product calibrator
Capacitance – Generate	(0.19 to 0.3) nF (0.3 to 1) nF (1 to 3) nF (3 to 10) nF (10 to 30) nF (30 to 100) nF (100 to 300) nF (0.3 to 1) μF (1 to 3) μF (3 to 10) μF (10 to 30) μF (30 to 100) μF (100 to 300) μF (100 to 300) μF (20 to 3) mF (3 to 10) mF	26 μF/F + 23 pF 5.8 mF/F + 3.9 pF 2.9 mF/F + 5.7 pF 2.6 mF/F + 2.3 pF 8.1 mF/F + 61 pF 3.0 mF/F + 2.0 pF 4.1 mF/F + 200 pF 4.1 mF/F + 700 pF 4.1 mF/F + 7.2 nF 6.9 mF/F + 48 nF 7.1 mF/F + 140 nF 6.5 mF/F + 320 nF 6.6 mF/F + 1.1 μF 7.7 mF/F + 1.1 μF 5.5 mF/F + 18 μF 6.6 mF/F + 11 μF 15 mF/F + 81 μF 9.0 mF/F + 250 μF 16 mF/F + 340 μF	Multi-product calibrator

Parameter/Range	Frequency	CMC <sup>2, 6</sup> (±)	Comments
AC Power – Generate			
10 μW to 100 W 10 μW to 100 W 100 W to 20.5 kW 100 W to 20.5 kW	(10 to 45) Hz 45 Hz to 1 kHz (10 to 45) Hz 45 Hz to 1 kHz	1.5 mW/W + 15 nW 0.43 mW/W + 4.3 nW 2.2 mW/W + 0.21 W 2.4 mW/W + 0.24 W	Multi-product calibrator
AC Voltage – Measure			
Up to 200 mV	(20 to 40) Hz 40 Hz to 2 kHz (2 to 30) kHz (30 to 100) kHz	$\begin{array}{c} 0.38 \; mV/V \\ 0.15 \; mV/V + 6.8 \; \mu V \\ 0.15 \; mV/V + 23 \; \mu V \\ 0.65 \; mV/V + 12 \; \mu V \end{array}$	Reference multimeter
(0.2 to 20) V	(20 to 40) Hz 40 Hz to 2 kHz (2 to 10) kHz (10 to 30) kHz (30 to 100) kHz 100 kHz to 1 MHz	$\begin{array}{c} 68 \; \mu V/V + 120 \; \mu V \\ 70 \; \mu V/V + 120 \; \mu V \\ 69 \; \mu V/V + 120 \; \mu V \\ 190 \; \mu V/V + 0.34 \; mV \\ 460 \; \mu V/V + 0.82 \; mV \\ 20 \; mV/V + 35 \; mV \end{array}$	
(20 to 200) V	(20 to 40) Hz (40 to 100) Hz 100 Hz to 10 kHz (10 to 30) kHz (30 to 100) kHz	$70 \; \mu V/V + 1.2 \; mV \\ 59 \; \mu V/V + 11 \; mV \\ 71 \; \mu V/V + 1.3 \; mV \\ 170 \; \mu V/V + 3.0 \; mV \\ 460 \; \mu V/V + 8.2 \; mV$	
(200 to 1000) V	45 Hz to 10 kHz (10 to 30) kHz	$\begin{array}{c} 160 \; \mu V/V + 29 \; mV \\ 0.45 \; mV/V + 82 \; mV \end{array}$	
AC High Voltage – Measure	(1 to 28) kV	0.30 kV	High voltage probe digital multimeter

Parameter/Equipment	Range	CMC <sup>2, 6</sup> (±)	Comments
DC Voltage – Measure	(100 to 200) mV 200 mV to 2 V (2 to 20) V (20 to 200) V (200 to 1000) V	$\begin{array}{c} 15 \; \mu V/V \\ 13 \; \mu V/V + 1.1 \; \mu V \\ 13 \; \mu V/V + 11 \; \mu V \\ 14 \; \mu V/V + 120 \; \mu V \\ 13 \; \mu V/V + 1.2 \; mV \end{array}$	Reference multimeter
DC High Voltage – Measure	(1 to 40) kV	0.30 kV	High voltage probe digital multimeter
DC Current – Measure	(100 to 200) µA 200 µA to 2 mA (2 to 20) mA (20 to 200) mA 200 mA to 2 A (2 to 20) A	11 μA/A 10 μA/A + 1.8 nA 15 μA/A + 28 nA 33 μA/A + 0.63 μA 140 μA/A + 28 μA 0.30 mA/A + 0.58 mA	Reference multimeter
Resistance – Measure	$\begin{array}{c} (0 \text{ to } 2)  \Omega \\ (2 \text{ to } 20)  \Omega \\ (20 \text{ to } 200)  \Omega \\ 200  \Omega \text{ to } 2  k\Omega \\ (2 \text{ to } 20)  k\Omega \\ (20 \text{ to } 200)  k\Omega \\ 200  k\Omega \text{ to } 2  M\Omega \\ (2 \text{ to } 20)  M\Omega \\ (20 \text{ to } 200)  M\Omega \\ (20 \text{ to } 200)  M\Omega \\ 200  M  \Omega \text{ to } 2  G\Omega \\ \end{array}$	$\begin{array}{c} 13 \; \mu\Omega/\Omega \\ 7.9 \; \mu\Omega/\Omega + 13 \; \mu\Omega \\ 8.4 \; \mu\Omega/\Omega + 0.14 \; m\Omega \\ 8.4 \; \mu\Omega/\Omega + 1.5 \; m\Omega \\ 8.3 \; \mu\Omega/\Omega + 15 \; m\Omega \\ 8.7 \; \mu\Omega/\Omega + 0.16 \; \Omega \\ 10 \; \mu\Omega/\Omega + 1.8 \; \Omega \\ 27 \; \mu\Omega/\Omega + 52 \; \Omega \\ 1.2 \; m\Omega/\Omega + 24 \; k\Omega \\ 1.1 \; m\Omega/\Omega + 190 \; M\Omega \end{array}$	Reference multimeter

Parameter/Equipment	Range	CMC <sup>2, 6</sup> (±)	Comments
DC Clamp – Generate			
Toroidal-Types	(10 to 16.5) A (16.5 to 150) A (150 to 1025) A	61 μA/A + 0.31 mA 0.58 mA/A + 9.4 mA 2.6 mA/A + 370 mA	Multi-product calibrator
Non-Toroidal Types	(10 to 16.5) A (16.5 to 150) A (150 to 1025) A	410 μA/A + 3.4 mA 4.0 mA/A + 65 mA 15 mA/A + 2.2 A	50-turn coil
AC Clamp – Generate			Multi-product calibrator
Toroidal-Types	(45 to 65) Hz (10 to 16.5) A (16.5 to 150) A (150 to 1025) A	0.94 mA/A + 7.5 mA 0.52 mA/A + 7.7 mA 3.8 mA/A + 0.55 A	50-turn coil
	(65 to 440) Hz (10 to 16.5) A (16.5 to 150) A (150 to 1025) A	1.1 mA/A + 9.5 mA 0.81 mA/A + 12 mA 6.8 mA/A + 1 A	
Non-Toroidal Types	(45 to 65) Hz (10 to 16.5) A (16.5 to 150) A (150 to 1025) A	5.2 mA/A + 46 mA 4.3 mA/A + 67 mA 26 mA/A + 3.8 A	
	(65 to 440) Hz (10 to 16.5) A (16.5 to 150) A (150 to 1025) A	5.4 mA/A + 48 mA 4.6 mA/A + 70 mA 28 mA/A + 4.2 A	
Earth Resistance Testers	$\begin{array}{c} (1 \text{ to } 10)  \Omega \\ (10 \text{ to } 100)  \Omega \\ 100  \Omega \text{ to } 1  k\Omega \\ (1 \text{ to } 10)  k\Omega \\ (10 \text{ to } 100)  k\Omega \\ 100  k\Omega \text{ to } 10  M\Omega \\ (10 \text{ to } 100)  M\Omega \end{array}$	$\begin{array}{c} 3.4 \ \text{m}\Omega/\Omega + 2.6 \ \text{m}\Omega \\ 0.45 \ \text{m}\Omega/\Omega + 0.17 \ \text{m}\Omega \\ 0.77 \ \text{m}\Omega/\Omega + 69 \ \text{m}\Omega \\ 0.78 \ \text{m}\Omega/\Omega + 0.68 \ \Omega \\ 0.78 \ \text{m}\Omega/\Omega + 6.9 \ \Omega \\ 7.8 \ \text{m}\Omega/\Omega + 0.78 \ \text{k}\Omega \\ 8.7 \ \text{m}\Omega/\Omega + 78 \ \text{k}\Omega \end{array}$	Decade resistance box

Parameter/Equipment	Range	CMC <sup>2, 6</sup> (±)	Comments
Insulation Resistance Testers	100 kΩ to 5 MΩ 5 MΩ to 1 GΩ	$7.8 \text{ m}\Omega/\Omega + 0.75 \text{ k}\Omega 7.8 \text{ m}\Omega/\Omega + 39 \text{ k}\Omega$	Insulation tester calibration system
Temperature Electrical Simulation Type K, T, U, R, J, E, B, N	(-200 to 0) °C (0 to 1370) °C	0.62 °C 0.62 °C	Multi-product calibrator

### IV. Fluid Quantities

Parameter/Equipment	Range	CMC <sup>2, 5</sup> (±)	Comments
Laboratory Volumetric Apparatus	(0.1 to 1) ml (>1 to 5) ml (>5 to 10) ml (>10 to 50) ml (>50 to 100) ml (>100 to 500) ml (>500 to 1000) ml (>1000 to 2000) ml	0.003 ml 0.004 ml 0.005 ml 0.016 ml 0.023 ml 0.075 ml 0.15 ml 0.28 ml	Analytical balances
Piston Operated Volumetric Apparatus	(1 to 10) µl (>10 to 50) µl (>50 to 100) µl (>100 to 300) µl (>300 to 500) µl (>500 to 1000) µl (>1000 to 2000) µl (2000 to 5000) µl	0.3 μl 0.4 μl 0.5 μl 0.8 μl 0.9 μl 1.5 μl 1.7 μl 2.6 μl	Micro balance  Analytical balances
Density Cup, Unit Weight Container, Cylindrical Molds etc. Metal Volumetric Apparatus	Up to 100 ml (>100 to 500) ml (>500 to 2000) ml (>2 to 5) 1 (>5 to 10) 1 (>10 to 20) 1 (>20 to 30) 1	0.06 ml 0.20 ml 1.8 ml 2.9 ml 6.5 ml 14 ml 49 ml	Precision balances digital balances
Liquid Flow <sup>3</sup>	Flow Rate (0 to 1000) L/m	1.6 %	Ultrasonic flow meter

### V. Mechanical

Parameter/Equipment	Range	CMC <sup>2, 5</sup> (±)	Comments
Uniaxial Testing Machines (Compression & Tension mode)	200 N to 500 kN	0.4 %	Force transfer standard & digital read-out
Compression machines	200 N to 500 kN (500 to 3000) kN	0.4 % 0.7 %	ISO 7500-1 ASTM E4
Hydraulic Jacks	200 N to 500 kN (500 to 3000) kN	0.4 % 0.7 %	
Load cells	100 N to 500 kN (500 to 3000) kN	0.12 % 0.6 %	
Proving rings	100 N to 50 kN	0.12 %	
Weights –	Up to 10 mg (20 to 50) mg (100 to 200) mg 500 mg to 1 g 2 g (5 to 10) g	0.001 mg 0.002 mg 0.003 mg 0.005 mg 0.008 mg 0.010 mg	Standard weights OIML Class E1, E2, F1 & M1
Fixed Points	20 g 50 g 100 g 200 g 500 g 1 kg 2 kg 5 kg 10 kg 20 kg	0.013 mg 0.016 mg 0.02 mg 0.05 mg 0.12 mg 0.3 mg 0.5 mg 1.4 mg 2.5 mg 5 mg	

Parameter/Equipment	Range	CMC <sup>2</sup> (±)	Comments
Analytical, Laboratory & Industrial Balances	Up to 10 mg 20 mg 50 mg 100 mg 200 mg 500 mg to 1 g 2 g 5 g 10 g 20 g 50 g 100 g 200 g 500 g 1 kg 2 kg 5 kg 10 kg 20 kg 50 kg 100 kg 500 kg 1000 kg 1500 kg 2000 kg	0.003 mg 0.004 mg 0.006 mg 0.009 mg 0.070 mg 0.011 mg 0.016 mg 0.021 mg 0.032 mg 0.032 mg 0.038 mg 0.06 mg 0.11 mg 0.30 mg 0.6 mg 1.1 mg 3.2 mg 6.0 mg 12 mg 740 mg 1500 mg 7400 mg 15 000 mg 22 000 mg 30 000 mg	Standard weights OIML Class E2, F1 & M1

Parameter/Equipment	Range	CMC <sup>2</sup> (±)	Comments
Pressure & Vacuum Gauges, Transducers & Calibrators			
Pneumatic	(-1 to 0) bar (0 to 20) bar (20 to 140) bar	0.0009 bar 0.0013 bar 0.0096 bar	Fluke PPC4
	(-1 to 0) bar (0 to 7) bar	0.012 bar 0.0039 bar	Digital pressure gauge
	(7 to 100) bar	0.024 bar	Digital pressure gauge
	(-1 to 0) bar (0 to 2.5) bar	0.0013 bar 0.0018 bar	Pressure calibrator
Hydraulic	(0 to 400) bar (400 to 2000) bar	0.029 bar 0.14 bar	Fluke PPCH
	(0 to 345) bar	0.13 bar	Pressure calibrator
	(345 to 700) bar	0.23 bar	Digital pressure gauge
	(700 to 2000) bar	2.9 bar	Digital pressure gauge
Pneumatic <sup>3</sup>	(-1 to 0) bar (0 to 7) bar	0.012 bar 0.0039 bar	Digital pressure gauge
	(7 to 100) bar	0.024 bar	Digital pressure gauge
	(-1 to 0) bar (0 to 2.5) bar	0.0013 bar 0.0018 bar	Pressure calibrator
Hydraulic <sup>3</sup>	(0 to 345) bar	0.13 bar	Pressure calibrator
	(345 to 700) bar	0.23 bar	Digital pressure gauge
	(700 to 2000) bar	2.9 bar	Digital pressure gauge
Safety Valve	(0 to 100) bar	0.004 bar	Digital pressure gauge or pressure calibrator
Safety Valve <sup>3</sup>	(0 to 100) bar	0.004 bar	Digital pressure gauge or pressure calibrator
Autoclaves & Pressure Vessels <sup>3</sup>	(0 to 5) bar	0.018 bar	Temperature & pressure data logger

## VI. Thermodynamics

Parameter/Equipment	Range	CMC <sup>2</sup> (±)	Comments
Digital/Dial Thermometers <sup>3</sup>	(-60 to 50) °C (50 to 280) °C (300 to 650) °C (650 to 1000) °C	0.2 °C 0.5 °C 1.2 °C 1.6 °C	Pt-100 with temperature readout Fluke 1529A & digital thermometers (Fluke 52 II / Fluke Hydra Series / Time Electronics 1090 using type S, K & T thermocouples)
Laboratory Ovens, Incubators, Muffle Furnaces, Climatic Chambers <sup>3</sup> (Freezers, Chillers, Refrigerators, Autoclave) Profiling at Multiple Internal Chamber Locations	(-60 to 50) °C (50 to 280) °C (300 to 1000) °C	0.2 °C 0.5 °C 1.6 °C	Digital thermometers (Fluke 52 II / Fluke Hydra Series / Time Electronics 1090 using type K & T thermocouples), Testo data loggers
Digital/Dial Thermo- Hygrometers & Chart Recorders	( 30 to 90) % RH (-20 to 60) °C	1.9 % RH 0.5 °C	Votsch climatic chamber & Testo 650 reference humidity measuring instrument, Omega iTHX-SD-5
Climatic Chambers <sup>3</sup> (Temperature with Humidity)	( 30 to 90) % RH (-20 to 60) °C	1.9 % RH 0.5 °C	Testo 650 reference humidity measuring instrument, Testo data loggers, Omega iTHX-SD-5
Liquid-in-Glass Thermometers <sup>3</sup>	(-60 to 50) °C (50 to 280) °C	0.2 °C 0.5 °C	Pt-100 with temperature readout Fluke 1529A & digital thermometers (Fluke 52 II / Fluke Hydra Series / Time Electronics 1090 using type S, K & T thermocouples)

Parameter/Equipment	Range	$CMC^{2}(\pm)$	Comments
Temperature Block Calibrators	(-40 to 280) °C (300 to 960) °C	0.1 °C 0.4 °C	Pt-100 with temperature readout Fluke 1529A / thermocouple Type S with temperature readout Fluke 1529A
Speedy Moisture Tester	(0.1 to 20) % Water Content	0.1 % Water Content	ASTM D 4944

### VII. Time & Frequency

Parameter	Range	CMC <sup>2, 6</sup> (±)	Comments
Frequency – Generate	(0.01 to 120) Hz (120 to 1200) Hz (1.2 to 12) kHz (12 to 120) kHz (120 to 1200) kHz (1.2 to 2) MHz	10 μHz/Hz 10 μHz/Hz + 1.1 mHz 10 μHz/Hz + 11 mHz 10 μHz/Hz + 110 mHz 10 μHz/Hz + 1.1 Hz 15 μHz/Hz + 2.1 μHz	Multi-product calibrator
Time – Measure	(60 to 86 400) s	$10 \ \mu s/s + 0.3 \ s$	Stopwatch
Rotational Speed – Optical	(60 to 90 000) rpm	0.02 % + 0.12 rpm	Tachometer

<sup>&</sup>lt;sup>1</sup> This laboratory offers commercial calibration service, field calibration, and dimensional testing.

<sup>&</sup>lt;sup>2</sup> Calibration and Measurement Capability Uncertainty (CMC) is the smallest uncertainty of measurement that a laboratory can achieve within its scope of accreditation when performing more or less routine calibrations of nearly ideal measurement standards or nearly ideal measuring equipment. CMCs represent expanded uncertainties expressed at approximately the 95 % level of confidence, usually using a coverage factor of k = 2. The actual measurement uncertainty of a specific calibration performed by the laboratory may be greater than the CMC due to the behavior of the customer's device and to influences from the circumstances of the specific calibration.

- <sup>3</sup> Field calibration service is available for this calibration. Please note the actual measurement uncertainties achievable on a customer's site can normally be expected to be larger than the CMC found on the A2LA Scope. Allowance must be made for aspects such as the environment at the place of calibration and for other possible adverse effects such as those caused by transportation of the calibration equipment. The usual allowance for the actual uncertainty introduced by the item being calibrated, (e.g. resolution) must also be considered and this, on its own, could result in the actual measurement uncertainty achievable on a customer's site being larger than the CMC.
- <sup>4</sup> In the statement of CMC, *L* is the numerical value of the nominal length of the device measured in meter and *F* is the numerical value of the force measured in Newtons.
- <sup>5</sup> In the statement of CMC, percentages is to be read as percent of reading unless otherwise noted.
- <sup>6</sup> The stated measured values are stated using the indicated instrument (see Comments). This capability is suitable for the calibration of the devices intended to measure or generate the measured value in the ranges indicated. CMC's are expressed as either a specific value that covers the full range or as a percent of the reading plus a fixed floor specification.
- <sup>7</sup> This laboratory meets R205 *Specific Requirements: Calibration Laboratory Accreditation Program* for the types of dimensional tests listed above and is considered equivalent to that of a calibration.

Au— Page 16 of 16

<sup>&</sup>lt;sup>8</sup> This scope meets A2LA's *P112 Flexible Scope Policy*.



# **Accredited Laboratory**

A2LA has accredited

**INCO-LABS** 

Safat, KUWAIT

for technical competence in the field of

## Calibration

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017

General requirements for the competence of testing and calibration laboratories. This laboratory also meets R205 – Specific Requirements: Calibration Laboratory Accreditation Program. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system

(refer to joint ISO-ILAC-IAF Communiqué dated April 2017).



Presented this 30th day of January 2024.

Mr. Trace McInturff, Vice President, Accreditation Services

For the Accreditation Council

Certificate Number 2487.03

Valid to December 31, 2025

For the calibrations to which this accreditation applies, please refer to the laboratory's Calibration Scope of Accreditation.

### 5 COMPANY ACTIVITIES

**INCO-LABS** is offering its services and operating its business through four different departments namely: Geotechnical Department, Materials Department, Survey Department, Calibration Department and Environmental Testing, where each department is supported with its technical staff, equipment, and utilities.

### 5.1 GEOTECHNICAL DEPARTMENT

Geotechnical investigation and exploration is the root of any construction, where the design inputs are highly required in accurate precise measures for designing the most appropriate foundation of the proposed building. Such design data will benefit the owner for having a well secured building for long term ownership and longer service life. Similarly, the engineering consultant office will benefit in a good outstanding for providing the correct foundation designs according to the soil investigation results.

Our Geotechnical department provides variety of services against reasonable fees for fulfilling the needs of properties' owners, engineering consultant offices, construction contractors, governmental sectors and private companies.

In addition, our Geotechnical Department participates in the environmental drilling and sampling to support the Environmental Research Division.

Our Geotechnical Department offers geotechnical engineering services such as bearing capacity analysis, foundation analysis, settlement analysis, slope stability analysis and other related engineering analysis.

The Geotechnical Department has a drilling fleet equipped with the latest technology of drilling and field testing instrumentation, especially for deep foundation design of high rise buildings. American made drilling rigs are designed in accordance to meet the ASTM testing standards for soil exploration up to 120 m depth. The testing instrumentation used to support the soil characteristics determination consists of cross hole and down hole seismic testing and pressure meter testing.

On the other hand, **INCO-LABS** has the ability to access muddy and shallow water areas using Marsh Buggy specially made from light weight aluminum in order to minimize the surface contact pressure against mud and watery areas. The marsh buggy has the ability to travel in land with speed of 8 Km/Hr, and maneuvering in water with speed of 5 Km/Hr. The D-50 drilling rig mounted on the marsh buggy has the ability of off-shore soil drilling up to 60 meters with 115 mm diameter, and on-shore soil drilling up to 40 meters with 115 mm diameter. The marsh buggy is capable to perform drilling in sea water level up to 4 meters from the sea bed level by using four spuds installed at the corners of the Marsh Buggy.

With the continuous business development, **INCO-LABS** is offering the Cone Penetration Testing using the latest technology in CPT that is unmatched as a technique for accurate and cost effective method of ground investigation of loose to dense sand and Soft ground condition such areas located in Sabiya, Khiran, and Boubiyan Island. With its rubber crawler, the CPT machine can be mobilized to the most difficult sites where it is hard to access by wheeled vehicles. The CPT testing machine is manufactured by Gouda Geo-Equipment based in The Netherlands with a massive testing production.

**INCO-LABS** is capable to carry out the following geotechnical services:

- Soil investigation (on-shore, off-shore)
- Soil & rocks drilling
- Water & monitoring well drilling
- Geotechnical studies
- Bearing capacity analysis
- Foundation design analysis
- Settlement analysis
- Slope stability analysis
- Soil & rocks mechanics
- Raw materials exploration program
- Hydrogeological studies
- Soil erosion studies

### 5.2 MATERIALS DEPARTMENT

**INCO-LABS** offers a full range of laboratory testing and in-situ testing for the need of construction, environmental monitoring and soil & materials investigation fields. Soil and materials testing are the profession of **INCO-LABS** core business. The firm has expanded its testing facilities with the highly qualified technicians, and the latest advanced testing equipment to provide fast and effective services according to the internationally recognized American and British Standards (ASTM – BS) for testing soil, concrete, aggregates, asphalt, and construction materials.

**INCO-LABS** offers a wide range of laboratory tests and on-site tests of materials in term of physics and chemistry performed according to the latest International Standards. Our Materials Department is capable to carry out various physical and chemical testing for soil, soil-cement, concrete, aggregates, asphalt, natural building stones, and other building materials. Our laboratories are equipped with machines for measuring the compressive and flexural strength of concrete, core sampling and testing tools, chemical testing tools for testing materials such as aggregates, concrete, cement, water and soil, and other various equipment for determination of soil classification, strength and deformation characteristics.

**INCO-LABS** is capable to carry out the following testing services:

- Materials testing of concrete, aggregates, sand, asphalt, cement, raw materials, tiles, blocks, admixtures, water, and other construction materials
- Physical and chemical testing of materials
- Third party civil works inspection
- Field testing of soil, concrete, and asphalt
- Field mobile laboratories

## 5.3 SURVEY DEPARTMENT

**INCO-LABS** Survey Department is fully equipped, both to assist in the work carried out by the geotechnical crews, and to work independently for Clients to carry out various range of survey services such as topographic survey, engineering survey, measured building survey, stock piles quantity survey, utilities above and underground survey and survey project management.

Working with associate companies in Kuwait, Gulf region and U.K., **INCO-LABS** Survey Department can offer Clients expertise in GPS satellite positioning, hydrographic and bathymetric survey, aerial surveying and survey training.

**INCO-LABS** Survey Department has approved its performance since year 2000 in the field of commercial development, oil and gas industry, route profiling, offshore construction and preservation of historic buildings.

Utilizing the latest advances in survey technology and the specialist skills of experienced staff, **INCO-LABS** Survey Department offers clients an integrated range of professional survey activities

## **5.3.1 TOPOGRAPHIC SURVEYING**

**INCO-LABS** puts into the field experienced 3-man survey teams equipped with Total Stations, data loggers AND GPS, to capture detail of sites for processing through CAD to produce maps and plans at scales ranging from 1/200 to 1/2500.

### **5.3.2 ENGINEERING SURVEYING**

The Senior Surveyors with **INCO-LABS** have many years experience in Kuwait possessing the skills necessary to carry out surveying in the Construction Industries. The Staff of **INCO-LABS** have worked in Heavy Civil Construction, Oilfield Construction and Offshore Construction, and are familiar with the techniques and instrumentation used in each discipline.

#### 5.3.3 MEASURED BUILDING SURVEY

**INCO-LABS** has completed the survey of a number of historic mosques in Kuwait, which involved topographic surveys at 1/200 scale, complemented by precise measurement of the interiors of each mosque, produced at scales of 1/25 and 1/50.

#### **5.3.4 UTILITIES SURVEY**

The Firm has the capabilities and the profession in survey the routes of underground utilities. Using specialized tracing equipment capable of detecting buried services up to 4.5 m depth from the natural ground level, coupled with Total Stations, data-loggers and GPS for recording the positions of these, accurate and complete plans of utilities networks can be produced guickly and cost-effectively.

#### 5.3.5 STOCK PILES QUANTITY SURVEY

**INCO-LABS** survey teams are capable to measure the quantity of stock piles, no matter the complication of the stacking arrangements, for the purpose of the stock control. With downloading the data collected from the site into a special software, 3-D model of the stock piles can be generated with calculating the volumes of the stock piles, where the quantities are calculated by knowing the density of the materials. **INCO-LABS** has an excellent outstanding with major companies in Kuwait handling crush stones and rocks business for stock piles quantity survey in semi-annual and annual basis for the purpose of the stock control and auditing.

#### **5.3.6 SURVEY PROJECT MANAGEMENT**

The Senior Staff of the **INCO-LABS** Survey Department have many years experience in the management of Land and Engineering Survey projects. This wealth of experience can be harnessed for Clients to manage the Survey related aspects of larger projects.

### 5.3.7 GPS SATELLITE POSITIONING

**INCO-LABS** has the capabilities in professional staff and advanced Global Satellite Positioning units with high accuracy, and in association agreements with professional firms in the Gulf and Europe which allow the deployment of additional sets of Satellite Positioning equipment into Kuwait to rapidly meet demands from Clients for accurate positioning in remote locations. In many cases, the production of topographic maps using GPS equipment can be a very rapid means of mapping large areas of open country.

#### 5.3.8 HYDROGRAPHIC AND BATHYMETRIC SURVEY

An increasing number of projects in Kuwait are related to the development of the shoreline and onshore areas. **INCO-LABS** responds to this demand by cooperating with firms based in Kuwait, and with specialist companies in Europe and the Gulf region, to provide a range of services to Clients related to bathymetric and hydrographic surveying. When carried out in conjunction with sampling and testing in the **INCO-LABS** laboratories, pooling the expertise and resources of the firms involved, **INCO-LABS** is capable of delivering to clients answers to many environmental questions.

#### 5.3.9 AERIAL SURVEY

Working in association with aerial photography firms in U.K. and the Far East, **INCO-LABS** Survey Department produces mapping of complex or extensive sites using photogrammetric methods, whether the results are required to be conventional line mapping or orthophoto imagery.

#### **5.3.10 SURVEY TRAINING**

The Firm's Associates in U.K. assist **INCO-LABS** in providing training in Land or Engineering Surveying, leading to the award of internationally recognized Survey qualifications.

## 5.4 CALIBRATION DEPARTMENT

INCO-LABS has advanced calibration laboratories established based on the company's management believe that calibration of measurement device is the most important concept upon which the industrial standardization is based on, where that the measurement process not be in the form that meets the strict quality requirements in a time characterized by globalization and intense competition between manufacturers unless the result of measurement error accompanied by specific proportion error in the process. In addition, it can not survive in the current environment for any organization which is productivity or assembly system without the correct measurements based on scientific bases for the information of metrology ensuring largely free of measurement errors, and this is not only through a series of measurements to ensure that the reference measurement instrument is traceable to the international system of units of measurement through the periodical calibration for the instrument.

Calibration is a comparison between measurements, one of known magnitude or correctness made or set with one device and another measurement made in as similar a way as possible with a second device. The device with the known or assigned correctness is called the standard. The second device is the unit under test, test instrument, or any of several other names for the device being calibrated.

**INCO-LABS** is offering the calibration services commercially based on the approval of the Ministry of Public Works. **INCO-LABS** has implemented the requirements of ISO/IEC 17025:2017 on its calibration laboratories, and look forward to obtain the international accreditation for calibration activities according to ISO/IEC 17025:2017.

Our Calibration Department is offering the following calibration services:

## **5.4.1 THERMOMETRY**

Calibration of ovens, incubators, water baths, autoclave devices, refrigerators, thermal calibrators, thermometers (bimetal, glass, digital), hotplates and thermocouples.

#### 5.4.2 HUMIDITY

Calibration of air humidity, digital hygrometers, chart recorders and humidity chambers.

## **5.4.3 FORCE**

Calibration of compressive strength testing machines, hydraulic compression machines and universal testing machines (tensile and compression).

#### 5.4.4 ELECTRICITY

Calibration of multi meters, clamp meters, voltmeters and ohm meters.

# 5.4.5 PRESSURE

Calibration of liquid pressure gauges, gases pressure gauges and vacuum gauges.

#### 5.4.6 Dimensions

Calibration of vernier calibers (digital, analogue and dial), depth gauges, height gauges, micrometers, dial indicators, steel rules, steel tapes, mechanical sieves, and accurate dimensional measurements for the spare parts and engineering objects.

#### 5.4.7 Mass

Calibration of sensitive balances, plate type balances and standard weights.

#### **5.4.8 Volume**

Calibration of volume of variety of glassware and pipettes.

# 5.5 STRUCTURAL EVALUATION

**INCO-LABS** with experienced staff in the field of structural and materials engineering is capable to perform a structural analysis of old and damaged buildings by carrying out various field and laboratory testing to observe the structural conditions of the building, using the existing material strength. The structural analysis is carried out using finite element method following the math-model using advanced professional softwares.

In general, the structural evaluation consists of detail survey of existing buildings, visual inspection of the building, material testing, structural analysis using existing conditions of the materials and superimposed loads, conclusion on the existing structural conditions, and recommendations on structural system with strengthening program

According to the tests results of the construction materials and the site investigation, **INCO-LABS** will propose a repair and strengthening program to the distress areas, if any is required.

Structural Evaluation Testing performed by **INCO-LABS** but not limited to the following:

- Non-destructive testing of estimating concrete compression strength using Schmidt Hammer test.
- Compressive Strength of concrete cores.
- Measurement of concrete cover
- Chemical composition of concrete
- Steel tensile strength

# **5.6 ENVIRONMENTAL TESTING**

**INCO-LABS** is capable to undertake projects involved in environmental monitoring programs, environmental testing, and consultancy. Our chemical laboratories are fully equipped to serve the environmental monitoring of soil, groundwater and waste water. **INCO-LABS** is working in association with local environmental consultant to provide the necessary

environmental consultancy to its clients. As of the continuous business development, **INCO-LABS** has developed its testing capabilities to serve the environmental studies and researches needs with the support of foreign professional environmental agency.

**INCO-LABS** is capable to carry out the following environmental services:

- Ground water level & quality
- H2S monitoring program
- Waste water analysis & studies
- Soil contamination testing & monitoring
- Soil erosion studies & solutions
- Environmental consultancy in association with local experts in environmental assessments & SHE programs

## 6 CALIBRATION OF EQUIPMENT

As per the Company Quality System, most of the equipment required a calibration that effect the validity and accuracy of test results are calibrated by the **National Institute of Standards (NIS)** in Egypt, which is approved and traceable calibration laboratory in the Middle East by the **National Institute of Standards and Technology (NIST)**, U.S.A. Other equipment are calibrated by the Calibration Department of **INCO-LABS**.

The calibration of equipment is a major requirement of **INCO-LABS** Quality Policy to ensure the quality of testing services provided to its clients. **INCO-LABS** is confident of its testing results, where the equipment used in laboratories and field testing are periodically calibrated by the internationally recognized approved calibration agency.

The following list includes selected calibrated equipment:

- Electronic and mechanical balances
- Drying ovens
- Hot plates
- Hot water bath
- Compression testing machines
- Flexural testing machine
- Air content of concrete instrument
- Concrete moulds (cubes cylinders)
- SPT Hammers (weight and falling distance)
- Proctor Rammers (weight and falling distance)
- Marshal apparatus (weight and falling distance)
- Aggregate impact value apparatus (weight and falling distance)
- Thermometers
- Glassware for chemical analysis (burettes, graduate cylinders, pipets, fixed volume pipets, ...)
- High temperature furnace
- Deflection gauges

- Vernier Callipers
- Measuring tapes
- Speedy moisture tester
- Standard sieves for soil gradation
- Standard weights
- Standard moulds for direct shear test, Consolidation moulds, CBR test, Density moulds.

The calibration certificates are available up on request. Official request can be sent to **INCO-LABS** for providing the required calibration certificates for the relevant equipment of the required testing.

For more information about the approved National Metrology Laboratories by the National Institute of Standards and Technology (NIST), please visit this website:

http://www.nist.gov/oiaa/nat\_pg1.htm

# **7 ORGANIZATION CHART**

# Level – 1 Top Management

Eng. Abdullah A. Al-Obaidan General Manager

Eng. Abdulaziz A. Al-Obaidan Deputy General Manager

# Level – 2 Management

Dr. Eng. Abdul Majeed Jeragh Technical Consultant

Dr. Moh. Elkhairy Ibrahim Salama Technical Manager

# Level – 3 Head of Departments

Eng. Ruperth Villamucho Head of Geotechnical Department

Eng. Karl Dexter Sualibio Head of Materials Department

Eng. Gamal Abdel Aziz Head of Calibration Department

Eng. Beda Barcelona Head of Survey Department

Eng. Lafi H. Al-Hussain Head of Technical Services

Eng. Ricardo C.Carlos Head of Special Testing Department

Mr. Mohammad N. Rafiq Head of Finance & Administration

# Level – 4 Engineers

Eng. Dennis Canon Materials Engineer

Eng. Ahmed El-Barbary Survey Engineer

Eng. Jojo George Varghese Drilling & Maintenance Engineer

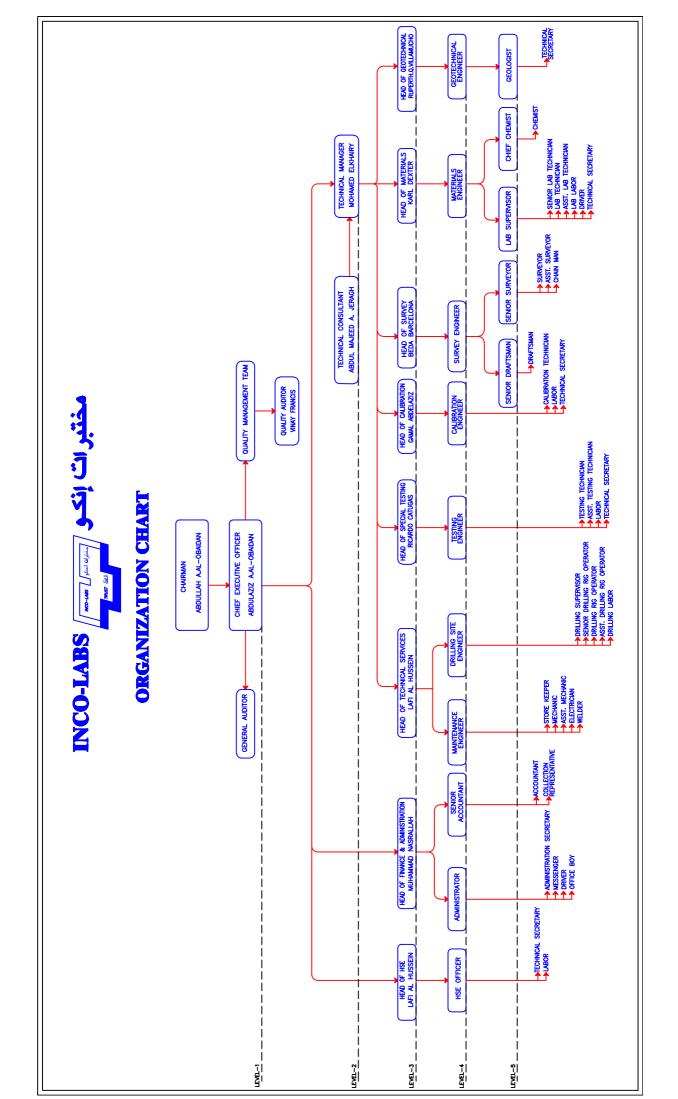
# Level - 5 Key Persons

Mohammad Awayed Drilling Supervisor

Ashraf kassem A.Shafy Drilling Rig Operator

Yassir Khaleel Lab Supervisor

Abdulnaser Sheikh Chemist



# **8 LISTING OF PROJECTS UNDERTAKEN BY THE FIRM**

Since its establishment in 1996, the Firm has undertaken numerous projects, with the volume of work increasing over the years. The listings given in this section do not show all jobs completed, but are selected to demonstrate the range of types of work undertaken by the Firm, and listed in four different categories based on the type of services (Soil Testing, Materials Testing, Survey, Environmental Testing, Structural Evaluation).

# 8.1 SOIL TESTING

# **8.1.1 SOIL INVESTIGATION**

PROJECT	SCOPE OF WORK	CLIENT	START	END
Geotechnical Investigation for South Saad Al Abdullah New City Project-Box Culvert at Saad Al Abdullah, State of Kuwait. Contract No. PAHW/C/1522/2023-2024	The scope of work consists of:  • 116 boreholes at 10.0m, 11.0m, 12.0m, 13.0m, 14.0m, 15.0m, 16.0m, 17.0m, 18.0m, 19.0m, 20.0m, 21.0m, 22.0m & 23.0m depth  • Lab Tests	China Gezhouba Group Co. for PAHW	01/2024	03/2024
Soil Investigation for New 132/11 Kv Substation SHPT "C", "D" & "F" (CONTRACT NO. MEW/C/5960-2023/2024) At Al Sabah Hospital Area, Shuwaikh, State of Kuwait	<ul> <li>The scope of work consists of:</li> <li>15 boreholes at 8.0m depth</li> <li>Soil electrical resistivity test-12 Nos.</li> <li>Lab Tests</li> </ul>	Larsen & Toubro Limited for Ministry of Electricity & Water (M.E.W.)	12/2023	12/2023
Geotechnical Investigation For PMP New Surge Tanks Project-Feed at Wafra Joint Operations, Wafra Area, State of Kuwait	The scope of work consists of: <ul> <li>13 boreholes at 15.0m depth</li> <li>Trial Pits 5 Nos. 2.0m depth</li> <li>Soil Electrical Resistivity Test 1 No</li> <li>Field CBR- 3 Nos.</li> <li>Lab Tests</li> </ul>	ILF Consulting Engineers for Saudi Arabian Chevron Inc. & Kuwait Gulf Oil Co.	11/2023	11/2023
Additional Geotechnical Investigation for Proposed Site of Landfill Extension for North Kuwait Excavation, Transportation, And Remediation Project in Kuwait Zone-2 (NKETR-Zone 2) at KOC, Sabriya, Contract No. 21056717	The scope of work consists of:  • 9 boreholes at 50.0m & 48.0m depth  • Lab Tests	Kuwait Company for Process Plant for KOC	09/2023	10/2023
Soil Investigation for Construction of New Visitors Car Parking at KNPC Head Office in Ahmadi, KNPC Contract No. HO/CPC/4314, State of Kuwait	The scope of work consists of: <ul> <li>54 boreholes at 20.0m depth</li> <li>Lab Tests</li> </ul>	Al Jazirah Industrial Projects Gen.Trad. & Cont. Co. W.L.L. for KNPC	09/2023	10/2023
Soil Investigation for Radar Site In Defense Sector - Kuwait At Ahmed Al Jaber Air Base, Julaia Naval Base, 3Jm Brigade Camp North Area, 26th Soor Brigade, State Of Kuwait	The scope of work consists of:  • 12 boreholes at 18.0m & 30.0m depth  • Soil electrical resistivity test-3 Nos.  • Lab Tests	Global Zone Co. Kuwait, Unites States Airforce	08/2023	09/2023

Soil Investigation for Kuwait Airways Tower at Kuwait City (Qibla Area), State of Kuwait	The scope of work consists of:  • 3 boreholes at 25.0 35.0 & 45.0m depth  • Trial Pits 3 Nos. 1.5m depth  • Piezometer test down to 35.0m depth  • Field Permeability Test 2 Nos3.0 to 7.0m depth  • Soil Electrical Resistivity Test 12 Nos.  • Lab Tests	Pan Arab Consulting Engineers (Pace) for Kuwait Airways	08/2023	09/2023
Soil Investigation for Al Sayer Garage & Car Service I at Shuwaikh Industrial Area, Bloc-1, Plot-05 State of Kuwait	The scope of work consists of: <ul> <li>5 boreholes at 25.0m depth</li> <li>Trial Pits 2 Nos. 2.0m depth</li> <li>Piezometer test down to 25.0m depth</li> <li>Lab tests</li> </ul>	Kuwait Bruckner Construction Contracting Co. (KSCC) for Mohammed Naser Al Sayer & Sons Co. W.L.L.	08/2023	09/2023
Soil Investigation for South Tank Farm (STF) Consultancy Services for Storm Water Drainage System Upgrade at STF & NTF Areas, State of Kuwait Under KOC Contract No. 22057813	The scope of work consists of: <ul> <li>19 boreholes at 10.0m depth</li> <li>Field Permeability Test 4 nos.</li> <li>Field CBR Test 4 Nos.</li> <li>Lab Tests</li> </ul>	United Engineering & Technical Consultants (UNETEC) for Kuwait Oil Company (K.S.C.)	07/2023	08/2023
Geotechnical Investigation for Soil Investigation for 72MW, 11 KV Main Intake Substation Sabriya-F at Sabriya Area, 20MW, 11 KV Area Substation at Gc-23, Emergency DG Set at Gc-23 and Related Activities at KOC-North Kuwait, Under KOC Contract No. 230591 54	The scope of work consists of:  • 4 boreholes at 10.0m depth  • Soil Electrical Resistivity test 3 Nos.  • CBR 6 Nos.  • Field Density test 6 nos.  • Thermal Resistivity 5 Nos.  • Lab Tests and provide complete Geotechnical Report	NBTC Group (P278) for Kuwait Oil Company (K.S.C.)	07/2023	08/2023
Geotechnical Investigation for Construction of New Visitor's Car Parking at KNPC Head Office in Ahmadi, State of Kuwait Under KNPC Contract No. HO/CPC/4314	The scope of work consists of:	Al Jazirah Industrial Projects General Trading & Contracting Co. W.L.L. for KNPC	07/2023	08/2023
Geotechnical Investigation for North Kuwait Excavation, Transportation & Remediation Project in Kuwait- Zone 2 (NKETR-ZONE 2) at KOC, Sabriya area, State of Kuwait, Contract No. 21056717	The scope of work consists of:  • 2 boreholes at 10.0m depth  • Trial Pits 12 Nos. 3.0m depth  • Field Permeability Test 2 Nos 3.0 to 7.0m depth  • Plate Load Test 12 Nos.  • Lab Tests	Kuwait Co. for Process Plant Construction & Contracting (KCPC) for KOC	05/2023	06/2023
Soil Investigation for V03 West Parallel Taxiway Under Contract No. 59-2016/2017 Package 3 for Construction Of New Runway 15r/33l, Reconstruction of Runway of 15l/ 33r, Associate Taxiways Infrastructure and Utilities At Kuwait International Airport	The scope of work consists of:  • 8 boreholes at 4.0m depth  • Trial Pits 8 Nos. 2.0m depth  • Field Density Test 32 Nos.  • Lab Tests	AVIC International for Directorate General of Civil Aviation (DGCA)	05/2023	06/2023

(Kia), Subhan				
Soil Investigation for Construction of Mosque In Sabah Al Ahmed Marine City, State of Kuwait	The scope of work consists of: • 26 borehole at 6.0m depth • Lab Tests	Al Daleel Gen.Trading & Contracting Co. for La'ala Al Kuwait	05/2023	05/2023
Soil Investigation for Commercial Plots in Khaitan Area, State of Kuwait	The scope of work consists of: <ul> <li>53 borehole at 18.0m depth</li> <li>Lab Tests</li> </ul>	Rawsam Consulting + Engineering For Qurain International Real Estate Co.	04/2023	04/2023
Geotechnical Investigation for Installation of Frequency Converter at Wafra Joint Operation Main Area & South Umm Gadr, State of Kuwait	<ul> <li>The scope of work consists of:</li> <li>9 boreholes at 10.0m depth</li> <li>Soil Electrical Resistivity test 2 Nos.</li> <li>Lab Tests</li> </ul>	Power Grid Company For Joint Operations	01/2023	01/2023
Geotechnical Investigation for New soil study for vessel 130-C-203 at gravity Sludge Catcher in KOC Burgan Area	The scope of work consists of:     3 boreholes at 20.0m depth     Trial Pits 2 Nos. 2.0m depth     Piezometer test down to 10.0m depth     Field CBR 2 Nos.     Soil Electrical Resistivity test 3 Nos.     Field thermal resistivity 2 Nos.     Downhole Test 1 No.     Lab Tests	Kuwait Oil Company (K.S.C.)	12/2022	12/2022
Soil Investigation for Theater Intelligence Platform-Central Domex (TIP-C) Arifjan Camp, State of Kuwait	The scope of work consists of:  1 borehole at 30.0m depth  2 boreholes at 14.0m depth  3 boreholes at 12.0m depth  Proctor  Lab CBR  Lab Tests	Arabi company for US Army Corps of Engineers (USACE)	12/2022	12/2022
Soil Investigation for 2 <sup>nd</sup> Avenue New Office Building in KOC, Ahmadi, KOC Contract No. 22058122, State of Kuwait	Drilling 11 Boreholes 10m depth with laboratory testing of soil samples and provide complete geotechnical report	Salem Al-Nisf Gen.Building & Contracting Co. for KOC	12/2022	12/2022
Geotechnical Investigation for Public buildings in south Abdullah al Mubarak, Contract No. 1486- 2022/2023, State of Kuwait	The scope of work consists of:  • 88 boreholes at 6.0m depth  • Lab Tests	El Eman Construction Est. for Gen.Trad. & Contracting for PAHW	10/2022	11/2022
Soil Investigation for Wafra Economic Zone / city (WEZ) at Wafra Area, State of Kuwait	The scope of work consists of:  • 40 boreholes at 6.0m depth  • 5 boreholes at 10.0m depth  • 5 boreholes at 15.0m depth  • 40 boreholes at 6.0m depth  • 2 boreholes at 20.0m depth  • 2 boreholes at 30.0m depth  • Lab Tests	Pan Arab Consulting Engineers (PACE) for Kuwait Direct Investment Promotion Authority (KDIPA)	07/2022	08/2022
Geotechnical Investigation for Enhancement of Desalinated Water Import & Storage facilities at KNPC- MAA Refinery, Mina Al Ahmadi, State of Kuwait	The scope of work consists of:  • 8 boreholes at 10.0 & 25.0m depth  • Trial Pits 1 No. 1.5m depth  • Soil Electrical Resistivity test 8 Nos.  • Plate Load Test 2 Nos.  • Lab Tests	Gulf Spic Gen.Trad. & Contracting Co. for KNPC	06/2022	10/2022

Soil Investigation for Jurassic Production Facility - 5 (JPF-5) at KOC North Kuwait, Abdaly area, Kuwait	The scope of work consists of:  30 boreholes at 10.0m depth Trial Pits 5 Nos. 2.0m depth CPT test 20 Nos. at 10m Crosshole 3 Nos. Soil electrical resistivity test 57 Nos. Field CBR 7 Nos. Field Permeability test 9 Nos. at 2.0 to 9.0m depth Plate Load Test 8 Nos. Lab Tests	Jereh Oil & Gas Engineering Corporation for KOC	03/2022	04/2022
Soil Investigation for Eleven Patterns Well Hook-Up and Associated Works Under KOC Contract No. 20055025 North Kuwait, State of Kuwait	The scope of work consists of:  11 boreholes at 10.0m depth Trial Pits 6 Nos. Soil electrical Resistivity Test 11 Nos. Lab Tests	Sayed Hamid Behbehani & Sons Co. W.L.L. for KOC	03/2022	03/2022
Soil Investigation for Jurassic Production Facility-4 (JPF-4) at KOC North Kuwait, Abdally Area, state of Kuwait. KOC Contract No. 21057422	The scope of work consists of:  • 31 boreholes at 10.0m depth  • 4 boreholes at 20.0m depth  • Trial Pits 6 Nos.  • CPT test 5 Nos.at 20m  • Crosshole 2 Nos.  • Soil electrical resistivity test 9 Nos.  • Field CBR 6 Nos.  • Field Density test 7 Nos.  • Field Permeability test 2 Nos.  • Plate Load Test 8 Nos.  • Lab Tests	SPETCO International Petroleum Co. for KOC	02/2022	03/2022
Soil Investigation-Offshore Boreholes for WTE- Emergency Sea Outfall at Umm Al Hayman, State of Kuwait	The scope of work consists of:	Al Hassanain JGL for MPW	12/2021	12/2021
Soil Investigation for New Tank No. 6 for Construction & Maintenance of Two Nos.R.C. Ground Reservoirs for Fresh Water & Annexed Works at West Funaitees (Complex No. 3) Stage II, Kuwait	The scope of work consists of: <ul> <li>18 boreholes at 10.0m depth</li> <li>Lab Tests</li> </ul>	Canar Trading & Contracting Co.for MEW	12/2021	12/2021
Soil Investigation for Consultancy Services for the Design of KIPIC Al Ahmadi Office at Ahmadi, State of Kuwait	The scope of work consists of:  • 20 boreholes at 10.0m depth  • Field CBR Test - 1 No.  • Electrical resistivity –1 No.  • Lab Tests	Al Habshi Engineering Consultant Office for Kuwait Integrated Petroleum Industries Co(KIPIC)	10/2021	11/2021
Soil Investigation for Supply & Installation of SHPT "W" 300Kv Substation (Contract No. MEW/5659-2021/2022) at Al Sabah Hospital "W", Shuwaikh	The scope of work consists of:  • 12 boreholes at 8.0m depth  • Trial Pits 6 Nos.  • Plate Load test – 4 Nos.  • Lab Tests	Larsen & Toubro Limited for MEW	09/2021	09/2021
Soil Investigation for Logistics and Transfer Warehouse in Subhan	The scope of work consists of: <ul><li>14 boreholes at 12.0m depth</li><li>Trial Pits 5 Nos.</li><li>Lab Tests</li></ul>	Al Hamra Kuwait Co. for US Army Corps of Engineers	09/2021	09/2021

Cail Investigation for Disale	The same of work consists of	Lothan Gulf Co. for	09/2021	09/2021
Soil Investigation for Block- 15, 20 at Mutla'a	The scope of work consists of: <ul> <li>19 boreholes at 4.0m depth</li> <li>18 boreholes at 3.0m depth</li> <li>2 boreholes at 2.0m depth</li> <li>Lab Tests</li> </ul>	Gen. Contracting Co.		
Soil investigation for Chemikuwait project at Western Shuaiba, Block-1, Plot-79, State of Kuwait	The scope of work consists of:  11 boreholes at 10.0m depth Trial Pits 2 Nos. Falling Head Permeability test-1 No. Pressuremeter test 3 Nos. Down-hole Seismic test-1 No. Lab Tests	Nizar Al Anjari Consulting Bureau for Chemikuwait for chemical industries	07/2021	07/2021
Soil investigation for Al Sayer project P2112 At Shuwaikh Industrial Area-01, Block 01, Plot 05	The scope of work consists of:  • 20 boreholes at 17.0m depth  • Lab Tests	Nizar Al Anjari Consulting Bureau for Al Sayer group Holding	07/2021	07/2021
Soil Investigation for Filling Station No. PSF-01 (N-1A) Soil Investigation for 25 Nos. KNPC Petroleum Filling Stations (Batch III) at Abdullah Mubarak, Al Mutla'a, State of Kuwait (Under Contract Nu mber: LM/CPC/4120/CNSL)	The scope of work consists of: <ul> <li>77 boreholes at 10.0m depth</li> <li>55 boreholes at 6.0m depth</li> <li>Lab Tests</li> </ul>	United Engineering and Technical Consultants, Architects, Engineers (UNETEC) for Kuwait National Petroleum Co. (KNPC)	06/2021	07/2021
Soil Investigation for KOC Jurassic Production Facility 3 Upgrade Project At KOC North Kuwait, Abdaly Area, State of Kuwait.	The scope of work consists of:     7 boreholes at 10.0m depth     Trial Pits 5 Nos.     CPT test 2 Nos.     Soil electrical resistivity test 3 Nos.     Field CBR 2 Nos.     Field Density test 2 Nos.     Lab Tests	SPETCO International Petroleum Co. for Kuwait Oil Company	05/2021	05/2021
Soil Investigation with Pressuremeter Testing for Boubyan Bank New Headquarters Building at Sharq Area, Kuwait City, State of Kuwait	The scope of work consists of:     2 boreholes at 20.0m depth     3 boreholes at 25.0m depth     Falling Head Permeability test-1     No.     Pressuremeter test 3 No.s     Lab Tests	Kuwait Bruckner Construction Contracting Co. KSCC for Boubyan Bank	03/2021	03/2021
Drilling Boreholes and Installing Ground Water Monitoring Wells for Al Zour New Refinery Project (NRP) at Al Zour, State of Kuwait	The scope of work consists of:     3 boreholes at 11.7m depth     21 boreholes at 9.0m depth     7 boreholes at 3.0m depth	NBTC Group – Kuwait (P256) Naser M. Al-Baddah & Partner Gen. Trad. & Cont. Co. for Kuwait Integrated Petroleum Industries Co. (KIPIC)	02/2021	03/2021
Soil Investigation for Cons., Operation & Maintenance of Waste Water Treatment Plant in South Mutla'a City & Other related works at South Mutla'a , State of Kuwait Cont.No.SE/208	The scope of work consists of: <ul> <li>1 boreholes at 25.0m depth</li> <li>1 boreholes at 10.0m depth</li> <li>4 boreholes at 6.0m depth</li> <li>Lab Tests</li> </ul>	The Arab Contractors for Ministry of Public Works Sanitary Engineering	02/2021	02/2021
Soil Investigation for Design Cons. Test Additional Shortwave Antenna System (Cont. No.951700-20-C-	The scope of work consists of:	Brice Builders LLC for U.S Agency for Global Media (USAGM)	01/2021	02/2021

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0131) at Mutla'a, State of Kuwait				
Soil Investigation for (Off Shore) for Al-Nuwaiseeb New Power Station at Al- Nuwaiseeb, State of Kuwait	The scope of work consists of:  • 4 boreholes at 15.0m depth  • Lab Tests	Aramenco Office (Arab American Eng. Co.) for Ministry of Electricity & Water (MEW)	01/2021	01/2021
Geotechnical Investigation for Stage-1, J3-Residential and Mall Jaber Al Ahmed City Investment Opportunity J3-Residential and Mall at Jaber Al Ahmed City, Block-4, State of Kuwait	The scope of work consists of:  • 15 boreholes at 40.0m depth  • 36 boreholes at 30.0m depth  • 1 borehole at 20.0m depth  • 32 boreholes at 15.0m depth  • 7 boreholes at 10.0m depth  • Lab Tests	Alghanim International for PAHW	12/2020	01/2021
Soil Investigation for Substation-M61A, M64A, M65A, RM40A & N01-Replacement of Old and Obsolete Substations in KNPC-MAA Refinery at Mina AI Ahmadi (Contract No. CA/CPD/0192-Kuwait)	The scope of work consists of:  13 boreholes at 10.0m depth Piezometer test down to 10.0m depth 6 Trial pits down to 2.0m Soil electrical resistivity test 20 Nos. Dynamic cone penetration test 11 Nos. Thermal resistivity test -16 Nos. Cross-hole seismic test-5 Nos.	Larsen & Toubro Limited for KNPC	10/2020	01/2021
Geotechnical Investigation for Replacement of Old & Obsolete Substations in Mina Ahmadi Refinery (MAA) - Contract No. CA/CPD/0192 - Kuwait	The scope of work consists of:  11 boreholes at 10.0m depth  6 Trial pits down to 2.0m  5 Crosshole Seismic test 10m  1 Piezometer test down to 10.0m depth  16 Thermal resistivity  11 Dynamic Cone Penetration Test 1.0m  20 Soil electrical resistivity test  Lab Tests	Larsen & Toubro Limited for KNPC	10/2020	12/2020
Soil Investigation for Interchange IC-04 under Contract No. RA/243 Upgrading of Abdally Highway from the Access to the Proposed Mutla'a city to the Proposed Interchange at Northern Regional Road, South Mutla'a, Kuwait	The scope of work consists of:  • 10 boreholes at 30.0m depth  • 4 boreholes at 20.0m depth  • 12 boreholes at 15.0m depth  • Lab Tests	ITINERA-S.P.A. for MPW-PART	10/2020	11/2020
Soil Investigation for Construction of Roads & Infrastructure Networks at South Mutla'a Residential Project, at South Mutla'a, State of Kuwait (Cont. No. PAHW/C/1300-2016/2017)	The scope of work consists of:	China Gezhouba Group Co.Ltd. for PAHW	03/2020	08/2020
Soil Investigation for drilling boreholes with sample collection for Military Base Amghara Landfill, Sulaibiya	The scope of work consists of:	Dar Al Bea'a Environmental Consultants for Kuwait environment	01/2020	11/2020

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west (Amghara LF6) Qurain, Arifjan, Yarmouk, Wafra, MAB, West Sulaibiya Amghara, East Sulaibiya, Kab'd, Jahra, Subhan Military Base, Qab'd Quarry area, Rheyya,	<ul><li>Gas monitoring wells</li><li>Piezometers</li><li>Lab Tests</li></ul>	public authority		
Geotechnical Investigation for Hessah Al-Mubarak Residential tower (Plot no. 48 & 49) at Daiya, Block-5, Plot 48 & 49, Kuwait	The scope of work consists of:  • 9 boreholes at 50.0m depth  • Piezometer test down to 25.0m depth  • Lab Tests	PAN ARAB Consulting engineers for Wafra Real Estate	03/2020	04/2020
Geotechnical Investigation for the New Head Quarters for the Institute of Banking Studies at Al-Qibla, Kuwait	<ul> <li>The scope of work consists of:</li> <li>6 boreholes at 50.0m depth</li> <li>Piezometer test down to 20.0m depth</li> <li>Lab Tests</li> </ul>	PAN ARAB Consulting engineers for Kuwait Institute of Banking studies	01/2020	02/2020
Geotechnical investigation & Soil Infiltration rate test for N-5,N6,N7 & N9 (Tank-1, 2, 3, 4, 5, 6 & 7) for Construction of the roads & networks of infrastructure services at South Mutla'a, Kuwait	The scope of work consists of:     7 boreholes at 20.0m depth     Infiltration test     Lab Tests	China Gezhouba Group Co.Ltd. for PAHW	04/2019	11/2019
Geotechnical Investigation for Cross Country Pipeline from KNPC (MAB) to KOTC, Umm Al Aish – FEED –For Supply of Finished LPG from KNPC to KOTC, State of Kuwait	<ul> <li>The scope of work consists of:</li> <li>12 boreholes at 10.0m depth</li> <li>12 Trial pits down to 3.0m</li> <li>CBR test 11 Nos.</li> <li>Soil electrical resistivity test 12 Nos.</li> <li>Plate Load test- 12 Nos.</li> <li>Falling Head permeability test-12 Nos.</li> <li>Lab Tests</li> </ul>	WOOD-AMEC Foster Wheeler Group Ltd. For KNPC	02/2019	09/2019
Geotechnical Investigation for MAB Refinery Portion- FEED-For Supply of Finishing LPG from KNPC to KOC, Umma Al Aish Plant at North Kuwait	The scope of work consists of:  11 boreholes at 15.0m depth 5 Trial pits down to 3.0m CBR test 11 Nos. Soil electrical resistivity test 11 Nos. Piezometer test down to 15.0m depth Downhole seismic test -3 Nos Plate Load test- 11 Nos Falling Head permeability test-11 Nos. Lab Tests	WOOD-AMEC Foster Wheeler Group Ltd. For KNPC	04/2019	09/2019
Geotechnical investigation & Soil Infiltration rate test for N-1 & N2 (Tank-1, 2, 3, 4, 5, 6 & 7) for Construction, completion and maintenance of the road works, networks of infrastructure services for and electrical substations for neighbourhoods (N1 & N4)	The scope of work consists of:  12 boreholes at 20.0m depth Infiltration test Lab Tests	Polat Yol Sanayi Ve Ticaret A.S. for PAHW	05/2019	06/2019

at South Mutla'a, Kuwait				
Soil investigation for ASP Pilot Facilities (Contract #18052644) at KOC North Kuwait (Sabahiya- Mahmoud), State of Kuwait	The scope of work consists of:  • 3 boreholes at 15.0m depth  • CPT Test 6 Nos.  • Soil Electrical resistivity test  • Trial pits 3 Nos.  • Lab Tests	SNF SA for KOC	03/2019	4/2019
Soil investigation for New Al Mulla Headquarters Building at Soor street, Kuwait City.	The scope of work consists of:  • 8 boreholes at 40.0m depth  • 3 boreholes at 60.0m depth  • Piezometer test down to 30.0m depth  • Lab tests	Pan Arab Consulting Engineers (PACE) for Al Mulla Group	11/2018	12/2018
Geotechnical for MOD Headquarter project # 17170 at Qurain, Kuwait	The scope of work consists of:  12 boreholes at 30.0m depth 1 boreholes at 25.0m depth 13 boreholes at 20.0m depth 15 boreholes at 6.0m depth 16 test 15 Nos. 17 CBR test 15 Nos. 18 Soil electrical resistivity test 6 nos. 19 Piezometer test down to 30.0m depth 19 Downhole seismic test -1 No. 19 Falling Head permeability test-3 Nos. 10 Soil thermal resistivity test-3 Nos. 10 Lab Tests	SSH International Engineering Consultants for Kuwait Ministry of Defense	21/2018	09/2018
Soil investigation for ZONE-A Construction & maintenance of 509 Houses including Civil works, Parking, Gen. building & Electric S/S East Taima'a Housing project at East Taima'a, Kuwait	The scope of work consists of:  • 4 boreholes at 6.0m depth  • 8 boreholes at 8.0m depth  • 12 boreholes at 10.0m depth  • 1 borehole at 30.0m depth  • Lab Tests	Kuwait Arab Contractors for PAHW	6/2018	6/2018
Soil Investigation for Construction, Completion and Maintenance of the Regional Road North Part from Sixth Ring Road North Part From Sixth Ring Road to Interchange-82 RA/259 at Salmi Road-70, Kuwait	The scope of work consists of:  12 boreholes at 15.0m depth  Lab Tests	Metallurgical Corporation of China Ltd. For PART	04/2018	04/2018
Geotechnical Investigation for Construction of Remote Header Manifolds & Associated Works in S&EK Area at KOC GC-20, 10 & 22 (East Kuwait)	The scope of work consists of:	Alghanim International Gen.Trad. & Contracting Co. for KOC	03/2018	03/2018
Soil Investigation for COAR+CCSE (Men & Women) Plot Nos.118, 119 &121, 122 & 123 Sabah Al Salem University, Kuwait	The scope of work consists of:  • 81 boreholes at 7.5m & 28.5m depth  • Lab Tests	KEO International Consultants for Kuwait University Construction Program	01/2018	02/2018

Soil Investigation for Bay	The scope of work consists of:	Surjin Tech Co.	12/2017	01/2018
Island North (Area C1 Building) RA/140 at Bay	• 14 boreholes at 11.45m & 15.45m depth	Ltd/Hyundai Eng. & Cont.Co. Ltd. For		
Island North, Subiya, State of Kuwait	<ul> <li>7 CPT test down to 13.0m depth</li> <li>Lab Tests</li> </ul>	Public Authority for Roads and		
of Rawait	• Lab Tests	Transportation		
Soil Investigation for Sabah	The scope of work consists of:	Alghanim	12/2017	12/2017
Al-Ahmed Sea City, Phase A1 (D18) Construction of 7	<ul><li>7 boreholes at 30m depth</li><li>7 CPT test down to 15.0m depth</li></ul>	International Gen.Trad. &		
Nos. Fresh Water Towers at	Lab Tests	Contracting Co.		
State of Kuwait			0=/00/	07/00/17
Geotechnical Final Report – Rev.0 Soil Investigation For	The Scope of work consists of:  • 10 boreholes at 30m depth	Alghanim International for MEW	07/2017	07/2017
Sabiya Stage-3	16 boreholes at 15m depth	International for MEVV		
#Mew/C/5200-2017/2018 At	CPT test 6 Nos.			
Sabiya Area, State Of Kuwait	Seismic Crosshole 3 Nos.			
	<ul> <li>Plate Load Test 4 Nos.</li> </ul>			
O a tank air al lance fination	Lab Tests  The Control of the C	Obin o O selvanta	06/2017	07/0047
Geotechnical Investigation for Construction Of Roads &	The Scope of work consists of:  • 4 boreholes at 14m depth	China Gezhouba Group Company Ltd.	06/2017	07/2017
Infrastructure Networks at	6 boreholes at 13m depth	For Public Authority		
South Mutla'a Residential	6 boreholes at 12m depth	for Housing Welfare		
Project, South Mutla'a, State	11 boreholes at 10m depth			
Of Kuwait (Cont. No. Pahw/C/1300-2016/2017)	15 boreholes at 9m depth			
1 anw/0/1300-2010/2017)	10 boreholes at 7m depth     Character at 6m depth			
	<ul><li>6 boreholes at 6m depth</li><li>1 borehole at 5m depth</li></ul>			
	Lab Tests			
Geotechnical Investigation	The Scope of work consists of:	Imprezza	01/2017	02/2017
for New Maternity Hospital	<ul> <li>5 boreholes at 80m depth</li> </ul>	PIZZAROTTI S.P.A.		
Project-SPA/235 at Sabah	8 boreholes at 50m depth	for MPW		
Hospital Complex, Shuwaikh area, Kuwait	2 boreholes at 40m depth     Diozemeter 7 Need depth			
a.sa, rawan	<ul><li>Piezometer 7 Nos. depth</li><li>Seismic Down-hole test 3 Nos.</li></ul>			
	Plate Load Test 14 Nos.			
	<ul> <li>Pressuremeter test 45 Nos.</li> </ul>			
	Pumping test 3 Nos.			
	Soil Electrical resistivity Test 24     Nos.			
	Field Permeability Test 12 Nos.			
	Lab tests			
Geotechnical Investigation	The Scope of work consists of:	Doosan Heavy	08/2016	09/2016
for Doha SWRO Desalination	78 boreholes on Onshore at 25m	Industries &		
Plant with Re-Carbonation System (Stage-1) at Doha	<ul><li>depth</li><li>18 boreholes on Offshore (13</li></ul>	Construction Co. for MEW		
Area, Kuwait	Nos. at 25m and 5 Nos. at 20m	IVIE VV		
	depth			
	CPT Test 22 Nos.			
	Seismic Down-hole test 7 Nos.  Plate Land Task 44 Nos.			
	<ul><li>Plate Load Test 14 Nos.</li><li>Soil Electrical resistivity Test 24</li></ul>			
	Nos.			
	<ul> <li>Field Permeability Test 16 Nos.</li> </ul>			
Octobrilla 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Lab tests  The Control of the c	D D.: 1	07/00/10	00/0040
Geotechnical report for Soil Investigation for Agreement	The Scope of work consists of:  • 21 boreholes at 25m & 30m depth	Parsons Brinckerhoff for MPW	07/2016	09/2016
No. EF/R/216 Study Design	• 23 boreholes at 10m & 15m depth	TOT IVIT VV		
& Construction Supervision	Lab tests			
for Construction and				

Maintenance for the Upgrading of Kabd-Sulaibiya Highway (604)-Phase II, Kuwait				
Geotechnical Investigation for TCF-Area 01, Unit-34 & Area 03, for Al Zour New Refinery Project (NRP) Package-1 (Contract No. ZOR/EPC-0055A-Main Process Units) at Al Zour Area, Kuwait	The scope of work consists of :  • 12 boreholes at 15m depth  • CPT Test 29 Nos.  • Lab tests	Vision International Gen.Trad. & Contracting Co. for KNPC	05/2016	06/2016
Geotechnical Investigation for EPC & C – Gas Train 5 project at Mina Al Ahmadi Refinery, State of Kuwait	The Scope of work consists of:  • 6 boreholes at 15m depth  • 6 boreholes at 20m depth  • 6 boreholes at 25m depth  • 6 boreholes at 35m depth  • 6 boreholes at 40m depth  • Lab tests	Vision International Gen.Trad. & Contracting Co. for KNPC	02/2016	06/2016
Geotechnical Investigation for the Study & Design of Kuwait Children's Hospital at Shuwaikh area, Kuwait	The Scope of work (Area-1, 2,3 & 4) consists of:  • 180 boreholes at 10-25m depth • Piezometer 20 Nos. depth • CPT Test 200 Nos. • Seismic Cross-hole test 26 Nos. • Plate Load Test 22 Nos. • Soil Electrical resistivity Test 47 Nos. • Thermal Conductivity Test 47 Nos. • CBR test 27 Nos. • Lab tests	Dar SSH International Engineering Consultants of Ministry of Health	02/2016	09/2016
Geotechnical Investigation for Al Zour New Refinery Project (NRP) Package -1 (Contract No. ZOR/EPC-0055A-Main Process Units) At Al Zour Area, State of Kuwait	The Scope of work (Area-1, 2,3 & 4) consists of:  • 180 boreholes at 10-25m depth  • Piezometer 20 Nos. depth  • CPT Test 200 Nos.  • Seismic Cross-hole test 26 Nos.  • Plate Load Test 22 Nos.  • Soil Electrical resistivity Test 47 Nos.  • Thermal Conductivity Test 47 Nos.  • CBR test 27 Nos.  • Lab tests	Vision International for KNPC	03/2016	05/2016
Geotechnical Investigation for Gas Turbines Power Project at Subiya Power & Distillation Plant Site Stage 2, Subiya Area, Kuwait	The Scope of work consists of:  15 boreholes at 20m depth Piezometer 1 No. 20.0m depth Trail Pits 3 Nos. CPT test 3 Nos. Pressuremeter test 1 No. Seismic Cross-hole test 2 Nos. Plate Load Test 3 Nos. Soil Electrical resistivity Test 3 Nos. Lab tests	Vision International for KNPC	01/2015	04/2015

Geotechnical investigation for the Construction of New Gathering Center GC-30 at KOC-Abdali, North Kuwait	The Scope of work consists of:  • 65 boreholes at 5,10,20,40m depth  • Trail Pits 4 Nos.  • Max Dry Density Proctor 16 Nos.  • CBR 2 Nos.  • Plate Load Test 2 Nos.  • Soil Electrical resistivity Test 9 Nos.  • Lab tests	Larsen & Toubro Ltd. For KOC	12/2014	01/2015
Geotechnical Investigation for Design, Execution, Completion and Maintenance Al-Shadadiya Industrial Zone Infrastructure Works at Shadadiya Area, Kuwait	The Scope of work consists of:  • 43 boreholes at 6m depth  • 4 boreholes at 15m depth  • 5 Boreholes at 20m depth  • Soil Electrical Resistivity 10 Nos.  • Seismic Cross-hole tests  • Lab tests	Mushrif Trading and Contracting Co. for PAHW	10/2014	12/2014
Geotechnical Investigation for the Proposed Olympic Village at Jaber Al Ahmed City, Kuwait	The Scope of work consists of:  • 87 boreholes at 15.0, 30.0, 35.0, and 40.0m depth  • Carrying out CPT 26 Nos.  • Carrying out Pressuremeter testing 13 Nos.  • Falling head permeability test  • Installation of Piezometer 13 Nos.  • Lab tests	United Engineering & Technical Consultants, Architects, Engineers for PAHW	03/2014	06/2014
Geotechnical Investigation for KFHRE Sharq Residential Complex at Sharq Area, Block-3, Plot-1, Kuwait	The Scope of work consists of:  • 2 boreholes at 60m depth  • 2 boreholes at 40m depth  • 2 boreholes at 25m depth  • Installation of Piezometer 60m depth  • 2 Soil Electrical Resistivity test &  • Lab tests	Dar SSH International Eng.Consultants for Kuwait Finance House	02/2014	03/2014
Geotechnical Investigation for Molten Sulfur Area Sulfur Handling Facilities Project (Revamp & New) at KNPC MAA Refinery , Mina Al Ahmadi, State of Kuwait	<ul> <li>The Scope of work consists of:</li> <li>49 boreholes at 30m depth</li> <li>Soil Electrical Resistivity 10 Nos.</li> <li>Seismic Cross-hole tests</li> <li>Lab tests</li> </ul>	Vision Int. Gen.Trad.& Cont.Co. W.L.L. for KNPC	12/2013	01/2014
Geotechnical Investigation for Design, Build, Completion & Maintaining of Sheikh Jaber Al Ahmed Al Sabah Causeway Project - Main Link (Contract No. MPW RA/140)	Boreholes & Lab tests	Combined Group Contracting Co. for Ministry of Public Works	10/2013	06/2015
Geotechnical Investigation for KNPC, FCC, SWT C/T for CFP Project at KNPC MAA Refinery, Mina Al Ahmadi, Kuwait	The Scope of work consists of:  • 29 boreholes at 20m depth  • 9 Soil Electrical Resistivity test  • 3 Plate Load test  • 2 Seismic Crosshole test  • Triaxial Compression Test & Lab tests	Vision International Gen. Trad. & Cont. co. for KNPC	10/2013	01/2014
Geotechnical Investigation for Sulphur Handling Facilities (Offshore & Onshore) (Rewamp & New) project at KNPC MAA Refinery, Kuwait	The Scope of work consists of: Onshore:  • 49 boreholes at 30m depth  • 10 Soil Electrical Resistivity test  • 2 Seismic Crosshole test  • Triaxial Compression Test	Vision International Gen. Trad. & Cont. co. for KNPC	09/2013	01/2014

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	Offshore:			
	20 boreholes at 30m depth			
	Triaxial Compression Test &			
	Lab test			
Costochnical Investigation	The Coope of work consists of	Parsons Brinkerhoff	03/2013	03/2013
Geotechnical Investigation for the Study, Design,	The Scope of work consists of:	International for MPW	03/2013	03/2013
for the Study, Design, Construction, Supervision	23 boreholes at 25m depth     3 boreholes at 25m depth			
and Maintenance for the	2 boreholes 300m depth &			
Upgrading of Roads Network	• 12 boreholes 35 m &			
within the Government Zone	Lab tests			
at South Surra Area, Kuwait				
Geotechnical Investigation	The Scope of work consists of:	Pan Arab Consulting	02/2013	03/2013
for Cultural Center Project at	27 boreholes at 30m depth	Engineers for PAHW	02/2010	00/2010
Sabah Al Ahmed City, Kuwait	3 boreholes 40m depth &	Linginiosis for 174 TV		
Cabarry artifica Oity, Nawar	Lab tests			
O a tank a land a land a time time time		Alama adi ala	00/0042	40/2042
Geotechnical Investigation for Schools for the	Boreholes & Lab tests	Ahmadiah	02/2013	10/2013
		Contracting & Trading Co. for PAHW		
Construction of Public Buildings in Jaber Al Ahmed		CO. IOI PARIV		
City-N1 & N3, Cont. No.				
PAHW/1207-2012/2013				
Geotechnical Investigation	Soil Investigation in Offshore &	National Petroleum	04/2013	06/2013
for (Offshore & Onshore)	Onshore)	Services Co.	0 1/2010	00/2010
for New SWRO	The Scope of work consists of:	(K.S.C.C.)		
Desalination Plant with	10 boreholes at 15m depth	(NAPESCO) for		
Recarbonation System	30 boreholes 25m depth	Ministry of Electricity		
(Stage-1) MEW Tender No.	Installation of Piezomter (3 Nos.)	& Water		
MEW/84-2011/2012 at Doha	Electrical Resistivity (6 Nos.)			
East & West Power Station,	Plate Load Tests (4 Nos.)			
Kuwait	• CPT (6 Nos.)			
Ruwait	• PMT (4 Nos.)			
	• Crosshole (2 Nos.)			
Geotechnical Investigation	The Scope of work consists of:	Kharafi National	02/2013	04/2013
for Water Pipeline from Doha	88 boreholes down to 10m	K.S.C.for Ministry of	02/2010	04/2010
West Power Station to		Electricity & Water-		
Mutla'a Area. Kuwait for	Soil Electrical Resistivity (88 Nos.)	Water Projects Dept.		
MEW Current works for		Valer Frojecto Dept.		
Water Lines & Connections				
through out the State of				
Kuwait (Contract No.				
MEW/A/4234/2010-2011)				
Geotechnical Investigation	Drilling 27 boreholes 30m depth and	Pan Arab Consulting	02/2013	03/2013
for the Cultural Center	3 Boreholes 40m depth with	Engineers W.L.L. for		
project at Sabah Al Ahmed	Laboratory testing soil samples and	Public Authority for		
City, Kuwait	provide complete Geotechnical	Housing Welfare		
	Report			
Geotechnical Investigation	Drilling 5 boreholes 15m depth and	Metallurgical	08/2012	08/2012
for Construction &	25 Boreholes 12m depth with	Corporation of China		
Maintenance of College of	Laboratory testing soil samples and	Ltd./Khalid Ali Al		
Science (Men's & Women's	provide complete Geotechnical	Kharafi Co. J.V. for		
Campus) & Faculty Club	Report	Sabah Al Salem		
(Contract No.		University City-Kuwait		
KU/KUCP/C0400/10-11) at		University		
Sabah Al Salem University City, Shadadiya, Kuwait				
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Soil Investigation for Wafra	Drilling 13 boreholes 15m depth, 3	Public Authority for	07/2012	07/2012
Residential Project at Wafra, Kuwait	Boreholes 30m depth and 1 Borehole 50 m depth and with Laboratory testing soil samples and provide complete Geotechnical Report	Housing Welfare		
Geotechnical Investigation for Az-Zour North IWPP Phase I, Az-zour, State of Kuwait	Soil Investigation in Onshore, Near shore & in Offshore) The Scope of work consists of:  • 30 boreholes at 15m depth  • 15 boreholes 20m depth  • 2 boreholes 40m depth  • Installation of Piezomter (30 Nos)  • Electrical Resistivity (15 Nos.)  • Plate Load Tests (3 Nos.)  • CPT (4 Nos.)  • Field CBR (3 Nos.)  • Field Falling Head Permeabilty test	Hyundai Heavy Industries Co. Ltd for Partnership Technical Bureau	05/2012	07/2012
Geotechnical Investigation for Freshwater Main Line from Sabah Al Ahmed Maritim City Water to JO, Wafra for MEW Current works for Water Lines & Corrections throughout the State of Kuwait	Drilling 72 boreholes 10m depth and 72 Soil Electrical Resistivity test with Laboratory testing soil samples and provide complete Geotechnical Report	Kharafi National K.S.C. for MEW	04/2012	06/2012
Geotechnical Investigation for the Youth Center at Saad Al-Abdullah, Block-2, Block- 8, Block-B, Block-C,Block-E & Block-N3, Kuwait	Drilling 76 Boreholes 10m depth and 6 Boreholes 15m depth with laboratory testing of soil samples and provide complete geotechnical report	Taher Consultant Engineering Center for PAHW	01/2012	01/2012
Environmental Studies of the Suspected Landfill with in the project area of the 6.5 Ring Road Project	<ul> <li>The Scope of work consists of:</li> <li>Installation of Gases Monitoring Wells</li> <li>9 boreholes at 15m depth</li> <li>Installation of Piezometer 9 Nos.</li> </ul>	Wataniya Environmental Services Co.	01/2012	01/2012
Geotechnical Investigation for KNPC LPG TRAIN-5 Project Front End Engineering Design (FEED) at KNPC Mina Al Ahmadi Refinery	The Scope of work consists of:  • 19 boreholes at 25m depth  • 2 Trial Pits 3m depth  • 2 Soil Electrical Resistivity test  • 2 Field Permeability test  • 2 Nos. Pressuremeter test  • 1 No.Crosshole Seismic test (25mdepth)	Vision Int. Gen. Trading &Cont. Co. for KNPC	12/2011	01/2012
Soil Investigation For Design and Maintenance of Kazma Camp	The Scope of work consists of: <ul> <li>122 boreholes down to 10 &amp; 13m</li> <li>Soil Electrical Resistivity (4 Nos.)</li> <li>Field CBR (24 Nos.)</li> </ul>	ATKINS & DAR SSH International Engineering Consultants	10/2011	11/2011
Soil Investigation for Release of location for Construction of Drilling Wells	Drilling Boreholes with laboratory testing of soil samples and provide complete geotechnical report	HOT Engineering & Construction Co. for KOC	3/2011	On going
Geotechnical Investigation for New GC-16 in West Kuwait (KOC Contract No. 44930) at KOC West Kuwait Field, Kuwait	The Scope of work consists of:  • 4 boreholes down to 40m depth  • 3 boreholes down to 20m depth  • 19 boreholes down to 10m depth  • Electrical Resistivity test (4 Nos.)  • Seismic Crosshole test (2 Nos)  • Plate Load test (1 No.)  • Cone Penetration test (CPT-17	Al-Khorayef Group Co. for KOC	3/2011	5/2011

	Nos.)			
	• Field CBR (4 Nos.)			
Geotechnical Investigation for Soil Improvement Works for Jaber Al Ahmed City Area (N1/N3). Cont. No. PAHW/1152-2009/2010	Boreholes, Cone Penetration Test & Pressure meter Tests	Ahmadiah Contracting & Trading Co. (K.C.S.C.) for Public Authority for Housing Welfare (PAHW)	4/2011	12/2011
Soil Investigation at Interchange # 13 (Yarmouk Area) for MPW CONTRACT No. RA/187-Construction, Completion & Maintenance of Interchanges on main Highways 5 <sup>th</sup> Ring Road & King Faisal Motorway Connecting to New Housing Areas at South Surra Area (IC-12,13,14 & 15)	Drilling 4 Boreholes 18m depth with laboratory testing of soil samples and provide complete geotechnical report	Hot Engineering & Construction Co. for Ministry of Public Works	03/2011	03/2011
Soil Investigation for the Proposed Kuwait Cancer Center at Al Sabah Hospital Complex, Shuwaikh Area	Drilling 3 Boreholes 25m depth with laboratory testing of soil samples and provide complete geotechnical report	Pan Arab Consulting Engineers for Ministry of Health	03/2011	03/2011
Soil Investigation for AlDhaher Residential Area at AlDhaher, Kuwait	Drilling 4 Boreholes 50m depth with laboratory testing of soil samples, rock coring and provide complete geotechnical report	Al Enma'a Real Estate Co. (K.S.C.C.)	02/2011	02/2011
Soil Investigation for 30 Storey Building with a Basement, Block-1, Plot-1 in Salmiya	Drilling 4 Boreholes 25m depth with laboratory testing of soil samples and provide complete geotechnical report	Al-Hamidiya Alahliya Co	02/2011	02/2011
Soil Investigation for New IT Group Center (KOC Cont. No. 45670) at KOC, Ahmadi, Kuwait	The scope of work consists of: - 4 Boreholes 4m depth - 2 Boreholes 6m depth - 3 Boreholes 10m depth - 4 Boreholes 15m depth	United Engineering & Technical Consultants (UNITEC) for KOC	01/2011	02/2011
Geotechnical Investigation for Soil Improvement Works for Jaber Al Ahmed City Area (N2). Cont. No. PAHW/1158- 2010/2011	Boreholes, Cone Penetration Test & Pressure meter Tests	MENARD Middle East Cont. Co / M.A. Al-Kharafi Co. for Public Authority for Housing Welfare (PAHW)	01/2011	04/2012
Soil Investigation for KNPC LPG Train-4 project at KNPC Mina Al Ahmadi Refinery, Kuwait	The scope of work consists of: - 9 Boreholes 20m depth - 11 trial pits 3m depth - 4 Crosshole Seismic test 20m - 2 Electrical Resistivity Test	Vision International Gen. Trading & Cont. Co. for KNPC	01/2011	03/2011
Soil Investigation for New Indicator Stacks (2 Nos.) of 110M High at TGTU (Unit 24)-MAB, Contract No. CB/CSPD/2003 at KNPC Mina Abdullah Refinery, Kuwait	Drilling 4 Boreholes 30m depth with laboratory testing of soil samples and provide complete geotechnical report	Gulf Spic Gen. Trad. & Contr. Co. for KNPC	01/2011	01/2011
Soil Investigation for a Proposed Tire Recycling Factory (Site No. 2) at Amghara Industrial Area, Kuwait	Drilling 4 Boreholes 10m depth with laboratory testing of soil samples and provide complete geotechnical report	ECO Environmental Consultants for Abu Shaibah General Trading for Tyre Recycling	11/2010	11/2010
Soil Investigation for Design Work to Relocate Pipeline	Drilling 3 Boreholes 15m depth with laboratory testing of soil samples and	Vision Int. Gen. Trad. & Cont. Co. W.L.L.for	11/2010	11/2010

Manifold at Mina Saud Tank	provide complete geotechnical report	Saudi Arabian		
Farm, Al Zour Area, Kuwait  Soil Investigation for Study, Design and Supervision of Construction of Umm Al Haiman Treatment Plant Extension and Related Works-Ruote from Sabah Al Ahmed City Pump Station Towards Nuwaiseeb Road, State of Kuwait (Agreement No. EF/S/82)	The scope of work consists of: - 12 Boreholes 8m depth - 12 Trial Pits 3m depth - 5 Piezometers 15m depth - 5 Field Falling Head Permeability	Chevron Inc.  Dar Al Handasah  Shair & Partners for  MPW	11/2010	11/2010
Soil Investigation for NBK New Plot (formerly knows as Sahah Al ahmed International Financial Center) at Sharq Area, Kuwait	Drilling 3 Boreholes 20m depth and 2 Boreholes 30m depth with laboratory testing of soil samples and provide complete geotechnical report	PROJACS for National Bank of Kuwait	11/2010	11/2010
Soil Investigation for Construction of New MNG-1 & MNG-2 48MW Substation in KOC-West Kuwait Area, Kuwait (KOC Contract No. 44331)	Drilling 5 Boreholes 10m depth with laboratory testing of soil samples and provide complete geotechnical report	NBTC for KOC	11/2010	11/2010
Soil Investigation for Repalcement of Crude oil Pipeline (New Transit Line from GC-10 to CMM M/F) in East Kuwait Area, Kuwait (KOC Contract No. 43282)	Drilling 7 Boreholes 10m depth with laboratory testing of soil samples and provide complete geotechnical report	Al Khadda International General Trading & Cont. Co.	10/2010	10/2010
Soil Investigation for a Multistorey Building for Hawally Educational Area Development Project at Salmiya, Kuwait	Drilling 2 Boreholes 25m depth with laboratory testing of soil samples and provide complete geotechnical report	KEB International Consultants Al Kulaifi Engineering Consultant Bureau for MPW	09/2010	09/2010
Soil Investigation for Construction of Contractor's Workshop at KNPC-Mina Ahmadi Refinery, Kuwait	Drilling 3 Boreholes 12m depth with laboratory testing of soil samples and provide complete geotechnical report	Bayader Al-Deira Gen. Trading & Cont. Co. for KNPC	09/2010	09/2010
Soil Investigation for the Proposed Carpentry Workshop & Material Preservation Facility-Miscellaneous Civil Works for Warehouse Team (KOC Cont. No. 44514)	provide complete geotechnical report	Al-Musairie National Gen. Trad. & Cont. Co. W.L.L.	09/2010	09/2010
Soil Investigation for Rawabi Burgan Fuel Gas Scrubber Facilities Upgrade at J.O., Wafra, (Contract No. JO/SC188/MP07)	Drilling 3 Boreholes 20m depth with laboratory testing of soil samples and provide complete geotechnical report	Joint Operations	08/2010	08/2010
Soil Investigation for Mail Building, Safwan Co. at Ardiya Industrial Area, Kuwait	Drilling 2 Boreholes 18m depth with laboratory testing of soil samples and provide complete geotechnical report	Al Daleel Gen. Trading & Cont. Co. for Safwan Company	07/2010	07/2010
Soil Investigation for Factory for Industrial Gases Production & Cooling Tower at Shuaiba Industrial Area, Kuwait	Drilling 6 Boreholes 8m depth and 1 Borehole 15m depth with laboratory testing of soil samples and provide complete geotechnical report	INCO Eng. Office For Technogas Co.	06/2010	06/2010
Soil Investigation for the Proposed American	Drilling 12 Boreholes 10m depth with laboratory testing of soil samples and	Al Arabia Educational Enterprises (K.S.C.)	04/2010	04/2010

University of the Middle Esat Building (1) at Egaila Area, Kuwait	provide complete geotechnical report			
Soil Investigation for the Construction & Maintenance of Fresh/Brackish Water Towers & Brackish Water R.C. Ground Reservoir (9 M.I.G. Capacity) & Annexed Works at Site D20, Jahra Area, Kuwait	Drilling 12 Boreholes 25m depth and 7 Boreholes 10m depth with laboratory testing of soil samples and provide complete geotechnical report	Khalid Ali Al Kharafi & Bros. Co. for MEW	03/2010	04/2010
Soil Investigation for the	Drilling 6 Boreholes 12m depth with	Associated	03/2010	03/2010
Construction of Arab University at Ardiya, Kuwait	laboratory testing of soil samples and provide complete geotechnical report	Construction Co		
Soil Investigation for the Proposed Al-Othman Commercial Charity Complex at Hawally Area, Kuwait	Drilling 4 Boreholes 45m depth and 4 Boreholes 20m depth with laboratory testing of soil samples and provide complete geotechnical report	Sayed Hamid Behbehani & Sons Co. W.L.L.	01/2010	01/2010
Soil Investigation For Maintenance of Fishing Berths at Shuwaikh Port Shuwaikh Area, Kuwait Contract No. KPA/32/2008	Drilling 4 Boreholes 15m depth with laboratory testing of soil samples and provide complete geotechnical report	Gulf Dredging & Gen. Contracting Co. for Kuwait Ports Authority	12/2009	12/2009
Geotechnical Investigation for Soil Improvement Works for Jaber Al Ahmed City Infrastructure Housing Project. Cont. No. PAHW/1137-2009/2010	Boreholes, Cone Penetration Test & Pressure meter Tests	Ahmadiah Contracting & Trading Co. (K.C.S.C.) for Public Authority for Housing Welfare (PAHW)	11/2009	12/2011
Geotechnical Investigation for Soil Improvement Works for Kuwait New Cities Project at Northwest Sulaibikhat, Kuwait	The scope of work consists of: - 1039 Boreholes 10m depth - 2424 Cone Penetration Test 10m depth - 881 Pressure meter Test 10m depth	MUSHRIF TRADING & CONTRACTING CO. for Public Authority for Housing Welfare (PAHW)	11/2009	3/2011
Geotechnical Investigation Report for KNPC New LPG North Tank Farm (FEED) at KNPC, Mina Al Ahmadi, Kuwait	10 boreholes were drilled down to 55m and 2 boreholes were drilled down to 10m depth, 4 test pits, 3 electrical resistivity, 1 crosshole seismic depth of 20m, 1 Plate Load Test, Slit trenches were excavated, soil classification, laboratory testing & submitting reports	AMEC (PMC) – Oil & Gas	11/2009	12/2009
Geotechnical Investigation for Upgrading of Western Part of 5 <sup>th</sup> Ring Road & Central Part of Jahra Road (Agreement No. EF/R/118), Kuwait	The scope of work consists of: - 35 boreholes drilled down to 15m, 18 Trial Pits, soil classification, laboratory testing and report.	Oriental Consultants Co. Ltd In Association with Dar Al-Dowailah Eng. Consultants for Ministry of Public Works	09/2009	10/2009
Geotechnical Investigation for Housing Project at Salmi area	The scope of work consists of:  - 38 boreholes drilled down to 30m, 50m & 12m, soil classification, laboratory testing and report.	Public Authority for Housing Welfare	05/2009	06/2009
Geotechnical Investigations for Gravity Sewer for Saban Al Ahmed City, Cont. No. 1119 at Sabah Al Ahmed	The scope of work consists of: - 42 boreholes drilled down to 15m, 16m, 17m, 18m, 19m, 20m, 21m, 23m & 24m, soil classification, laboratory testing and report.	Highslant Contracting Group for Public Authority for Housing Welfare	04/2009	06/2009
Geotechnical Investigation for Umm Al Hyman STP Extension Works At Umm Al Hyman, Kuwait	The scope of work consist of: - 110 boreholes drilled down to 8m, 15m, 20m & 30m, Field Permeability, soil classification, laboratory testing and report	Dar Al-Hanadasah Shair & Partners	04/2009	06/2009

		TOLE : : :	00/00==	10/00
Geotechnical investigation for Fourth Gas Train Project (ISBL & OSBL Area) at Mina Al Ahmadi Refinery, Contract No. CA/PD/3678	Fourth Gas Train Project (ISBL & OSBL Area). The Scope of Work consist of: - 64 boreholes drilled down to 15m & 20m - 3 piezometer down to 12m depth - 4 Crosshole Seismic test 15m	SK Engineering & Construction Co.	08/2008	10/2008
	<ul> <li>20 Test pits</li> <li>3 Pressure meter test tests</li> <li>14 Electrical Resistivity tests</li> <li>5 Field Permeability tests</li> <li>5 Plate Load Tests</li> </ul>			
Geotechnical Investigation Report for Area 2 EF 1719 – New BS 132 and Enhancements to BS131 in North Kuwait, KOC	- factual and interpretative report. 6 boreholes were drilled down to 10m and 20m, 8 test pits, 6 electrical resistivity, 1 crosshole seismic depth of 20m, 8 Field Permeability tests, 8 Plate Load Tests, 2 Slit trenches were excavated, soil classification, laboratory testing & reports	AMEC (PMC) – Oil & Gas	08/2008	11/2008
Soil Investigations for ShuwaikhRO Desalination Plant with Recarbonation System at Shuwaikh	Major Soil Investigation for the Shuwaikh RO Desalination project. The scope of work consisted of: -105 boreholes drilled down to 25m below of which 21 boreholes were drilled offshore down to depth of 25m 4 piezometrs down to 10m depth 34 plate load tests depth of 2m 3 crosshole seismic test 20m - 5 field permeability 16 electrical resistivity 4 CPT - 3 Test pits down to 2m - factual and interpretative report.	DOOSAN heavy Industries & Construction Co.	06/2008	11/2008
Soil Investigations for Expansion of Sulaibiya Waste Water Treatment Plant	7 Boreholes drilled down to 15m, 20m & 30m and 8 Trial pits, Soil Electrical Resistivity Test, Plate Load test, Pressuremeter test, Field Permeability Test, Soil classification, laboratory testing and report	Kharafi National W.L.L.	03/2008	04/2008
Soil Investigation for Construction & Maintenance of 5 Nos. R.C. Reservoirs for Fresh Water at West Funaitees Complex No. 3 – Stage 1	120 Boreholes drilled down to 15.0m depth , Soil classification, laboratory testing and submitting report	Kharafi National W.L.L.	11/2007	03/2008
Soil Investigation for College of Engineering & Petroleum and College of Science for Shadadiya University	20 Boreholes drilled down to 20.0m depth, 20 Boreholes drilled down to 15.0m depth & 80 Boreholes drilled down to 12.0m depth, Soil classification, laboratory testing and submitting report	Gulf Consult	08/2007	10/2007
Soil Investigation for Drilling Holes	Drilling Holes, Mud Drilling & Auger drilling, 5m, 8m and 9m depth	Sk Eng. (Bab Al Amarat Trad. & Cont.)	10/2007	10/2007
Soil Investigation for Legal Advise Legislation Headquarter Building at Sharq, Kuwait City	3 Boreholes drilled down to 20.0m, 4 Boreholes drilled down to 25.0m, 3 Boreholes drilled down to 30.0m soil classification, 2 Piezometers, Laboratory testing and report	Al Zamami Consulting Engineers (ZCE)	06/2007	06/2007
Soil Investigation for Kuwait	3 Boreholes drilled down to 45.0m,	SSH International	06/2007	06/2007

International Airport at Long Term Parking Area, Kuwait	2 Boreholes drilled down to 35.0m, 1 Borehole drilled down to 42.0m,	Consultants		
International Airport	soil classification, 2 Piezometers, Laboratory testing and report			
Soil Investigation for New MW Project at IBB Kuwait Transmitting Station, Al- Mutla'a area, Kuwait	3 Boreholes drilled down to 10.0m, 9 Boreholes drilled down to 6.0m, 2 Boreholes drilled down to 10.0m, 19 Boreholes drilled down to 6.0m, soil classification, 2 Falling Head tests, Laboratory testing and report	International Broadcasting Bureau (IBB)	04/2007	06/2007
Soil Investigation for High Muthla Water Distribution Complexes at Mutla'a area	126 Boreholes drilled down to 15.0m depth, soil classification, Laboratory testing and submitting report	Kharafi National Co. W.L.L.	02/2007	03/2007
Soil investigation works for تخطيط وتصميم الخدمات الرئيسية لمدينة Jaber Al-Ahmed City Project (Public Buildings)-for Kindergarten School, Intermediate School, Secondary School & Mosque & Imam house	8 Boreholes drilled down to 10.0m depth, 8 Boreholes 10.0m depth, 19 Boreholes 10.0m depth, 4 Boreholes 10.0m depth, & 1 Borehole 12.0m depth, Soil Classification, Laboratory testing & Submitting soil report	First Kuwaiti Trading & Contracting Co. W.L.L.	12/2006	12/2006
Soil Investigation for Criminal Evidence headquarters Building	4 Boreholes drilled down to 15m depth, 1 Borehole drilled down to 25.0m depth, soil classification, Laboratory testing and report	Gulf Spic Contracting Co.	10/2006	10/2006
Soil Investigation report for 1 <sup>st</sup> Ring Road-Jahra Gate Roundabout (Package 1), Cont. No. RA/106	Under Bridge No. 1, 2 boreholes drilled down to 10.0m depth, 3 boreholes to 13.0m, 1 boreholes to 14.0m, 11 boreholes to 15.0m, 3 boreholes 20.0m depth. Under Bridge No. 2 & 3, 9 boreholes drilled down to 15.0m depth, 1 borehole to 16.0m, 5 boreholes to 20.0m & 1 borehole to 25.0m depth, Piezometers, soil classification, laboratory testing & Submitted Geotechnical report.	Aktor-Copri Joint Venture	10/2006	11/2006
Soil Investigation for Kuwait Trade Center at Kuwait City	1 Borehole drilled down to 80.0m depth, 1 pressure meter testing up to 60m depth, soil classification, laboratory testing, and submitted Geotechnical report	Al-Jazera Consultants	08/2006	10/2006
Soil Investigation for ground reservoirs for fresh water at Mina Abdulla	36 Boreholes drilled down to 15.0m depth, soil classification, laboratory testing, and Geotechnical report	The National Co. for Mech. & Elect. Works	07/2006	09/2006
Site Investigation for Rock Formation for KOC Crude Export Facilities at North Pier	4 Boreholes 6" drilled down to 15.0m depth, collecting rock core samples, soil classification, laboratory testing and submitted Geotechnical report	Middle East Ltd.	08/2006	08/2006
Soil Investigation for Al-Jawhara Commercial and Offices Tower at Salhiya, Al-Qibla	Borehole 30m depth, 2 boreholes 35m depth, 1 borehole 45m depth, soil classification, laboratory testing and submitted Geotechnical report	Consultant Engineers	06/2006	07/2006
Soil Investigation for Al-Manara Tower at Al-Sharqy, Sharq	Borehole 36m depth, 1 borehole 45m depth, soil classification, laboratory testing and submitted Geotechnical report	Futooh Al-Asfoor Consultant Engineers	06/2006	06/2006
Soil Investigation for Northern Az-Zour Water Distribution Scheme at Mina Az-Zour	65 Boreholes drilled down to 15.0m depth, soil classification, laboratory testing, and Geotechnical report	The National Co. for Mech. & Elect. Works	04/2006	07/2006
Shuaiba North Gas Turbine Power Station	Major Soil Investigation for designing the Shuaiba North Power Station. The scope of work consisted of:  - Conducting Electrical CPT tests: 6 Nos.	Ministry of Energy Electricity & Water	01/2006	03/2006

	<ul> <li>Drilling boreholes and</li> </ul>			
	conducting SPT tests and			
	collecting soil samples (max			
	depth 25 m): 19 Nos.			
	<ul> <li>Drilling boreholes off-shore</li> </ul>			
	(max. depth of 10m): 6 Nos.			
	- Cross hole seismic test up to			
	25 m depth: 2 Nos.			
	- Pressure meter test up to 15			
	m depth: 2 Nos.			
	- Conducting Trial Pits to max.			
	depth of 4m: 4 Nos.			
	- Plate Load test: 4 Nos.			
	- Performing laboratory tests			
	on soil samples, physical,			
	strength and chemical tests:			
	2200 Nos.			
	factual and interpretative report.			
Geotechnical Investigation	7 Boreholes drilled down to 30.0m	Al-Jazera Consultants	12/2005	12/2005
for The Greenhills Complex	depth, 2 Boreholes drilled down to	For The Commercial		
Building at Mahboula	40.0m depth, soil classification,	Real Estate Co.		
	laboratory testing and submitted			
	Geotechnical report			
Soil Investigation for Schools	10 Boreholes drilled down to 10.0m	Mushrif Trading &	11/2005	01/2006
at Mangaf	depth, 69 Boreholes drilled down to	Contracting Co. For	,	0.72000
at Mangai	6.0m depth, 5 Boreholes drilled down	Public Authority for		
	to 12.0m depth, soil classification,	Housing Welfare		
		(PAHW)		
Cail Investigation at Mangef	laboratory testing and soil report		10/2005	10/2005
Soil Investigation at Mangaf	28 Boreholes drilled 6.0m depth, 17	Public Authority for	10/2005	10/2005
for Construction of:	Boreholes 12.0m, 2 Boreholes 10.0m	Housing Welfare		
Primary School – Girls	depth, soil classification, laboratory	(PAHW)		
Kindergarten school Intermediate School – Girls	testing and submitted soil report			
Secondary school – Girls				
Geotechnical Investigation	1 Borehole drilled 25.0m depth, 8	Salem Al-Marzouk &	09/2005	09/2005
for Al Mulla Group Complex	Boreholes drilled 9.0m depth, 1	Sabah Abi-Hanna For	03/2003	03/2003
Tot At Mulia Group Complex	Borehole drilled down 10.0m depth, 3	Bader Al Mulla &		
	Field CBR, soil classification,	BROS. Co.		
0.71	laboratory testing and soil report	0: (5	00/0005	00/0005
Soil Investigation for Kuwait	7 Boreholes drilled down to 17.0m	Sief Engineering	08/2005	08/2005
National Assembly Project at	depth, 6 Boreholes drilled down to	Consultants For		
Kuwait City	15.0m depth, soil classification,	Kuwait National		
	laboratory testing and soil report	Assembly		
Soil Investigation for	20 Boreholes drilled down to 7.0m	United Warehousing	08/2005	08/2005
Construction of Warehouse	depth, 10 Boreholes drilled down to	& Refrigeration Co.		
at Sulaibiya	3.0m depth, 5 Field CBR, soil			
,	classification, laboratory testing and			
	submitted soil report			
Geotechnical Investigation	2 Boreholes drilled down to 15.0m	Alghanim	05/2005	05/2005
for construction of The	depth, 1 boreholes drilled down to	International General		
Avenue at Al-Rai	25.0m depth, soil classification,	Trading & Contracting		
Avellue at Al-IVal		Co.		
Coil Investigation for Cover-	laboratory testing and soil report.	Kuwait Arab	05/2005	05/2005
Soil Investigation for Sewage	2 Boreholes drilled down to 25.0m		05/2005	05/2005
Treatment Plant Lift Station	depth, soil classification, laboratory	Contractors For		
at Khiran Pearl City-Phase	testing and geotechnical report	Lala'a Al Kuwait Real		
A1		Estate Co.		
Soil Investigation for	5 Boreholes drilled down to 15.0	Salem Al-Marzouk &	04/2005	04/2005
Construction of New	depth, 3 boreholes drilled down to	Sabah Abi-Hanna		
Equipment and Fabrication	10.0m depth and 1 Borehole drilled	For The arketin Co.		
workshop at Mina Abdullah	down to 25.0m depth, Piezometer, soil			
Area	classification, laboratory testing and			
	submitted geotechnical report			

Soil Investigation for	15 Boreholes drilled between 10 to	Salem Al-Marzouk &	03/2005	03/2005
Construction of New	15m depth, soil classification,	Sabah Abi-Hanna	03/2003	03/2003
University Campus at	laboratory testing and submitted	For		
Shadadiya Area.	geotechnical report.	Kuwait University		
Soil Investigation for	Boreholes drilled down to 15m depth,	Al-Jazera Consultants	02/2005	02/2005
Environmental Public	4 Boreholes drilled down to 20m, 3	For		
Authority Headquarters at	boreholes drilled down to 30m depths,	Environmental Public		
Shuwaikh.	soil classification, laboratory testing and submitted geotechnical report.	Authority		
Soil Investigation at	112 Boreholes drilled to 6m depth,	Public Authority for	12/2004	12/2004
Sulaibikhat 35, Block 1 for	One (1) borehole drilled to 12m depth,	Housing Welfare	12/2001	12,200
construction of:	soil classification, laboratory testing	(PAHW)		
Secondary school – Girls	and submitted geotechnical report.			
Local mosque and Imam house Construction of Houses				
Soil Investigation for Showbiz	5 Boreholes drilled to 12.5m in land	Salem Al-Marzouk &	12/2004	12/2004
Re-Development at Ras Al-	area, another 5 boreholes drilled	Sabah Abi-Hanna	,	,
Ardh.	down to 12.5m in mud area with	For		
	specially designed Marsh Buggy, soil	SHOWBIZ CO.		
	classification, lab testing and			
Cail Investigation for Analism	submitted soil report.  14 Boreholes to 12m depth, 13	Dublic Authoritus for	10/2004	10/2004
Soil Investigation for Arefjan Project.	Boreholes to 18m depth, 1 Borehole	Public Authority for Housing Welfare	10/2004	10/2004
T Toject.	to 30m depth, soil classification,	(PAHW).		
	laboratory tests and soil report.	(174177).		
Soil Investigation for Khiran	29 Boreholes drilled between 11m to	Ahmadiah Contracting	09/2004	09/2004
Pearl City Project (Part-B).	18m depths, soil classification,	For La'ala Al-Kuwait		
	laboratory tests and soil report.	Real Estate Co.		
Soil Investigation for 75m	1 Borehole drilled to 73.5m depth,	Public Authority for	08/2004	09/2004
Demonstration Borehole at	removal core of 1.5m length from 73.5	Housing Welfare (PAHW).		
Arefjan Area.	to 75m depth, soil classification, laboratory tests and submitted	(FANVV).		
	geotechnical report.			
Soil Investigation for Khiran	30 Boreholes drilled to 15m depth, soil	Ahmadiah	08/2004	08/2004
Pearl City Project (Part-A).	classification, laboratory tests and	Contracting		
	submitted soil report.	For La'ala Al-Kuwait		
O il location for Konsil	OF Developed will also 4000 developed 40	Real Estate Co.	00/0004	08/2004
Soil Investigation for Kuwait Sewerage Improvements,	25 Boreholes drilled to 10m depth, 10 Boreholes drilled to 20m depth, soil	Binnie Black & Veatch International	08/2004	08/2004
Phase VII-Part B.	classification, laboratory tests and	Ltd. & The		
Thase virial b.	submitted soil report.	Associated Engg.		
	'	Partnership		
Soil Investigation at Arifjan	14 Boreholes drilled between 12m	Public Authority for	07/2004	07/2004
Area.	depth, 13 Boreholes drilled between	Housing Welfare		
	18m depth & 1 Borehole drilled			
	between 30m depth, soil classification, laboratory testing and			
	submitted Soil report.			
Geotechnical Investigation	64 Borehole drilled between 6 to 12m	Public Authority for	07/2004	07/2004
for Kindergarten, Primary	depth soil classification, laboratory	Housing Welfare		
School, Intermediate School,	testing and submitted Soil report.			
Police station, Clinic and				
Supermarket at South Jahra				
and West Jleeb Al Shyoukh.	5 Poroholos drillod batusan 20m	Al lozoro Conquitanto	07/2004	07/2004
Soil Investigation for Construction of K.O.T.C	5 Boreholes drilled between 30m depth & 1 Borehole drilled between	Al-Jazera Consultants	01/2004	0772004
Building at Shuwaikh.	40m depth soil classification,			
Danishing at Criawantii.	laboratory testing and soil report.			
Soil Investigation for	8 Borehole drilled between 30m	Al-Huwaila Est.	06/2004	06/2004
Construction of Chalet	depth, soil classification, laboratory			
15102, Block 5, Sector 1 at	testing and submitted Soil report.			
Julia'a.				

Geotechnical Investigation	3 Boreholes drilled between 20m	Al Jazera Consultants	06/2004	06/2004
for Construction of Legal	depth, 1 Borehole drilled between			
Advice legislation head quarters at Sharq.	15m depth, 2 Borehole drilled between 30m depth, soil			
quarters at Orlary.	classification, laboratory testing and			
	submitted Soil report.			
Soil Investigation for	7Boreholes drilled between 20-25m	Halcrow International	06/2004	06/2004
Extension of Berth No. 8 at	depth, soil classification, laboratory	for Kuwait Portland		
Shuwaikh Port.	testing and submitted Soil report.	Cement Co.		
Soil Investigation for	49 Boreholes drilled between 6 to	Al-Qahatani General	06/2004	06/2004
Schools.	12m depth, soil classification,	Trading Co. for		
	laboratory testing and soil report.	PAHW		
Soil Investigation for Al-Rai	Boreholes drilled between 30m depth,	Al-Jazera Consultant	05/2004	05/2004
Integrated Real Estate	soil classification, laboratory testing	for KBCC		
Project at Al Rai, Plots 1,2,3	and submitted Soil report.			
Geotechnical Investigation	20 Boreholes drilled between 15m	Burhan International	05/2004	05/2004
for Kuwait Sewerage	depth, soil classification, laboratory	Construction Co. for		
Renovation (Phase-VII), Part	testing and submitted Soil report.	MPW		
A at Salwa, Contract No.				
SE/46. Soil Investigation for	4 Boreholes drilled between 30m	Kuwait United	05/2004	05/2004
Construction of 32 storey	depth, 4 Boreholes drilled between	Construction	03/2004	03/2004
residential complex at	20m depth, soil classification,	Management		
Dasman, Sharq.	laboratory testing and soil report.	Management		
Geotechnical Investigation	5 Boreholes drilled between 20m	Kuwait University	05/2004	05/2004
for Water Disposal Area at	depth, 2 Boreholes drilled between	(College of		
Mina Abdullah Area and	20m depth, soil classification,	Engineering &		
South side of 7 <sup>th</sup> Ring road	laboratory testing and soil report.	Petroleum)		
area.	, , ,	,		
Geotechnical Investigation	18 Boreholes drilled between 15m	Gulf Consult for	04/2004	04/2004
for College of Engineering	depth, soil classification, laboratory	Kuwait University		
and Petroleum at Shuwaikh	testing and submitted Soil report.			
Campus.				
Geotechnical Investigation	28 Boreholes drilled to 7m depth, 35	KEC International Ltd	03/2004	03/2004
for Supply & Erection of 33	Boreholes drilled to 10m depth Soil	& Bahman Trading		
KV Ovehead Transmission	Electrical Resistivity tests, soil	Corporation		
Line Towers- Item No. 1-One	classification, laboratory testing and	For		
New 33 KV DC OH Line from proposed Mangeesh C	submitted Soil report.	Ministry of Electricity and Water		
132/33/11 KV Substations to		and water		
existing UM-QUDAIR "Q"				
Substation.				
Soil Investigation report for	3 Boreholes drilled to 20m & I	Al-Jazera Consultants	02/2004	02/2004
Construction of Legal advice	Borehole 15m depth, soil			
legislation head quarters at	classification, laboratory testing and			
Sharq.	submitted Soil report.			
Soil Investigation for	141 Boreholes drilled to 10m depth,	GULF CONSULT	02/2003	03/2003
construction of Ali Al-Sabah	soil classification, laboratory tests and	For		
Military Academy Project at	submittal of Geotechnical report.	Ministry of Defence		
Jahra-Abdally Road.	100 5	<b>5</b> 1 11 1 11 11 11 11	4.4/0000	04/0000
Soil investigation for	103 Boreholes drilled down between	Public Authority for	11/2002	01/2003
Kindergartens, intermediate	6m to 12m depth, soil classification	Housing Welfare		
schools, primary schools for	and submitted soil report.			
boys and girls at Umm Al- Haiman and West Jleeb Al-				
Shuyoukh.				
Soil Investigation for	13 Boreholes drilled down between 12	The Arab Contractors	08/2002	08/2002
construction of water tanks at	to 14m depth, soil classification,	For Ministry of	35,2002	33,2002
South Doha and South	laboratory tests and soil report	Electricity and Water		
Jahra.	,			
Soil Investigation for transfer	52 Boreholes drilled down to 6m	Mushrif Trading &	07/2002	07/2002
<del>_</del>		<u>U</u>		•

of treated sewage Effluent for Irrigation of Abdully Road & Farms.	depth, soil classification, laboratory tests and submitted soil investigation report.	Contracting Co. For Ministry of Public Works		
Soil Sampling for determination of soil contamination at Mina Al-Zour for Saudi Arabian Texaco.	121 Boreholes drilled to 4m depth, soil classification, laboratory testing and submitting soil report.	Al-Essa Medical & Scientific Equipment Co. for Joint Operations / Saudi Arabian Texaco	12/2001	01/2002
Site investigation of Rock Formation at lime Powder Factory – Quarry at Al- Ahmadi.	50 Boreholes drilled to 20m to take rock core samples form below existing grade, various tests on core samples and submitting soil report.	National Industries Company	11/2001	12/2001
Soil Investigation for box culvert at South Doha and West Jaleeb Al-Shuyoukh Area.	75 Boreholes drilled to 11m depth, soil classification, laboratory testing and submitting soil report.	Shaheen Al-Ghanim Co. For Public Authority for Housing Welfare	11/2001	11/2001
Soil Investigation for Box Culvert at South Hadiah, Al- Reqa 8, Block 3, (Part-I & II)	Drilling and sampling of 50 boreholes to 6m-14m depth, classification, soil testing and submitting Geotechnical report.	Al-Qahtani General Trading & Contracting Co. For Public Authority for Housing	01/2001	01/2001
Al-Khiran Pearl City Project, Al-Khiram city, Kuwait	Major Soil Investigation for development of residential city. The site covers on area of approximately 72 km2. Main purpose of this investigation is to evaluate suitability of dredging and backfill material and determine overall suitability of the site for development. The scope of work consisted of:  - Conducting Electrical CPT tests: 169 Nos Drilling boreholes and conducting SPT tests and collecting soil samples (max depth 30m): 91 Nos Drilling boreholes over water (max. depth of 3m): 17 Nos Drilling boreholes inter-tidal area: 14 Nos Conducting Trial Pits to max. depth of 4m: 129 Nos Performing laboratory tests on soil samples, physical, strength and chemical tests: 2200 Nos. Submitting factual and interpretative report	Al-Shaheen Consultants (Buro Happold)/La'ala Al- Kuwait Real Estate Co.	10/1998	01/1999

More references are available up on request

# 8.1.2 CONE PENETRATION TESTING (CPT)

PROJECT	SCOPE OF WORK	CLIENT	START	END
Soil Investigation For	Soil Investigation with Cone Penetration	Al Hussaini National	10/2023	10/2023
Construction Of	Testing	Gen. Trading &		
Submarine Seawater	-	Contracting Co.for		
Intake Pipe At Shuwaikh,		Kuwait Institute For		
State of Kuwait		Scientific Research		

		(KISR)		
Jurassic Production Facility - 4 (JPF-4) Project at KOC North Kuwait, Abdaly area, State of Kuwait. Under KOC Cont. No.21057422	Soil Investigation with Cone Penetration Testing	SPETCO International Petroleum Co.	02/2022	03/2022
Jurassic Production Facility - 5 (JPF-5) Project at KOC North Kuwait, Abdaly area, State of Kuwait. Under KOC Cont. No.21057423	Soil Investigation with Cone Penetration Testing	Jereh Oil & Gas Engineering Corporation	03/2022	04/2022
Ground Improvement Works for East Sabah Al Ahmad City – PAHW Contract No.1441	Cone Penetration Testing (Pre & Post CPT)	China Railway No.5 Engg. Group Co. Ltd. / TREVI Foundations- Kuwait	12/2021	On-going
Jurassic Production Facility 3 (JPF-3) Upgrade At KOC North Kuwait, Abdaly Area, State of Kuwait. Under KOC Contract No. 16052988	Soil Investigation with Cone Penetration Testing	SPETCO International Petroleum Co.	05/2021	05/2021
Bay Island North - Sheikh Jaber Causeway Project (Main Link) At Subiya Area, State of Kuwait Under MPW Contract No. RA/140	Cone Penetration Testing (CPTu) with Dissipation Test	Hyundai Engineering & Const. Co. Ltd.	10/2020	10/2020
KNPC-CFP-MAB (Greenfield) at Mina Abdullah area, State of Kuwait	Cone Penetration Testing	NBTC Group-Kuwait (P-242)	02/2020	08/2020
Clean Fuel Project (CFP) at KNPC-MAA, Mina Ahmadi, State of Kuwait	Cone Penetration Testing	JGSK Joint Venture	07/2019	08/2019
Site Preparation for EPC of Gas Train-5 Project (GT-5) At MAA Refinery, Mina Ahmadi Area, State of Kuwait	Cone Penetration Testing	NBTC Group-Kuwait (GT-5)	08/2019	08/2019
Soil Investigation for Al Zour LNG Import Project at Al Zour, State of Kuwait	Cone Penetration Testing	HDKC	03/2019	08/2019
MSE Walls for IC-5, IC-5", IC-6, IC-9, IC-15 & IC-16. Roads Connecting Abdullah Port to Wafra. Under MPW Contract No. RA/238	Cone Penetration Testing	Alghanim International	01/2019	01/2019
Al Zour LNG Import Project at Al-Zour, State of Kuwait	Cone Penetration Testing (Off-shore CPT)	Hyundai Engineering & Construction	01/2019	01/2019
EPC of Gas Train-5 (GT-5) Project at KNPC MAA, Mina Ahmadi, State of Kuwait. under KNPC Contract No. CA/CSPD/0116	Cone Penetration Testing	Sayed Hamid Behbehani & Sons Co.	08/2018	10/2018
Bay Island North-Area C1 Building, RA/140 Project At Bay Island North, Subiya, State of Kuwait	Cone Penetration Testing	Hyundai Engineering & Construction Co. Ltd. / Surjin Tech Co. Ltd.	01/2018	03/2018
Gas Train-5 (GT-5)	Cone Penetration Testing	Heavy Engineering	03/2019	03/2019

Due in at at ICNIDO MAAA		lia di catrila a 0		1
Project at KNPC MAA, Mina Ahmadi, State of		Industries & Shipbuilding		
Kuwait		Company (HEISCO)		
Al Zour LNG Import Project	Cone Penetration Testing	China Harbour Engg.	01/2018	03/2018
at Al-Zour, State of Kuwait	(Pre-CPT & Post-CPT)	Co. Ltd.		
Al Zour LNG Import Project	Cone Penetration Testing	Hyundai Engineering	10/2017	11/2017
at Al-Zour, State of Kuwait	(Pre-CPT & Post-CPT)	& Construction Co.		
Al Zour LNG Import Project at Al-Zour, State of Kuwait	Cone Penetration Testing (Pre-CPT & Post-CPT)	Keller Grundbau GMBH, Dubai, UAE	03/2017	12/2017
Deep compaction at Bay North Island-Sheikh Jaber Causeway Project. Under MPW Contract	Soil investigation with Cone Penetration Testing	Hyundai Engineering & Construction Co.	11/2016	12/2016
No. RA140		TDE) (I.E	05/0046	40/0046
Sheikh Jaber Causeway Project, South Island. Under MPW Contract No. RA140	Cone Penetration Testing	TREVI Foundations	05/2016	10/2016
Sheikh Jaber Causeway Project. Under MPW Contract No. RA-140	Soil investigation with Cone Penetration Testing	Hyundai Engineering & Construction Co.	02/2016	02/2016
KOC Small Boat Barge Project at Ahmadi, State of Kuwait	Soil Investigation with Cone Penetration Testing	Menard Vibro for Kuwait Oil Company (KOC)	01/2016	03/2016
KNPC-New Refinery Project (NRP) Ground Improvement Package at Al Zour area, State of Kuwait	Cone Penetration Testing (Pre-CPT & post CPT)	VANOORD for Kuwait Integrated Petroleum Industries Company (KIPIC)	12/2015	02/2016
Compacted Fill for Bid Package No. 4B-Civil Works for Utility Service Tunnel East, Sabah Al Salem University City, State of Kuwait	Soil Investigation with Cone Penetration Testing	Kuwait Company for Process Plant for Kuwait University Construction Programme (KUCP)	02/2015	03/2015
KNPC-New Refinery Project (NRP) Ground Improvement Package at Al Zour area, State of Kuwait	Cone Penetration Testing (Pre-CPT & Post-CPT)	Menard Vibro for Kuwait Integrated Petroleum Industries Company (KIPIC)	03/2015	03/2015
Different Sub-zones at Sabah Al Salem University project at Shadadiya, State of Kuwait	Soil Investigation with Cone Penetration Testing	Gulf Dredging General Contracting Co. for Kuwait University Construction Programme (KUCP)	05/2012	05/2012
Land Vibro Compaction at Shuaiba Port, State of Kuwait	Cone Penetration tests (Pre-CPT & Post-CPT)	Kuwait Bruckner Const.Cont. Co. for Kuwait Ports Authority	05/2012	05/2012
Soil Improvement Works for Jaber Al Ahmed City Infrastructure Housing Project-N1 & N3	Cone Penetration Tests (Pre-CPT & Post CPT) to max.10m depth, with SPT & Pressuremeter Test (PMT)	Ahmadiah Contracting & Trading Co. / MENARD Middle East Contracting Co. L.L.C. for Public Authority for Housing Welfare (PAHW)	01/2012	01/2012
Gantry Cranes for Shuwaikh Port at Shuwaikh Industrial area	Cone Penetration Testing	Kuwait Bruckner Const. Cont. Co.	03/2011	06/2011

State of Kuwait Soil Improvement Works	Cone Penetration Tests (Pre-CPT &	Ahmadiah	4/2011	11/2011
for Jaber Al Ahmed City Area (N1/N3). Under	Post CPT) to max.10m depth, with SPT & Pressuremeter Test (PMT)	Contracting & Trading Co. /MENARD Middle	,,,,	
Contract. No.	, ,	East Contracting Co.		
PAHW/1152-2009/2010		L.L.C. for Public Authority for Housing		
		Welfare (PAHW)		
Sabah Al-Salem	Cone Penetration Test for estimation of	Gulf Dredging &	02/2011	02/201
University City. Under	Soil Bearing Capacity at Zones G24 &	General Contracting		
Contract No. KU/107- 1/2008-2009 at	G33	Co. (GDC) for Kuwait University		
Shadadiya, State of		Construction		
Kuwait		Programme (KUCP)	21/22/1	10/00/
Soil Improvement Works for Jaber Al Ahmed City	Cone Penetration Tests (Pre-CPT & Post CPT) to max.10m depth, with SPT &	M.A. Kharafi Co. / MENARD Middle	01/2011	12/2011
Area (N2) under	Pressuremeter Test (PMT)	East Contracting Co.		
Contract No.	,	L.L.C. for Public		
PAHW/1158-2010/2011		Authority for Housing		
Soil Improvement Works	Cone Penetration Tests (Pre-CPT & Post	Welfare (PAHW) MUSHRIF TRADING	11/2009	3/2011
for Kuwait New Cities	CPT) to max.10m depth, with SPT &	& CONTRACTING	11/2000	0,2011
Project at Northwest	Pressuremeter Test (PMT)	CO. / MENARD		
Sulaibikhat, State of Kuwait		Middle East		
Nuwaii		Contracting Co. L.L.C. for Public		
		Authority for Housing		
		Welfare (PAHW)	40/0000	40/004
Soil Improvement Works for Jaber Al-Ahmed City	Cone Penetration Tests (Pre-CPT & Post CPT) to max.10m depth, with SPT &	Ahmadiah Contracting & Trading	12/2009	12/201
Infrastructure Housing	Pressuremeter Test (PMT)	Co. / MENARD		
Project. Under Contract	( )	Middle East		
No. PAHW/1137-		Contracting Co.		
2009/2010		L.L.C. for Public Authority for Housing		
		Welfare (PAHW)		
Private Villa at Messilah,	Cone Penetration Test (2Nos.).	Option One	03/2009	03/2009
Block-3, Plot-6, State of Kuwait		International W.L.L.		
Reverse Osmosis (RO)	Soil investigation with Cone Penetration	DOOSAN heavy	06/2008	11/2008
Desalination Plant with	Testing	Industries &		
Recarbonation System at Shuwaikh Port,		Construction Co.		
Shuwaikh Industrial				
Area, State of Kuwait				
Shuaiba North Gas	Soil investigation with Cone Penetration	Ministry of Electricity	01/2006	03/2006
Turbine Power Station, Shuaiba area, State of	Testing	& Water (MEW)		
Kuwait				
Motor Rewinding Repair	Cone Penetration Tests	Marafie Construction	10/2004	10/2004
_ , , , ,		Company For		
Factory at Amghara				
Factory at Amghara Industrial Area, State of Kuwait		Gulf Paramount Services Ltd.		
Industrial Area, State of Kuwait Boubyan Port Feasibility	Cone Penetration Tests	Services Ltd.  Mouchel Middle East	08/2004	08/2004
Industrial Area, State of Kuwait	Cone Penetration Tests	Services Ltd.  Mouchel Middle East Ltd. (Mouchel	08/2004	08/200
Industrial Area, State of Kuwait Boubyan Port Feasibility Study, State of Kuwait		Services Ltd.  Mouchel Middle East Ltd. (Mouchel Parkmann Group)		
Industrial Area, State of Kuwait Boubyan Port Feasibility Study, State of Kuwait Gathering Center -15	Cone Penetration Tests  Cone Penetration tests	Services Ltd.  Mouchel Middle East Ltd. (Mouchel	08/2004	
Industrial Area, State of Kuwait Boubyan Port Feasibility Study, State of Kuwait Gathering Center -15 (GC-15) at KOC North Kuwait – Rawdatain		Services Ltd.  Mouchel Middle East Ltd. (Mouchel Parkmann Group) SEMATCO		08/2004
Industrial Area, State of Kuwait Boubyan Port Feasibility Study, State of Kuwait Gathering Center -15 (GC-15) at KOC North		Services Ltd.  Mouchel Middle East Ltd. (Mouchel Parkmann Group) SEMATCO		

Fahaheel area, State of				
Kuwait				
Fahaheel Waterfront	Cone Penetration tests	Gulf Dredging &	02/2002	02/2002
Project-Package-4,		General Cont. Co.		
Fahaheel area, State of				
Kuwait				
Kuwait Waterfront	Cone Penetration tests, with Field CBR	Associated	01/2002	01/2002
Project at Salmiya area,	tests	Construction Co.		
State of Kuwait				
Khiran Pearl City	Cone Pentration Tests (more than	United Gulf	04/2001	04/2001
	50Nos.) to Max. depth of 10m or refusal.	Construction Co.		

More references are available up on request

# 8.1.3 <u>ELECTRICAL RESISTIVITY TESTING</u>

PROJECT	SCOPE OF WORK	CLIENT	START	END
New Study for Vessel 130-C-203 at Gravity Sludge Catcher in KOC- Burgan Area, State of Kuwait.	Soil Investigation with In-Situ Soil Electrical Resistivity Tests.	Kuwait Oil Company (K.S.C.)	12/2022	12/2022
Jurassic Production Facility - 4 (JPF-4) Project at KOC North Kuwait, Abdaly area, State of Kuwait. Under KOC Cont. No.21057422	Soil Investigation with In-situ Soil Electrical Resistivity tests	SPETCO International Petroleum Co.	02/2022	03/2022
Jurassic Production Facility - 5 (JPF-5) Project at KOC North Kuwait, Abdaly area, State of Kuwait. Under KOC Cont. No.21057423	Soil Investigation with In-situ Soil Electrical Resistivity tests	Jereh Oil & Gas Engineering Corporation	03/2022	04/2022
Eleven Patterns Well Hook-Up and Associated Works at KOC North Kuwait, Abdaly area, State of Kuwait. Under KOC Cont. No.20055025	Soil Investigation with In-situ Soil Electrical Resistivity tests	Sayed Hamid Behbehani & Sons Co.W.L.L Mechanical Division	03/2022	03/2022
Installation of New LP Gas Ring Header and Associated Works at Shuaiba Industrial area, State of Kuwait. Under KOC Cont. No. 21057221	Soil Investigation with In-situ Soil Electrical Resistivity tests	Mark Technologies Gen. Trad. & Cont. Co. W.L.L.	02/2022	03/2022
SUG & Common Gas Compressor Station-WJO Gas Mitigation Project at Joint Operations area in Wafra, State of Kuwait. Under Contract No. KGOC- WJO/SC476/SAPW21	Soil Investigation with In-situ Soil Electrical Resistivity tests	Alkhorayef Company L.L.C.	04/2022	04/2022
Instrument Landing System (ILS) For The 3rd Runway And The System's Upgrade / Relocation At the existing East Runway, Kuwait	Soil Investigation with In-situ Soil Electrical Resistivity tests	Intelcan Technosystems Inc.	10/2021	10/2021

International Airport, Subhan, State of Kuwait				
Design, Construct, Test Additional Shortwave Antenna System at Mutla'a, State of Kuwait (Contract No. 951700-20- C-0131)	Soil Investigation with In-situ Soil Electrical Resistivity tests	BRICE BUILDERS L.L.C.	09/2021	10/2021
Supply and Installation of SHPT "W" 300kV Substation At Al Sabah Hospital "W", Shuwaikh, State of Kuwait. Under Contract No. MEW/5659-2021/2022)	In-situ Soil Electrical Resistivity tests	Larsen & Toubro Limited	09/2021	09/2021
Jurassic Production Facility 3 (JPF-3) Upgrade At KOC North Kuwait, Abdaly Area, State of Kuwait. Under KOC Contract No. 16052988	Soil Investigation with In-situ Soil Electrical Resistivity tests	SPETCO International Petroleum Co.	05/2021	05/2021
Replacement of Old and Obsolete Substations In KNPC-MAA Refinery, Mina Al Ahmadi, State of Kuwait. under KNPC Contract No. CA/CPD/0192-Kuwait) For the following Substations: N01 S/S, M61A S/S, M65A S/S & RM40A S/S	Soil Investigation with In-situ Soil Electrical Resistivity tests	Larsen & Toubro Limited	10/2020	12/2020
132 /11kV GIS Substation At Al Sabah Medical District, Shuwaikh Area, State of Kuwait	Soil Investigation with In-situ Soil Electrical Resistivity tests	Kaltaparu Power Transmission Ltd Kuwait	09/2020	09/2020
Replacement of Uniflux Heaters in LPG Trains 1, 2 & 3 at KNPC MAA Refinery, Mina Al Ahmadi, State of Kuwait. Under KNPC Contract No. CA/CPD/0228	Soil Investigation with In-situ Soil Electrical Resistivity tests	Sinopec Engineering (Group) Co. Ltd.	09/2019	09/2019
Front End Engineering & Design (FEED) For Supply of Finished LPG From KNPC (MAB) To KOTC, Umm Al Aish Plant At North Kuwait, State of Kuwait Cross Country Pipeline From KNPC(MAB) to KOTC, Umm Al Aish & For Mina Abdullah (MAB) Refinery	Soil Investigation with In-situ Soil Electrical Resistivity tests	WOOD-Amec Foster Wheeler Group Ltd.	02/2019	09/2019
Soil Electrical Resistivity Test for Remote Header Manifolds Contract No. # 15052373/008/17	Soil Electrical Resistivity tests	Alghanim Int'l. Gen.Trad. & Cont. Co. for KOC	09/2018	09/2018
Soil Electrical Resistivity Test for Molten Sulphur Handling Facilities	Soil Electrical Resistivity tests	Gulf Spic General Trading & Contracting Co. for KNPC	07/2017	07/2017

Soil Electrical Resistivity Test for Expansion and	Soil Electrical Resistivity tests	Al Musairie National Gen.Trad & Cont Co. / Punj Lloyd	01/2016	On going
Revamping of Ahmadi Depot - LM		/ Purij Lloyd		
Soil Electrical Resistivity	Soil Electrical Resistivity tests	Arabi Enertech Co.	03/2016	On going
Test for Installation of				
New Fire Water Tanks				
at GC's 17, 27 & 28	Call Flactuical Danieticity to the	Courant a Co	08/2015	10/2015
Soil Electrical Resistivity Test for Clean Fuel	Soil Electrical Resistivity tests	Sungbo Co.	06/2015	10/2015
Project Cont. # C9FP-				
D1-D11-K012				
Soil Electrical Resistivity	Soil Electrical Resistivity tests	Laala Al Kuwait Co.	09/2014	10/2014
Test for Sabah Al				
Ahmed Sea City		0.150.1.0	11/0011	0.1/00.15
Soil Electrical Resistivity	Soil Electrical Resistivity tests	Gulf Spic General	11/2014	01/2015
Test for Flare Gas Recovery Facilities at U-		Trading & Contracting Co.		
49		W.L.L.		
Soil Electrical Resistivity	Soil Electrical Resistivity tests	Arabi Enertech Co	05/2013	12/2015
Test for Replacement of	,			
Dual Tank at GC-04 &				
Dry Tank at GC-21				
Contract No 11050569	Cail Floatriant Booistivity toota	Cult Chia Canaral	12/2012	1/2013
Soil Electrical Resistivity Test for Replacement of	Soil Electrical Resistivity tests	Gulf Spic General Trading &	12/2012	1/2013
HIC Affected Equipment in		Contracting Co.		
SK GC-3,4,7,8 & 21		W.L.L.		
(Contract No. 12050692),				
KOC, State of Kuwait				
Soil Electrical Resistivity	Soil Electrical Resistivity tests	Al-Ahlia Switch Gear	07/2012	08/2012
Test for Various		Co.		
Subastation at Messilah Soil Electrical Resistivity	Soil Electrical Resistivity tests	IMCO Engineering &	07/2011	10/2011
Test for Replacement of	Soli Electrical Resistivity tests	Construction Co.	0772011	10/2011
Old and Inadequate		Construction Co.		
Flood Light Towers at				
Tankage & Offsite Areas				
of Old Refinery at MAA			00/0044	05/0044
Soil Electrical Resistivity	Soil Electrical Resistivity tests	Al-Khadda	03/2011	05/2011
Test for Soil Investigation for		International General Trading & Contracting		
Replacement of Crude		Co.		
Oil Pipeline				
Various electrical	Soil Electrical Resistivity tests	Ahlia Switchgear Co.	01/2010	11/2010
substations in Kuwait				
Soil Electrical Resistivity	Soil Electrical Resistivity tests	DOOSAN heavy	11/2008	11/2008
test for ShuwaikhRO		Industries &		
Desalination Plant with		Construction Co.		
Recarbonation System				
at Shuwaikh Soil Electrical Resistivity	Soil Electrical Resistivity tests	AMEC (PMC) – Oil &	10/2008	10/2008
test for Area 2 EF 1719	Con Electrical registivity tests	Gas	15,2000	13,2000
- New BS 132 and				
Enhancements to BS131				
in North Kuwait, KOC				
Soil Electrical Resistivity	Electrical Resistivity tests	SK Engineering &	09/2008	09/2008
test for Fourth Gas Train		Construction Co.		
Project (ISBL & OSBL Area) at Mina Al Ahmadi				
Refinery, Contract No.				
. tomory, Contract 140.	ı	1	1	1

CA/PD/3678		I	I	
	Cail Floatrical Desistivity Test	Kharafi National	04/2008	04/2008
Soil Electrical Resistivity	Soil Electrical Resistivity Test	Kharafi National	04/2006	04/2006
test for Expansion of		W.L.L.		
Sulaibiya Waste Water				
Treatment Plant				
Soil Electrical Resistivity	Soil Electrical Resistivity test	Alghanim Int'l.	07/2006	07/2006
for ESP For FCC Unit at		Gen.Trad. & Cont.		
Mina Ahmadi		Co. for KNPC		
Soil Electrical Resistivity	Soil Electrical Resistivity test	The Joint Operations	06/2006	06/2006
for SUG Trunk Line	-			
Replacement at Pipeline				
Route from SUG to MGC				
Facilities, Service Order				
No. SC/95-SO-076				
Soil Electrical Resistivity	Soil Electrical Resistivity test	Al Ahleia Switchgear	11/2005	11/2005
for Construction of	Con Electrical recolority test	Co. KSCC for Ministry		
Khiran Pearl city "A" &		of Energy		
"B" 132/11 KV		or Energy		
Substations				
Soil Electrical Resistivity	Soil Electrical Resistivity test	The Joint Operations	09/2005	09/2005
for JO/SC95/MP04-Civil	Ooli Electrical Nesistivity test	The John Operations	00/2000	00/2000
Engineering Services				
Soil Electrical Resistivity	Soil Floatrical Posistivity toot	Al Ahleia Switchgear	06/2005	06/2005
test for Construction of	Soil Electrical Resistivity test		00/2003	00/2003
		Co. KSCC for Ministry		
Khiran Pearl city	Call Flantainal Designativity Acad	of Energy	11/2004	11/2004
Soil Electrical Resistivity	Soil Electrical Resistivity test	Hyundai Engineering	11/2004	11/2004
test for Construction of		& Const. Co. Ltd. For		
132/33/11 KV Two (2)		Ministry of Energy		
Substation at Abdally "A"		10000	22/222	22/222
Soil Investigation for	Soil Resistivity Test and Thermal	ISCO for KNPC	08/2003	08/2003
local marketing, Supply	resistivity			
& distribution Facilities at				
Mina Al-Ahmadi Refinery				
Soil Investigation for	Soil Resistivity Test and Thermal	House of Trade Cont.	08/2003	08/2003
VSM Crude Transit	resistivity	for KOC		
pumps at 11 GC's				
SEK/Contract No. 17278				
Soil Investigation for	Soil Electrical Resistivity test	Al-Meer Technical for	07/2003	07/2003
installation of Smokeless		KOAC		
TV flares at GC's 1, 2, 4,				
7, 11 & 21				
Soil Electrical Resistivity	Performing 4 Nos. of Electrical	The National Co.	01/2001	01/2001
test for Flare Gas	Resistivity test and providing evaluation	For Mech. &		
Recovery Project at	of corrosivity.	Electrical works Ltd.		
Shuaiba Area.	<b>,</b>			
Soil Electrical Resistivity	Performing 4 Nos. of Electrical	Abdullah Ahmed	06/2000	06/2000
test for Reinforcement	Resistivity test and provide a direct			
bar Factory at Shuaiba	evaluation of corrosivity.			
Industrial Area.	Standard of contooning.			
maddiai / ii da.	<u> </u>	l	<u> </u>	
More references are availa	able un on request			
MINITE TETETETICES ATE AVAILA	inic ap on request			

## **8.2 MATERIALS TESTING**

# 8.2.1 TURNKEY MATERIALS TESTING PROJECTS

PROJECT	SCOPE OF WORK	CLIENT	START	END
Jurassic Production Facility – 5 North Kuwait	Concrete Pouring Test Result	MARK Technologies Co. for KOC	2021	01/2023

_				
Al Zour Refinery Project	Concrete Pouring Test Result	FDH JV / AL HANA	2021	Ongoing
EPC-2 & 3		for WOOD		0909
Standby Services	Concrete Pouring Test Result			
Contract for Works				
Related to Tankage &		NBTC for KIPIC	2020	Ongoing
Marine				- 119-1119
(CZ/REF/MP/060) P-IM-				
003 (Al-Zour)	O to Downia a Toot Downia	Object Otate		
	Concrete Pouring Test Result	China State		
Academic support facility		Construction Co. for	03/2014	Ongoing
		Dar Al Handasah/SSH		
KNPC CFP MAB P-242	Concrete Pouring Test Popult	NBTC	2014	Ongoing
Unconfined	Concrete Pouring Test Result		02/2019	03/2022
	Concrete Pouring Test Result	Impressa Pizzarotti	02/2019	03/2022
Compressive Test Result For New				
Maternity Hospital –				
SPA/235				
Unconfined	Concrete Pouring Test Result	HDEC DAEAH-	01/2019	06/2021
Compressive Test	Concrete Fouring Test Nesdit	PKG-1	01/2013	00/2021
Result For LNGI		1110-1		
Al Zour Refinery Project	Concrete Pouring Test Result	FDH JV / HEISCO	10/2018	01/2021
Structural Steel	Concrete Fouring Test Nesdit	1 Bit 3 V / HEIGOG	10/2010	01/2021
Mechanical & Piping				
(SMP)- Sulfur Area/				
WO# 633207				
Unconfined	Concrete Pouring Test Result	Wara Construction	05/2018	05/2021
Compressive Test	Control of Caring Tool Trocal	Wara Construction		
Result for Air Defence				
Improvement				
Unconfined	Concrete Pouring Test Result	FDH JV-Fluor/NBTC	04/2018	05/2020
Compressive Test				
Result Pipe rack-unit				
49A 48A, Brown Field P-				
239				
Unconfined	Concrete Pouring Test Result	SEPCO III Electric	03/2017	09/2019
Compressive Test		Power Construction		
Result for The third				
stage Al Zour South Gas				
Turbines to Combined				
cycle Plant CCGT-3				
Unconfined	Unconfined Compressive Test Result	Al Ajmi International	04/2016	09/2018
Compressive Test		(CGC)		
Result For Bulk Handling				
Facilities			00/00/0	10/00/10
Unconfined Unconfined	Unconfined Compressive Test Result	Petrofac	03/2016	10/2018
Compressive Test		International Limited		
Result For Lower Fars		/ NBTC		
Heavy Oil Development				
Program Phase-1	Harantinad Camanas Sira Tast Bas II	I/h anafi Ni-tii /	01/2015	11/2015
Unconfined Compressive Test	Unconfined Compressive Test Result	Kharafi National /	01/2015	11/2015
Compressive Test Result For Installation of		Hyundai E & C		
LSFO, FG, Gas Oil Pipe				
Lines from MAA to				
Doha, Sabiya, EF-				
1713/45582/KN-1669				
Concrete Pouring Test	Concrete Pouring Test Result	Ahmadiah	01/2014	11/2019
Result For NBK - New	Condition outling restrictsuit	Contracting &	01/2014	1112013
Headquarters Building		Trading Co		
Unconfined	Unconfined Compressive Test Result	Vision International	11/2014	12/2014
Choomined	Chochinica Compressive restrictual	VISION INCOMMENDIAL		, _ ∪ 1 ¬

Compressive Test Result For FEED for Replacement of Old and Obsolete Substations Vision International Co.		Co.		
Unconfined Compressive Test Result For Sheikh Jaber Al-Ahmad Al-Sabah Causeway	Unconfined Compressive Test Result	HYUNDAI ENGINEERING & CONSTRUCTION CO.	07/2013	07/2014
Concrete Pouring Test Result For HALON Phase-out Project	Concrete Pouring Test Result	Al-Musairie National General Trading & Contracting Co./Hanwa E&C	05/2012	02/2013
Unconfined Compressive Test Result For Ahmadi Depot	Unconfined Compressive Test Result	KNPC	03/2012	05/2012
Concrete Pouring Test Result For Installation of Power Supplies and Distribution Network @ ESPS at 12 Minagish and 42 Umm Gudair Infill Oil Wells	Concrete Pouring Test Result	Naser M. Al-Baddah & Partner Gen.Trad. & Cont.Co. (N.B.T.C)	01/2011	08/2011
Concrete Pouring Test Result For Clean & Recycle Oily Viscous Liquid (OVL) Services	Concrete Pouring Test Result	NBTC/ PIKA INTERNATIONAL	05/2010	08/2010
Unconfined Compressive Test Result For New Booster BS-132 & Enhancements to BS- 131, North Kuwait.	Unconfined Compressive Test Result	Naser M. Al-Baddah & Partner Gen.Trad. & Cont.Co. (N.B.T.C)	05/2011	02/2014
Unconfined Compressive Test Result For Shuiaba North Co-Generation Power and Distillation Plant Contract No. MEW/C/3656-2007/2008	Unconfined Compressive Test Result	Fisia Italimpianti Group Impregilo	01/2011	08/2011
Rock Core testing for Building New Gathering Center GC-24 at Sabriya, Kuwait	Coring Rock samples Borehole logs (sandstone), Unconfined Compression test	First Kuwaiti Trading & Contracting Co. for KOC	01/2009	01/2009
Rock Core Testing for KOC Crude Export Facilities at North Pier	Coring of rock samples, laboratory testing: unconfined compression test, brazilian tensile strength, point load test, calcium carbonate content.	Boskalis Westminster Middle East Ltd.	10/2006	10/2006
Rock Core Testing for KOC Crude Export Facilities at North Pier	Coring of rock samples, laboratory testing: unconfined compression test, brazilian tensile strength, point load test, calcium carbonate content.	Boskalis Westminster Middle East Ltd.	08/2006	09/2006
Field California Bearing Ratio (CBR) results for Evaluation of Existing Asphalt Pavement at Kuwait International Airport	135 Field CBR were conducted and submitted field data and CBR results.	Directorate General of Civil Aviation	07/2005	07/2005
Field California Bearing	40 Field CBR were conducted and	Directorate General	12/2004	02/2005

Ratio (CBR) for evaluation of existing asphalt pavement at Kuwait International Airport.	submitted field data and CBR results.	of Civil Aviation				
Reconstruction of Mina Ahmadi Refinery	Site laboratory for performing soil compaction testing, concrete inspection and testing.	SK Engineering Korea	03/2002	09/2003		
More references are available up on request						

# 8.2.2 FIELD SOIL COMPACTION TESTING

PROJECT	SCOPE OF WORK	CLIENT	START	END
Jurassic Production Facility – 5 North Kuwait	Field soil density testing using cone method	MARK Technologies Co. for KOC	2021	01/2023
Al Zour Refinery Project EPC-2 & 3	Field soil density testing using cone method	FDH JV / AL HANA for WOOD	2021	Ongoing
Standby Services Contract for Works Related to Tankage & Marine (CZ/REF/MP/060) P-IM- 003 (Al-Zour)	Field soil density testing using cone method	NBTC for KIPIC	2020	Ongoing
Academic support facility	Field soil density testing using cone method	China State Construction Co. for Dar Al Handasah/SSH	03/2014	Ongoing
KNPC CFP MAB P-242	Field soil density testing using cone method	NBTC	2014	Ongoing
Field soil density testing using cone method for New Maternity Hospital Contract No. SPA/235	Field soil density testing using cone method	Impressa Pizzarotti	2019	2020
Field soil density testing using cone method for Al Zour LNGI Project	Field soil density testing using cone method	Hyundai Engineering Co.	2019	Ongoing
Field soil density testing using cone method for Air Defense improvement	Field soil density testing using cone method	Wara construction	03/2018	Ongoing
Field soil density testing using cone method for E & I Works for Sulphur area Al Zour Refinery project WO # 683021	Field soil density testing using cone method	HEISCO	12/2018	2021
Field soil density testing using cone method for New Gathering Center, GC-31	Field soil density testing using cone method	Dodsal Engineering	03/2017	Ongoing
Field soil density testing using cone method for Al Zour LNGI Project	Field soil density testing using cone method	Hyundai Engineering & Construction Co.	2017	Ongoing
Field soil density testing using cone method for KNPC-CF	Field soil density testing using cone method	NBTC/Hyundai Heavy Industries (HHI)	07/2017	12/2019
Field soil density testing using cone method for LFHO Phase – 1P-244	Field soil density testing using cone method	Petrofac Int.Limited/NBTC	10/2017	02/2019
Field soil density testing	Field soil density testing using cone	NBTC	05/2017	11/2019

		T	ı	
using cone method for P-264	method			
Field soil density testing using cone method for Mina Al-Zour P-256	Field soil density testing using cone method		03/2017	09/2019
Field soil density testing using cone method for GC-31	Field soil density testing using cone method		11/2017	09/2019
Field soil density testing using cone method for Al Zour Refinery project EPC-0059	Field soil density testing using cone method	e Essar / Galfar Engineering	04/2016	07/2019
Field soil density testing using cone method for Extension of Fence South & East KOC	Field soil density testing using cone method	Al-Eman Construction Co.	02/2016	02/2020
Field soil density testing using cone method for LFHO, Abdally	Field soil density testing using cone method	Al-Jazirah Industrial Co.	03/2016	11/2020
Field soil density testing using cone method for New Water Center (NWC), North Kuwait	Field soil density testing using cone method	GS E & C	08/2016	10/2019
Field soil density testing using cone method for LFHO Phase-1 at Abdali	Field soil density testing using cone method	Alghanim International	05/2016	08/2019
Field soil density testing using cone method for Al Zour refinery project EPC-0059	Field soil density testing using cone method	China State Construction Co.	03/2014	ongoing
Field soil density testing for KNPC CFP MAB2 Area 3 Main Civil Work Package No 3 (P242- Brown field)	Field soil density testing using cone method	B NBTC / FDH JV Hyundai Heavy Industries (HHI) / NBTC	11/2015	2019
Field soil density testing for Expansion & Revamping of Ahmadi Depot - LM	Field soil density testing using cone method	General Trading & Contracting Co. / Punj Lloyd	10/2015	09/2018
Field soil density testing for Sabiya OCGT stage - 2		e Alghanim International Ltd	10/2015	08/2019
Field soil density testing for Area 2 Civil works integrated Package no.2	Field soil density testing using cone method	FDH JV (DAEWOO E & C) / NBTC	10/2015	06/2019
Field soil density testing for CFP MAB-2 Area-2 Unit-137	Field soil density testing using cone method	P FDHJV- DAEWOO/SUNGBO	05/2015	09/2018
Field soil density testing for Academic Support facility	Field soil density testing using cone method	china state construction co.	06/2014	Ongoing
Field soil density testing for Sulphur Handling Facilities Project (SHFP)	Field soil density testing using cone method	LTD. / NBTC	06/2014	05/2018
Field soil density testing for FCC, SWT & CT for CFP Project-KNPC at Mina Al Ahmadi	Field soil density testing using cone method	Daelim Industrial Co / NBTC	05/2014	06/2018
Field soil density testing for Installation of Telemetry System For	Field soil density testing using cone method	Daelim Industrial Co. LTD./ Al Musairie National Gen.Trd &	01/2014	10/2016

Montoring and Control of Consumes Networks System (EF/1717) Annal Nehicle All Indian All Anhard Refinery New Booster Station Bank Bank AGRAP Revamp Project at Man Al Anhard Refinery New Booster Station Bank Bank AGRAP Revamp Project at Man Al Anhard Refinery New Booster Station Bank Bank AGRAP Revamp Project at Man Al Anhard Refinery New Booster Station Bank Bank Bank Bank Bank Bank Bank Ban		T						I	
System (EF/1717) Amil Vehicle Hangars at KAZMA Camp BID Pack SA & B. Main Campus Roads, Utilities without method BID Pack SA & B. Main Campus Roads, Utilities without goals a Landscation Captur (Var) BID Pack SA & B. Main Campus Roads, Utilities without goals a Landscation Station Pack and the pack of the	Monitoring and Control						Co.		
Armi Vehicle Hangars at Kelz (AZMA Camp bill De Pack SA & B. Main Campus Roads, Utilities, Surface parking Oasis & Landscape All Zour Power Station Phanking Oasis & Contracting Co. Phanking Oasis & Contra	_								
Method Sand Sand Sand Sand Sand Sand Sand San									
RAZMA Camp   method   Fleid   Soil density testing using   Cone   Copporation   Ltd   Coppr (JV)   Copporation   Ltd   Coppr (JV)   Copporation   Ltd   Coppr (JV)   Coppr (	_		density	testing	using	cone	,	03/2013	09/2014
Campus Roads, Utilities, Surface parking Oasis & Landscape Al Zour Power Station Mall Reflocation HALON Phase-out Field soil density testing using cone Harwha E&C HARDN HIND AND AND AND AND AND AND AND AND AND A								00/2010	00/2011
Surface parking Casis & Landscape Al Zour Power Station Ruethod HALON Phase-out (Hamwha) at Mina Shualba LPG Train-4 Mina Al Mina Shualba LPG Train-4 Mina Al Field soil density testing using cone Bhank and Mina Shualba LPG Train-4 Mina Al Field Soil density testing using cone Bhank and Mina Shualba LPG Train-4 Mina Al Field Soil density testing using cone Bhank and Mina System up gradation Installation of LSFC Puel Gas and Gas Oil Pipeline MAA to Sabiya Boha PL Part 'A" EP- 1713 WO#673006 New GC-16 IN West Kuwait Works Cont- 44930 New GC-16 IN West Kuwait Shand Al Refinery New AGRP Revamp Project at Mina Ahmadi Refinery New Booster Station BS 171 at West Kuwait NLTF Project at Mina Ahmadi Refinery New Booster Station BS 171 at West Kuwait NLTF Project at Mina Ahmadi Refinery Mina Al Ahmadi Refinery Mina Al Ahmadi Refinery Mina Al Ahmadi Refinery New Booster Station BS Field soil density testing using cone method  Mina Al Ahmadi Refinery Mina Al Ahmadi Refinery Mina Al Ahmadi Refinery New Booster Station BS Refield soil density testing using cone method  Mina Al Ahmadi Refinery New Booster Station BS Field soil density testing using cone method  Mina Al Ahmadi Refinery New Grade Refinery New Booster Station BS Field soil density testing using cone method  Mina Al Ahmadi Refinery New Booster Station BS Field soil density testing using cone method  Mina Al Ahmadi Refinery New Booster Station BS Field soil density testing using cone method  Mina Al Ahmadi Refinery New Booster Station BS Field soil density testing using cone method  Mina Al Ahmadi Refinery New Booster Station BS Field soil density testing using cone method  Mina Al Ahmadi Refinery New Booster Station BS Field soil density testing using cone method  Mina Al Ahmadi Refinery New Booster Station BS-Field soil density testing using cone method  Mina Al Ahmadi Refinery New Booster Station BS-Field soil density testing using cone method  Mina Al Ahmadi Refinery New Booster Station BS-Field soil density testing using cone method  Mina Al Ahmadi Refinery New	•	Field soil	density	testing	using	cone	SINOHYDRO		
Surface parking dasis & Landscape Al Zour Power Station Kuwait Chamban Al Landscape Al Zour Power Station Kuwait Chamban Al Landscape Al Zour Power Station Kuwait Chamban Al Landscape Al Zour Power Station Refinery HALON Phase-out Fleid soil density testing using cone hand the contracting Co. Hanwha E & C Hall Hanwha E & C Hanwha E & C Hall Hanwha E & C Hall Hanwha E & C Hall Han		method					Corporation Ltd-	02/2013	On going
All Zour Power Station Mina Sull Relocation method with testing using cone Contracting Co. Mina Contracting Co. Mina Mina Shualba LPG Train-4 Mina Al Mina Al Mina Mina Mina Mina Mina Mina Mina Mina	Surface parking Oasis &						Copri (JV)	02/2013	On going
Wall Relocation	Landscape								
Manufaction   Mina	Al Zour Power Station	Field soil	density	testing	using	cone	KCC Engineering &	00/0040	04/0040
HALON   Phase-out (Hanwha) at Mina Shuaiba   LPG Train-4 Mina Al Almadi Refinery   Hanwha Fire Alarm System up gradation   Method   Mina System up gradation   Mina	Wall Relocation	method	•	•	_		Contracting Co.	02/2013	04/2013
Contracting Co.   Contractin	HALON Phase-out	Field soil	density	testina	usina	cone			
Shualba' LPG Train-4 Mina AI Field soil density testing using cone Markefinery Hamwha Fire Alarm System up gradation Installation of LSFO Fuel Gas and Gas Oil method method Installation of LSFO Fuel Sabhya & Doha PL Part 'A' EP- 1713 WO#673006 New GC-15 IN West Kuwait Civil Works Cont- 44930 New AGRP Revamp Field soil density testing using cone Markefinery New Booster Station BS 171 at West Kuwait NLTF Project at Mina Alahmadi Refinery New Booster Station BS 171 at West Kuwait Mina Al Ahmadi Refinery  LPG Train-4 Project at Mina Alahmadi Refinery  New 30" Crude Oil Transit Line TL-4 from North Kuwait to CMM Integrated Security Field soil density testing using cone method m	(Hanwha) at Mina		,	3	3			01/2013	03/2015
PG Train-4 Mina Al Ahmadi Refinery   Field   Soil   density   testing   using   cone   method   method   method   Mina	,								
Ahmadi Refinery method soil density testing using cone gradation of LSFO Fuel Gas and Gas Oil method method linstallation of LSFO Fuel Gas and Gas Oil method method soil density testing using cone Method soil density testing using cone gradation of LSFO Fuel Gas and Gas Oil method soil density testing using cone Method soil density testing using cone gradation of LSFO Fuel Gas C-16 IN West Kuwait Civil Works Conti-44930 New AGRP Revamp Project at Mina Ahmadi Refinery New Booster Station BS 171 at West Kuwait Cambrida Soil density testing using cone gradation method soil density testing using cone gradation soil density testing using cone method soil density testing using cone gradation soil de		Field soil	density	testing	usina	cone	Daelim Industrial Co		
Hamwha Fire Alarm System up gradation method  System up gradation of LSFO Fuel Gas and Gas Oil Pipeline MAA to Sabiya & Doha PL Part "A" EP-1713 WOH973006  New GC-16 IN West Kuwait Civil Works Cont-44930  New AGRP Revamp Project at Mina Ahmadi Refinery  New Booster Station BS 171 at West Kuwait Namadi Refinery  IDF Grid Soil density testing using cone method  MITF Project at MAA Project at Mina Ahmadi Refinery  New BO's Crude Oil Transit Line TL-4 from North Kuwait to CMM  New 30" Crude Oil			dononty	100119	uomg	00110	Baeiiii iiiaaeiiai Ge	10/2012	10/2013
Installation of LSFO Fuel Gas and Gas Oil Pipeline MAA to Sabiya   Doha PL Part "A" EP-1713 WO#673006	•		density	testing	usina	cone	Kharafi National		
Installation of LSFO Fuel Gas and Gas Oil Pipeline MAA to Sabiya & Doha PL Part "A" EP-1713 WO#673006  New GC-16 IN West Kuwait Civil Works Cont-44930  New AGRP Revamp Project at Mina Ahmadi Refinery  NLTF Project at MAD Refinery  MITF Project at MAD Refinery  Um Al-Aish LPG Plant  Mina Al Ahmadi Refinery  Mira Trunk Line Replacement (Joint North Kuwait to CMM Sabah Al-Salem University at Shadadiya (Infrastructure) Contraction Co.  Mer Mad GR Revamp Project at Mina Ahmadi Refinery  MITF Project at Mina Al-Salem University at Shadadiya (Infrastructure) Contracting Co.  Mer So" Crude Oil Transit Line TL-4 from North Kuwait to CMM Sabah Al-Salem University at Shadadiya (Infrastructure) Contraction Co.  Mer Mad Gas Oil method method method method with soil density testing using cone method with soil density			acribity	testing	using	00110	Maran Madona	09/2012	04/2014
Gas and Gas Oil Pipeline MAA to Sabiya & Doha PL Part "A" EP- 1713 WO#673006 New GC-16 IN West Kuwait Civil Works Cont- 44930 New AGRP Revamp Project at Mina Ahmadi Refinery North Kuwait to CMM Integrated Security Systems for KCC facilities  Waffa Trunk Line Replacement (Joint Operations) New 30° Crude Oil Transit Line TL-4 from North Kuwait to CMM Integrated Systems for KCC facilities  Waffa Trunk Line Replacement (Joint Operations) New Sor Crude Oil Transit Line TL-4 from North Kuwait to CMM Sabah AL-Salem University at Shadaliya (Infrastructure) Contract Nor KWI 701-1/2008-2009 New Booster Station BS 1Field soil density testing using cone method with testing using cone with testing using cone with testing using cone with testing using cone with testing using con			density	tecting	ueina	cone	HEISCO/Hyundai		
Pipeline MAA to Sabiya & Doha PL Part "A" EP   Field Soli density testing using cone method   Timeline Mark (Contracting Co.   Tim			uchisity	lesting	using	COHE	TIE13CO/Tiyundai		
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New GC-16 IN West Kuwait Cult Works Contacting Co.   New AGRP Revamp Project at Mina Alahmadi Refinery   New AGRP Revamp Mina Alahmadi Refinery   New AGRP Revamp Revamp Mina Alahmadi Refinery   New AGRP Revamp								03/2012	10/2013
New GC-16 IN West Kuwait Civil Works Contacting Co.   New AGRP Revamp Project   Field soil density testing using cone method   New AGRP Revamp Project   New Booster Station BS   Field soil density testing using cone method   New Booster Station BS   Field soil density testing using cone method   New Booster Station BS   Field soil density testing using cone method   New Booster Station BS   Field soil density testing using cone method   New Booster Station BS   Field soil density testing using cone method   New Booster Station BS   Field soil density testing using cone method   New Booster Station BS   Field soil density testing using cone method   New Booster Station BS   Field soil density testing using cone method   New Booster Station BS   Field soil density testing using cone method   New Booster Station BS   Field soil density testing using cone method   New Booster Station BS   Field soil density testing using cone method   New Booster Station BS   Field soil density testing using cone method   New Booster Station BS   Field soil density testing using cone method   New Booster Station BS   Field soil density testing using cone method   New Booster Station BS   New Booster Station BS   Field soil density testing using cone   Naser M. Al-Beddah & Partners Co.   N									
Kuwati Civil Works Cont-   44930		Field seil	al a .a a !4	4 4!			0.00 [		
Ady   AGRP   Revamp   Field   soil   density   testing   using   cone   method   m			aensity	testing	using	cone		00/0040	00/0040
New AGRP Revamp Project   New Agree   Field   Soil   density   testing   using   cone   NBTC/Tecnimont   01/2012   10/2013   NLTF   Project   at   Mina   Ahmadi   Refinery   New Booster Station   BS   The Idad   Soil   density   testing   using   cone   HOT Engineering & Construction Co.   On/2012   On/		metnoa						03/2012	09/2013
Project   NLTF Project at Mina   Ahmadi Refinery   Soil density testing using cone   HOT Engineering & Construction Co.   O1/2012   O7/2012   O7/2013   O7/2013   O7/2013   O7/2014   O7/2014   O7/2013   O7/2014   O7/2013   O7/2014   O7		E: 11 "			<u> </u>		- U		
NLTF Project at Mina Ahmadi Refinery method	·		density	testing	using	cone	NBTC/Techimont	01/2012	10/2013
Ahmadi Refinery  New Booster Station BS   Field   Soil   density   testing   using   cone   GDC/Kharafi   National/SAIPEM   National/SAIPE									
New Booster Station BS 171 at West Kuwait NLTF Project at MAA Refinery  LPG Train-4 Project at Mina Al Ahmadi Refinery  Wafra Trunk Line Replacement (Joint Operations) New 30" Crude Oil Transit Line TL-4 from North Kuwait to CMM Sabah Al-Salem University at Shadadiya (Infrastructure) Contract North Kuwait to Contract North Kuwait to Contract North Clay and Al-Salem University at Shadadiya (Infrastructure) Contract North Clay and Al-Salem University at Shadadiya (Infrastructure) Contract North Clay and Al-Salem University at Shadadiya (Infrastructure) Contract North Clay and Al-Salem University at Shadadiya (Infrastructure) Contract North Clay and Al-Salem University at Shadadiya (Infrastructure) Contract North Clay and Al-Salem University at Shadadiya (Infrastructure) Contract North Clay and Al-Salem University at Shadadiya (Infrastructure) Contract North Clay and Al-Salem University at Shadadiya (Infrastructure) Contract North Clay and Al-Salem University at Shadadiya (Infrastructure) Contract North Clay and Al-Salem University at Shadadiya (Infrastructure) Contract North Clay and Al-Salem University at Shadadiya (Infrastructure) Contract North Clay and Al-Salem University at Shadadiya (Infrastructure) Contract North Clay and Al-Salem University at Shadadiya (Infrastructure) Contract North Clay and Al-Salem University at Shadadiya (Infrastructure) Contract North Clay and Al-Salem University at Shadadiya (Infrastructure) Contract North Clay and Al-Salem University at Shadadiya (Infrastructure) Contract North Clay and Al-Salem University at Shadadiya (Infrastructure) Contract North Clay and Al-Salem University at Shadadiya (Infrastructure) Contract North Clay and Al-Salem University at Shadadiya (Infrastructure) Contract North Clay and Al-Salem University at Shadadiya (Infrastructure) Contract North Clay and Al-Salem University at Shadadiya (Infrastructure) Contract North Clay and Al-Salem University at Shadadiya (Infrastructure) Contract North Clay and Al-Salem University at Shadadiya (Infrastructure) Contract			density	testing	using	cone		01/2012	07/2012
National/SAIPEM   National/S									
NLTF Project at MAA Refinery method m			density	testing	using	cone		01/2012	2017
Refinery  LPG Train-4 Project at Mina Al Ahmadi Refinery  LPG Train-4 Project at Mina Al Ahmadi Refinery  LPG Train-4 Project at Mina Al Ahmadi Refinery  Field soil density testing using cone MTC  New 30" Crude Oil Transit Line TL-4 from North Kuwait to CMM  Integrated Security Systems for KOC facilities  Wafra Trunk Line Replacement (Joint Operations)  New 30" Crude Oil Transit Line TL-4 from North Kuwait to CMM  Integrated Security Systems for KOC facilities  Wafra Trunk Line Replacement (Joint Operations)  New 30" Crude Oil Transit Line TL-4 from North Kuwait to CMM  Field soil density testing using cone Replacement (Joint Operations)  New 30" Crude Oil Transit Line TL-4 from North Kuwait to CMM  Sabah Al-Salem University at Shadadiya (Infrastructure) Contract No. KU/107-1/2008-2009  LPG Fourth Gas Train Field soil density testing using cone Naser M. Al-Beddah method Mensity testing using cone Naser M. Al-Beddah & Partners Co.									
LPG Train-4 Project at Mina Al Ahmadi Refinery  Mina Al Ahmadi Refinery  LPG Train-4 Project at Mina Al Ahmadi Refinery  Mina A			density	testing	using	cone	GS Engineering Co.	12/2011	02/2011
Mina Al Ahmadi Refinery  Mina Al-Aish LPG Plant  Field soil density testing using cone method  North Kuwait to CMM  Integrated Security Systems for KOC facilities  Wafra Trunk Line Replacement (Joint Operations)  New 30" Crude Oil Transit Line TL-4 from North Kuwait to CMM  New 30" Crude Oil Transit Line TL-4 from North Kuwait to CMM  New 30" Crude Oil Transit Line TL-4 from North Kuwait to CMM  Sabah Al-Salem University at Shadadiya (Infrastructure) Contract No. KU/107-1/2008-2009  LPG Fourth Gas Train Project at Mina Ahmadi Refinery KNPC  New Booster Station BS- Field soil density testing using cone Naser M. Al-Beddah Refinery KNPC  New Booster Station BS- Field soil density testing using cone Naser M. Al-Beddah Registery testing using cone Naser M. Al-Beddah Registery testing using cone Naser M. Al-Beddah Registery testing using cone Refinery KNPC  New Booster Station BS- Field soil density testing using cone Naser M. Al-Beddah Registery testing using cone Naser M. Al-Beddah Registery testing using cone Naser M. Al-Beddah Registery testing using cone Refinery KNPC  New Booster Station BS- Field soil density testing using cone Naser M. Al-Beddah Registery testing using cone Naser M. Al-Beddah Registery testing using cone Naser M. Al-Beddah Registery testing using cone Refinery KNPC  New Booster Station BS- Field soil density testing using cone Naser M. Al-Beddah Registery testing using cone Refinery KNPC								12/2011	02/2011
Um Al-Aish LPG Plant Field soil density testing using cone method M			density	testing	using	cone			
Um Al-Aish LPG Plant Field soil density testing using cone method	Mina Al Ahmadi Refinery	method						05/2011	11/2013
Discrept Contracting Co.   Discrept Contracting Cont							Co./Daelim Industrial	03/2011	11/2013
New 30" Crude Oil Transit Line TL-4 from North Kuwait to CMM Integrated Security Systems for KOC facilities  Wafra Trunk Line Replacement (Joint Operations) New 30" Crude Oil Transit Line TL-4 from method  Wafra Trunk Line Replacement (Joint Operations) New 30" Crude Oil Transit Line TL-4 from Morth Kuwait to CMM  Sabah Al-Salem University at Shadadiya (Infrastructure) Contract No. KU/107-1/2008-2009 LPG Fourth Gas Train Project at Mina Ahmadi Refinery KNPC  New Booster Station BS-  New 30" Crude Oil Field soil density testing using cone method  Field soil density testing using cone Gulf Dredging Co.  Naser M. Al-Beddah & Partners Co.							Co.		
New 30" Crude Oil Transit Line TL-4 from Morth Kuwait to CMM  Integrated Security Systems for KOC facilities  Wafra Trunk Line Replacement (Joint Operations)  New 30" Crude Oil Transit Line TL-4 from Method  Field soil density testing using cone MTC  Wafra Trunk Line Replacement (Joint Operations)  New 30" Crude Oil Transit Line TL-4 from Morth Kuwait to CMM  Sabah Al-Salem University at Shadadiya (Infrastructure) Contract No. KU/107-1/2008-2009  LPG Fourth Gas Train Project at Mina Ahmadi Refinery KNPC  New Booster Station BS-  Field soil density testing using cone Naser M. Al-Beddah & Partners Co.	Um Al-Aish LPG Plant	Field soil	density	testing	using	cone	HOT Engineering &	05/2011	02/2012
Transit Line TL-4 from North Kuwait to CMM  Integrated Security Systems for KOC facilities  Wafra Trunk Line Replacement (Joint Operations)  New 30" Crude Oil Transit Line TL-4 from North Kuwait to CMM  Sabah Al-Salem University at Shadadiya (Infrastructure) Contract No. KU/107-1/2008-2009  LPG Fourth Gas Train Project at Mina Ahmadi Refinery KNPC  New Booster Station BS-  Field soil density testing using cone with testing using cone and the soil density testing using cone with testing using cone and the soil density tes		method					Contracting Co.	05/2011	02/2012
Transit Line TL-4 from North Kuwait to CMM  Integrated Security Systems for KOC facilities  Wafra Trunk Line Replacement (Joint Operations)  New 30" Crude Oil Transit Line TL-4 from North Kuwait to CMM  Sabah Al-Salem University at Shadadiya (Infrastructure) Contract No. KU/107-1/2008-2009  LPG Fourth Gas Train Project at Mina Ahmadi Refinery KNPC  New Booster Station BS-  Field soil density testing using cone with testing using cone and the soil density testing using cone with testing using cone and the soil density tes	New 30" Crude Oil	Field soil	density	testing	using	cone	-		
North Kuwait to CMM  Integrated Security Systems for KOC facilities  Wafra Trunk Line Replacement (Joint Operations)  New 30" Crude Oil Transit Line TL-4 from North Kuwait to CMM  Sabah Al-Salem University at Shadadiya (Infrastructure) Contract No. KU/107-1/2008-2009  LPG Fourth Gas Train Project at Mina Ahmadi Refinery KNPC  New Booster Station BS- Field soil density testing using cone Integrated Security Single Station BS- Field soil density testing using cone Integrated Samsung / Canar (04/2011)  Samsung / Canar (04/2011)  Od/2012  Fa K Shuaier  Naser M. Al-Beddah & Partners Co.  Samsung / Canar (04/2011)  Od/2011  Od/2012  Fa K Shuaier  Od/2011  Od/2012  Field soil density testing using cone Gulf Dredging Co.  Naser M. Al-Beddah & Partners Co.  Naser M. Al-Beddah & Partners Co.  Od/2011  Od/2012			,	3	3			05/2011	08/2011
Integrated Security Systems for KOC facilities  Wafra Trunk Line Replacement (Joint Operations)  New 30" Crude Oil Transit Line TL-4 from North Kuwait to CMM  Sabah Al-Salem University at Shadadiya (Infrastructure) Contract No. KU/107-1/2008-2009  LPG Fourth Gas Train Project at Mina Ahmadi Refinery KNPC  New Booster Station BS- Field soil density testing using cone Maser M. Al-Beddah (Method Method Metho									
Systems for KOC facilities  Wafra Trunk Line Replacement (Joint Operations)  New 30" Crude Oil Transit Line TL-4 from North Kuwait to CMM  Sabah Al-Salem University at Shadadiya (Infrastructure) Contract No. KU/107-1/2008-2009  LPG Fourth Gas Train Project at Mina Ahmadi Refinery KNPC  New Booster Station BS-  Field soil density testing using cone method with testing using cone with testing using cone with testing using cone of the contract with testing using cone with testing using cone with testing using cone with testing using cone of the contract with testing using cone with testing using cone with testing using cone of the contract with testing using cone with testing using cone with testing using cone with testing using cone of the contract with testing using cone with testing usin		Field soil	densitv	testina	usina	cone	Samsung / Canar		
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Wafra Trunk Line Replacement (Joint Operations)  New 30" Crude Oil Transit Line TL-4 from North Kuwait to CMM  Sabah Al-Salem University at Shadadiya (Infrastructure) Contract No. KU/107-1/2008-2009  LPG Fourth Gas Train Project at Mina Ahmadi Refinery KNPC  New Booster Station BS- Field soil density testing using cone Intention University testing using cone Intention Inten									
Replacement (Joint Operations)  New 30" Crude Oil Transit Line TL-4 from North Kuwait to CMM  Sabah Al-Salem University at Shadadiya (Infrastructure) Contract No. KU/107-1/2008-2009  LPG Fourth Gas Train Project at Mina Ahmadi Refinery KNPC  New Booster Station BS- Field soil density testing using cone Naser M. Al-Beddah (Mark Mark Mark Mark Mark Mark Mark Mark		Field soil	density	testina	usina	cone	F & K Shuajer		
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Transit Line TL-4 from North Kuwait to CMM  Sabah Al-Salem University at Shadadiya (Infrastructure) Contract No. KU/107-1/2008-2009  LPG Fourth Gas Train Project at Mina Ahmadi Refinery KNPC  New Booster Station BS- Field soil density testing using cone Naser M. Al-Beddah (19/2014)  & Partners Co. (19/2014)		Field soil	density	testing	Heina	CODE	Naser M. Al-Reddah		
North Kuwait to CMM  Sabah Al-Salem University at Shadadiya (Infrastructure) Contract No. KU/107-1/2008-2009  LPG Fourth Gas Train Project at Mina Ahmadi Refinery KNPC  New Booster Station BS- Field soil density testing using cone Naser M. Al-Beddah (Naser M. Al-Bed			uchally	iesuiig	using	COHE		03/2011	2014
Sabah Al-Salem University at Shadadiya (Infrastructure) Contract No. KU/107-1/2008-2009  LPG Fourth Gas Train Project at Mina Ahmadi Refinery KNPC  New Booster Station BS- Field soil density testing using cone Naser M. Al-Beddah (2012) (04/2012)		metriou					G 1 altilol3 CU.	03/2011	2014
University at Shadadiya (Infrastructure) Contract No. KU/107-1/2008-2009  LPG Fourth Gas Train Project at Mina Ahmadi Refinery KNPC  New Booster Station BS- Field soil density testing using cone Naser M. Al-Beddah 03/2011 04/2012  O4/2012  O4/2012  O4/2012  O4/2012  O4/2012  O4/2012  O4/2012  O4/2012		Field seil	donoity	tocting	ueina	0000	Gulf Drodging Co		
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No. KU/107-1/2008-2009  LPG Fourth Gas Train Pield soil density testing using cone Naser M. Al-Beddah Project at Mina Ahmadi Refinery KNPC  New Booster Station BS- Field soil density testing using cone Naser M. Al-Beddah 03/2011 10/2014		method						03/2011	04/2012
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Project at Mina Ahmadi method & Partners Co. 03/2011 2017  Refinery KNPC  New Booster Station BS- Field soil density testing using cone Naser M. Al-Beddah 03/2011 10/2014		Field"	al a !#-	4			Managa M. Al Dividil		
Refinery KNPC  New Booster Station BS- Field soil density testing using cone Naser M. Al-Beddah 03/2011 10/2014			aensity	testing	using	cone		00/00:	00.4=
New Booster Station BS- Field soil density testing using cone Naser M. Al-Beddah 03/2011 10/2014		method					& Partners Co.	03/2011	2017
		E			<u> </u>		A1		
131 & BS-132, North   method   & Partners Co./SK   50/2511			density	testing	using	cone		03/2011	10/2014
	131 & BS-132, North	method					& Partners Co./SK		-

Kuwait			Eng.			
Installation of power supplies and distribution network to ESPS at Managish & Umm Gudair KOC Contract # 42154	Field soil density testing umethod	using cone	Naser M. Al-Beddah & Partners Co.	09/2010	07/2012	
New Booster Station BS- 131, North Kuwait	Field soil density testing umethod	using cone	Naser M. Al-Beddah & Partners Co.	09/2010	2016	
Shuaiba North Co- Generator Power Plant and Distillation Plant Contract # MEW/C/3656	Field soil density testing umethod	using cone	Fisia Italimpianti	12/2008	09/2012	
GC-24 Project	Field soil density testing umethod	using cone	First Kuwaiti	03/2008	02/1010	
TVS Project	Field soil density testing umethod	using cone	HEISCO	08/2008	03/2010	
GC-24 at Abdally	Field soil density testing umethod	using cone	Naser M. Al-Beddah & Partners Co.	06/2008	02/2010	
PMP Water Disposal Facilities at Wafra (Cont. No. JO/HC014) MP03	Field soil density testing umethod	using cone	Arabi Enertech	06/2005	2007	
Joint Operation at Wafra	Field soil density testing umethod	using cone	Arabi Enertech	07/2005	2007	
KOC Project at Ahmadi	Field soil density testing ι method	using cone	Al-Hana Gen. Trad. & Cont. Co.	09/2006	02/2009	
O2K-Polythene expansion project at Shuaiba	Field soil density testing umethod	using cone	HEISCO	08/2006	03/2009	
More references are available up on request						

# **8.2.3 FIELD CONCRETE INSPECTION**

PROJECT	SCOPE OF WORK	CLIENT	START	END
Jurassic Production Facility – 5 North Kuwait	Compressive strength of Concrete Core, Half cell protection, Grout inspection, Rebound Hammer test & Chemical tests and submitting report	MARK Technologies Co. for KOC	2021	01/2023
Al Zour Refinery Project EPC-2 & 3	Compressive strength of Concrete Core, Half cell protection, Grout inspection, Rebound Hammer test & Chemical tests and submitting report		2021	Ongoing
Standby Services Contract for Works Related to Tankage & Marine (CZ/REF/MP/060) P-IM- 003 (Al-Zour)	Compressive strength of Concrete Core, Half cell protection, Grout inspection, Rebound Hammer test & Chemical tests and submitting report	NBTC for KIPIC	2020	Ongoing
Academic support facility	Compressive strength of Concrete Core, Half cell protection, Grout inspection, Rebound Hammer test & Chemical tests and submitting report	China State Construction Co. for Dar Al Handasah/SSH	03/2014	Ongoing
KNPC CFP MAB P-242	Compressive strength of Concrete Core, Half cell protection, Grout inspection, Rebound Hammer test & Chemical tests and submitting report	NBTC	2014	Ongoing
Concrete Structure for LNGI Project, Kuwait	Compressive strength of Concrete Core, Half cell protection, Grout inspection, Rebound Hammer test & Chemical tests	SRG Limited	2019	2020

	and submitting report			
Concrete Structure for KNPC Al-Zour Refinery project-EPC-Package No.4, Kuwait	Compressive strength of Concrete Core, Half cell protection, Rebound Hammer test & Chemical tests and submitting report	Bayader Al-Deira Gen.Trad. & Cont.Co.	06/2018	11/2019
Concrete Structure for KNPC CFP MAB2 Area 3 Main Civil Work Packge No.3 (P-242 Green Field), Kuwait	Compressive strength of Concrete Core, Asphalt testing, Half cell protection, Rebound Hammer test & Chemical tests and submitting report	NBTC/Hyundai Heavy Industries (HHI)	03/2017	08/2019
Concrete Structure for Lower Fars Heavy Oil Development Program Phase-1, Kuwait	Compressive strength of Concrete Core, Half cell protection, Rebound Hammer test & Chemical tests and submitting report	Al-Jazirah Industrial	08/2016	02/2020
Concrete Structure for Lower Fars Heavy Oil Development Program Phase-1, Kuwait	Compressive strength of Concrete Core, Rebound Hammer Test, Lab Ultrasonic, Field Ultrasonic, Measurement of Concrete Cover Meter, and submitting report	Consolidated Contractors Co. (CCC) for KOC	11/2016	11/2016
Concrete Structure for Building at Subhan, Block 10, Plot 88, Kuwait	Compressive strength of Concrete Core, Half cell protection, Rebound Hammer test & Chemical tests and submitting report	All Wazzan Food Industries Group	01/2016	02/2016
Field & Lab Testing	Compressive strength of concrete core, Half cell protection, Measurement of concrete cover meter, Depth of carbonation, Measurement of foundation and submitting report	Talal Khalifa Algeri	02/2016	02/2016
Structural Evaluation	Concrete Core, Non Destructive Test by Rebound Hammer, Half Cell Potential & chemical test and submitting report	Al Wazzan Food Industries Group	01/2016	02/2016
Structural Evaluation of EPS Factory at Subhan	Concrete Core & Non Destructive Test by Rebound Hammer and submitting report	Al-Qatami Insulation Material Factory	08/2015	09/2015
Structural Evaluation of Rehabilitation of Kuwait Towers, Kuwait	Concrete Core & Non Destructive Test by Rebound Hammer and submitting report	UNETEC	12/2014	01/2015
Structural Evaluation of UT-2 Exchanger Pedestals at Equate Petrochemicals Co. Shuaiba Area, Kuwait	Concrete Core & Non Destructive Test by Rebound Hammer and submitting report	Al-Khadda International Gen. Trad. & Contracting Co. W.L.L. for Equate Petrochemicals Co.	06/2013	06/2013
Field & Lab Testing for Azda Bint Hareth School Building at Mubarak Al Kabeer Area	Concrete Core, Non Destructive Test by Rebound Hammer, Crack Depth of Concrete, Lab Ultrasonic Test, Concrete cover and submitting report	Kuwait Institute for Scientific Research Center	04/2013	04/2013
Field & Lab Testing for Azda Bint Hareth School Building at Mubarak Al Kabeer Area		Kuwait Institute for Scientific Research Center	03/2013	03/2013
Field & Lab Testing for Jaber Al Ahmed N2 Project at Jaber Al Ahmed City	Concrete Core and submitting report	Mohmed Abdulmohsin Al Kharafi & Sons Co. for PAHW	09/2012	09/2012
Field & Lab testing for Radisson Blue Re Development at Salwa	submitting report	Wara Construction Co. for Radisson Blue Hotel	07/2012	07/2012
Field & Lab Testing for Radisson Blue Redevelopment at Salwa	Concrete Core and submitting report	Wara Construction Co.	04/2011	04/2011
Field & Lab Testing for K.D.D. Factory at	_	The Kuwait Danish Diary Co.	03/2010	03/2010

Subhan				
Lab testing for Masjid Abdullah Ibn Omar at Jahra	Carbonation foundation	Abdul Hamid Al- Essa Gen. Tradg. Co. for Ministry of Awqaf	02/2010	01/2010
Material Testing for K.D.D. Factory at Subhan		The Kuwait Danish diary	12/2009	12/2009
Structural Evaluation of Universal Printing Press at Subhan	Concrete Core, Crack depth of Ultrasonic Method, Hammer test & submitting report	Kharafi National for Arwa Real Estate Gen. Trad. & Cont. Co.	11/2009	11/2009
Soil Investigation & Field Concrete testing for Head Office at Kuwait Public Awqaf Foundation at Dasma	investigation, chemical analysis	Kuwait Awqaf Public Foundation	12/2008	12/2008
Completion of Load test for Beams for Water Mall Project at Hawally		Al-Ahlia Contracting Group w.l.l.	11/2008	12/2008
Structural Evaluation of Administration building at Shuaiba		Dourwaza Engineering	03/2008	04/2008
Material Testing of Conference Hall at Jaber Al-Mubarak Tower - Sharq	Non Destructive test by Rebound Hammer, Compressive Strength of Concrete Core, Lab Ultrasonic test, Field Ultrasonic, Concrete Cover, Chemical anlaysis and submitting report	Dourwaza Engineering	01/2008	02/2008
Structural Evaluation of Building after Fire for Pearl of Kuwait Tower	Estimating the Crack Depth of Concrete by Ultrasonic Method (Field & Lab), Non Destructive test by rebound hammer, Concrete Core, & Chemical tests and submitting report	First United Gen. Trad. & Cont. Co.	10/2007	11/2007
Field & lab test for Al- Sha'ab Residential Tower, Block 8, Plot 63	Estimating the Crack Depth of Concrete by Ultrasonic Method (Field & Lab), Non Destructive test by rebound hammer, Concrete Core, & Cover meter test and submitting report	National Projects Establishment	10/2007	11/2007
Structural Evaluation of Building with Fire for Porche Car Showroom of Center Extension at Al Rai, Shuaikh	Estimating the Crack Depth of Concrete by Ultrasonic Method (Field & Lab), Non Destructive test by rebound hammer, Concrete Core, & Chemical tests and submitting report	Sadeem Al Kuwait	07/2007	07/2007
Water Distribution Complex at Subiya/ Subiya WDC-C1, Project / Contract No. MEW/NCC/2859-2002- 2003	Estimating the Crack Depth of Concrete by Ultrasonic Method	China Gezhouba Construction Group Corporation	05/2005	05/2005
Crack depth of concrete by Ultrasonic method for Water Distribution Complex at Subiya/ Subiya WDC-C1, Project / Contract No. MEW/NCC/2859-2002- 2003	Estimating the Crack Depth of Concrete by Ultrasonic Method	China Gezhouba Construction Group Corporation	01/2005	01/2005
Estimating the Crack Depth of Concrete By Ultrasonic Method for		Combined Group Contracting Co. for Ministry of Education	09/2004	09/2004

Muath Ibn Jable Intermediate School at Khaitan				
Crack depth of concrete by Ultrasonic method for KOAC Ne Retail Commercial complex at Shuwaikh	Estimating the Crack Depth of Concrete by Ultrasonic Method	Combined Group Co. for KOAC	08/2003	08/2003
Field & Ultrasonic test for construction of Shallah at Bnaider	Extraction of Concrete Core & Field Ultrasonic Pulse Velocity test	Abdul Aziz Al-Hajri	08/2003	08/2003
Compressive strength and structural elements at Hotel Safir Bestaki.	Extraction of concrete cores and performed compressive strength and lab tests and submittal of report.	Saleh Al-Qallaf Engineering Consultant	05/2003	05/2003
Compressive strength of structural elements and soil investigation for residential building at Fintas.	Extraction and compressive strength for concrete cores and submitted structural report.	Jawharat Al-Fanar Real Estate Co.	04/2003	04/2003
Assessment of the strength of concrete foundation tower 6001 at MGC, Wafra	Extraction and compressive strength of concrete core and submitted report.	F & K Ibrahim Al- Shuyour For Joint Operation	04/2003	04/2003
Compressive strength for old commercial building at Kuwait city	Extraction and compressive strength of concrete core and submittal of report.	Kuwait Real Estate company	03/2003	03/2003
Compressive strength of structural elements for existing chicken poultry farm at Shagai.	Extraction and compressive strength of concrete core and submittal of report.	Kuwait United Chicken Poultry Co.	01/2003	01/2003
Compressive strength of structural elements and soil investigation for construction maintenance and construction of Adan Hospital.	Extracting and compressive strength for concrete cores and drilled boreholes and submittal of reports.	Nezar Al-Anjari Consulting Office	07/2002	07/2002
Chinese Restaurant at Arabian Gulf Street.	Concrete, Soil and Asphalt testing and submitting results.	Futooh Al-Asfoor Consultant	09/2001	09/2001
Bayan Palace Phase II, Guest Palace	Concrete core, laboratory core compression test and chemical analysis of water, aggregate, cement	Salem Al-Marzouk and Sabah Abi- Hanna/Ministry of Public Works	01/1999	02/1999
Petrochemical Industry Project at Shuaiba	Compressive strength of concrete core and Ultrasonic tests	Industrial & Engineering Consulting Office/(INCO)/Petroch emical Industries Co.	11/1998	11/1998
More references are availa	able up on request			

# 8.3 SURVEY

PROJECT NAME	SCOPE OF WORK	CLIENT	START	END
Four New Schools at Different Places in Kuwait	Topographic and Underground Utility Services Detection	Nezar Al Anjari Consulting Bureau	04/2024	04/2024
Kuwait Public Transport Company (KPTC) pmo Sheraton Station	Topographic and Underground Utility Services Detection	Pan Arab Consulting Engineers	03/2024	03/2024
Kuwait Digital Startup Campus, Mubarak Al Abdulla City	Topographic and Underground Utility Services Detection	Project Management International System	03/2024	03/2024

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Sief Car Parking Area, Block 2, Kuwait City	Utility Survey	Future Home Engineering Consultants	03/2024	03/2024
US Embassy Entrance Gate	Utility Survey	KAAVAL Security Systems & Equipment Company	02/2024	02/2024
Land Survey of a Farm in Sulaibiya Farm	Topographic and Underground Utility Services Detection	Dar Mimar Consultants	02/2024	02/2024
PAHW_C_1528-2023_2024, Supply, Installation, Implementation and Maintenance of Four Main Station of Voltage 132/11 Kv + One secondary Station of Voltage 11/0.415kv in the Service Part of Jaber Al Ahmed Cit (JBAH "6X", JBAH "9Y", JBAH "12Y", JBAH "9X")	Topographic and Underground Utility Services Detection	Larsen & Toubro	02/2024	02/2024
Hadi Hospital Car Parking in Jabriya	GPR Scanning Survey	Nezar Al Anjari Consulting Bureau	02/2024	02/2024
Subsurface Mapping of Shallow Weakness Zones in South Al- Mutlaa City, Kuwait Using Ground Penetrating Radar (GPR) AND Electrical Resistivity Tomography: A Case Study	GPR Scanning Survey	Dr. Anwar Al Helal – Assistant Professor: Public Authority for Applied Education and Training – College of Basic Education	01/2024	01/2024
Volumetric Survey of Stock pile in Mina ABDULLAH Yard	Volumetric Survey	Union Construction Mat. Mfg. Co.	12/2023	12/2023
Volumetric Survey of Stock pile in Mina ABDULLAH Yard	Volumetric Survey	Kuwait Company for Process Plant Construction and Contracting	12/2023	12/2023
Underground Utilities Detection Survey at KOTC Filling Station for (2) Cable Trenches Route in Shuaiba	Utility Survey	Life Energy	12/2023	12/2023
Chalet 2619 in Bnaider	Topographic Survey and Underground Detection	Darm Mimar Consultants	12/2023	12/2023
Residential Complex, Salmiya	Topographic survey and Underground Detection	Al Habshi Engineering Consultants	12/2023	12/2023
Small Anchor Foundations Survey at USAGM Radio Station in Matla'a	As-Built Survey	Brice Builders, LLC. ANC 8(a)	11/2023	11/2023
Tactical Vehicle Maintenance Facility at US Army Corps of Engineers, Camp Buehring	Topographic survey and Underground Detection Survey	Al-Ghanim Combined Group Co.	11/2023	11/2023
New Segment Building of KOC Ahmadi Hospital	Topographic survey and underground detection survey and FAÇADE Survey	Al Habshi Engineering Consultants	10/2023	10/2023
Farmland in Abdali (Plots 12, 16 & 17)	Topographic survey and underground detection survey and FAÇADE Survey	Al Habshi Engineering Consultants	10/2023	10/2023
Water Facilities Upgradation New Tank, Control Center Water and Substation at KOC South Tank Farm	Topographic survey and underground detection survey	Heavy Engineering Industries and Shipbuilding Co.	10/2023	10/2023
Structural Survey in Shuwaikh Area - Block B	Structural Survey	Kuwait Technical Services co.	09/2023	09/2023

Design Services for Darwaza Abdul Razzaq Rehabilitation Project	Topographic and Underground Detection Survey	Pan Arab Consulting Engineers (PACE)	09/2023	09/2023
4 nos Radar Sites in Defence Sector - 26 Al Soor Brigade Site 4	Topographic and Underground Detection Survey	Global Zone Co. Kuwait	08/2023	09/2023
Shuwaikh Coastal Development	Topographic Survey and Underground Utility Detection	Pan Arab Consulting Engineers (PACE)	07/2023	08/2023
Proposed KDF Plant in Mina Abdulla	Topographic Survey and Underground Utility Detection	Kuwaiti Engineering Group	07/2023	07/2023
KNPC New Headquarter Carparking Project	Topographic Survey and Underground Utility Detection	Al Jazirah Industrial Projects Gen. Trad. & Contracting Co. W.L.L	07/2023	07/2023
Consultancy Services for FEED Detailed Engineering for New Fire Station at MAA & MAB Refinery and Clinic Building at MAA Refinery	Underground Utility Survey of Cable and Pipe Route	Al Habshi Engineering Consultants	06/2023	06/2023
Plot 45, 46 & 47 Juliaa Chalet	Topographic Survey and Underground Utility Detection	Darwish & Mariano DMDA International	06/2023	06/2023
Wafra Economic Zone	Drone Survey	Pan Arab Consulting Engineers (PACE)	05/2023	05/2023
Consultancy Services for Storm Water Drainage System Upgrade at KOC South Tank Farm and North Tank Farm	Topographic Survey and Underground Utility Detection	United Engineering and Technical Consultants	02/2023	05/2023
Beach Erosion at Saudi Arabian Chevron (SAC) at Mina Al-Zour	Topographic Survey, Underground Utility Detection and Bathymetric Survey	Al Habshi Engineering Consultants	05/2023	05/2023
Residential Chalet at Nuwaiseeb	Topographic Survey and Underground Utility Detection	Al Habshi Engineering Consultants	05/2023	05/2023
Consultancy Services for FEED Detailed Engineering for New Fire Station at MAA & MAB Refinery and Clinic Building at MAA Refinery	Topographic Survey and Underground Utility Detection	Al Habshi Engineering Consultants	03/2023	03/2023
USAF/MOD Permanent Access Road to Cargo City, Kuwait International Airport	Topographic Survey and Underground Utility Detection	Al Qemaa Thonaeia Company	02/2023	02/2023
STORM WATER DRAINAGE SYSTEM UPGRADE - KOC STF and NTF	Topographic Survey,Underground Utility Survey and Slit Trenching Excavation	United Engineering and Technical Consultants	01/2023	10/2023
Structural Stability Survey of SCT -1 Cooling Tower	Stability and Damage Mapping	EQUATE PETROCHEMICAL COMPANY	12/2022	01/2023
Commercial Areas (A/C/D/ Districts) in Sabah Al Agmed City	Topographic Survey and Underground Utility Survey	AGI Architects	12/2022	12/2022
Enhancement and Extension of Hangers	Topographic Survey and Underground Utilty Survey	Al Jazirah Industrial Projects Gen. Trading.	11/2022	11/2022
Replacement of old and obsolete substation in MAA Refinery - Additional Cable route at RM40A	Topographic Survey and Underground Utilty Survey	Larsen & Toubro Limited	11/2022	11/2022
Updating of Topographic Survey of Othman Bin Affan Street in Sharq	Topographic Survey	PACE	10/2022	10/2022
Consultancy Services for	Slit Trenching	Gulf Spic Gen. Trad.	08/2022	09/2022

Enhancement of Desalinated		& Cont. Co. W.L.L.		
Water Import & Storage		& Cont. Co. W.L.L.		
Facilities at MAA Refinery  SKETR-2 Soil Remediation  Project Zone 2	Groundtruthing, Topographic Survey and Underground Utility Survey	Heavy Engineering Industries and Shipbuilding Co. (HEISCO)	07/2022	11/2022
Wafra Economic Zone	Topographic Survey and Underground Utilty Survey	PACE	07/2022	07/2022
Additional Bathymetric survey - Emergency Sea Outfall offshore area	Bathymetric Survey	Al Hassanain JGL Contracting WLL	06/2022	06/2022
WJO Gas Mitigation Project	Topographic Survey and Underground Utilty Survey	AIKHORAYEF Company for Sale, Maintenance & Repair of Oil Production Equipment W.L.L.	05/2022	05/2022
Emergency Sea Outfall offshore area (April 12, 2022 to May 11, 2022)	GPS RENTAL	Al Hassanain JGL Contracting WLL	05/2022	05/2022
Al Mubarakiya District Project	Topographic and Asbuilt Survey	PACE	04/2022	04/2022
Testing & Survey of SCT -2 Cooling Tower	Damage Mapping	EQUATE PETROCHEMICAL COMPANY	04/2022	04/2022
Mubarakiya District Project	Topographic Survey and Underground Utility Detection	Dar Al-Jazera Consultants	03/2022	03/2022
Wafra Joint Operation Gas Mitigation Project – SUG and Common Station	Topographic Survey and Underground Utility Detection	Alkhorayef Company for Sale, Maintenance and Repair of Oil Production Equipment LLC	03/2022	04/2022
Derwaza Al Abdulrazaq Intersection, Kuwait City	Topographic Survey and Underground Utility Detection, and As-built of Tunnel	Pan Arab Consulting Engineers	03/2022	03/2022
Ahmadi Gate Mall, East Ahmadi	Topographic Survey and Underground Utility Detection	Pan Arab Consulting Engineers	03/2022	03/2022
Installation of New LP Gas Ring Header and Associated Works at Shuaiba Industrial Area with KOC	Topographic Survey and Underground Utility Detection	MARK Technologies Gen. Trading & Contracting Co. W.L.L.	02/2022	03/2022
Abdulla Al Habshi Farmland	Topographic Survey	Al Habshi Engineering Consultants	02/2022	02/2022
New Clinic at Bneid Al Gar	Topographic Survey and Underground Utility Detection	Pan Arab Consulting Engineers	02/2022	02/2022
Jurassic Production Facility 4 at KOC North Kuwait	Topographic Survey and Underground Utility Detection	SPETCO International Petroleum Company	12/2021	01/2022
Emergency Sea Out Fall (ESO), Umm Al Hayman Waste Water Treatment	Bathymetric Survey	Al Hassanain JGL Contracting W.L.L.	12/2021	12/2021
United Dairy Kuwait Lands (Al Khalid Farm & Al Quatami Farm)	Topographic Survey and Underground Utility Detection	DAR Gulf Engineers Consultants	12/2021	12/2021
SURVEY OF SEA COOLING TOWER 1 (DAMAGE MAPPING & DIMENSIONAL STABILITY SURVEY-SCOPE C)	Damage Mapping and Dimensional Stability Survey	EQUATE Petrochemical	11/2021	12/2021

Settlement Monitoring of Road 40 Flyover – Umm Al Hayman Waste Water Pipeline Route crossing the road 40	Settlement Monitoring Survey	Al Hassanain JGL Contracting W.L.L.	02/2021	12/2021
SURVEY OF SEA COOLING TOWER 2 (DAMAGE MAPPING & DIMENSIONAL STABILITY SURVEY-SCOPE C)	Damage Mapping and Dimensional Stability Survey	EQUATE Petrochemical	08/2021	09/2021
Study, Design and Beautification of Souk Al Mubarakiya and Car Park, Kuwait City	As-built Survey of Souk	Pan Arab Consulting Engineers (PACE)	08/2021	09/2021
Topographic Survey and Underground Utilities Detection Survey for KIPIC Headquarters Office in Ahmadi	Topographic Survey and Underground Utility Detection	Al Habshi Engineering Consultants	09/2021	09/2021
US Army Corps of Engineers Logistics and Transfer Warehouses in Subhan	Topographic Survey and Underground Utility Detection	Al Hamra Kuwait	09/2021	09/2021
Upgrade (Phase 1) of Jurassic Production Facility 3 at Rhaudatain in KOC North	Additional Underground Utility Survey	SPETCO International Petroleum Company	08/2021	09/2021
Contract No.: MEW/5659- 2021/2022, Supply and Installation of 300KV Main Transformer Substation at Al Sabah Hospital "W"	Topographic Survey and Underground Utility Detection	Larsen & Toubro Limited	09/2021	09/2021
KW.21.0648 J6B PAHW BIS School, Jaber Al Ahmed City	Topographic Survey and Underground Utility Detection	AGi Architects	09/2021	09/2021
KIPIC Headquarters Office in Ahmadi	Topographic Survey and Underground Utility Detection	Al Habshi Engineering Consultants	09/2021	09/2021
KW.19.0569 Ahmed Al Sirhan Villa, Plot 16, Block 3 Khaldiya	Topographic Survey and Underground Utility Detection	AGi Architects	08/2021	08/2021
KW.13.0275 HYATT Khiran Hotel, Al Khiran	Topographic Survey and Underground Utility Detection	AGi Architects	08/2021	08/2021
Ayman Al Shaya Chalet in Bneider	Topographic Survey and Underground Utilities Detection	Dar Al Jazera Consultants	07/2021	07/2021
Tank Settlement and Topographic Survey at South Tank Farm STF Tank 24 in KOC	Settlement Survey and Topographic Survey	Al Habshi Engineering Consultants	07/2021	07/2021
Upgrade (Phase 1) of Jurassic Production Facility at Rhaudatain in KOC North	Topographic Survey and Underground Utilities Detection	SPETCO Internationa Petroleum Company WLL	06/2021	07/2021
Salmiya Rescue Center (Salmiya Marine Fire Station)	Topographic Survey and Bathymetric Survey	Naseeb Maritime Company	06/2021	06/2021
SJAM Kidney Transplant Hospital and Emad Al Bahaar Hospital for Brain & Neurosurgery	Topographic Survey and Underground Utilities Detection	AGi Architects	05/2021	05/2021
GPR and Radio Detection Scanning of Apron in Ali Al Salem Airbase	Underground Detection Services	British Links Kuwait	04/2021	04/2021
Level Baseplate of Foundation Mixer	Settlement Survey	Petrochemical Industries Company	04/2021	04/2021
Design and Supervision Services for Boubyan Capital Twin Towers, Mirqab, Kuwait	Topographic Survey and Underground Utilities Detection	PACE	03/2021	03/2021

Platform Level Monitoring of SCT1 and SCT 2	Settlement Monitoring	EQUATE	03/2021	04/2021
Crack Mapping and Structural Stability Survey of Sea Cooling Towers 1 & 2	Structural Survey and Damage Mapping	EQUATE	02/2021	04/2021
United State Agency for Global Media Antenna Expansion	Topographic Survey and Underground Utilities Detection	Brice Builders LLC	02/2021	02/2021
Shuaiba Port Jetty LMP Facility for Halliburton Baroid Fluid Services in Shuaiba Port	GPR Utility Survey	Al Farooqi Engineering Consultants Bureau	02/2021	02/2021
Hyundai and Genesis 3S Facility, Shuwaikh Area	Topographic Survey and Underground Utilities Detection	KEO Internatiuonal Consultants	02/2021	02/2021
Scouting Survey Trip for Mutriba and West Kuwait for Kuwait Oil Company	Hiring Survey Team	Arabian Geophysical & Surveying Company (ARGAS)	01/2021	01/2021
Crack Mapping Survey in Unit 85 Berthing Slab at KIPIC AL ZOUR	MAPPING Survey	Al Habshi Engineering Consultants	01/2021	01/2021
Volumetric Survey of Stock Pile at UNICONS Wafra Yard	Volumetric Survey	Union Construction Materials Manufacturing Co.	01/2021	01/2021
Emergency Sea Outfall (ESO) Pipeline Route in Umm Al Hayman Waste water Treament Plant	Topographic Survey and Underground Utilities Detection	Al Hassanain JGL for Roads, Sewage and Bridges	11/2020	12/2020
Miral Restaurant Complex in Mangaf	Structural Dimensional Survey	Arabesque United Company	10/2020	11/2020
Topographic Survey of Rasha Al Bahar	Topographic Survey and Underground Utilities Detection	AGi Architects	11/2020	11/2020
Replacement of Old and Osolete Substations in Mina Ahmadi Refinery Project	Topographic Survey and Underground Utilities Detection	L & T Construction	08/2020	10/2020
Sabah Al Ahmed City S3 Souk, Business Center & 3 Star	Topographic Survey and Underground Utilities Detection	PACE	08/2020	08/2020
New Fire Station at MAB Refinery	Topographic Survey and Underground Utilities Detection	Projects House Engineering Consultancy	07/2020	07/2020
Kuwait City Traffic Study and Road Improvements Project – Additional Survey Works	Topographic Survey and Underground Utilities Detection	PACE	07/2020	07/2020
Al Khaled Tower Architectural Survey	Architectural Survey	PACE	06/2020	07/2020
Independent Third Party for Topographical Surveyor (LNGi Project - KALI)	Topographic Survey	Hyundai Engineering & Construction Co., Ltd.	04/2020	09/2020
Ali Abdul Wahab Plot, Shuwaikh	Topographic Survey and Underground Utilities Detection	DAR Al-Jazera Consultants	04/2020	04/2020
Entertainment City Project	Topographic Survey and Underground Utilities Detection	PACE	02/2020	02/2020
Independent Third Party for Topographical Surveyor (LNGi Project - KALM)	Site Survey Services	Hyundai Engineering & Construction Co., Ltd.	01/2020	01/2020
Topographic Survey and Underground Scanning for Unaccompanied Officers Quarters in Camp Arifjan	Topographic Survey and Underground Utilities Detection	Middle East Development Company (MEDCO)	12/2019	12/2019
Pipeline Route Topographic Survey Outside and Inside of Equate Petrochemical	Topographic Survey and Underground Utilities Detection	Green Carbon Co. W.L.L.	11/2019	11/2019
As Built Survey for Stable Muhamadiyah Housing and	As Built Survey	Integrated Engineering	08/2019	08/2019

Emanda Older & Desidence		0		
Equestrian Club at Road 306, Wafra Road		Consultancy		
Kuwait City Traffic Survey Study & Road Improvement Project	Topographic Survey and Underground Utilities Detection	PACE	06/2019	08/2019
Topographic Survey for Replacement of Uniflux Heaters at MAA Refinery	Topographic Survey and Underground Utilities Detection	Sinopec engineering Group Ltd	08/2019	08/2019
Volumetric Survey for Wafra and Mina Abdullah Yard	Volumetric Survey	Jahart Berlin Co.	07/2019	07/2019
Topographic Survey and Underground Services for Construction of Billeting Facilities in Ali Al Salem Airbase	Topographic Survey and Underground Utilities Detection	British Link Company	06/2019	06/2019
Road Level Survey of Exist Road and Car Parking level at Hotel Entrance for Al Kout Mall in Fahaheel	As Built Survey	Tamdeen Shopping Centers Co.	03/2019	04/2019
Topographic Survey of Sabriya Mahuddud(SA-MA) ASP Pilot Project in KOC North	Topographic Survey and Underground Utilities Detection	Gulf Energy Company	03/2019	03/2019
Ziad Mustafa Sultan Villas	Topographic Survey and Underground Utilities Detection	Keo International Consultants	02/2019	02/2019
Work order 2008/PD/WO-090 Topographic Survey and Ground Scanning of 12" Pipeline Route from KNPC to KOTC Umm Al Aish	Topographic Survey and Underground Utilities Detection and Slit Trenching works	Amen Foster Wheeler Group Ltd/Wood	02/2019	01/2020
KMOD HQ Project in Subhan	Topographic Survey and Underground Utilities Detection	SSH	11/2018	12/2018
Subcontract for Structural survey of six existing tanks in KOC field	Site Survey Services	China Petroleum Engineering & Construction Coporation (CPECC)	08/2018	09/2018
Construction of office building for oil & vital protection dept. and perimeter fence in South Ratqa for KOC	Topographic Survey and Underground Utilities Detection	Arabi Enertec	09/2018	11/2018
Independent Third Party for Topographical Surveyor(LNGi Project-HEC)	Site Survey Services	Hyundai Engineering Co., Ltd	2018	2022
Independent Third Party for Topographical Surveyor(LNGi Project-KALI)	Site Survey Services	Hyundai Engineering & Construction Co. Ltd	2017	2020
Independent Third Party for Topographical Surveyor(LNGi Project-KALM)	Site Survey Services	Hyundai Engineering & Construction Co. Ltd	2018	2020
Road & Building Monument  Monitoring	Site Survey Services	Pizzarotti	12/2017	12/2018
Structural Survey of Shells Surface-Equate	Site Survey Services	Integrated Technical Services	06/2017	07/2017
Kuwait University(Sabah Al Salem University)	Topographic Survey and Underground Utilities Detection	KEO International	01/2017	02/2017
FDH JV NRP (Independent Third Party Surveyor)	Site Survey Services	FDH-JV	2016	2017
KNPC CFP MAB 2 (Independent Third Party Surveyor)	Site Survey Services	FDH-JV	2015	2018
Topographic Survey & Bathymetric Survey for Doha SWRO Desalination Plant with	Topographic Survey & Bathymetric Survey	Doosan Heavy Industries & Construction Co.	08/2016	09/2016

Re-carbonation System-Stage 1				
KOC New Housing Project	Topographic Survey and Underground Utilities Detection	SSH	02/2016	04/2016
KOC GC 17 & APS	Topographic Survey and Underground Utilities Detection	Gulf Energy Company	03/2016	04/2016
Shuwaikh & Hawally Pumping Station w/ Pipeline	Topographic Survey and Underground Utilities Detection	SMEC	01/2016	05/2016
Topographic Survey for 215 Radar Points	Topographic Survey	Indra Sistemas/Shamlan International	08/2015	09/2015
Topographic Survey OF Combined Gas Turbine at Subiya Power Station,SUBIYA	Topographic Survey and Underground Utilities Detection	NAPESCO	05/2015	05/2015
KNPC	Topographic Survey	AMEC	02/2015	05/2015
GC-30 in KOC North	Topographic Survey and Underground Utilities Detection	Larsen and Toubro	01/2015	02/2015
Farwaniya Hospital	Topographic Survey and Underground Utilities Detection	Al Habshi Consultants	10/2014	10/2014
Topographic Survey Road 30 Intersects	Topographic Survey and Underground Utilities Detection	KCCEC	02/2014	02/2015
EPC Work at MAB, KNPC	Topographic Survey for Pipelines Cable Route Survey	Kharafi National	01/2013	06/2013
EPC Work at Mina Abdullah, KNPC	Topographic Survey for Pipelines Cable Route Survey	Kharafi National	10/2012	12/2012
Pipe Line Route Survey at KOC	Topographic Survey for Pipeline Route Survey	Mechanical Engineering & Construction Co.	04/2012	09/2012
Bathymetric Survey at Az-Zour Power Project	Bathymetric Survey	Hyundai Heavy Engineering Industries	04/2012	06/2012
Spinal Corridor Drawing With Dimension at Sief Palace	Topographic Survey for creating as built drawings	Kharafi National	05/2011	05/2011
Topographic Survey for Construction of Maine Intake (20MW) New Elevated A-27	Topographic Survey includes above and underground services survey	HEISCO	05/2011	05/2011
Booster Station BS-171 at KOC	Topographic Survey under the instructions of the contractor	Saipem SpA Kuwait Branch	04/2011	06/2011
Wafra Farms Plan	Topographic Survey of farms for existing boundaries and features	Green Fields of Agricultural Co.	04/2011	05/2011
Rail Level Measurement at the Unisteel Factory, Shuaiba	Topographic survey for measuring the precise alignment of rails level	Danieli Engineering	04/2011	04/2011
New 4-Lane Highway Linking the Existing 212 Road and New North Ahmadi Dual Road	Topographic Survey includes above and underground services survey	United Engineering & Technical Consultants	03/2011	05/2011
CGUP GAS GATHERING FEED Project	Topographic Survey for Pipelines Routing Survey and above / underground services survey	AMEC Natural Resources for Joint Operations Wafra	03/2011	05/2011
KUWAIT CANCER CENTER LOCATED IN SABAH HOSPITAL COMPLEX	Topographic Survey includes above and underground services survey	Pan Arab Consulting Engineer	02/2011	02/2011
Salbookh Volumes Measuerments	Volumetric Survey Measurments of Salbookh Stockpiles	Al- Banan Co	01/2011	01/2011
New Traffic Licensing Department for Ministry of Interior	Topographic Survey includes above and underground services survey	Dar Kuwaiti Tech Consultants	12/2010	12/2010
Construction Work at Ali Al- Salem Air Base for U.S. Army	Topographic Survey includes above and underground services survey	Tarmeem Gen. Trad. & Cont. Co.	12/2010	12/2010
Design Work to Relocate Pipeline Manifold	Topographic Survey includes above and underground services	Saudi Arabian Chevron Inc.	12/2010	12/2010

	survey			
New IT Group Building in Ahmadi for KOC	Topographic Survey includes above and underground services survey	United Engineering & Technical Consultant	11/2010	11/2010
Bayan Palace Banqueting Kitchen Building	Topographic Survey includes above and underground services survey	Al-Khateeb Furniture Industries Co.	11/2010	11/2010
Umm Hayman Treatment Plant	Topographic Survey of pipelines	Dar Al-Handasah Consultants	11/2010	11/2010
Kuwait Sanitary Master Plan	Topographic Survey for measuring coordinates and elevation of sanitary manholes	SSH International Consultants	11/2010	11/2010
Structural Survey of Existing Building at Mina Abdullah Refinery (KNPC)	Topographic Survey to establish as-built structural drawings	O & G Engineering Gen. Trad & Cont Co	11/2010	11/2010
Construction & Modification Work at Local Marketing (KNPC)	Topographic Survey includes above and underground services survey	Al-Ghanim Combined Group	09/2010	09/2010
Water Wells Location at Several Locations in Kuwait	Topographic Survey for measuring coordinates and elevation of well locations	Kuwait Well Drilling Co.	08/2010	08/2010
New GC-16 in West Kuwait for KOC	Topographic Survey includes above and underground services survey	Al-Khorayef Group	04/2010	04/2010
Agricultural Farm in Sulaibiya	Topographic Survey includes above and underground services survey	Nizar Al-Anjari Consultants	04/2010	04/2010
New Eocene Crude Oil Pipeline from MGC at Wafra (joint Operations)	Topographic Survey includes above and underground services survey	Pika International	04/2010	04/2010
U.S. Army Patrol Roadway and Control Room	Topographic Survey includes above and underground services survey	Tarmeem Gen. Trad. & Cont. Co.	03/2010	03/2010
Clinker Production Plant at Shuaiba – Raw Materials Storage Yard	Topographic Survey for measuring the alignment of equipment rails	Kuwait Cement Co.	03/2010	03/2010
Maintenance & Repair of Tanks for KOC	Topographic Survey includes above and underground services survey	AGAM Group Co.	02/2010	02/2010
Civil & General Works for KNPC Mina Abdullah Refinery Project # CB-1163	Topographic Survey includes above and underground services survey Underground utility survey	O & G Engineering Gen. Trad & Cont Co Wajda international	02/2010	02/2010
Utilities/ services detection		Hayat		on going
Utilities/ services detection	Underground utility survey	communication	03/2008	on going
Salbookh Volumes Measurements	Volumetric Survey Measurements of Salbookh Stockpiles	Shaheen Al-Ghanim Co.	12/2009	01/2010
120 MBOPD Early Production Facility	Topographic Survey for Cable Route inside BS-131, North Kuwait	Al-Rashed Group	01/2010	01/2010
Contract NO. LM/0022 Const. of R.C. Pipe Culverts & Open Ditches for Protection of Product Pipelines	Topographic Survey Report for Areas 8, 9, 10 & 11	Alghanim Combined Group General Trad. & Cont. Co	12/2009	01/2010
Utility & Topographic Survey for Area 50 x 50 m located in Mina Abdullah inside Kirby Factory	Utility and Detection works	Safari For General Trading Co.	12/2009	12/2009
Utility Survey Work at Various	Utility and Detection works	Shabakkat Co.	11/2009	2010

Sites in Kuwait				
Salbookh Volumes Measuerments	Volumetric Survey Measurments of Salbookh Stockpiles	Al- Banan Co	12/2009	01/2010
New Traffic Licensing Department Building at Jahra	Topographic Survey and detection works	Dar Kuwaiti Tech Consultants	12/2009	12/2009
Electricity and water Training institute Extension Project	Topographic Survey for all Site (Souikh)	Alia El Saigh Engineering Consultant Office	10/2009	11/2009
Boundary and Building Survey for Company Assets, Kuwait	Boundary Survey including the ownership boundaries, the existing buildings inside the sites and the surrounding boundary walls and fences within the site limits	Touristic Enterprises Company	8/2009	05/2010
Lakes in Al-Kout Mall, Fahaheel	Topographic Survey	Al-Sabaiea National Cont. & Gen. Trad. Co.	08/2009	08/2009
Pipeline Project at JOint operation, wafra	Topographic Survey	Pika International	07/2009	08/2009
The New Traffic Licensing Department Building at Hawalli	Topographic Survey	Dar Kuwaiti Tech Consultants	07/2009	08/2009
AL-Daboss Commercial Complex	Architectural & Structural Survey for Al-Dabbous Commercial Complex	SAAC Architectural Consultants	07/2009	09/2009
Topographic Survey Proposal for survey Around the Marriage Hall In Bneid Al-Gar & Dasmah	Topographic Survey	Mimar Consultants	06/2009	06/2009
3 Plots at Kazma, Samoud & Tahreer Camps	Topographic Survey	Kuwaiti Engineering Group	05/2009	06/2009
Contract NO. LM/0022	Const. of R.C. Pipe Culverts & Open Ditches for Protection of Product Pipelines at 16 locations (areas)	Alghanim Combined Group General Trad. & Cont. Co	05/2009	07/2009
4 Plots at National Guard Camps in Power Stations of Kuwait	Topographic Survey	Dar Al Dabbous Consulting Engineers	05/2009	06/2009
Topographic Survey for Umm Al Hyman STP Extension Works At Umm Al Hyman, Kuwait	Topographic Survey Works	Dar Al-Hanadasah Shair & Partners	4/2009	05/2009
Updating As-Built Drawings for all KOC facilities. Project # 36678	Topographic Survey Works	Gulf Spic Contracting Co.	11/2008	01/2011
Civil Engineering Services Contract No. (JO/SC188/MP07)	Topographic Survey for Wafra Oilfields, Pipelines Routing Survey and Positioning of Explatory Wells using GPS	Saudi Arabian Chevron & Kuwait Gulf Oil Co. (Joint Operation)	10/2008	04/2012
Topographic Survey & Bathymetric survey for SHUWAIKH RO DESALINATION PLANT	Topographic & Bathymetric survey	DOOSAN HEAVY INDUSTRIES AND CONSTRUCTION CO.	5/2008	10/2008
Topo Survey outside GC- 16&Pipeline from TP-4 toPig launcher at GC-16 (KOC WK Managish)	Topographic survey	Safwan Petreluem &Tech.	4/2008	6/2008
Topo Survey outside GC- 190&Point A (KOC North Kuwait)	Topographic survey	Safwan Petreluem &Tech.	4/2008	4/2008
Volumetric Measurements of Stockpiles	Volumetric Survey	Salbookh Trading Co.	4/2008	4/2008
Topo Survey for Benid AL-gar Slip way & Parking	Topographic survey	Touristic Enterpriser	4/2008	4/2008

SulaibiyWWT Expansionation	Topographic survey	Kharafi National co.	3/2008	3/2008
Volumetric Measurements of	Volumetric Survey	Shaheen Al- Ghanim	3/2008	3/2008
Stockpiles		Co.	3/2000	3/2000
Rail level measurement for CSU Traveling Rails	Checking Rail Aligmement & Levels	Kuwait Cement Company	3/2008	3/2008
Gas compression plants at KOC WK Managish	Topographic survey	Safwan Petreluem &Tech.	3/2008	3/2008
Radio Detection for Buried Services & Utilities مشروع KNPCبميناء الاحمدي مكاتب	Utilities Services Detection KNPC Office – Ahmadi Port	Kuwait Dynamics Ltd. (KDL)	02/2008	02/2008
RFQ for Marine Survey Work	As built Path metrics	Mushrif Trading & Contracting Co (Marine Construction)	01/2008	01/2008
Structural Evaluation Two Story Building at Shuaiba	Structure Evaluation Survey	Al Derwaza Consultancy Office	01/2008	01/2008
Saleh Shehab Resort at Julai'a	Topographic Survey	Universal United Real Estate Consultancy	01/2008	01/2008
Volumetric Measurements of Stockpiles	Volumetric Survey	Al- Bnan Co.	12/2007	12/2007
Volumetric Measurements of Stockpiles	Volumetric Survey	Salbookh Trading Co.	12/2007	12/2007
Volumetric Measurements of Stockpiles	Volumetric Survey	Shaheen Al- Ghanim Co.	12/2007	12/2007
Replacement of 9 Crude Oil Filling Lines Project,	Constructor Survey for Civil Work	Daelim Industrial Co., Ltd.	12/2007	02/2009
Replacement and Upsizing of only water drain piping in NTF	Topographic Survey	Finesco International	11/2007	06/2008
Cont. No. JO/SC166/MM07 Industrial Facility Services locations of sheds, Concrete flooring and site office	Topographic Survey	Tariq Al Ghanim Gen. Trad. & Cont. Co.	09/2007	10/2007
Site of Oil Ikea Warehouse at Shuwaikh	Topographic Survey	Brain Storm Co.	08/2007	11/2007
Two Pipeline Routes from Disposal Water wells SA244 & RA259 to EPF Plant	Topographic Route Survey	Safwan Petroleum Technologies Co.	07/2007	10/2007
Replacement of 12" dia fresh and 10" dia drain water lines at south tank farm, Ahmadi	Topographic Survey	Mechanical Eng. & Contracting Co. (MECC)	05/2007	11/2007
Gas oil pipeline from MAA Gas Turbine station at Subiya Power Station, Cont. No. 33388- Installatiuon of 20"	Topographic Survey	METALEX	05/2007	11/2007
Route of Optic Fiber cable bet. New EPF & GC-15 Control Room	Topographic Route Survey	Safwan Petroleum Technologies Co.	07/2007	10/2007
MTC Headquarter Building Extension Shuwaikh	Utility Survey	Khalid Ali Al-Kharafi & Bros. Co. W.L.L.	06/2007	06/2007
site of 3-Legged Tower at K- Crossing	Topographic Survey	Burgan One Commercial Establishment	06/2007	06/2007
Mercedes Benz Service Center, Shuwaikh	Topographic Survey	Kuwaiti Engineering Group	05/2007	06/2007
Kuwait Regency Palace Hotel	Topographic Survey	Al-Khateeb Furniture Industries Co.	05/2007	06/2007
Equipment Verticality Survey	Equipment Verticality Survey	Gulf Spic Contracting Co.	05/2007	05/2007

		W.L.L.		
Sheikh Khalifa Bin Zayed City -	Volumetric Survey	The Associated	05/2007	05/2007
Gaza, Palestine		Engineering		
		Partnership	0.4/0.00	05/0005
Installation of New 20" Gas	Topographic Survey	Matalex	04/2007	05/2007
Pipeline from Mina Al–Ahmadi		Construction		
to Subiyah Power Station	Topographia Survoy	Industry Trading International Broad	04/2007	04/2007
The new MW Project - NK	Topographic Survey	casting Bureau	04/2007	04/2007
Mina Abdullah & Amgara	Volumetric measurements of stock	Shaheen Alghanim	04/2007	04/2007
Factories	piles	Co.	04/2007	04/2007
Al-Jadeer Trading Co. (Farm) at	Topographic Survey	Al-Matouk	04/2007	04/2007
Abdally	Topograpine ourvey	Consultants & Proj.	04/2007	04/2007
Abdany		Management		
Site of Sultan Center	Topographic Survey	Brain Storm Co.	04/2007	04/2007
Restaurant in Salmiya				
Commercial Complex at Qibla	Topographic Survey	Pan Arab Consulting	03/2007	03/2007
Area		Engineers W.L.L.		
Volumetric measurements	Volumetric measurements of stock	Salbook Tradings	01/2007	01/2007
	piles			
Volumetric measurements	Volumetric measurements of stock	Jawhara Berlin	01/2007	01/2007
	piles	General Trading &		
	·	Contracting Co.		
Stockpiles Survey	Carry out a survey of the stockpiles	Al Banan Trading	01/2007	01/2007
	at their yard at Mina Abdullah	Co.		
Stockpiles Survey	Carry out a survey of the stockpiles	Salboukh Trading	12/2006	12/2006
	at their yard	Co.		
Japanese Embassy	Topographic survey with above	SSH International	12/2006	12/2006
	and underground utilities	Consultants		
Stockpiles Survey	Carry out a survey of the stockpiles	Shaheen Al-Ghanim	12/2006	12/2006
	at their yard on the Mina Abdullah	Co.		
1600 5 1 1 1 1 1 1 1 1	and Amghara area		1.1/0000	10/000
KOC Project at Ahmadi	Setting out for construction	Al-Hana Gen. Trad.	11/2006	12/2006
Fitness Courter Court at Davis	purpose of the project	& Cont. Co.	44/0000	11/0000
Fitness Center Guest at Bayan Palace	Topographic survey with above and underground utilities	SSH International	11/2006	11/2006
Joint Operation at Wafra	Volumetric Survey	Consultants Joint Operation	10/2006	10/2006
Stockpiles Survey	Carry out a survey of the stockpiles	Shaheen Al-Ghanim	09/2006	10/2006
Stockpiles Survey	at their yard on the Mina Abdullah	Co.	09/2006	10/2006
	and Amghara area	C0.		
Headquarter of Criminal	Topographic survey with above	Kuwait Engineering	09/2006	10/2006
Evidence	and underground utilities	Group	03/2000	10/2000
Oil Well Locations at Wafra J.O.	Topographic Survey for oil wells	Join Operations	09/2006	09/2006
On Wen Educations at Wana 5.0.	locations	Join Operations	03/2000	03/2000
Joint Operations at Wafra	Topographic survey for plant and	Join Operations	09/2006	09/2006
our operations at Wand	pipeline route	Com Operations	00/2000	00/2000
Joint Operations at Wafra	Topographic survey for pipeline	Join Operations	09/2006	09/2006
comit operations at trains	corridor	Com Operations	00,200	00,200
Joint Operations at Wafra	Setting out Khafji Road	Join Operations	09/2006	10/2006
Chalet at Mina Abdullah	Topographic survey and utilities	Housing Finance	08/2006	08/2006
	detection	Company		
Joint Operations at Wafra	Topographic survey for	Join Operations	08/2006	08/2006
•	evaporation pits	'		
Al-Jazeera Airways	Topographic survey with above	SSH International	08/2006	08/2006
Maintenance Facilities	and underground utilities	Consultants		
Gateway Hotel at Kuwait	Topographic survey with above	SSH International	07/2006	07/2006
International Airport	and underground utilities	Consultants		
KGOC Headquarter at Ahmadi	Topographic survey with above	Kuwait Gulf Oil Co.	07/2006	07/2006
<u> </u>	and underground utilities			
Steel Melting Shop	Topographic survey with above	UNISTEEL CO.	07/2006	07/2006
	and underground utilities	ì	1	

Stockpiles Survey	carry out a survey of the stockpiles	Shaheen Al-Ghanim	06/2006	06/2006
Stockpiles Survey	at their yard on the Wafra Road	Co.	06/2006	00/2006
	and amghara area	00.		
Joint Operations at Wafra	Topographic survey of pipeline route	Join Operations	06/2006	06/2006
KOC Project North Kuwait	Topographic survey of plant and pipelines	SAFWAN Petroleum Co.	05/2006	05/2006
Joint Operations at Wafra	Setting out of pipeline from MGC to SUG	Join Operations	05/2006	05/2006
Kuwait Sea Sport Clup at Salmiya	Topographic survey with above and underground utilities	Kuwaiti Tech Consultants	05/2006	05/2006
V.V.I.P. Building at Kuwait Int. Airport	Setting out works	MASS United Co.	04/2006	04/2006
Mina Ahmadi Refinery Bench Marks	Coordinates fixing for bench marks	Al-Ghanim International Co.	03/2006	03/2006
Stockpiles Survey at Mina Abdullah	Volumetric Survey	Al-Banan Co.	01/2006	01/2006
Civil Engineering Services Contract No. (JO/SC95/MP04)	Topographic Survey for Wafra Oilfields, Pipelines Routing Survey and Positioning of Explatory Wells using GPS	Saudi Arabian Chevron & Kuwait Gulf Oil Co. (Joint Operation)	07/2005	10/2008
Contract No. JO/SC27/MP01 For Civil Engineering Services	Replacement Of Existing Wk Fuel Gas Line By New 24" New Pipeline	Arabi Enertech For Joint Operations	01/2005	04/2005
Stockpiles Survey	carry out a survey of the stockpiles at their yard on the Wafra Road and amghara area	Shaheen Al-Ghanim Co.	01/2005	01/2005
Porsche Centre Show Room Extension Project	Topographic Survey Porsche Centre Extension Project	Salem Al-Marzouk & Sabah Abi Hanna	12/2004	12/2004
Water Disposable Facility At Wafra (Cont. Jo/Hc014/Mp03)	Topographic Survey	Arabi Enertech	09/2004	10/2004
12" Gas Pipeline Route Parallel To Nic Fence At Shuiba Industrial Area	Topographic Survey	Gulf Shores Co. (GSSCO)	08/2004	09/2004
Kuwait National Assemply	Site Survey for Kuwait National Assebly	Sief Engineering Consultants	07/2004	08/2004
Mubarak Al-Abdullah Neighborhood Center	Topographic Survey	Industrial & Engineering Consulting Office	12/2003	01/2004
Training Center At Joint Operations – Wafra	Topographic Survey	Kuwait Engineering Group	11/2003	11/2003
INTERNATIONAL Hospital At Salmiya	Topographic Survey	Gilbert Dabbous Architect	11/2003	11/2003
12" Gas Pipeline Route Parallel To Nic Fence	Topographic Survey	National Industries Co	10/2003	11/2003
Environmental Public Authority Headquarters At Shuwaikh Industrial Area, Kuwait	Topographic Survey	Al-Jazera Consultants	10/2003	10/2003
Subiya-Study Of Land Allocation For Housing Care	Topographic Survey	Dar Al-Handasah	10/2003	10/2003
Traditional Houses At Failaka Housing Area	Topographic Survey	Kuwait United Const. Management	09/2003	09/2003
For The Project Design Of Gulf Paramount Services Ltd. Kuwait At Amghara Industrial Area	Topographic Survey	Industrial & Engineering Consulting Office	09/2003	09/2003
South Surra Center Of Al-	Topographic Survey	Industrial & Eng.	05/2003	05/2003

# **8.4 ENVIRONMENTAL TESTING**

PROJECT	SCOPE OF WORK	CLIENT	START	END
North Kuwait Excavation, Transportation And Remediation (NKETR) ZONE-2 Project At KOC- NK, State Of Kuwait	Drilling Boreholes & Installing 2" Dia. Piezometers (3m Depth)	J.V. Of Kuwait Co. for Process Plant Construction & Contracting (KCPC) and Environmental Technology Co. (ETC)	11/2022	11/2022
South Kuwait Excavation, Transportation And Remediation (SKETR) ZONE-1 Project At KOC- NK, State Of Kuwait	Drilling Boreholes & Installing 2" Dia. Piezometers (3m Depth) & Groundwater Monitoring Wells (15m Depth)	J.V. Of Khalid Ali Al Kharafi & Brothers Co. & Lamour Corp.	10/2022	11/2022
North Kuwait Excavation, Transportation And Remediation (NKETR) ZONE-1 Project At KOC- NK, State Of Kuwait	Drilling Boreholes & Installing 2" Dia. Piezometers (3m Depth) & 4" Dia. Groundwater Monitoring Wells (51m & 61m Depth)	J.V. Of Khalid Ali Al Kharafi & Brothers Co. & Lamour Corp. Ab	08/2022	10/2022
South Kuwait Excavation, Transportation And Remediation (SKETR) ZONE-2 Project At KOC- SK, State Of Kuwait	Drilling Boreholes & Installing 2" Dia. Piezometers (3m Depth) & 4" Dia. Groundwater Monitoring Wells (30m Depth)	J.V. Of HEISCO & Hangzjou ST Co. Ltd	08/2022	08/2022
Sulaibiya Quarry, Block-01, Plot-7, State of Kuwait	Drilling Borehole & Installing Piezometer with Groundwater Level (GWL) Monitoring	Kadhema Scientific Consultancy & Services	03/2022	04/2022
Environment Assessment Of A Proposed Residential Area Used For Scrap Tires Disposal At Sulaibiya Area, State Of Kuwait	Drilling Boreholes To 10m And 15.0m With Soil Sampling	Dr. Anwar Al Yaqout Kuwait University	02/2022	02/2022
Research study on the Effects of Reverse Osmosis Units Brine Reject from Agricultural Farms on the Groundwater Quality and Levels in Abdally Farms, State of Kuwait.	Drilling & Construction of Three Ground Water Monitoring Wells with Pumping Test	Kuwait Institute for Scientific Research (KISR)	12/2021	02/2022
WTE-Emergency Sea Outfall Project, Umm Al Hayman, State of Kuwait	Drilling Boreholes & Installing Two Piezometers, with Groundwater level Monitoring	Al Hassanain JGL Contracting W.L.L.	11/2021	11/2021
Al Zour New Refinery Project (NRP)	Drilling Boreholes & Installing Ground Water Monitoring Wells	NBTC Group-Kuwait for KIPIC	02/2021	03/2021
Shuaiba Landfill Site (LF-15) at West Shuaiba Industrial Area, Block-11, State of Kuwait	Drilling of Validation Boreholes to different depths, between 13.5m & 30m depth, with Sample Collection	Dar Al Bea'a Environmental Consultants Co. For: Kuwait Environment Public Authority (KEPA)	11/2020	11/2020
South of Seventh Ring Road Landfill Site (LF-01) Kab'd, State of Kuwait	Drilling of New Gas Boreholes (80 Nos.) boreholes to different depths, between 1m & 10m depth for Gas Monitoring	Dar Al Bea'a Environmental Consultants Co. For: Kuwait Environment Public Authority (KEPA)	09/2020	10/2020
Construction of Ali	Drilling Borehole & Installing Piezometer,	Ali Abdulwahab Al-	09/2020	09/2020

Abdulwahab Commercial Building At Shuwaikh, Block- G, Plot- 256, State of Kuwait	with Groundwater level Monitoring	Mutawa Commercial Co.		
South of Seventh Ring Road Landfill Site (LF-01) Kab'd, State of Kuwait	Drilling Boreholes & Installing Four (4) New Water Wells for groundwater monitoring & sampling.	Dar Al Bea'a Environmental Consultants Co. For: Kuwait Environment Public Authority (KEPA)	09/2020	09/2020
Amghara (Rheyya Tyre) Landfill Site (LF-20) Amghara Area, State of Kuwait	Drilling boreholes and Installing Two (2) New Water Wells for groundwater monitoring & sampling	Dar Al Bea'a Environmental Consultants Co. For: Kuwait Environment Public Authority	09/2020	09/2020
Jahra Landfill Site (LF-03) Jahra Area, State of Kuwait	Drilling Boreholes and Installing Four (4) New Water Wells for groundwater monitoring & sampling	Dar Al Bea'a Environmental Consultants Co. For: Kuwait Environment Public Authority	08/2020	09/2020
Subhan Military Area Landfill Site (LF-07), Subhan Area, State of Kuwait	Drilling Boreholes and Installing Three (3) New Water Wells for groundwater monitoring & sampling	Dar Al Bea'a Environmental Consultants Co. For: Kuwait Environment Public Authority	06/2020	11/2020
Jahra Landfill Site (LF-03) At Jahra Area, State of Kuwait	Drilling New Gas Boreholes (69 Nos.) to different depths, between 1m & 10m depth for Gas Monitoring	Dar Al Bea'a Environmental Consultants Co. For: Kuwait Environment Public Authority	07/2020	07/2020
South of Seventh Ring Road Landfill Site (LF-01) Kab'd, State of Kuwait	Drilling Boreholes (33Nos.) to different depths, between 9m & 50m depth, with Sample Collection	Dar Al Bea'a Environmental Consultants Co. For: Kuwait Environment Public Authority	07/2020	08/2020
Kabd Landfill Site (LF-04) At South of 7th Ring Road, State of Kuwait	Drilling New Gas Boreholes (21Nos.) to different depths, between 1.0m & 6.0m depth for Gas Monitoring	Dar Al Bea'a Environmental Consultants Co. For: Kuwait Environment Public Authority	03/2020	03/2020
Rheyya Tyre Landfill Site (LF-20) At Sulaibiya, State of Kuwait	Drilling of Two (2) Validation Boreholes of 2m and 20m depth, with sample collection	Dar Al Bea'a Environmental Consultants Co. For: Kuwait Environment Public Authority	03/2020	03/2020
Kabd Quarry Landfill Site (LF-12), Kabd Area, State of Kuwait	Drilling New Gas Boreholes (9Nos.) to different depths, between 1m & 6m depth for Gas Monitoring	Dar Al Bea'a Environmental Consultants Co. For: Kuwait Environment Public Authority	03/2020	03/2020
Subhan Military Area Landfill Site (LF-07) At Subhan Area, State of Kuwait	Drilling Boreholes (43Nos.) to different depths, between 1m & 10m depth, with Sample Collection	Dar Al Bea'a Environmental Consultants Co. For: Kuwait	03/2020	03/2020

		Environment Public Authority		
Jahra Landfill Site (LF-03) At Jahra Area, State of Kuwait	Drilling Boreholes (25Nos.) to different depths, between 11m & 48m depth, with Sample Collection	Dar Al Bea'a Environmental Consultants Co. For: Kuwait Environment Public Authority	02/2020	03/2020
Kab'd Animal Waste Dumping Site (LF-14) in Kabd Area, State of Kuwait	Drilling borehole and Installing one (1) New Water Well for groundwater monitoring & sampling	Dar Al Bea'a Environmental Consultants Co. For: Kuwait Environment Public Authority	02/2020	03/2020
East Sulaibiya Landfill Site (LF-13) at Sulaibiya Area, State of Kuwait	Drilling borehole and Installing one (1) New Water Well for groundwater monitoring & sampling	Dar Al Bea'a Environmental Consultants Co. For: Kuwait Environment Public Authority	02/2020	03/2020
Western Yarmouk Landfill Site (LF-10) in Yarmouk Area, State of Kuwait	Drilling boreholes and Installing Three (3) New Water Wells for groundwater monitoring & sampling. Drilling New Gas Boreholes (2Nos.) to 4m depth for Gas Monitoring	Dar Al Bea'a Environmental Consultants Co. For: Kuwait Environment Public Authority	01/2020	02/2020
Arifjan Landfill Site (LF-11) at Arifjan Area, State of Kuwait	Drilling boreholes and Installing Three (3) New Water Wells for groundwater monitoring & sampling. Drilling New Gas Boreholes (3Nos.) to 4m depth for Gas Monitoring	Dar Al Bea'a Environmental Consultants Co. For: Kuwait Environment Public Authority	01/2020	02/2020
Qurain Landfill Site(LF-08) at Qurain Area, State of Kuwait	Drilling boreholes and Installing Four (4) New Water Wells for groundwater monitoring & sampling. Drilling New Gas Boreholes (84Nos.) to different depths between 1m and 13.5m depth for Gas Monitoring	Dar Al Bea'a Environmental Consultants Co. For: Kuwait Environment Public Authority	01/2020	02/2020
Wafra (km14) Industrial Waste Water Site (LF-17) at Wafra Area, State of Kuwait	Drilling boreholes and Installing Three (3) New Water Wells for groundwater monitoring & sampling.	Dar Al Bea'a Environmental Consultants Co. For: Kuwait Environment Public Authority	01/2020	02/2020
West Sulaibiyah (Amghara) Landfil Site (LF-06) at Sulaibiya Area, State of Kuwait	Drilling boreholes and Installing Four (4) New Water Wells for groundwater monitoring & sampling.	Dar Al Bea'a Environmental Consultants Co. For: Kuwait Environment Public Authority	02/2020	02/2020
Mina Abdullah Landfill Site (LF-02) at Mina Abdullah, State of Kuwait	Drilling Borehole (12m depth) with Sample Collection	Dar Al Bea'a Environmental Consultants Co. For: Kuwait Environment Public Authority	02/2020	02/2020
Sulaibiya West (Amghara) Landfill Site (LF-06) At Sulaibita Area, State of Kuwait	Drilling Boreholes (90Nos.) to different depths, between 1.5m & 10m depth, with Sample Collection	Dar Al Bea'a Environmental Consultants Co. For: Kuwait Environment Public Authority	01/2020	01/2020

Subhan Military area	Drilling Validation Boreholes (10Nos.) to	Dar Al Bea'a	12/2019	12/2019
Landfill Site (LF-07) in Subhan Area, State of	different depths, between 10m & 35m	Environmental Consultants Co.		
Kuwait	depth, with Sample Collection	For: Kuwait		
rawan	With Campio Concention	Environment Public		
		Authority		
Kabd Quarry Landfill Site	Drilling Validation Boreholes (6Nos.) to	Dar Al Bea'a	12/2019	12/2019
(LF-12), Kabd Area, State	different depths, between 7m & 33m depth,	Environmental		
of Kuwait	with Sample Collection	Consultants Co.		
		For: Kuwait Environment Public		
		Authority		
Mina Abdullah Landfill Site	Drilling Boreholes (10Nos.) to different	Dar Al Bea'a	09/2019	10/2019
(LF-02) at Mina Abdullah,	depths, between 6m & 31m depth,	Environmental		
State of Kuwait	with Sample Collection	Consultants Co. For: Kuwait		
		Environment Public		
		Authority		
Mercury Contaminated Soil	Drilling Boreholes (2Nos.) to 10m & 27m	Dar Al Bea'a	09/2019	10/2019
Site (LF-19) in Mina	depth, with Sample Collection	Environmental		
Abdullah, State of Kuwait		Consultants Co.		
		For: Kuwait		
		Environment Public Authority		
Kab'd Animal Waste	Drilling Boreholes (9Nos.) to different	Dar Al Bea'a	08/2019	08/2019
Dumping Site (LF-14),	depths, with Sample Collection	Environmental	00/2013	00/2013
Kab'd area, State of		Consultants Co.		
mKuwait		For: Kuwait		
		Environment Public		
E + 0 + 3 : 1   1511 0 :	D.III. D. 1 1 (40)1 ) 1 155	Authority	00/0040	00/0040
East Sulaibiya Landfill Site (LF-13) at Sulaibiya Area,	Drilling Boreholes (43Nos.) to different depths, with Sample Collection	Dar Al Bea'a Environmental	08/2019	08/2019
State of Kuwait	depuis, with Sample Collection	Consultants Co.		
Clate of Hawaii		For: Kuwait		
		Environment Public		
		Authority		
Jleeb Shouyukh Landfill	Drilling Boreholes (92Nos.) to different	Dar Al Bea'a	06/2019	06/2019
site (LF-05) At Jleeb	depths, with Sample Collection	Environmental		
Shouyukh, State of Kuwait		Consultants Co. For: Kuwait		
		Environment Public		
		Authority		
Arifjan Landfill Site (LF-11)	Drilling Boreholes (9Nos.) to different	Dar Al Bea'a	04/2019	04/2019
At Arifjan, State of Kuwait	depths, with Sample Collection	Environmental		
		Consultants Co.		
		For: Kuwait Environment Public		
		Authority		
West Yarmouk Landfill	Drilling Boreholes (12Nos.) to different	Dar Al Bea'a	03/2019	03/2019
Site (LF-10) At Yarmouk	depths, with Sample Collection	Environmental		
Area, State of Kuwait		Consultants Co.		
		For: Kuwait		
		Environment Public		
Amghara Landfill Site (LF-	Drilling Boreholes (15Nos.) to different	Authority Dar Al Bea'a	03/2019	03/2019
06) At West Sulaibiya	depths, with Sample Collection	Environmental	00/2019	00/2018
Area, State of Kuwait	and the second s	Consultants Co.		
		For: Kuwait		
		Environment Public		
Made Adles to test	Dulling Danahalis (40NL) \ 188	Authority	00/0040	00/0040
Wafra 14km Industrial	Drilling Boreholes (12Nos.) to different	Dar Al Bea'a	03/2019	03/2019
Waste Water Landfill Site	depths, with Sample Collection	Environmental		

(LF-17) At Wafra Area, State of Kuwait		Consultants Co. For: Kuwait		
		Environment Public Authority		
Mutlaa, Plot 311, 378, 399 Quarry Site	Drilling of 30m deep boreholes (30m depth), with soil sampling, visual classification and physical tests in laboratory	Solutions for Environmental Consultancy	11/2019	11/2019
Conducting In-Situ Hydraulic Conductivity Tests for Compacted Calcareous Sand (Gatch) Liners in Municipal Solid Waste Landfill in Kuwait , Project No. EV/ 01/06 2010-2009 / 110	Construction of compacted pads, installation of Sealed Double Ring Infiltrometer, long-term monitoring of permeability, and submitting statistical records.	Kuwait Institute of Scientific Research Center (KISR)	12/2009	3/2011
Collecting Water Samples and Detection of Hydrogen Sulphide (H <sub>2</sub> S) at Salmiya (Symphony Mall)	Drilling of 12" dia borehole to 30m depth, Installation of well (8" diameter PVC-Blank and screened) and installation submersible pump for the purpose of collecting ground water samples for H <sub>2</sub> S detection	Commercial Real Estate Co.	06/2010	06/2010
Drilling of Boreholes and Installation of CMT multi channel system for monitoring wells at KNPC- Mina Shuaiba (MSH), Mina Ahmadi (MAA)	Drilling of 8" dia borehole to 12m and 18m depths, Installation of continuous multi channel tubing (CMT) for 4" dia monitoring well. (4" diameter PVC-Blank and screened)	Kuwait Institute of Scientific Research Center (KISR)	12/2008	12/2008
Drilling of Boreholes for Soil & Groundwater Sampling at SA-276, SA- 198, & NWRA-0001 at Sabriya & North West Rawdatain, North Kuwait Oilfields	Drilling of 8" dia borehole to depths between 5m and 30m depth by using Hollow Stem Augers.	Kuwait Institute of Scientific Research Center (KISR)	07/2008	07/2008
Drilling Production Well for Collecting Water Samples and Detection of Hydrogen Sulphide (H <sub>2</sub> S) at Sharq, Block 4, Plot 1	Drilling of 12" dia borehole to 30m depth, Installation of well (8" diameter PVC-Blank and screened) and installation submersible pump for the purpose of collecting ground water samples for H <sub>2</sub> S detection	Al Jazera Consultants	01/2007	01/2007
Drilling Production Well for Collecting Water Samples and Detection of Hydrogen Sulphide (H <sub>2</sub> S) Concentrations at Qibla, Block 1, Plot 2	Drilling of 12" dia borehole to 30m depth, Installation of well (8" diameter PVC-Blank and screened) and installation submersible pump for the purpose of collecting ground water samples for H <sub>2</sub> S detection		02/2007	02/2007
Drilling Production Well for Collecting Water Samples and Detection of Hydrogen Sulphide (H <sub>2</sub> S) Concentrations for various Project in Kuwait City	Drilling and Installation of water well to 30 m depth for the purpose of collecting ground water samples for H <sub>2</sub> S detection	Al Jazera Consultants	01/2007	01/2007
Al-Waqayan Tower At Dirwaza Abdulrazaq, State of Kuwait  Soil Irrosions	Drilling and Installation of water well to 30 m depth for the purpose of collecting ground water samples for H2S detection under the supervision of Kuwait Institute of Scientific Research	PROJACS	12/2006	12/2006
Water Well at Subiya, State of Kuwait	Drilling and Installation of Water Well to 50m depth.	Greenland Establishment	12/1998	12/1998

# **8.5 STRUCTURAL EVALUATION**

PROJECT	SCOPE OF WORK	CLIENT	START	END
On Load Test for Slab on Grade – Slab Type III (GA PLAN GF-B02 – G/21 – Length 7m) For Al-Khiran Outlet Mall at Khiran, Plot 4151, State of Kuwait	Load Test for Slab	Alghanim International Gen.Trad. & Contracting Co. for Tamdeen	10/2019	10/2019
On Load Test Data for Bridge1 & 2, Construction, Completion & Maintenance of Roads, Bridges, Storm Water Drainage, Sewers and Other Services for Road Connecting Abdullah Port & Wafra, Contract No. RA/238, State of Kuwait	Field and laboratory testing of concrete, soil investigation, structural analysis and recommendations	Alghanim International Gen.Trad. & Contracting Co. for MPW Roads & Engineers Sectors	2/2018	02/2018
Structural Survey, Material testing & Sub-surface Condition D-1403-EU-1, Ethylene Tank	Field and laboratory testing of concrete, soil investigation, structural analysis and recommendations	Integrated Technical Services for EQUATE	11/2017	11/2017
Load test of Basement slab of admin building for lower fars heavy oil development program phase-1 administration building	Field and laboratory testing of concrete, soil investigation, structural analysis and recommendation of repairs	Consolidated Contractors co. (CCC) for KOC	9/2017	9/2017
Structural Evaluation of UT-2 Exchanger Piers	Field and laboratory testing of concrete, soil investigation, structural analysis and recommendation of repairs	EQUATE via Al- Khadda International Trading and Contracting Co.	12/2012	12/2012
Structural evaluation for KN new headquarter at Shuwaikh Free Zone	Field monitoring of concrete slab settlement / deflection with loading and unloading (Loading Tests)	Kharafi National	03/2011	04/2011
Structural evaluation for Unit- 15 at Mina Abdullah (KNPC)	Field and laboratory testing of concrete and steel, and structural analysis of building	O & G Engg.W.L.L. for Gen. Trad. & Contracting co. for KNPC	09/2010	09/2010
Zakari Al Ansaree Library at Shamiya	Report For Completion of Field Data Loading & Unloading Tests for Beams	Kuwait University for Ministry of Education	02/2010	03/2010
Structural Evaluation for Abdullah Ibn Omar Mosque at Jahra Area, Kuwait	Soil Investigation, Material Testing , structural analysis and recommendation	Abdul Hamid Al- Essa General Trading Co.	02/2010	03/2010
Soil Investigation for Data Collection-Structural Evaluation of Three Foundations (V-35- 101, V-35-102 & V-35-103) at KNPC, MAB Refinery, Mina Al Abdulah, Kuwait	Field and laboratory testing of concrete, soil investigation, structural analysis and recommendations	O & G Enginering W.L.L for General Trading& Contracting for KNPC	01/2010	02/2010
Structural Evaluation for Al- Khalifa Mosque at Sharq, Kuwait	Soil Investigation, Material Testing , structural analysis and recommendation	Abdul Hamid Al-Essa General Trading Co.	01/2010	03/2010
Structural Evaluation for Crane	Field and laboratory testing of concrete, soil investigation, structural analysis and	Boodai Construction Co. for KNPC	12/2009	01/2010

## LIST OF PROJECT/S (PILE TESTING & INSTRUMENTATION WORKS)

S/I	PROJECT	SCOPE OF WORK	CLIENT	Start Date	End Date
1	THE SCIENTIFIC CENTER PROJECT	Pile Integrity Test (PIT)	Ghannam & Al Sayegh Co.	Jan-24	Feb-24
2	5th Ring Road RA/257 Project	Pile Integrity Test and Cross Hole Sonic Logging Test	Kuwait Bruckner	Dec-23	Ongoing
3	THE SCIENTIFIC CENTER PROJECT	PILE TENSION LOAD TEST Integrity Test (PIT)	Kuwait Bruckner	Aug-23	Sep-23
4	Plot One64-Pace Studio, Hassa Almubarek	INSTRUMENTATION WORKS (Concrete Temperature Monitoring)	First United Building Construction Co. W.L.L.	Jul-23	Jul-23
5	SHUAIBA PIER PORT PROJECT	PILE DYNAMIC LOAD TEST (HIGH STRAIN LOAD TEST)	HEISCO / GULF DREDGING	Jan 23	Dec-23
6	AL SAFEY TOWER PROJECT	Crosshole Sonic Logging (CSL), Pile Integrity Test (PIT)	United Emirates	DEC 22	DEC 22
7	A1AAKFE Project/Khiran	Pile Static Axial Tension Load Test	ARAMENCO	Nov 22	DEC 21
8	Al Ghouse Road Project, RA/265	Crosshole Sonic Logging (CSL), Pile Integrity Test (PIT), Pile Static Load Compression Test (Monitoring and Witnessing)	Kuwait Bruckner	Nov 21	Jun-23
9	Ras Al Ard Project, Temporary Marine Facility	Pile Static Axial Tension Load Test, High Strain Pile Dynamic Load Test	TOA Company	Jan 22	Jul-22
10	Mariam Tower	Crosshole Sonic Logging (CSL), Pile Integrity Test (PIT), Pile Static Load Compression Test (Monitoring and Witnessing)	Kuwait Bruckner	Feb 22	Jul-22
11	Boubyan Island Project	Ground Instrumentation Works	COPRI International /HEISCO	Oct 21	Ongoing
12	Waste Water Project	Pile Integrity Test (PIT)	Al Hassanain- JGL	May-21	Dec 21
13	7th Ring Road /CHINA RAIL, RA/240 Project	Pile Integrity Test (PIT)	Trevi Foundation	May-21	Dec 21
14	Al Bassman Tower 2, Qobla	High Strain Dynamic Test (PDA)	Kuwait Bruckner	Sep-20	Oct-20
15	Kuwait Internationa Airport Package 3: Design and Construction of New Runway 15R/33L	INSTRUMENTATION WORKS (Concrete Temperature Monitoring)	First United General Trading & Contracting Co.	Jun-20	Ongoing
16	Hessah Al Mubarak Package 9 (Plot no. 52 - GRAND PARK TOWER) & Package 8 (Plot no. 161 - GRAND SEA TOWER	Crosshole Sonic Logging (CSL), Pile Integrity Test (PIT), Pile Static Load Compression Test (Monitoring and Witnessing), High Strain Pile Dynamic Load Test	Kuwait Bruckner Construction & Contraction Co. (KSCC)	Mar-20	Oct-20
17	RA-223, 6.5 Ring Road and Bridges Project.	Crosshole Sonic Logging (CSL), Pile Integrity Test (PIT), Pile Static Load Compression Test (Monitoring and Witnessing)	Trevi Foundation	Jun-20	Dec-20
18	RA 243, Mutla Site Project	Crosshole Sonic Logging (CSL), Pile Integrity Test (PIT), Pile Static Load Compression Test (Monitoring and Witnessing), High Strain Pile Dynamic Test (PDA)	Trevi Foundation	May-20	Aug-20
19	RA-200, Cairo Street Project	Crosshole Sonic Logging (CSL), Pile Integrity Test (PIT)	Kuwait Bruckner Construction & Contraction Co. (KSCC)	Jan-20	May-20

## LIST OF PROJECT/S (PILE TESTING & INSTRUMENTATION WORKS)

S/I	PROJECT	SCOPE OF WORK	CLIENT	Start Date	End Date
20	Hessah Al Mubarak Package 1 (Plot no. 160) BID PACK 2	Crosshole Sonic Logging (CSL), Pile Integrity Test (PIT), Pile Static Load Compression Test (Monitoring and Witnessing)	Al Khalid De Watering & Shoring Co.	Sep-19	Mar-20
21	Sabah Al Ahmed City Project (Six Residential Prototype)	Crosshole Sonic Logging (CSL), Pile Integrity Test (PIT), Pile Static Load Compression Test (Monitoring and Witnessing), High Strain Dynamic Test	Trevi Foundation	Sep-19	Jan-20
22	New Justice Palace Project	Crosshole Sonic Logging (CSL), Pile Integrity Test (PIT), Mechanical Caliper Logging Test	Trevi Foundation	Aug-19	Dec-20
23	Kuwait National Guard Project	Instrumentation (Concrete Temperature Monitoring)	China Harbour Engineering Co.	May-18	Jan-20
24	Doha Ports Project	Pile Static Load Compression Test (Monitoring and Witnessing), Pile Lateral Load Test (Monitoring and Witnessing)	Consulting Engineering Group, CEG / Specialties Construction	Mar-19	Feb-20
25	KIPIC Al Zour LNG Import Jetty - BD1 Project	Pile Static Load Compression Test (Monitoring and Witnessing), High Strain Pile Dynamic Test	HDEC	Jun-19	Jan-20
26	Justice Palace Project	Crosshole Sonic Logging (CSL), Pile Integrity Test (PIT), Mechanical Caliper Logging Test	Trevi Foundation	Jun-19	Jan-20
27	Sabah Al Ahmed City Project (Plot 5, 6 & 7)	Crosshole Sonic Logging (CSL), Pile Integrity Test (PIT)	Al Khalid De Watering & Shoring Co.	May-19	Sep-19
28	MPW Roads & Bridges, RA/256	Crosshole Sonic Logging (CSL), Pile Integrity Test (PIT)	Al Khalid De Watering & Shoring	Oct-18	Mar-19
29	MPW Roads & Bridges, RA/256	Crosshole Sonic Logging (CSL), Pile Integrity Test (PIT)	Trevi Foundation	Mar-19	May-20
30	Causeway Subiya Embankment, RA/140 Project	Crosshole Sonic Logging (CSL), Pile Integrity Test (PIT)	Trevi Foundation	Mar-18	Jan-19
31	KNPC Al Zour LNG Import Project	Pile Static Load Compression/Tension Test, High Strain Dynamic Test	Hyundai	May-17	Sep-18
32	KIPIC Al Zour LNG Import Project	Crosshole Sonic Logging (CSL), Pile Integrity Test (PIT), Pile Static Load Compression Test (Monitoring and Witnessing)	Trevi Foundation	May-17	Sep-17
33	Shagaya 50MW CSP Plant project	Pile Integrity Test (PIT)	British Company	Oct-16	May-17
34	KNPC - Al Zour Refinery Project Package 2 & 3	Crosshole Sonic Logging (CSL), Pile Integrity Test (PIT), Pile Static Load Compression Test (Monitoring and Witnessing)	Trevi Foundation	May-17	Aug-17
35	Al Babtain Tower Project	Crosshole Sonic Logging (CSL), Pile Integrity Test (PIT)	Edrasis ME	Aug-17	Nov-17
36	Bayan Al Cause Road Project	Crosshole Sonic Logging (CSL), Pile Integrity Test (PIT)	Kuwait Bruckner	Apr-17	Dec-17
37	Causeway , RA/140, Weigh Office Bldg 2 & Weigh Station Project	Crosshole Sonic Logging (CSL), Pile Integrity Test (PIT), Pile Static Load Compression Test (Monitoring and Witnessing)	Trevi Foundation	Jul-17	Sep-17
38	7th Ring Road Interchange, RA/240 Project	Pile Integrity Test (PIT), High Strain Pile Dynamic Test	Trevi Foundation	Sep-17	Dec-17

## LIST OF PROJECT/S (PILE TESTING & INSTRUMENTATION WORKS)

S/I	PROJECT	SCOPE OF WORK	CLIENT	Start Date	End Date
39	Jamal Abdul Nasser St. RA/167 Project	Crosshole Sonic Logging (CSL), Pile Integrity Test (PIT), Pile Static Load Compression Test (Monitoring and Witnessing)	Trevi Foundation	2012	Jan-19
40	Jahra Road, RA/166 Project	Crosshole Sonic Logging (CSL), Pile Integrity Test (PIT), Pile Static Load Compression Test (Monitoring and Witnessing)	Kuwait Bruckner / Edrasis ME	2012	Jan-19
41	Mahboula Wafra Seef Project	Crosshole Sonic Logging (CSL), Pile Integrity Test (PIT)	Edrasis ME	Oct-16	Jun-17
42	TR Project, Al Zour Refinery Project	Crosshole Sonic Logging (CSL), Pile Integrity Test (PIT), Pile Static Load Compression Test (Monitoring and Witnessing), High Strain Pile Dynamic Test	Edrasis ME	Sep-16	Jun-17
43	Behbehani Showrrom Project	shole Sonic Logging (CSL), Pile Integrity Test	Edrasis ME	May-17	Jul-17
44	5th Ring Road RA/210 Project	Pile Integrity Test (PIT), Pile Static Load Compression Test (Monitoring and Witnessing)	Kuwait Bruckner	August 2016	Jul-17
45	MPW Roads & Bridges, RA/256	Crosshole Sonic Logging (CSL), Pile Integrity Test (PIT)	Afcons	Apr-18	Jan-20
46	Road 70 Bridge Interchanges, RA/259 Project	Crosshole Sonic Logging (CSL), Pile Integrity Test (PIT), Pile Static Load Compression Test (Monitoring and Witnessing)	Kuwait Bruckner	Mar-17	Jul-20
47	Sheikh Al Ahmed Al Sabah Causeway Project, RA/140	Crosshole Sonic Logging (CSL), Pile Integrity Test (PIT), Pile Static Load Compression Test (Monitoring and Witnessing)	Trevi Foundation	2014	May 2016
48	Al Bidda Round About, RA/222	Crosshole Sonic Logging (CSL), Pile Integrity Test (PIT)	Kuwait Bruckner	May 2016	May 2016
49	Sulabikat Roads & Interchange RA/213	Pile Integrity Test (PIT), Pile Static Load Compression Test (Monitoring and Witnessing)	Ahmadiah Contracting	January 2015	August 2016
50	JS, Bayan Al Gayuse Road Project RA-263	shole Sonic Logging (CSL), Pile Integrity Test	Kuwait Bruckner	April 2017	December 2017
51	Assima Project	Mechanical Caliper Logging Test	Edrasis ME	January 2017	August 2017
52	Volkswagen Showroom	Crosshole Sonic Logging (CSL), Pile Integrity Test (PIT)	Edrasis ME	June 2016	August 2016
53	Kuwait University	Crosshole Sonic Logging (CSL), Pile Integrity Test (PIT), Pile Static Load Compression Test (Monitoring and Witnessing)	Trevi Foundation	May 2016	August 2016
54	Infectious Disease Hospital Project	Crosshole Sonic Logging (CSL), Pile Integrity Test (PIT)	Kuwait Bruckner	August 2016	August 2016
55	Causeway Doha Link Project, RA/214	Crosshole Sonic Logging (CSL), Pile Integrity Test (PIT), Pile Static Load Compression Test (Monitoring and Witnessing)	Trevi Foundation	September 2016	December 2016
56	Kuwait Naval Base Project	Instrumentation (Concrete Temperature Monitoring)	TOA Company	Apr-18	Dec-18
57	KIPIC Al Zour LNG Import Project	Ground Instrumentation Works	HDEC	Apr-18	May-19
58	NEW MATERNITY HOSPITAL	Instrumentation Work (Inclinometer) - Diaprhagm Wall Monitoring	PIZZAROTTI	Jun-17	Jul-19

# قائمة مشاريع فحوصات الخوازيق

تاريخ الإنتهاء	تاريخ البدء	موجز الأعمال	اسم المقاول	اسم المشروع
جاري العمل	2012/04	فحوصات الخوازيق (Low Strain Test) - Pile Integrity Test (PIT) - Crosshole Sonic Logging (CSL)	TREVI Foundation	مشروع طريق جمال عبدالناصر عقد رقم (RA/167)
جاري العمل	2016/09	فحوصات الخوازيق (Low Strain Test) - Pile Integrity Test (PIT)	EDRASIS Middle East	مشروع مصفاة الزور الجديدة AlZour New Refinery Project
جاري العمل	2016/09	فحوصات الخوازيق (Low Strain Test) - Pile Integrity Test (PIT) - Crosshole Sonic Logging (CSL)	TREVI Foundation	مشروع جسر وصلة الدوحة عقد رقم (RA/214)
جاري العمل	2016/08	فحوصات الخوازيق (Low Strain Test) - Pile Integrity Test (PIT)	شركة كويت بروكنر	مشروع تقاطعات الدائري المخامس عقد رقم (RA/210)
2016/08	2012/07	فحوصات الخوازيق (Low Strain Test) - (Crosshole Sonic Logging (CSL)	شركة كويت بروكنر	مشروع طريق الجهراء عقد رقم (RA/166)
2016/08	2016/08	فحوصات الخوازيق (Low Strain Test) - (Crosshole Sonic Logging (CSL)	شركة كويت بروكنر	مشروع مستشفى الأمراض السارية
2016/07	2014/06	فحوصات الخوازيق (Low Strain Test) - Pile Integrity Test (PIT) - Crosshole Sonic Logging (CSL)	TREVI Foundation	مشروع جامعة الشدادية

تاريخ الإنتهاء	تاريخ البدء	موجز الأعمال	اسم المقاول	اسم المشروع
2016/07	2016/06	فحوصات الخوازيق (Low Strain Test) - Pile Integrity Test (PIT) - Crosshole Sonic Logging (CSL) -	EDRASIS Middle East	مشروع معرض سيارات فولكس واجون
جاري العمل	2014/10	فحوصات الخوازيق (Low Strain Test) Pile Integrity Test (PIT) – Crosshole Sonic Logging (CSL) – Loading Test 3 <sup>rd</sup> Party Witnessing –	TREVI Foundation	مشروع جسر الشيخ جابر الأحمد الصباح ، عقد رقم (RA/140)
2016/05	2015/01	فحوصات الخوازيق (Low Strain Test) – Pile Integrity Test (PIT) –	شركة الأحمدية للمقاولات	مشروع عقد رقم (RA/213)
2015/06	2014/06	فحوصات الخوازيق (Low Strain Test) – Pile Integrity Test (PIT) –	شركة مشرف للمقاولات	مشروع تقاطع رقم 14 مدينة جابر الأحمد عقد رقم (RA/211)
2015/06	2012/07	فحوصات الخوازيق (Low Strain Test) - (Crosshole Sonic Logging (CSL)	EDRASIS Middle East	مشروع خدمات طريق الجهراء عقد رقم (RA/166)
2015/01	2015/01	فحوصات الخوازيق (Low Strain Test) - Pile Integrity Test (PIT)	شرکة أرامينکو – Aramenco	مشروع ميناء الدوحة
2013/12	2013/10	فحوصات الخوازيق (Low Strain Test) - Pile Integrity Test (PIT)	شركة المقاولون العرب الكويتية	مشروع تطوير طريق الجهراء عقد رقم (RA/212)

#### 9 CURRICULUM VITAE OF COMPANY STAFF

The senior professional and technical staff of **INCO-LABS** possesses many years experience in their respective specializations. This section contains the curriculum vitae of the following:

#### **MANAGEMENT**

Eng. Abdullah A. Al-Obaidan : Chairman

General Manager

Eng. Abdulaziz A. Al-Obaidan : Vice-Chairman & M.D.

Deputy General Manager

Dr. Abdul Majeed A. Jeragh : Technical Consultant

Dr. Moh. Elkhairy Ibrahim Salama : Technical Manager

**DEPARTMENTS** 

1) Geotechnical Department : Eng. Ruperth Villamucho

Head of Geotechnical Dept.

2) Materials Department : Eng. Karl Dexter Sualibio

Materials Engineer

3) Piling Department : Eng.Ricardo C.Carlos

Head of Special Testing Dept.

4) Survey Department : Eng. Beda Barcelona

Head of Survey Dept.

Eng. Ahmad M. El-Barbary

Survey Engineer

5) Calibration Department : Eng. Gamal A. El-Demyati

**Head of Calibration Department** 

6) Drilling & Maint. Department : Eng. Lafi Hardan Lafi Hussain

Head of Technical services

Eng. Jojo George Varghese

**Drilling & Maintenance Engineer** 

7) Finance & Administration : Mr. Mohammad N. Rafiq

Head of Finance & Admin.

### **SENIOR PROFESSIONAL STAFF**

Subu Sudheesa Babu : Geologist
Yasir Khalil : Lab Supervisor
Moemen Khairi : Lab Supervisor
Mazhar Iqbal Moh.Khan : Lab Supervisor
Mohammad Awayed : Drilling Supervisor
Anns Imtiaz : Drilling Site Engineer
Ameer Ali : Senior Surveyor

#### **TECHNICAL STAFF**

Zulfiqar Ali Muhammed Isaac : Lab Technician Naeem Shabbir : Lab Technician Nasurullah Ahmed Ali : Lab Technician

Abdul Nasir Shaikh Abdul Jabbar : Chemist

Kajeenthiran Thayananthan : Drilling Rig Operator Ashraf kassem Abdel Shafy : Drilling Rig Operator Ghulam Abbas : Drilling Rig Operator Abdul Nasser R. Mohammad : Drilling Rig Operator

Mohammed Haneefa Ismayil : Surveyor
Upul kumar : Mechanic
Ahmed Ali Mohammed Salim : Accountant

Note: The complete set of employees CV's are available up on request.

# **ENG. ABDULLAH ABDULAZIZ AL-OBAIDAN**

TITLE Chairman, General Manager

**EXPERTISE** Management

**PAST** 

**EXPERIENCE** 

Mar. 96 to Present INCO-LABS, Kuwait

Position: Chairman, General Manager

<u>Duties</u>

Responsible for managing all aspects of the Company, formulating strategy and liaising with officials and Clients. Technical Manager and Heads of Departments report on

a daily basis.

Apr. 89 to Dec. 97 Kuwait Prefabricated Building & Construction Co, Kuwait

Position: Chairman and Managing Director

Apr. 85 to Dec. 88 Sulaibhiyah Group of National Industries Co., Kuwait

Position: General Manager

Oct. 79 to Mar. 85 National Industries Co, Kuwait

Position: Deputy Managing Director for Cement Products

and Member of the Board of Directors

Aug. 75 to Sep. 79 National Industries Co, Kuwait

Position: General Manager, Cement Products factory

Aug. 69 to Jul. 75 National Industries Co, Kuwait

Position: Manager, Cement Products Factory

Jul. 68 to Jul. 69 National Industries Co, Kuwait

Position: Assistant Manager, Cement Products Factory

Jun. 67 to Jun. 68 The Industrial College, Kuwait

Position: Instructor

### ABDULLAH ABDUL AZIZ AL-OBAIDAN

**DIRECTORSHIPS** Member of the Board of Directors,

**Kuwait Cement Co, Kuwait** 

1976 to 1995

1989 to 1990

**Director of Kuwait Municipality Board.** 

and

1991 to 1992

1985 to 1989 Member of the Board of Directors,

Kuwait Prefabricated Building & Contractors Co., Kuwait

1992 to 1985 Member of the Board of Directors.

Gulf Clinker Co, Kuwait

1981 to 1985 Member of the Board of Directors,

White Cement & Building Material Co., Ras Al-Khaimah.

1984 to 1987 Chairman of the Board,

**Overland Transport Co, Kuwait** 

1997 to 1980 Member of the Board of Directors,

**Kuwait Omani Cement Co., Kuwait** 

ACADEMIC High Industrial Institute, Cairo

**BACKGROUND** B.Sc. (Mechanical Engineering), 1966.

**Kuwait University** 

Diploma in Industrial Management, 1970

NATIONALITY Kuwaiti

PROFESSIONAL

**AFILIATIONS** 

**Kuwait Society of Engineers** 

LANGUAGES Arabic, English, German

COUNTRIES WORKED IN

Kuwait, Germany and G.C.C. countries

### **ENG. ABDULAZIZ A. AL-OBAIDAN**

TITLE Vice-Chairman & Managing Director

Deputy General Manager

**EXPERTISE** Management.

PAST EXPERIENCE

Jan 2004 to INCO - LABS, to Present State of Kuwait

Position: Vice-Chairman & Managing Director Deputy General Manager

#### **Duties**

- Responsible for managing the Company day-to-day activities and reporting to the Company Chairman or General Manager.
- Responsible for managing all aspects of the company, formulating strategy and liaising with officials and Clients.
- Responsible for the quality of the Company as a Quality Management Team Leader
- Direct involvement in HSE Department in order to reach the Company's HSE targets
- Fully aware with Material, Geotechnical, Drilling and Survey Departments through Technical Manager and all Heads of Departments reporting on a daily basis.
- Controlling Finance and Personal administration department

March 1999 to Dec. 2003

M/s. Kuwait Cement Co. (K.S.C) State of Kuwait

Position: Mechanical Engineer

#### **Technical duties**

- > Ship Unloading and material Handling Equipment in Shuaiba Port.
- Participation in inspection of fabricated structures, machineries related to the raw material handling equipment and other sections.
- Operation and maintenance of raw materials handling equipment.
- In-Charge of the Safety & Security Department for maintaining the fire fighting and alarm system in the Plant.
- Follow-up safety and security matters within the plant and establishing and applying the safety and security measures.

ACADEMIC QUALIFICATIONS

B.Sc (Mechanical Engineering) – Year 1998

from the Ohio State University, Columbus, Ohio, U.S.A

PROFESSIONAL AFFILIATION

- Kuwait Society of Engineers Affiliate Member – No. 3003

- American Society of Mechanical Engineers (ASME)

Affiliate Member – No. 6636112

- American Society of Civil Engineers (ASCE)

Associate Member – No. 35389104

- American Concrete Institute (ACI) - Kuwait Chapter

Member – No. ME 153

**NATIONALITY** 

Kuwaiti

**LANGUAGES** 

**English and Arabic** 

COUNTRIES WORKED IN

Kuwait.

### DR. ABDUL MAJEED A. JERAGH

(CERTIFIED CONSULTANT ENGINEER by Kuwait Society of Engineers)

TITLE Technical Consultant (Geotechnical & Materials Engineering)

**EXPERTISE** Expertise consultant in Civil Engineering (Geotechnical,

Materials and Structural Engineering).

**PAST EXPERIENCE** 

1997 to Present INCO-LABS, Kuwait.

Position: Technical Consultant

**Duties** 

Responsible for consulting all type of Geotechnical and Materials Engineering, interpretation of Soil & Material testing results - Geotechnical Engineering Calculations,

Design and Recommendations.

1992 to 2004 Government Center for Testing and Research,

Ministry of Public Works, State of Kuwait.

Position: Assistant Under Secretary

1978 to 1992 Government Center for Testing and Research,

Ministry of Public Works, State of Kuwait.

Position: Chief Engineer

1971 to 1978 University of Texas & New Mexico State University, USA,

Study Leave to obtain MS and Ph.D. Degrees

1968 to 1971 Government Center for Testing and Research,

Ministry of Public Works, State of Kuwait.

Position: Director of Material Testing Division

1979 to 1994 University of Kuwait, State of Kuwait

worked as a Part time Instructor in Civil Engineering

1998 to 2000 The Public Authority for Applied Education & Training,

State of Kuwait

Worked as a Part time Instructor in Soil Mechanics

ACADEMIC Ph.D. in Civil Engineering

**BACKGROUND** - From New Mexico State University, USA. - 1978

Master of Science in Civil Engineering

- From University of Texas at El-Paso, USA - 1974

**Bachelor of Science in Civil Engineering** 

- From University of Texas at El-Paso, USA - 1972

Major Structural Engineering

# PROFESSIONAL AFFILIATION

- Member of Kuwait Society of Engineers
- Member of American Concrete Institute

#### **PUBLICATIONS**

- Fatigue of Plain Concrete Subjected to Biaxial-Cyclic Loading" Proceeding of The American Concrete Institute Fall Convention on Fatigue of Structures, 1798, Houston, Texas, USA, ACI Publications SP-75.
- Corrosion of Reinforced Concrete Foundation in Kuwait"; Proceedings of the First Arabian Conference on Corrosion, 1984, Kuwait, Pergamon Press.
- "Subsoil Water rise in Residential areas in Kuwait", joint research with Kuwait Institute for Scientific Research. 1984.
- "Environmental Conditions & Concreting in Kuwait" MPW report, 1985
- "Static Cone tests and settlement of Calcareous Desert Sands", Canadian Geotechnical Journal, Vol. 23,, 1986.
- "Study of the properties of Surface Soils in Kuwait", ASCE J., Geotechnical Engineering, Vol.17, 1986.
- "Factors affecting the collapse Potential of Calcareous Desert Sands", Proceedings of the 9<sup>th</sup> Southeast Asian Geotechnical Conference, Bangkok, Tailand, 1987.
- "Concrete Deterioration in Kuwait" presented in short course held at Kuwait Institute for Scientific Research, 1986.
- "Requirement for Protection of Building and other Structures Against Water from the Ground", Specification issued by the ministerial order No. 24/1987.
- Correlation between Standard Penetration test values and Overburden Pressure for Desert Sands". Canadian Geotechnical Journal, Vol. 25, 1988.
- "Expansive Behavior of Subgrade Soils in Arid Areas", Transportation Research Record, Washington DC, Vol. 1288, 1989.
- "Site Investigation for Tower Structure on Ring-shaped Raft on Sand", Proceedings of the European Congress of Geotechnical and Foundation Engineering, Amsterdam Holland, 1990.
- "Incremental Collapse of Subgrades", Proceedings of the International Road Federation Regional Conference, Calgary, Alberta, Canada, July 1994.
- "Environmental Effects on Concreting in Kuwait", Accepted at the Seventh Arab Structural Engineering Conference, Kuwait, Nov. 1997.
- "Post War Bridge RATING IN Kuwait", Accepted at the IRF XIIIth International Road Federation World Meeting, Toronto, Canada, June 16, 1997.

# CONFERENCES ATTENDED

- 1998 Transportation 1998 (ARRB): Sydney, Australia.
- 1997 7<sup>th</sup> Arab Structural Engineering Conference: Kuwait
- 1997 International Road Federation World Meeting: Canada
- 1996 Highway and Bridge Maintenance: Dubai, UAE.
- 1995 PIARC XXth World Road Congress: Montreal, Canada
- 1994 International Road Federation Regional Conference, Canada

- 1993 Rehabilitation of Damaged Buildings: Kuwait
- 1993 Recent Technology for Testing & Evaluation of Civil works: Kuwait
- **1992 Building Deterioration in the Arab World and Methods of Repair**, Riyadh, KSA.
- 1989 Third International Conference of Deterioration and Repair of Reinforced concrete in the Arabian Gulf: Bahrain
- 1989 12<sup>th</sup> International Conference on Soil Mechanics and Foundation Engineering: Brazil
- 1985 11<sup>th</sup> International Conference on Soil Mechanics and Foundation Engineering: San Francisco, USA.
- 1984 First Arabian Conference on Corrosion: Kuwait.
- 1978 American Concrete Institute Fall Convention on Fatigue of Structures: Texas, USA.

# MEMBERSHIP WITH TECHNICAL COMMITTEES

- 1994 Chairman of the Technical Committee for investigating Structural damages at the intake of Alzoor Power Station.
- 1990 Member of Committee for preparing the General Specifications for building and Public Works.
- 1988 Member of Committee for Studying Soil subsidence in Al-Zaher Area, State of Kuwait.
- 1987 Member of the Committee for preparing Specifications to be used in the projects of the Ministry of Public Work, State of Kuwait for protecting building and structures from the effect of underground water.

NATIONALITY - Kuwaiti

**DATE OF BIRTH** - 01<sup>st</sup> April, 1942 in Kuwait

**LANGUAGE** - Arabic and English

COUNTRIES - Kuwait WORKED IN

### DR. Mohamed Elkhairy Ibrahim Salama

# TITLE Technical Manager

### ACADEMIC BACKGROUND

# Ph.D. in Geotechnical Engineering

- University of Illinois Chanpaign-Urbana, USA-Jan.1992

### **Master of Geotechnical Engineering**

- University of Illinois Chanpaign-Urbana, USA-Jan.1986

### **Bachelor of Science in Civil Engineering**

- Egypt- May 1980

#### **EXPERTISE**

More than **25 years** expertise consultant in Geotechnical Engineering and Materials (**Geotechnical**, **Materials and Civil Engineering**).

#### **PAST EXPERIENCE**

# Oct.2016 to Present INCO-LABS, Kuwait.

Position: Technical Manager

#### **Duties**

Technical Manager responsible for the technical issues for all the departments in the Company.

Managing day to day activities of all departments through the Head of Departments, which include the followings:

- 1. Managing the day-to-day technical activities of the Company
- 2. Reporting to the Deputy General Manager on daily basis
- Member of the Company Quality Management Team. Responsible for the Quality Assurance and Quality Control of work carried out by the Company; this includes:
  - Reviewing quality system documents prior to submission to Deputy GM
  - Ensuring that lab facilities and equipment meet all requirements of the quality system; e.g. calibration, maintenance, and proficiency testing.
  - c. Preparing and recommending personnel training schedule to Deputy GM
  - d. Reports to Deputy GM on quality system performance and improvement measures.
  - e. Managing the internal audit process.
- 4. Supervision and coordination of soil investigation activities.
- 5. Organization and documentation of field data
- 6. Evaluate design parameters data validity
- 7. Perform bearing capacity, foundation design and slope analysis calculations
- 8. Perform structural evaluation studies
- 9. Interpretation of results of geotechnical and materials testing
- 10. Writing of geotechnical and materials engineering reports
- 11. Approving geotechnical and materials engineering reports

- 12. Approving quotations related to geotechnical investigation, materials testing and survey works, each valued up to KD 2500
- 13. Approve all Job Orders related to the soil investigation works
- 14. Approve all the Company invoices
- 15. Authorized to issue Purchase Orders related to all departments
- 16. Authorized to control direct expenses up to KD 250
- 17. Take over the responsibilities and authorities of the Deputy General Manager, Head of Geotechnical Department, Head of Materials Department, or Head of Survey Department (in his absence) with a written instruction/approval from the General Manager.

### 2014-2016 Al Dawadmie Province, Saudi Arabia

Position: Project Manager

### **Duties**

- Planning and design new projects for the province include landscape, new roads, road maintenance, road lighting, new gardens city aqua's planning, and new buildings.
- Prebid study for all type of previous projects and preparation of all bid documents include drawing, specification, bill of quantity and estimated coast with visibility study for that project.
- Supervision a team work of 30 engineer, surveyor and field observer.
- Complete field supervision of about 50 project with different contractors, review field work and contractors submittals most of these projects designed and all bid documents prepared under my supervision.
- Organize a series of training meeting with for engineers and the rest of the team work to improve their skills.

# 2008-2014 Hamza Associates 1995-2003

Position: Sr.Geotechnical Engineer

- Share in execution of soil Boring to East Port Said Harbor include Marine and land boring.
- Design and prepare documents for bidding the first and largest Project in Middle east for side support of excavation (6 to 11 m depth) using Soil Nailing for City Star Mall the largest Market in Cairo. Excavation area is about 100000 m2.
- Design strutted secant piles as side support for 15 m deep excavation for New Cairo water intake
- Design dewatering system for new Cairo water intake (50 x 150 m) to depth 15 m adjacent to river Nile.
- Design cantilever reinforced temporary side support system for new Cairo water intake
- Design soldier pile temporary system for Diesel power station for new Cairo water intake
- Design soldier pile different systems as temporary side support
   11 m deep excavation for Elkhosos Cairo project, 3 Km length.

- Design soil grouting system around water pipes as a pipe protection during 11 m deep excavation for Elkhsos Cairo project, 3 Km length.
- Proposal for design Tieback side support system for secant pile wall
- Design diaphragm wall for Juhina building for top down construction system of underground excavation
- Proposal for design deep water wells in Damietta for Methanix company (Canedian Owen factory, and Italian contractor)
- Participation in preliminary design of Dry Dock in Kuwait
- Design Dynamic Compaction and review of field test for compaction evaluation in Kuwait.
- Site investigation for extension of Dry Dock in Dammam for Zamil Steel Co. Kingdom of Saudi Arabia. Evaluation of different geotechnical site investigation companies.
- As Hamza Associates the consultants of Zamil steel Co. in Dammam we reviewed all the contactors proposals, field work and changes in design. Bearing capacity and settlements analysis for heavy loaded rails.
- Proposal for design of side walls, system of soil backfilling and field compaction using vibroflotation for Zamil Steel Co. new extension of dry dock for ship repair, all work in sea, in Dammam, Saudi Arabia.
- Review bidding documents, which ORASCOM Co. intended to submit for King abdel Aziz Airport new extension Saudi Arabia – the new proposal include substitution of grouting blug for control of ground water by using dewatering deep wells. The extension about 1500 m length with width 100 to 200 m width.
- Suspension of different utility (water, gas) pipes with diameter ( 40 to 150 cm) and span 32 m. to allow for construction of underground main sewage culvert in Cairo.
- Design underground parking surrounding exists historical villa, include diaphragm walls and dewatering system, Cairo.
- Detailed site investigation for Electrical Power plant for Khorafi National at Kafer elbatikh, Egypt.
- Design of large diameter piles 80 cm, axial and lateral capacity, for Khorafi National at Kafer elbatikh, Egypt.
- Supervision of construction of 5 trial piles D=80 cm and depth 40 m. Testing of piles Axial static, dynamic, high strain dynamic, and execution of 2 field lateral load tests. Writing technical reports for axial and lateral pile testing results evaluation, for Khorafi National at Kafer elbatikh, Egypt.
- Bid proposal study for ground water control during construction of new Assute Barrage (Egypt) which will be constructed inside River Nile, in cooperation with STRABAG (German contractor) include: estimation of field permeability's, proposing different system of excavation and water control.
- Review design of large diameter piles in different soils for cross brides as part of modification of Cairo/Alexandria highway.
- Review of side support system and open cut tunnel for part of Cairo/Alexandria highway underground crossing.
- Study the possibility of dry excavation for new harbor in Qatar in cooperation with DEME international company, include the feasibility of dewatering in comparison with dredging under water, that was for entrance channel and Navel harbor.
- > Stability of slope analysis for a new road In Algeria. Include stability analysis and review design for about 600 sections some

- of them in rocks, others in soil and some in mixed soil. The study includes soil stability improvements to enhance slope stability.
- Site investigation reports for building as high as 26 floors and parametric study for foundations (isolated raft, and pile) with the required foundation recommendations for each type of building ( such as Barwa project in Cairo and others ...).
- Foundation design for high voltage electric towers.
- Estimation of offshore jack up platform with 3 legs spud can penetration in Persians Gulf Sea with 100m water depth.
- Complete design check for deepening sea bed from -16.0 to -18.0 m of Demita Harbor, Egypt 1200 m quay wall. The quay wall constructed in 80's by using cellular cofferdam. We proposed a ground improvement using Jet grouting but then due to high coast we changed our design to clay improvement by stone columns. The near sea rail carrying the crane elevated to new deep piles.
- Complete design check for deepening sea bed from -16.0 to -18.0 m of East Port Said harbor, Egypt 1200 m quay wall. The quay wall is a 3 span 35 m width diaphragm wall 65 m depth. The design check reviewed by Royal Haskoning DHV International consultant company. Design check include, bearing capacity, stability of slopes, settlement, negative skin friction, sliding, basal heave and structure capacity of RC diaphragms, with influence of static and seismic load, tidal lag, and over dredging.
- A large scale site investigation for Gas processing terminal project owned by British Petroleum and managed by Bechtel International in north east delta Egypt with top soft clay layer. The investigation includes 35 Boreholes 45m deep and 30 CPT, include performing all required field and laboratory testing. A technical report is presented include all the test results, data interpretation, soil properties and foundation recommendations for heavy and light structures.
- Conducting a preliminary design for contract bidding to construct a Gas Jetty at Aquba harbor in Jordon. The jetty should be constructed on steel pipe piles. Red sea soil is that includes coral reefs. The piles expected to be subjected to compression, tension, and lateral loads with some piles vertical and some piles inclined.
- Currently involved as a sub -consultants with INROS LACKNER SE (Germany) in prebid Initial design for ship lift structure on Suez canal in Port Said Egypt, the work include complete Site investigation using 60 m deep boreholes and CPT. Design of shall foundations and piles are required -

#### 2005-2008 Gabal Al Garby University

Position: Teaching in Civil Engineering Dept.

### 2003-2005 Garyones University

Position: Teaching in Civil Engineering Dept.

### 1992 - 2003 Own Private Consultant Office, Egypt

#### **Duties**

Geotechnical Site Investigation, Design multi story housing building, and provide consultant advise to construction companies in different civil projects.

### 1989-1992 Advanced Construction Technology Center, U.S.A.

Position: Research Engineer at Civil Engineering Dept.

#### 1988-1989 PhD Advisor in USA

In his private consultant office in Geotechnical & Civil Construction projects

**1980-1981 Construction Engineer** include supervision of housing projects,

factories, Sanitary pipe lines, and Roads.

# Field Civil Engineering Practice and Consulting Experience

- o Certified Consulting Engineer in Egypt- in field of Geotechnical Engineering.
- During the time (1980 1981) worked with as construction Engineer Activity include supervision of housing projects, factories, Sanitary pipe lines, and Roads.
- During the time (1988 –1989) worked with my PhD Advisor in the United States in his private consultant office in some Geotechnical and civil construction projects.
- During the time (1992 –2003) I have my Owen private consultant office in Port-Said Egypt in addition to teaching in University, Activity include: Geotechnical Site Investigation, Design multi story housing building, and provide consultant advise to construction companies in different civil projects.
- o Executed large number of soil investigations and foundation design recommendations for high buildings and many other projects (factories, warehouses, pipelines, electric planets, irrigation projects, etc...) in many different type of soils.
- Supervision of Soil Mechanics Laboratory, Civil Eng. Dept. Port Said, Suez Canal University for more than 10 years.
- o Consulting experience in different Civil Construction Projects, Geotechnical Engineering and Highway construction during work in university in Egypt and Libya.
- o Recommended by Suez Canal University as a Consultant to High court in Egypt in some Civil Engineering legal disputes projects.

# <u>Topics of Geotechnical and Civil Engneering Activities Include design (Manual and using Software) and supervision</u>

- 1. Side support system for all type excavations:
  - Soldier piles Braced excavation All type of retaining walls
  - Secant pile walls Diaphragm walls Tieback walls
  - Sheet pile walls
- 2. Dewatering: shallow and deep, for small and large areas
- 3. Stability of slopes
- 4. Soil grouting
- 5. Soil nailing
- 6. All types of soil improvement methods
- 7. Design of pile subjected to axial load
- 8. Design of pile subjected to lateral load
- 9. Experience with field pile testing Static axial, dynamic, high strain dynamic, and lateral pile testing.

- 10. Excavation and construction stages simulation
- 11. Soil laboratory test results evaluation for design : shallow foundations, deep foundations, and stability of slopes...etc
- 12. Field soil test results evaluation for geotechnical design.
- 13. writing factual and detailed Geotechnical site Investigation reports
- 14. Experience in review all type of Geotechnical reports for: light and heavy structures, water supply station, water lines, waste water treatment station, pump station.
- 15. Design and review Pipe Jacking and Tunneling projects.
- 16. Design of offshore foundations such as spud can penetration in Persians Gulf sea.
- 17. Design and review design of different types of deep quay walls (18.0 m water depth).
- 18. preparation of pre bid documents for several projects
- 19. Roads construction, maintenance and quality control specifications.
- 20. Landscape and Gardens development and specifications.

#### **General Civil Engineering Experience**

The ability to review design of : Concrete structures, Steel structures, Foundations, Water and Waste water projects, Highways, Bridges, and all types of geotechnical projects.

#### **Conference attendance**

- Attended many scientific conferences in the field of structure and geotechnical engineering. Conference attended inside and outside Egypt. Some Examples for Conferences:
- International conference in soil mechanic and foundation engineering, Sanfransisco, USA, 1986.
- International conference in soil mechanic and foundation engineering, Alexandria, Egypt, 2011.
- o Dam Engineering ,symposium, Purdue University, USA, 1986
- o Geotechnical Engineering Symposium honoring Prof. Ralph peck, in University of Illinois Champaign Urbana, USA.
- o Arab International conference in structure engineering, Tripoli, Libya, 1993.
- The Eleventh African Regional Conference on Soil Mechanics and Foundation Engineering, Cairo, Egypt,
- o 2. nd Int. Conf. on Eng. Research, Suez Canal University, Egypt, 1995
- The Second International Conference for Advanced Trends in Engineering, Minia University, Egypt, April 2002.
- 4th International Conference on Civil and Architecture Engineering, ICCAE, Military Technical College, Egypt, May 2002.

# **Publications**

- 1- Mohamed Elkhairy Salama "DESIGN OF PRESSURE TUNNELS IN ROCKS" Proc.5th Arab Conference on Structural Engineering , Tripoli-Libya, Vol.2, pp 1071 – 1082.1993
- 2- Mohamed Elkhairy Salama "BEARING CAPACITY OF TWO-LAYER SOIL PROFILE" Proc. The Third International Conference on Engineering Research, Suez Canal Uiniversity, Faculty of Engineering, Port Said, Egypt, Vol. II, pp. 170-180, Nov. 1999.
- 3- Mohamed Elkhairy Salama "STRENGTH OF TENSION REINFORCED EMBANKMENTS ON CLAY" Scientific Bull. Fact. Eng. Ain Shams Univ. Vol. 35, No. 2, June 30, 2000, pp. 43-58
- 4 Mohamed Elkhairy Salama "ANALYSIS OF AXIALLY LOADED PILES USING A BOUNDING SURFACE CLAY PLASTICITY MODEL" Scientific Bull. Fact. Eng. Ain Shams Univ.vol. 36, No. 1, Mar., 2001, pp. 1-15.

- 5- Mohamed Elkhairy Salama, et.al. "Analysis of Soil Nailed Retaining Walls", Proc. the Eleventh African Regional Conference on Soil Mechanics and Foundation Engineering, Cairo, Egypt, Vol. 2, p. 472.
- 6- Mohamed Elkhairy Salama. et. al. "Parametric Study for factors which Influence the Behavior of Nailed-Soil Retaining Walls", Proc. 2. nd Int. Conf. on Eng. Research, Dec. 1995, Vol. III pp. 88-99
- 7- K.A. Mahmoud, M.E. Abdelghaffar, M. Elkhairy Salama, and M. Hamza "Design of Reinforced Earth Retaining Stuctures Using El\_Sabrien Software" Port-Said Engineering Research Journal, Faculty of Engineering, Suez Canal University, Vol. 6, No.2, Spt. 2002.
- 8- Mohamed Elkhairy Salama, and Yasser M. "EXPERIMENTAL MODELING OF LATERALLY LOADED PILE GOUPS IN SAND", The Second International Conference for Advanced Trends in Engineering, Minia University, Egypt, April 2002.
- 9- Mohamed Elkhairy Salama, and Yasser Saad Moawad "LATERALLY LOADED PILE GROUP MODELS EVALUATION OF TEST RESULTS" 4th International Conference on Civil and Architechture Engineering, ICCAE, Military Technical College, May 2002.
- 10- Mohamed Elkhairy Salama, "Insight into Development of Finite Element Multi-Nonlinear Earth Retaining Structure Model" Journal of Engineering Research, Faculty of Engineering Al-Fateh University, Sept. 2007, Issue 8, pp. 51-68.
- 11- Mohamed Elkhairy Salama, "Raft-Reinforced Concrete Skeleton Buildings Subjected to Settlement snd/or Tilt" Journal of Engineering Research, Faculty of Engineering Al-Fateh University, Sept. 2008, Issue 10, Sept. 2008.
- 12-Mohamed Elkairy Salama "Design of Deep excavation Close to River Nile" to be published at Port-Said Engineering Research Journal, Faculty of Engineering, Suez Canal University.
- 13- Mohamed Elkairy Salama "Design of Deep dewatering system Close to River Nile" to be published at Port-Said Engineering Research Journal, Faculty of Engineering, Suez Canal University.
- 14- Mohamed Elkairy Salama, et. Al "EVALUATION AND REDesign of STEP DEWATERING SYSTEM FOR Deep excavation INSIDE River Nile AS REQURMENT FOR CONSTRUCTION OF NEW ASSUTE BARRAGE" to be published at Scientific Bull. Fact. Eng. Ain Shams Univ.
- 15- Mohamed Elkairy Salama and Marawan Shahien "ANALYSIS OF STATIC AND DYNAMIC AXIAL PILE LOAD TESTS" presented at DFIMEC 2012, Middle east Conference Case histories in Geotechnical and Foundation Engineering, American University Dubai, UAE, 14-15 March, 2012. And to be submitted to DFI journal.

# <u>Awards</u>

- Peace fellowship from the American International Agency for Development for MSc. Degree in Civil Eng. from USA (1985 – 1986).
- Egyptian Government Ministry of higher Education Fellowship for Ph.D. Degree from USA (1986-1990).
- Research Engineer at Advanced Construction Technology Center, Civil Engineering Department University of Illinois USA (1989 to 1992)
- Member of honor Society for Excellent Student Tau. Beta. Bi, University of Illinois section, USA.
- Student member of American Society of Civil Engineering ASCE during graduate study in USA.

### **Graduate Degrees research Supervision**

 Supervised on student obtained MSc. At Suez Canal University in geotechnical engineering in the year 2001. o Supervised on student obtained PhD. At Suez Canal University in geotechnical engineering in the year 2002.

# Soil laboratory experience

- o Writing detailed technical specifications for required complete laboratory soil testing at: - Garyounis University, Benghazi
- o Faculty of Engineering at Port said University (previously Suez canal University)

**NATIONALITY** - Egyptian

- 14<sup>th</sup> January, 1958 in Egypt DATE OF BIRTH

- Arabic and English LANGUAGE

COUNTRIES - USA, Saudi & Kuwait

**WORKED IN** 

### **ENG. RUPERTH Q. VILLAMUCHO**

TITLE Head of Geotechnical Engineer

**EXPERTISE** Experience in the field of soil and Construction Materials

testing.

#### PAST EXPERIENCE

#### 2007 to present INCO - LABS, Kuwait.

Position: Head of Geotechnical Engineer

- Managing day-to-day activities of the Geotechnical Department
- Report to the Technical Manager on daily basis
- Responsible for the Quality Assurance and Quality Control of the Company geotechnical testing. This includes implementing procedures to ensure that all equipment and instruments used for tests within the scope of the quality system meet all of the requirements.
- Responsible for applying safety provisions in geotechnical testing.
- Evaluation and interpretation of geotechnical testing results
- Coordination of soil investigation activities.
- Organization and documentation of geotechnical field data
- > Evaluate geotechnical design parameters data validity
- Perform bearing capacity, foundation design and slope analysis calculations
- Responsible for the development of soil/rocks testing equipment and services
- Writing of soil/rocks testing and geotechnical reports
- Approving the geotechnical reports
- Approve all Job Orders related to the geotechnical testing
- Authorized to issue Purchase Orders related to the Geotechnical Department
- ➤ Take over the responsibilities and authorities of the Geotechnical Engineer (in his absence) with a written instruction/approval from the Chairman or C.E.O.
- Authorized to be a member of the Company Quality Management Team

#### Feb., 2006-2007 INCO - LABS, Kuwait.

Position: Sr. Drilling Engineer

- Responsible for managing all drilling staff working with the Company. Reporting to the Technical Manager.
- In charge of Quality Control of work carried out by the drilling staff of INCO-LABS.
- Managing all drilling activities of the Company.
- Coordination with the Head of Geotechnical Department for drilling works scheduling and planning.

- Coordinate with the client for executing the drilling works.
- Controlling the Company drilling fleet.
- Provide technical assistance and trouble shooting for all problems related to the drilling fleet on site.
- Prepare the soil boring logs reports.
- Coordination with the Head of Maintenance & Safety Department for the status of the drilling rigs working condition.

# 1997- Jan 2006 Philippine Geoanalytics, INC.,

Philippines.

Position: Operations Manager

### **Duties & Responsibilities**

- Manage operations of various geological, geotechnical and environmental drilling projects.
- In charge of operations of 10 skid type drilling rigs, 4 Mobile B40 truck mounted rigs, computerized ECPT Pagani equipment, electrical resistivity meter and seismic refraction survey seismograph and various specialized field test such as piezometer installations, pumping tests, inclinometer installation and monitoring using SINCO inclinometer readout unit (Datamatc) and data reduction using GTILT, Plate load TESTS AND Structural Load tests.
- Supervise about 50 drilling staff composed of Field Engineers, operators and helpers/drillers, drivers and mechanics.

### 1993-1997 EM2A Partners & Co., Philippines

Position: Asst. Engineer-Engineering Geologist

### **Duties & Responsibilities**

- ➤ Preparation of Boring Plan, Soil & Rock profiles using Autocad Software (Version 2000) and/Intellicad Software.
- Preparation of the draft Geotechnical and Geotechnical evaluation Report for review and final comments of the Principal Engineer. The report embodies the recommended foundation schemes for proposed structures, slope stability analysis, settlement analysis and construction considerations for the project based on the field and laboratory test results of geotechnical investigation works completed by PGA, Inc.
- Settlement computation and analysis using UNISETTLE software by Bengt and Fellenius.
- Pile capacity analysis UNIPILE software by Bengt and Fellenius.
- Soil Nail Wall design using SNAIL software.

#### 1992 - 1997 Minimax Mineral Exploration Corporation, Philippines

Position: Sr. Mining Engineer

#### **Duties & Responsibilities**

- ➤ Formulation, Implementation and Supervision of Geotechnical work programs designed to evaluate the economic potential of target mining projects.
- > Preparation of Mining program, production cost estimates and mine engineering studies.
- Organization and Supervision of development works and initial mine production programs of project areas geared for operation.

### 1992-1993 Philippine Geoanalytics., Inc., Philippines

Position: Field Geotechnical Engineer

#### **Duties & Responsibilities**

- Field supervision of drilling teams and field test crew for geotechnical investigation projects in the Philippines.
- Drilling, SPT and Auger Sampling of geotechnical boreholes.
- Installation of Environmental Monitoring Wells.
- In-situ measurement of soil shear strength using Lab Vene Shear and Pocket Penetrometer.
- > In-situ Field CBR Test.
- In-situ Plate Load Testing of soils.
- > In-situ Soil Permiability testing by Pumping test.

#### 1985 - 1987 Philichrome Mining Corporation, Philippines

Position: Mine Engineer

#### **Duties & Responsibilities**

- Implementation of Mine pit programs and production schedules.
- > Supervision of mine pit hydraulicking and Heavy Media Separation (HMS) plant operations.
- Organizations, scheduling and supervision of shift supervisors and mine pit and benefication plant personnel to ensure efficient production operations achieve company production targets.

# TRAINING SEMINAR ATTENDED

- Member, Philippine Socity of Mining Engineers (PSME)
- ➤ **Member**, University of the Philippines Alumni Association (UPAA).
- Alumnus, University of the Philippines Matallurgical and Mining Association (UP49ers).
- Lecturer, Mining Engineering BOARD review (1991) Manila Review Center, Adamson University, Manila, Philippines.
- Participant, Technical Seminar on Rammed Aggregate Pier Technology GEOPIER USA-Phoenix, Arizona, USA.

# LIST OF MAJOR PROJECTS UNDERTAKEN

- Ctci Corporation. LVN ISOMERIZATION & GOHT 3 Project.
- Modern Asia Environmental Holdings, Inc./Infratex Philippines, Inc. – Proposed Environmental Complex.
- Metropoliton Waterworks & Sewerage System (MWSS) - Drilling & Installation of Piezometers, Angat DAM Monitoring Project.
- > Golder Associates. UPS Asian Air Hub
- > Golder Associates. Proposed LNG Plant
- Shangri-La Hotels & Resorts/Arup Phiis. Inc/Davis Langdon & Seah Phils. Inc. – Proposed Boracay Shangri –La Resorts.
- EDSA Shangri-La Properties Inc./Arup Phiis Inc. Prposed 60-Storey Shang Twing Tower
- Leighton Contractors Phils./Golder Associates. Geotechnical Investigation, Rapu-Rapu Base Metals Mine Project
- ➤ Holcim (Phils) Inc. Silica Quarry Site Drilling and Sampling for Silica Reserve Evaluation.
- > Takenaka Corporation. Proposed New Bacolod (Silay) Airport.
- Singapor Ministry of Foreign Affairs/Davis Langdon & Seah Phils Inc. – Proposed New Chancery for the Singapore Embassy in Manila.
- Pilipinas Shell Petroleum Corporation. Proposed Diesel Fuel Tank Projects.
- ➤ CTI Engineers International. Proposed Bridge Sites Holio Flood Control Project Phase 4.
- ➤ Embassy of the Unites States of America. Proposed Transmitting Station.
- Pilipinas Shell Petroleum Corporation. Proposed Bitumen Plant.

### ACADEMIC BACKGROUND

- Bachelor of Science in Mining Engineering U.P. Diliman, Quezon City, Philippines, 1979-1984

#### COMPUTER

Microsoft Office, STAAD, AutoCAD, and other geotechnical And Internet Applications.

#### **SKILLS**

**NATIONALITY** - Filipino

# DATE OF BIRTH AND PLACE

- 25/11/1962 - Philippines

#### LANGUAGES

- English and Filipino

# COUNTRIES WORKED IN

- Kuwait & Philippines.

### KARL DEXTER JOHN A. SUALIBIO

TITLE Material Engineer

**EXPERTISE** Over 17 years of Experience in the field of Quality

Control of Construction Materials and Concrete.

#### **PAST EXPERIENCE**

# Aug.2010 to present

#### INCO - LABS, Kuwait.

Position: Material Engineer

- Monitoring and supervising Laboratories activities
- Coordinating the laboratory and field testing of materials
- Preparation of technical reports representing lab and field testing results for materials
- Coordinating with the Geotechnical Engineer the materials testing programs related to the soil investigation projects to meet the project completion date
- > Analyzing and interpretation of materials test results
- Responsible of the Quality Assurance and Quality Control of laboratory and field testing of materials
- > Report to the Technical Manager on daily basis
- Authorized to issue Job Orders related to the Materials Department

# July2006-July2010 Phil Geoanalytics Inc. Philippines

Position: Laboratory/Field Engineer

#### **Duties & Responsibilities**

- Supervision of various Soil Investigation Exploration Onshore & Offshore project
- Preparation of Occupational Health & Safety program any project site
- In-situ Plate Load testing of soils (Surface Soil Bearing Capacity)
- Soil Resistivity Testing soils
- Seismic Reflection /Refraction Surveys
- Ground Penetrating Redar Survey
- Geotechnical Borehole Core Drilling
- Rotary Drilling, Hollow Steam Auger Drilling
- Falling Head Test
- Offshore, Onshore Soil Investigation Exploration Procedures
- Borehole Instrumentation (Piezomter, Water Level recorder, Water Meter, Inclinomter)

- Installation & Reading Use of Inclinometers Test (Slope Protection Test Data)
- Responsible for Soil Testing, Fine & Coarse Aggregate Testing, Soil Aggregate Testing, Concrete Testing & Testing Metals).

ACADEMIC BACKGROUND - Bachelor of Science in Civil Engineering

Philippines-200-2005

NATIONALITY

- Pilipino

LANGUAGES

- English & Arabic

COUNTRIES WORKED IN

- Kuwait & Philippines

### **ENG. RICARDO C. CARLOS**

TITLE Pile Test Engineer

**EXPERTISE** Experience in the field of Testing & Monitoring Works for Piling,

Geotechnical, Structural and Meteorological with complete

Centralized Data Acquisition System.

#### **PAST EXPERIENCE**

Nov.2014 to present INCO - LABS, Kuwait.

# **Position: Pile Test Engineer**

- Setup and Pile testing for Bi-Directional Static Load test, Axial Static Load test (Compression, Tension and Lateral Load Test (Conventional and Instrumental Piles), Cross Hole Logging (CHSL), Dynamic Load Test, PIT (Pile Integrity Test), Anchor Stressing and Load Calibration.
- Prepare Pile details, Daily report and Progress report (Piling works, shoring works and De-watering works) and Site test reports.
- Project Management, Supervision, Coordination and Site Engineering works.

#### Jan. 2011-Nov.2014 Kuwait Bruckner Construction & Contracting Co.(K.S.C.C.), Kuwait.

#### Position: Project Engineer/Test Engineer

- Project Management, Supervision, Coordination and Site Engineering works.
- Project monitoring, Quality Assurance, Quality Control and Safety aspects.
- Prepare Pile details, Daily report and Progress report (Piling works, shoring works and De-watering works) and Site test reports.
- Setup and Pile testing for Bi-Directional Static Load test, Axial Static Load test (Compression, Tension and Lateral Load Test (Conventional and Instrumental Piles), Cross Hole Logging (CHSL), Dynamic Load Test, PIT (Pile Integrity Test), Anchor Stressing and Load Calibration
- Supervise project to ensure the project timetables, goals and deadlines are met in an efficient and satisfactory manner.
- Assists, participates and coordinates public meetings, contractor meeting, consultant meetings and other meetings related to functional area and project under charge.

# Feb.2007-Dec.2010 Strainstall Middle East, LLC

Dubai, UAE.

**Position: Senior Manager** 

# **Duties & Responsibilities**

- Project Management, Supervision, Coordination and Site Engineering works.
- Planning & scheduling the projects including implementation, estimation & manpower requirements.
- Perform installation, programming and monitoring of Geotechnical, structural and meteorological (weather station) instrumentations.
- Centralized Data Acquisition System, Network system Installation, setup and configuration (LAN, Wireless network) and alarm system.
- Prepares checklist and perform installation, setup and pile testing for Bi-Directional Static Load test, Axial Static Load test (Compression and Tension Load test) and Lateral Load test, Cliper Logging and CHSL, Dynamic Load test, PIT (Pile Integrity test).
- Instrument & Equipment Calibration.
- Enable to perform on the spot rough draft design layout and materials estimate.
- Provides technical support and conduct on-site training to field Engineers and Technician for quality works and proper execution to ensure and maintain customer satisfaction.
- Inspection, double check installed instruments, sensors and testing setup to assure the quality of woks and accuracy of the instrument or sensors.
- > Analysis and respond to customer's feedback.

# Jan.1999-Jan.2007 Klystron Technologies, Inc. Manila, Philippines

Position: Project Manager/Project Engineer

# **Duties & Responsibilities**

- Project Management, Supervision, Coordination and Site Engineering works.
- Performs site visit and site inspection of new projects to prepare constructive and Bid proposal's for Voice & Data structured cabling. PABX and system network setup, CCTV and security system and ship repairs.
- Projects/Negotiations, Deals & bargaining with the Company managers and Company Owners.
- Assist of preparation of contract documents, permitting, agreements, certification and related documentation.
- Prepare project implementation plan and progress report to ensure the achievement of Company's objects and targets.
- > Direct administration of construction personnel for ongoing construction projects.
- Assess preliminaries requirement for the project.

- Provides recommendations regarding project staff assignments/teams.
- > Prepare estimate and Bill of Materials & Qualities (BOQ).
- Prepare Project Costing & Manpower requirement.
- Communication to interact effectively with co-workers, managers, subordinates and the general public sufficient t convey information and to give work direction.
- Adheres to safety and quality standards as applicable to duties and accountabilities.
- Prepare Design Proposal and Lay-out using AutoCAD software.
- Knowledgeable in ship repair, steel works and steel fabrication.

# Jan.1996-Dec.1998 Narel Construction and Development, Inc. Makati City, Philippines

**Position: Site Engineer/Design Engineer** 

### **Duties & Responsibilities**

- Project Supervision
- > Prepare costing of labour and materials per unit model.
- > Prepare materials Inventory, daily time record and schedule work.
- Prepare materials requisition, Purchase of Materials and Payroll.
- Project supervision, Refurbishing, repair, Fabrication and Installation of stainless steel kitchen equipment, renovation of Banquet Kitchen, Fabrication and Installation of AHU framing and support.
- Piping design, hot and cold water line, sewer line & Down spout (riser), drainage system.
- Design of Boiler and Boiler system.
- > Design Computation, project and materials estimate.
- Drawing/Drafting of unit model 2D & 3D modeling using AutoCAD Rel.14 & 13 for windows.

# April1995-Dec.1995 Globstan Training & Test Center Makati City, Philippines

Position: AutoCAD Development Staff

#### **Duties & Responsibilities**

- Supports the Marketing of the AutoCAD Training programs.
- Studies the Windows Operation System and other applications software's running on the same environment, Troubleshoots a Computer for some minor problems.
- Marketing of AutoCAD training programs.
- Trouble shooting AutoCAD application software's.
- Act as Junior Instructor for training courses-AutoCAD release 12.

### Project's Accomplishment:

# Piling Works, Shoring, Anchor Installation, Dewatering, Deep Well and Pile Testing (Axial Load Test, PDA, PIT, CHSL, Anchor Stressing & Locking Test)

- Mangaf / Sabahiya Highway (2,200 Piles)
- Wafra Mall Extension (88 Piles)
- Shuaik Port (Gantry Crane Rails Foundation) (110 Piles)
- Jahra Road 80 (3,400 Piles)
- Mina Al Zour Power Plant (1,160 Piles)
- Kuwait National Petroleum Company (KNPC), AhMadi, GSEC North LPG Tank (Pile Testing, Anchor Work and Cathodic protection Borehole.
- Kuwait National Petroleum Co. (KNPC), AhMadi, Gulf Dredging New AGRP (55 Piles)
- Kuwait National Petroleum Co., Mina Abdulla, Boiler Foundation (60 Piles)
- Kuwait Investment Authority Head Quarters, Sharq Kuwait City (526 Piles)
- Kuwait Oil Company (300KVA Overheads Tower Lines Piling)(296 Piles)
- Sabah Al Ahmed Sea City Projects Road 285 (East Bridge) (262 Piles)
- Honda Show Room, Al Rai (64 Piles).

#### **BDSLT Installation works and Test Monitoring on following sites:**

- Zetas-Arabian Const.Co, Etihad Towers Site, Abu Dhabi, UAE
- Arabian Forasol Foundations,- Palm Jumeirah, Dubai, UAE
- Arabian Construction Co., Etihad Towers, Abudhabi, UAE
- Bauer International, Finanacial City (Al showa Island), Abudhabi, UAE
- Bauer International, Nations Towers, corniche Abudhabi, UAE
- Bauer International, IPIC Headquarters, Nuror Abudhabi, UAE
- Bauer International, Capital Center, Exhibitions Center Abudhabi, UAE
- NSCC, Capital Center, Exhibitions Center Abudhabi, UAE
- NSCC, Emirates Pearl, Abudhabi, UAE
- Bauer Internatinal, SEBA Tower, Khalidiya Abudhabi
- Soil Tech. Foundation, Corniche Hotel, Corniche Abudhabi UAE
- · Gulf Pilling, City of Lights, Al reem Island, Abudhabi UAE
- Bauer International, TDIC Headquarters, Magta Bridge, Abudhabi UAE
- Bauer International, Saadiyat Island Bridge
- Bauer International, Al Raha Beach
- Bauer International, Cleveland Clinic, Al Showa Island Abudhabi UAE
- Soil tech Foundation, Hodiriyat Bridge
- NSCC, Abu Dhabi Airport Extension (ADISC)

# Dynamic test (Low Strain & High Strain Test (PIT & PDA)), Static Load Test and Lateral Load Test, Cross Hole Sonic Logging (CHSL), Caliper Logging.

- Arabian Forasol Foundations, Palm Jumeirah, Dubai, UAE
- Arabian Foundations, Gate Towers, Al Reem Island, Abudhabi, UAE
- Arabian Foundations, ADNOC HQ, Corniched Abu Dhabi, UAE.
- APCC, Central Park Site, Dubai, UAE
- MEFG, Ras Al Khor Crossing, Dubai, UAE
- Zetas-ACC, Etihad Towers Site, Abu Dhabi, UAE
- Bauer, Finanacial City (Al showa Island), Abudhabi, UAE
- Bauer, Nations Towers, corniche Abudhabi, UAE
- Bauer, IPIC Headquarters, Nuror Abudhabi, UAE
- Bauer, Capital Center, Exhibitions Center Abudhabi, UAE
- NSCC, Capital Center, Exhibitions Center Abudhabi, UAE
- NSCC, Emirates Pearl, Abudhabi, UAE
- NSCC, ADIA Abudhabi, UAE
- NSCC, Abudhabi Airport Extension, Abudhabi, UAE
- Bauer, TDIC Headquarters, Maqta Bridge, Abudhabi UAE

- Bauer, Saadiyat Island
- Bauer, Al Raha Beach
- Kuwait Bruckner Company, Capital Tower, Sharq Kuwait
- Kuwait Bruckner Company, Kuwait Business Town, Kuwait
- Kuwait Bruckner Company, Flour Mill, Kuwait
- Kuwait Bruckner Company, Massaleh Tower, Bnid Algar Kuwait
- Sambo & E&C, Alsalam St. Upgrading, Abudhabi UAE
- Al Habtoor STFA (HSSG), Sorbonne University, Alreem Island Abudhabi
- Al Habtoor\_STFA(HSSG), Zayed University, Khalifa City Abu Dhabi, UAE
- Al Habtoor\_STFA(HSSG), ADISC, Khalifa City, Abu Dhabi, UAE

### Structural, Geotechnical and Meteorological Monitoring Works:

- Burj Khalifa Tower, Dubai Structural Instrumentations / Monitoring works
- Landmark Tower, Abu Dhabi Diaphragm wall monitoring, Structural Instrumentation / Monitoring, - Ground Instrumentation/Monitoring, Weather station (Meteorological Instrumentations).
- Central Market, Abu Dhabi Diaphragm wall monitoring, Caliper Logging, Temperature Monitoring, Structural Instrumentations / Monitoring, Weather station (Meteorological Monitoring).
- Capital Plaza, Abu Dhabi Strut and Slab Instrumentations / monitoring, Ground Instrumentations/Monitoring
- Royal Complex, Abu Dhabi Geotechnical Instrumentations.
- Albustan Complex, Abudhabi Diaphragm Wall Monitoring, Cross Hole Sonic Logging
- Capital Tower, Kuwait Ground Instrumentations/Monitoring, Pile Instrumentation/Monitoring, Cross Hole Sonic Logging
- Capital Center, Abudhabi Caliper Logging, Cross Hole Sonic Logging
- Zayed University, Abudhabi Caliper Logging, Cross Hole Sonic Logging
- Sorbonne University- Caliper Logging, CHSL, Dome Monitoring
- Cleveland Clinic, Abudhabi, Caliper Logging, Cross Hole Sonic Logging
- Emirates Pearl, Abudhabi Ground Instrumentation/Monitoring, Strut Monitoring, Anchor Load Test
- Sheik Zayed Bridge, Abudhabi Bridge Monitoring( Structural Instrumentations)
- Achrafeih Tower, Beirut Lebanon Pile Instrumentation Works and Pile Testing.

ACADEMIC BACKGROUND - Bachelor of Science in Mechanical Engineering University of Santo Tomas, Philippines, 1988-1995

COMPUTER SKILLS Microsoft Office, Word Star, Basic Programming (COBOL), Lotus 123, AutoCAD, Windows Vista, Windows 7 & 8, Microsoft PowerPoint, Adobe Photoshop and Internet Applications.

NATIONALITY - Filipino

DATE OF BIRTH AND PLACE

- 07/02/1971 - Philippines

**LANGUAGES** - English and Filipino

COUNTRIES WORKED IN

- Kuwait & Philippines.

### **ENG. BEDA BARCELONA**

TITLE Head of Survey Department

**EXPERTISE** Land & Engineering Surveying and Survey Project

Management

PAST EXPERIENCE

November 2013 to Present

**INCO-LABS, Kuwait** 

Position: Head of Survey

### **Duties**

Supervise day to day activities of the survey crews on site.

- Managing the Survey Department day-to-day activities
- > Supervises all work carried out by the Survey Department
- Report to the Technical Manager on daily basis
- Responsible for the Quality Assurance and Quality Control of survey works. This includes implementing procedures to ensure that all equipment and instruments used for tests within the scope of the quality system meet all of the requirements.
- Responsible for applying safety provisions in Survey activities.
- Prepare technical and financial proposals related to the Survey activities
- Oversees the works carried out by the field survey crews
- Responsible for the marketing of the survey services
- Supervises the survey mapping and CAD cartographic section
- Authorized to approve all survey drawings and survey technical reports
- > Approve all Job Orders related to the survey works
- Authorized to issue Purchase Orders related to the Survey Department
- Responsible for the trouble shooting and technical assistance of the site activities
- Responsible for the development of the survey equipment and services

# December 2004 to February 2012

# Middle East Surveys, Kuwait

Position: Head of Survey

### **Duties**

- Supervise day to day activities of the survey crews on site
- Managing the Survey Department day-to-day activities
- > Supervises all work carried out by the Survey Department
- Report to the Technical Manager on daily basis
- Responsible for the Quality Assurance and Quality Control of survey works. This includes implementing procedures to ensure that all equipment and instruments used for tests within the scope of the quality system meet all of the requirements.
- Responsible for applying safety provisions in Survey activities.
- Prepare technical and financial proposals related to the Survey activities
- Oversees the works carried out by the field survey crews
- Checking, verifying, preparing, editing and process final detail and topographic drawing.
- Works involved in Major Mapping surveys, Topographic survey of existing surface and other features, such as KOC Pipeline Corridors from KNPC Refinery, Ahmadi to Doha Power Plant-Kuwait; Topographic and Underground surveys of 96#'s Buildings and Gathering Center Facilities of Kuwait Oil Company.

### September 2001 to November 2003

# Hyundai Engineering and Construction Co., Ltd. Taiwan

Position: Survey Engineer

- Providing technical assistance to the Chief of Survey in general surveying and project management. Calculates and prepares the construction layout data using the GPS and Total Station instrument onboard programs, this calculated layout data is then used for layout, grading and to check all stakes for construction project, checks and verifies design data on construction plans prior to layout calculation and to ensure the accuracy before the data is used in construction project.
- ➤ Checks and verifies the Sub-Contractor's work during construction to ensure all construction elements meet the layout requirements and survey standards.
- Conducting field surveys and operate survey instrument and computer equipment to measure distance, angles, elevations and contours.

# May 2000 to August 2001

# Hanjin Heavy Industries and Construction Co., Ltd. Philippines

Position: Site Engineer

### **Duties**

- Responsible for all steel structure survey layouts and elevation of LRT Stations. Checking final elevation and location of embedded anchor bolts prior for concrete pouring.
- Checking levels and actual location of anchor bolts for the steel structural member for fabrication and checking verticality and alignment of structural member.
- Monitoring of steel installation of column, main frames, platform beams, braces, staircases, elevator encasement, steel trusses, guide way deck beam, metal decking and other form of steel structure. Also monitoring for the site welding, torque and other structural testing.
- Monitoring architectural finishes such as metal cladding works, concrete toppings, wall plastering, tiles and other architectural finishes.
- Supervising the works of sub-contractor such as welding, bolting, grouting and give instruction and decision in accordance with the plans and project specification. Knowledge in other software such as word, excel.

#### .

# March 1998 to February 2000

# Hyundai Engineering and Construction Co., Ltd. Singapore

Position: Land Surveyor

- Record measurement and other information obtained during field survey activities.
- ➤ Keep records, measurement and other survey information in systematic order.
- Assist in the calculation, analysis and computation of measurement obtained during field survey.
- > Determine precise locations using electronic distance measuring equipment.
- Responsible for establishing horizontal and vertical benchmarks prior for the construction of the structures at Sludge processing Building, Power House and other building facilities using Total Station Sokkia SET 3C and Automatic Level.
- > Stakeout and lay outing the location and elevation of structures for excavation.
- Responsible for setting out the centerline of roads, pipe trenches, road drains, pipeline, cable duct line, Pumping Station, Electrical Building and other external survey works. Also calculating the location of the structure by azimuth and coordinates.

### November 1995 to November 1997

# Hyundai Engineering and Construction Co., Ltd. Kuwait

Position: Land Surveyor

### **Duties**

- Assist survey engineer to develop methods and procedures for conducting field construction surveys. Conduct field surveys and operate survey instrument to measure distance, angles, elevations and contours. Record measurement and other information obtained during field survey activities.
- ➤ Locating and establishing horizontal and vertical control prior for the construction of structure and other facilities like cable tunnel, trenches, sea water intake, steel liner and concrete encasement, cable duct line using GEODIMETER 444 and Automatic Level instrument.
- > Stakeout location for excavation of structure to be constructed.
- Established alignment and elevation for the ventilation pipes also setting out lines, reference points, reference level and other survey work marks.
- ➤ Undertaking actual profile and cross-section of the proposed Kuwait Oil Company pipeline.

### ACADEMIC QUALIFICATIONS

**Bachelor of Science in Civil Engineering** 

Bicol University, Legazpi City, Philippines, 1987-1992

Master in Engineering Technology (36 units earned) Camarines Sur Polytechnic College, Cam. Sur, Philippines

2012 - present

NATIONALITY Filipino

LANGUAGES English

COUNTRIES WORKED IN

Kuwait, Singapore and Taiwan

# **Ahmad Muhammad Ahmad El-Barbary**

TITLE Survey Engineer

**EXPERTISE** Land & Engineering Surveying and Survey Project Management

February 2010 To Present **INCO-LABS**, Kuwait

Position: Survey Engineer

### **Duties**

- Supervise day to day activities of the survey crews on site.
- Provide Technical Assistance and trouble shooting for solving technical problems.
- Responsible for handing over and downloading the data to the CAD Section.
- Following the progress and checking of the drawing generation.
- Meeting with Clients and prepare technical and financial survey works offers.

# PAST EXPERIENCE

July 2005 to Feb. 2010

**GULF INSPECTION INTERNATIONAL CO., Kuwait** 

Position: Surveying Engineer (office and site)

Project Name: FACILITY UPGRADE & RELOCATION OF U/G PROCESS PIPING FOR GATHERING CENTERS & BOOSTER STATIONS.

Consultative : (SK Engineering & Construction co.) & (petroface Co.)

- Arranging manpower, equipment, and material, on site for forthcoming activities as per drawing scheduling.
- Surveying The Gathering Centers &Booster Stns
- Preparing Topographic maps to the all site
- Setting out for the Designed Pipeline in Site.(In sk Company Only)
- > Preparation of the As Built drawings for the Project.
- Co-ordination with the Consultant and Site Engineers.

Project Name: NEW REFINERY PROJECT (NRP)ROUETE

**TOPOGRAPHICAL SURVEY** 

Consultative: FLUOR COMPANY INTERNATIONAL

#### **Duties**

Arranging manpower, equipment, and material, on site for forthcoming activities as per drawing scheduling.

- ➤ Topographic surveying from South Tank farm to Alzuor (Length 60km)
- > Design of Profiles of Proposed Pipe
- Establishing control points in the path of project By Using GPS (RTK-STATIC –KINEMATIC)

Project Name: CRUDE EXPORT FACIUTIES AT (NTF, STF & MAA)[NORTH TANK FARM & 48" GRAVITY LINES Project]

Consultative: HYUNDAI HEAVY INDUSTRIES CO., LTD.

### **Duties**

- Arranging manpower, equipment, and material, on site for forthcoming activities as per drawing scheduling.
- > Topographic surveying North Tank and North Pier
- Design of Profiles of Proposed Pipe from North Tank to North Pier (LENGTH 8.480km)
- Establishing control points in the path of project By Using GPS (RTK-STATIC –KINEMATIC)

Project Name: SUPPLY AND INSTALLATION OF 132KV in Khiran city

**Consultative: MINISTRY OF ENERGY (ELECTRICITY & WATER)** 

#### **Duties**

- Topographic surveying North Tank and North Pier
- Design of Profiles of Proposed Pipe from North Tank to North Pier (LENGTH 8.480km)
- Establishing control points in the path of project By Using GPS (RTK-STATIC –KINEMATIC)

Project Name: New Khiran Town project

Consultative: PUBLIC AUTHORITY FOR HOUSING WELFARE

- > Topographic surveying North Tank and North Pier
- ➤ Topographic surveying (AREA 166km^2)
- Establishing control points in the path of project By Using GPS (RTK-STATIC –KINEMATIC)

Project Name: Kharafi new Shuaiba Camp (3) Project No. 9195

Consultative: Kharafi National

### **Duties**

- > Topographic surveying for the site using (total station & GPS)
- > Establishing control points for the site.
- > Sitting out civil and mechanical work of the new camp.

# Project Name: TOPOGRAPHIC SURVEYING OF KUWAIT NATIONAL AIRPORT

# **Duties**

- Topographic surveying
- > Establishing control points in the path of project area

Project Name: New Khiran Town project

**Consultative:** PUBLIC AUTHORITY FOR HOUSING WELFARE

#### **Duties**

- > Topographic surveying (AREA 166km^2)
- Establishing control points in the path of project By Using GPS (RTK-STATIC –KINEMATIC)

Project Name: TOPOGRAPHIC SURVEYING OF 1713 And 1760 pipelines Consultative: FLUOR company

#### **Duties**

- Topographic surveying (AREA 166km^2)
- Establishing control points in the path of project By Using GPS (RTK-STATIC –KINEMATIC)

# April 2005 to Alawi Tounsi Company July 2005 KSA

Position: Surveying Engineer (site engineer)

- > Topographic surveying for the site using (total station)
- > Establishing control points of the site.
- > Sitting out the coordinates of buildings of the hospital.
- Using the Level for adjusting the level of excavation and buildings

# Sept. 2003 to Kalubiah Utility Data Center

April 2005 Egypt

Position: Surveying Engineer (site engineer)

# **Duties**

- > Topographic surveying for the site using (total station & GPS)
- > Establishing control for Kalubiah Governorate.

# ACADEMIC QUALIFICATIONS

➤ BS.C from Shoubra faculty of Engineering (Surveying Department – May 2001)

### **Computer Skills:**

Windows 2000 + Windows XP AutoCAD 2000 + 2002 + 2004+2006 SDR map (Surveying program) Surfer (Surveying program)

Soft disk (Surveying program)
Prolink (Surveying program)
Win comm. (Surveying program)

Microsoft Excel 2000 +XP Microsoft Word 2000 +XP Leica Geo Office (GPS Software)

Trimble Geomatic Office (Surveying program) GPS Software

Land Desktop 2004

### **Surveying Instruments Skills:**

High experience in using [Level, Total station & GPS (Trimbel, Leica and Sokkia)]

# **Detection Instruments Skills:**

High experience in using Radio detection (RD400&RD4000), Metrotech Detection and Leica Detection.

NATIONALITY Egyptian

**LANGUAGES** English and Arabic

COUNTRIES WORKED IN

Egypt, Saudi Arabia and Kuwait.

#### **ENG. GAMAL ABD EL AZIZ MOHAMMAD**

TITLE Head of Calibrations Department

**EXPERTISE** Over 30 years of Experience in the field of Calibration

PAST EXPERIENCE

Aug.2014 to Present INCO-LABS, Kuwait.

Position: Head of Calibration Department

#### **Duties**

- ➤ Managing day-to-day activities of the Calibration Department
- > Report to the Technical Manager on daily basis
- ➤ Responsible for the Quality Assurance and Quality Control of the Calibration laboratories. This includes implementing procedures to ensure that all lab equipment and facilities used for calibration within the scope of the quality system meet all of the requirements.
- Monitor and enforce safety provisions and regulations in the Calibration Laboratories.
- ➤ Authorized for evaluation and interpretation of calibration results
- ➤ Authorized to approve quotations related to the calibration, each up to KD 3000
- ➤ Authorized to control direct expenses up to KD 100
- > Responsible of the local marketing for the calibration services
- > Responsible for the development of calibration equipment and services
- > Authorized to issue calibration certificates
- > Approving the calibration certificates
- > Approve all Job Orders related to the calibration
- > Authorized to issue Purchase Orders related to the Calibration Department
- Authorized to be a member of the Company Quality Management Team
- ➤ Take over the responsibilities and authorities of the Technical Manager in the field of calibration (in his absence) with a written instruction/approval from the Chairman or C.E.O.

# 2007-2010 National Institute of Standards (NIS), Egypt

Position: Technical Manager of Engineering & Surface Metrology Dept.

### **Technical duties**

All technical issues relating to the calibration certificates issued for the customers (Technical procedures, Uncertainty Budgets, Measurement traceability and so on according to the requirements of ISO 17025).

#### 2003-2006 National Institute of Standards (NIS), Egypt

Position: Executive Manager of Technical Calibration Dept.

#### **Technical duties**

Distributing, manage and manipulate all calibration services between the Customers (more than 2000 customers) and all 22 NIS laboratories.

# 1987-2003 National Institute of Standards (NIS), Egypt

Position: Senior Metrology Specialist at the Engineering Dimentional & Surface Metrology Dept.

#### **Technical duties**

Carrying out and supervise the calibration work in field of dimensional metrology Such that Gauge Blocks, Levels, Screw Threads, Micrometers, Dial Indicators, coordinate measuring machine, and ... etc).

#### 1985-1987 Food & Beverage Industries, Egypt

Position: Maintenance Engineer

#### 1983-1985 Armed Forces, Egypt

Position: Maintenance Engineer

#### **Professional Activities:**

- Technical Assessor in field of Dimensional metrology since 2000, Performed more than 120 Assessment Visits, among them there are four assessment visits were monitored by ILAC, International Laboratory Accreditation Committee, and more than 35 assessment visits in Gulf Countries (Kingdom of Saudi Arabia, UAE, Oman)
- Advisory Committee Member for Accreditation of Dimensional & Testing Laboratory According to international Standard ISO / IEC 17025 at Egyptian accreditation Council (EGAC) since 2000 until now.
- Task Force Member Team of Dubai accreditation Center (DAC) since 2010.
- Member in total quality Consultancy unit NIS. (2002 2006) (Laboratory accreditation requirements consultant 4 laboratories)
- Member in Egyptian Organization for Standardization and quality (2003-2010).
- Calibration of most dimensional instruments used in industry.

CV Gamal Abd El Aziz Mohammad

- Calibration of all volumetric apparatus used in laboratories.
- Estimating the uncertainty budget relating to the calibration of dimensional and volumetric calibrations.
- Shared as a trainer in the following training courses that was carried out
  - Yearly at the Engineering & Surface Metrology Department, NIS Since 1996
- Calibration of gauge blocks by mechanical comparator.
- Calibrate of simple dimensional instruments (Micrometer, vernier caliber, Dial indicator...etc.)
- > Estimation and evaluation of uncertainty budget in the calibration results of all dimensional instruments.
- Awareness of General requirements for the competence of testing and calibration laboratories according to ISO /IEC 17025 science 2002

#### **Attended Training Courses:**

- Metrication & Legal Metrology Course at NPL (National Physical
- Laboratory) & IILM (Indian Institute of Legal Metrology) India 1989-1990
- Engineering Metrology Course at NIM (National Institute of Measurement) – China – 1994-1995.
- Legal Metrology Course at NRLM (National Research Laboratory) Japan & at Tokyo Metropolitan Institute of weight and measures, Japan - 1998
- National Standards System & Precision Measurements Course at KRISS (Korea Research Institute of Standard & Science) Korea – August & September 2004.
- ➤ ISO/IEC Guide 25 Course for quality managers at UKAS (United Kingdom Accreditation Service) Egypt December 1996.
- ➤ ISO/IEC Guide 25 Course for the production of quality manuals at UKAS Egypt December 1996.
- Uncertainty Budget Course at UKAS Egypt March 1997.
- ➤ Technical Assessor (ISO/IEC Guide 25) Course at NLAB Egypt February, 2000.
- Laboratory Assessors Course (ISO/IEC 17025) at the Egyptian Accreditation Council (EGAC) SEAS Project – August & September 2003.
- Proficiency Testing Course at National Institute of Standard (NIS)
- Calypso Basic Course of Coordinate Measuring Machines January 2006.
- CNC Machines Course Theory, Programming & Applications -April 2006 at Engineering Faculty of Cairo University.
- Verification & Calibration of CNC Machine Tools Course by Laser Interferometer – June 2006.
- ➤ Talyrond 73 Operation Course February 2006 by Taylor Hobson Precision.
- Mass and volume calibrations, 6June to 8 Th, 2011by Mettler Toledo.
- Flow measurement using ultrasonic flow meter, 12 to 16 Jan. 2014, by National Institute for Standards.

CV Gamal Abd El Aziz Mohammad

## Countries of International Experience:-

- Jordan: Calibration expert From NIS to Jordanian Royal Society of Science. 1998.
- Libya: Calibration expert From NIS to the Libyan Institute for oil, 2006.
- > Kuwait: Calibration expert From NIS to INCO LABS, 2006.
- Sudan: Calibration expert From NIS to the Sudan Institute for oil, 2010.
- ➤ Sudan: Assessment visit (EGAC) ISO 17025 According to ISO/IEC 17025. (2015)
- Kingdom of Saudi Arabia: Assessment visits (6 visits) According to ISO/IEC 17025.
- United Arab Emirates: Assessment visits (More than 100 assessment visits) According to ISO/IEC 17025.
- Oman: Assessment visits (2 visits) According to ISO/IEC 17025.
- ➤ Iraq: Training & consultant in dimensional metrology and evaluating of relating uncertainty Budgets, also for awareness and implementation of ISO 17025 quality system. (2 Visits each visit 6 days) 2016 and 2017.

ACADEMIC BACKGROUND

**NATIONALITY** 

- B.Sc Production Engineering

Helwan University Cairo, Egypt.

- Egyptian

37.

**LANGUAGE** - Arabic, English

COUNTRIES WORKED IN

- Kuwait & Egypt.

CV Gamal Abd El Aziz Mohammad

## **ENG. LAFI HARDAN LAFI AL-HUSSAIN**

TITLE Head of Technical Services

**EXPERTISE** Experience in the field of Mechanical Engineering

### **PAST EXPERIENCE**

Feb 2003 to Present

INCO-LABS, Kuwait.

Position: Head of Technical Services

## **Duties**

- > Supervise all activities related to the maintenance of the Company facilities, equipments, drilling rigs, and vehicles
- Responsible for the maintenance of the Company utilities such as fire fighting system, air conditioning units, electrical network and sewage network
- Report to the Deputy General Manager on daily basis
- Assure the readiness of the drilling rigs and vehicles on daily basis
- Coordinate with the Drilling Engineer for scheduled shutdown of drilling rigs for the purpose of maintenance
- Responsible for the Company spare parts store
- Responsible for the spare parts and consumables availability in the Company store
- Maintain the maintenance history records of machines and vehicles breakdowns, fuel consumption reports, preventive and routine maintenance records
- Maintain a copy of the operational and maintenance manuals of drilling rigs, vehicles, machines and equipment
- Follow up safety and security matters within the Company activities, and establishing & applying the safety and security measures
- Responsible of the Quality Assurance and Quality Control of machines and vehicles operation
- Trouble shooting and repair of machines, drilling rigs, and vehicles

Oct 98 to Oct 99

M/s. National Industries Company, State of Kuwait.

Position: Mechanical Technician

#### **Duties**

- Maintenance/service of all vehicle and equipment
- Rectification and trouble shooting
- > Replacing and ordering required necessary spare parts.

TECHNICAL BACKGROUND Bachelor of Science in Mechanical Engineering
- From Arab Academy for Science and Technology and
Marine Transport, Egypt – Year 2002

**Diploma in Mechanical Cars** 

From the College of Technology, State of Kuwait.

**NATIONALITY** 

- Syrian

DATE OF BIRTH AND PLACE

- 12 / 03 / 1975 : Kuwait

**PROFESSIONAL AFFILIATION** 

- Kuwait Society of Engineers

**LANGUAGES** 

- Arabic and English

COUNTRIES **WORKED IN** 

## **MUHAMMAD NASRULLAH RAFIQ**

TITLE Head of Financial & Administration

**EXPERTISE** Over **26 years** experience in the field of Accounting.

PAST EXPERIENCE

Apr 2005 to Present INCO-LABS, Kuwait

Position: Head of Financial & Administration

## **Duties**

- Responsible for the Company accounts, Balancesheets, Liabilities and Assets.
- Preparing monthly & yearly revenues/costs reports.
- Responsible for the attendance and leaves of employees.
- Responsible for issuing payments & invoices.
- Responsible for maintaining a record for all debits and credits of the Company relation with others.
- Responsible for the coordination with Insurance companies to insure all of the Company assets such as Vehicles, Buildings, Equipments and Professional Indemnity.
- Supervision of the Administrative Staff such as Secretaries, Messengers, Collection Representative.

April 1981 to March 2005

Mabanee, Kuwait

Position: Accountant

ACADEMIC QUALIFICATIONS

- Higher Secondary School

Pakistan.

- B.Com, University of Punjab

Pakistan

NATIONALITY - Pakistani

**DATE OF BIRTH** - 20/10/1958

**LANGUAGE** - Arabic, English & Urdu

COUNTRIES WORKED IN

# **JOJO GEORGE VARGHESE**

TITLE Drilling Engineer

**EXPERTISE** Experience in the field of soil and Construction Materials

testing.

#### PAST EXPERIENCE

March 2011 to present

INCO - LABS, Kuwait.

Position: Drilling Engineer

Managing all drilling activities of the Company

- Coordination with the Head of Geotechnical Department for drilling works scheduling and planning
- > Coordinate with the client for executing the drilling works
- Controlling the Company drilling fleet
- Provide technical assistance and trouble shooting for all problems related to the drilling fleet on site
- Prepare the soil boring logs reports
- Responsible for handing over the soil boring logs to the Geotechnical Engineer
- Responsible for handing over the soil and rocks samples to the Materials Engineer
- Coordination with the Head of Maintenance & Safety Department for the status of the drilling rigs working condition
- Authorized to terminate the soil drilling work for safety measures of the drilling fleet and rigs
- Responsible of the Quality Assurance and Quality Control of the drilling works
- Authorized to issue Job Orders related to the soil investigation works
- Report to the Technical Manager on daily basis

ACADEMIC BACKGROUND

- Bachelor of Technology in Mechanical Engineering

Amal Jyothi College of Engineering, India-2009

COMPUTER SKILLS **Computer Aided Design-**Uni Graphics, Catia, Master Cam CNC Programming, CNC Lathe & Milling Machine.

NATIONALITY - Indian

**LANGUAGES** - English, Arabic, Hindi, Tamil and Malayalam

COUNTRIES WORKED IN

# YASIR KHALIL

TITLE Lab Supervisor

**EXPERTISE** Over 11 years experience in the field of Testing of soil and

construction materials at lab and field.

PAST

**EXPERIENCE** 

May 2005 to Present INCO-LABS, Kuwait

Position: Lab Supervisor

## **Duties**

Responsible for the supervision of all type of physical & engineering property testing on soil, Concrete & Asphalt in lab and in-situ testing.

> Ensure the quality of testing carried out by the technicians.

Ensure the implementation of HSE requirements for lab and site testing.

**2000 to 2004** Mushrif Trading & Contracting Co.

Kuwait.

Position: Lab. Technician

#### **Technical duties**

➤ Testing of loose Asphalt samples, including extraction, gradation, bulk density etc.

Asphalt core sampling and testing.

1999 to 2000 Top Sanabel General Trading & Cont. Co.

Kuwait.

Position: Lab Technician

#### **Technical duties**

> Testing of Asphalt and cores including extraction, gradation, etc.

ACADEMIC QUALIFICATIONS - Fsc. Maths

Govt. Polytechnic Institute Nowshera, Pakistan.

NATIONALITY - Pakistan

**DATE OF BIRTH** - 04/12/1976

**LANGUAGE** - Arabic and English

COUNTRIES - Kuwait & Pakistan WORKED IN

## **MOUMEN KHAIRY ABOU AL HAMD**

TITLE Lab Supervisor

**EXPERTISE** Over 8 years experience in the field of Testing of soil and

construction material at lab and field.

PAST EXPERIENCE

Nov 2004 to Present INCO-LABS, Kuwait

Position: Lab Supervisor

# **Duties**

- Assist the Materials Engineer in monitoring and supervising laboratories activities
- Assist the Materials Engineer in coordinating the laboratory and field testing of materials
- Perform laboratory and field testing of materials such as soil, aggregates, concrete, asphalt and rocks
- Maintaining the testing equipment in good condition
- Preparation of materials test reports
- Authorized to issue Job Orders related to the materials testing
- Authorized to provide training in materials testing for the technicians
- Checking materials tests reports prepared by the technicians
- Report to the Materials Engineer on daily basis
- ➤ Take over the responsibilities and authorities of the Materials Engineer ( in his absence) with a written instruction/approval from the Chairman or Chief Executive Officer
- ➤ Ensure tests are performed according to quality system requirements.

# 2003 to 2004 Hassan Allam Company Egypt.

Position: Lab Technician

#### **Technical duties**

- ➤ Testing of Soil including sieve analysis, proctor, field density, concrete including, pouring inspection, slump test, cube strength, etc.
- Preparation of materials test reports
- > Maintaining the testing equipment in good and safe condition

# ACADEMIC QUALIFICATIONS

- Bachelor of Arts in Social Works, from University Sohag, Egypt.

## **MOUMEN KHAIRY**

**NATIONALITY** - Egyptian

**DATE OF BIRTH** - 31/08/1982

**LANGUAGE** - Arabic & English

COUNTRIES WORKED IN

- Kuwait & Egypt

## MAZHAR IQBAL MOHAMMAD KHAN

TITLE Lab Supervisor

**EXPERTISE** Over 17 years experience in the field of Testing of soil and

construction material at lab and field.

PAST EXPERIENCE

Jan 2015 to Present INCO-LABS, Kuwait

Position: Lab Supervisor

#### **Duties**

- Assist the Materials Engineer in monitoring and supervising laboratories activities
- Assist the Materials Engineer in coordinating the laboratory and field testing of materials
- Perform laboratory and field testing of materials such as soil, aggregates, concrete, asphalt and rocks
- Maintaining the testing equipment in good condition
- Preparation of materials test reports
- > Authorized to issue Job Orders related to the materials testing
- Authorized to provide training in materials testing for the technicians
- Checking materials tests reports prepared by the technicians
- Report to the Materials Engineer on daily basis
- ➤ Take over the responsibilities and authorities of the Materials Engineer ( in his absence) with a written instruction/approval from the Chairman or Chief Executive Officer
- ➤ Ensure tests are performed according to quality system requirements.

## Jul 2006 to Dec 2014 INCO-LABS, Kuwait

Position: Lab Technician

## <u>Duties</u>

- Responsible for all type of physical & Engineering property testing on soil, Concrete & Asphalt.
- Conducting field density test, gradation, etc.
- > Testing of concrete including concrete mix design, pouring inspection, slump test, air content test etc.

# Aug 2005 to Jun 2006 United Gulf Construction Co. (U.G.C.C.), Kuwait

Position: Lab. Technician

### **Technical duties**

Concrete inspection-Temperature record, Slump test, Cube preparation etc.

- Conducting Field Density Test, Proctor, Sieve Analysis and Atterberg limit for Soil etc.
- Conducting Rebound Hammer & Ultrasonic test

2000-2002 **Mohmand Construction Company Pvt.** 

Peshawar, Pakistan.

Position: Lab. Technician

## **Technical duties**

 Concrete inspection-Temperature record, Slump test, Cube preparation etc.

- Conducting Field Density Test, Proctor, Sieve Analysis and Atterberg limit for Soil etc.
- Conducting Rebound Hammer & Ultrasonic test

1994-2000 **Karcon Construction Company Pvt.** Peshawar, Pakistan.

Position: Lab. Technician

## **Technical duties**

- Concrete inspection-Temperature record, Slump test, Cube preparation etc.
- Conducting Field Density Test, Proctor, Sieve Analysis and Atterberg limit for Soil etc.
- Conducting Rebound Hammer & Ultrasonic test

ACADEMIC - Diploma in Commerce **QUALIFICATIONS Technical Board of Education** 

- Pakistani **NATIONALITY** 

DATE OF BIRTH - 06/08/1974

LANGUAGE - Arabic, English & Urdu

COUNTRIES **WORKED IN** 

- Kuwait & Pakistan

## **ANNS IMTIAZ**

TITLE Drilling Site Engineer

**EXPERTISE** Experience in the field of soil and Construction Materials

testing.

#### PAST EXPERIENCE

# April 2015 to present

## INCO - LABS, Kuwait.

Position: Drilling Site Engineer

- Managing all drilling activities of the Company
- Coordination with the Head of Geotechnical Department for drilling works scheduling and planning
- > Coordinate with the client for executing the drilling works
- Controlling the Company drilling fleet
- Provide technical assistance and trouble shooting for all problems related to the drilling fleet on site
- > Prepare the soil boring logs reports
- Responsible for handing over the soil boring logs to the Geotechnical Engineer
- Responsible for handing over the soil and rocks samples to the Materials Engineer
- Coordination with the Head of Maintenance & Safety Department for the status of the drilling rigs working condition
- Authorized to terminate the soil drilling work for safety measures of the drilling fleet and rigs
- Responsible of the Quality Assurance and Quality Control of the drilling works
- Authorized to issue Job Orders related to the soil investigation works
- Report to the Technical Manager on daily basis

## Sep.2013 to March 2015

## Skyway enterprises, India

Position: Civil Engineer

Water proofing, renovation and construction of Houses. With the Public Works Department (P.W.D), Channapatna taluk as the client

# July 2013 to Aug.2013

#### Al Suhoub Trading & Contracting Company, India

Position: Supervising Engineer

Gas Emission Control Works of Company (Kuwait Oil Company – KOC) at Ahmadi Town Ship, Kuwait. We were the main contractors for the project, working directly under

- the Kuwait Oil Company (K.O.C) building maintenance team supervision
- The executed projects were: Continuous monitoring of lower explosive limit, controlling the emission of flammable and toxic gasses. Such as methane, hydrogen Sulphide etc. We drilled bore holes, maintained network connections (Y Pipes), constructed venting wells and installed gas clams to monitor and control the gasses.
- We also started the shifting of fans installed in Ahmadi Township to KOC refinery area (South Ahmadi) via micro tunneling of about 315meter. Lastly, we also did renovations and constructed new houses for the registered KOC occupants as per KOC building maintenance team instructions.

## June 2011 to June.2013

#### Al Musairie National Gen. Trad. & Contracting Company, India

Position: Site Engineer

- Umm Al Aish New Gas Filling Plant Project (Kuwait Oil Tanker Company Project K.O.T.C) @ Abdaly, Kuwait. We were the sub-contractors for the project, with Hanwha engineering and construction company (South Korea) as the main contractor.
- The executed projects are the main new L.P.G gas filling area and control Room, underground water tank/pump room, ware house and pantry building, administration building, social building and maintenance work shop. We did block work, plastering (Surface preparation, dash coat, scratch coat and finishing coat), flooring (surface preparation and laying of tiles), roofing and painting works.
- Also we executed Ucrete (4 6 mm heavy duty polyurethane floor finish unique HD polyurethane resin technology with exceptional resistance to aggressive chemicals) for the first time in Kuwait in this project.
- ➤ Upgrading of obsolete fire detection, alarm and suppression systems at KNPC sites including the phase out of halon system at K.N.P.C Mina Al Ahmadi refinery, Kuwait. We were the sub-contractors for the project with Hanwha engineering and construction company (South Korea) as the main contractor. The executed projects are preparation and installation of pre cast duct banks, cable trenches at tank farm area in the refinery.
- L.P.G Train 4 project @ K.N.P.C Mina Al Ahmadi refinery, Kuwait. We were the sub-Contractors for the project with Daelim industrial company (South Korea) as the main contractor. The executed projects are clean water line sewer (C.L.S) pipeline and man holes, valve pit, flow meter pit, flare stack pipe rack foundations and flare foundations at Outside battery limit (O.S.B.L) area in the refinery.
- Extension of a conference room and construction of a stimulator room at Joint Operations, Wafra, Kuwait. We were the sub-Contractors for the project with Chevron (Saudi Arabia) as the main contractor.

## May 2010 to May 2011

# Muscat engineering international services company L.L.C, Muscat, Oman

Position: Civil Engineer

Design and construction of Adam airstrip, Adam, Ad Dakhiliyah region, Sultanate of Oman. We were the sub-Contractors for the project. We were assigned to fix edge Kerb, non-mountable Kerb and interlock tiles for a stretch of 4 Kms. Also we have done stone pitching (Rip rap) on three box culverts (both upstream and downstream sides

# Oct.2008 to May 2010

## Skyway enterprises, India

Position: Civil Engineer

Water proofing and renovation of houses

## ACADEMIC BACKGROUND

#### - B.E Civil Engineering, India

# COMPUTER SKILLS

**PGDCA-** Post graduate diploma in computer applications- India Auto CADD, Staad Pro, Architectural CADD, 3D Studio Max

NATIONALITY

- Indian

LANGUAGES

- English, Arabic, Hindi, Tamil and Malayalam

# COUNTRIES WORKED IN

- Kuwait & India



## **MOHAMED AWAYED RADAD**

TITLE Drilling Supervisor

**EXPERTISE** Over 11 Years of working experience as a Drilling

Supervisor

PAST EXPERIENCE:

March 2000 to Present INCO-LABS, Kuwait

Position: **Drilling Supervisor** 

## **Technical duties**

Assist the Drilling Engineer in controlling the Company drilling fleet.

- Assist the Drilling Engineer to provide technical assistance and trouble shooting for all problems related to the drilling fleet on site
- Generation of soil boring logs
- Handing over the soil boring logs to the Geotechnical Engineer
- Handing over the soil and rocks samples to the Materials Engineer
- Responsible for safety measures of the drilling fleet and rigs on site.
- Site inspection for site readiness and accessibility prior to mobilize the drilling rigs
- > Report to the Drilling Engineer on daily basis
- > Ensure tests are performed according to quality system requirements

ACADEMIC QUALIFICATION - Secondary Education

**DATE OF BIRTH** 12/04/1975

**LANGUAGES** Arabic and English

COUNTRIES WORKED IN

## **AMEER ALI**

TITLE Senior Surveyor

**EXPERTISE** Engineering Survey, Topographic Survey, Marine

Survey, As-Built Survey

PAST EXPERIENCE

July.2017 to Present **INCO-LABS**, Kuwait

**Position: Senior Surveyor** 

**Duties** 

Carry out survey and engineering survey works

Setting out of buildings and structures

> Perform under ground utilities detection works

> Prepare and generate data reports

➤ Maintain the survey equipment in good condition

Crack mapping survey at Pizzarotti – New Maternity Hospital

Undertake Building Settlement Survey and shoring Survey.

➤ Third Party Surveyor, GS Engineering, CFP MAA Refinery Project Brown Field).

PETROFAC, Third Party Surveyor, GC29 at KOC North Field

Instrument handled such Leica Builder 200, Sokkia 1010, GPS1200, Automatic Level and Sprinter 250, Radio Detector.

Oct.2013-June 2017

STFA Turkey

Small Boat Harbours KOC Project in KNPC Area,

Kuwait

**Position: Land Surveyor** 

<u>Duties</u>

- ➤ Make the control point for the project, transferred from MACD28 Ahmadi, Statistics survey and traverse closing.
- Building works and steel structure building survey works.
- > Bathymetric survey inside KNPC south harbor 39 zone north.
- > Reference lione for dredging in south and north harbor.
- > Stake out the building points and leveling with level instrument.
- > Survey works for pipe piling for JIB Crane
- > Sheet Piling works for ship lifting area.
- ➤ Topographic Survey from KNPC South to KOC HEAD OFFICE 30KM FOR COMMUNICATION LINE.
- > Checking depth of seabed by echo sounder and manual.
- ➤ Survey works for breakwater construction, Quay wall placing, Accropode placing and crown wall works.

### Sept. 2012-Sept.2013

# **SEMATCO GENERAL TRADING & CONST. CO. State of Kuwait**

**Position: Surveyor** 

#### **Duties**

- Survey and alignment Setting out of Road and building.
- Accomplish various watersheds highways as well as topographical surveys.
- ➤ Observe and follow the provided necessary supervisions in preparation of specifications as well as plans for entire state bridge, highways, park building and other structures.
- Take necessary maintenance as a private practitioner in surveying sites developmental layouts and other topographical services.
- ➤ Topographic survey of Road 25, 8km length for Ministry of Electricity and Water project.
- Checking manhole depth, pipe invertlevel and brackish water line.
- > Topographic survey of stockpile for volume calculation.
- Building Survey for Army Control station in Abdally, North Kuwait
- Stakeout of Borehole points.
- > Topographic surveying with Total Station & GPS.
- > Draw as-built plan for building.
- Surveying and leveling positioning of roads and drainages.
- ➤ Able to handle all survey instruments such as Total Stations,GPS and Theodolites
- Surveying and leveling positioning of all roads and drainage
- ➤ Ensure work done on Pipe laying and manhole laying are according to the measurements

#### Feb. 2008-June 2012

# B.H. CONSTRUCTION COMPANY Bengaluru, India

**Position: Surveyor** 

## **Duties**

- Sketch the path above a surface area, following any excavation work.
- ➤ Prepare and maintain sketches, map, reports and legal descriptions of surveys in order to certify and assume liability for work performed.
- ➤ Prepare/supervise preparation of all data, charts, records, etc and to record the results and land surveys features.
- Verify the accuracy of survey data, including measurements and calculations conducted at various sites.

Instruments handled:

TOTAL STATION : LEICA-TS06, TCRM 1202/1203, SOKKIA 510 GPS : TRIMBLE R4 MODEL 3, LEICA GPS 1200,

LEICA GPS Viva

LEVEL INST : TOPCON, AT-G2, LEICA NA720, Leica

Sprinter 250

ACADEMIC QUALIFICATIONS

- Secndary School Certificate, Board of Education, Government of Kerala

- Civil Engineering Diploma, Korattymatha Technological

Institution, Thrissur DT, Kerala, India

**FIELD QUALIFICATION** 

Good experience in field survey

➤ Knowledge of Topographic survey

> Knowledge of Mathematical Calculations

> Analytical skills

➤ Computer Knowledge

➤ AUTOCAD

NATIONALITY Indian

**LANGUAGES** English, Hindi, Tamil and Malayalam, Madium in Arabic

COUNTRIES Kuwait & India

#### **ZULFIQAR ALI MUHAMMED ISHAQ**

TITLE Lab Technician

**EXPERTISE** Over **7 years** experience in the field of Testing of soil and

construction material at lab and field.

PAST EXPERIENCE

June '06 to Present INCO-LABS, Kuwait

Position: Lab Technician

## **Duties**

- > Testing all type of physical & Engineering property testing on soil, Concrete & Asphalt.
- Conducting field density test, etc.
- ➤ Testing of concrete including compressive strength, pouring inspection, slump test, air content test etc.

#### Nov '04 to Jan '05 Muhammad Abdul Mohsin Al-Kharafi & Sons.

Position: Lab. Technician

## **Technical duties**

- Conducting Field Density Test on sites. Sampling fresh concrete and performing slump test.
- Collection of sample of coarse and fine aggregate from batching plant for sieve analysis.
- Collection of soil sample for Proctor test.

#### 2002 to 2003 Associated Consulting Engineers Pvt. Ltd.

Pakistan

Position: Material Inspector

## **Technical duties**

- Collection of concrete sample for cube and slump.
- Collection of asphalt concrete mix for performing extraction test and gradation.

# 1999 to 2001 Guarantee Engineers Pvt. Ltd.

Pakistan

Position: Lab Technician

#### **Technical duties**

- Conducting Field Density Test on sites. Sampling fresh concrete and performing slump test.
- Collection of sample of coarse and fine aggregate from batching plant for sieve analysis.
- > Collection of soil sample for Proctor test.

ACADEMIC QUALIFICATIONS

- Bachelor in Arts

Pakistan.

**NATIONALITY** 

- Pakistani

DATE OF BIRTH

**-** 17/04/1972

**LANGUAGE** 

- English, Arabic, Urdu and Hindi

COUNTRIES WORKED IN

- Kuwait & Pakistan

## NAEEM SHABBIR

TITLE Lab Technician

**EXPERTISE** Over 8 years experience in the field of Testing of soil and

construction material at lab and field.

**PAST** 

**EXPERIENCE** 

August 2006 to Present **INCO-LABS**, Kuwait

Position: Lab Technician

### **Duties**

- > Testing all type of physical & Engineering property testing on soil, Concrete & Asphalt.
- Conducting field density test, etc.
- > Testing of concrete including compressive strength, pouring inspection, slump test, air content test etc.
- > Non destructive test by rebound.
- Conducting Field CBR & Plate Load test
- > Testing material including Sieve analysis, Unit weight, Crushing value, Impact value and Soundness.

Feb. to June 2006 M/s. Ahmadiah Construction Co. Kuwait

Position: Lab. Technician

#### **Technical duties**

- Concrete inspection-Temperature record, Slump test, Cube preparation etc.
- Conducting Field Density Test, Proctor, Sieve Analysis and Atterberg limit for Soil etc.

Jan to Dec.2005 Micro Plus Computer, Pakistan.

Position: Technician

## **Technical duties**

- Concrete inspection-Temperature record, Slump test, Cube preparation etc.
- Conducting Field Density Test, Proctor, Sieve Analysis and Atterberg limit for Soil etc.

Jan to Sept.2004 Kuwait Austria General Trad. & Cont. Co. Kuwait

Position: Laboratory Technician

ACADEMIC - Metric Education QUALIFICATIONS

Lahore Board Education - Pakistan

TECHNICAL - Professional Diploma in Computer Hardware, QUALIFICATION Mechanical Diploma (6 Months), &

# Having Working knowledge of Civil Works.

- Secondary School Certificate, Govt. of Pakistan

NATIONALITY

- Pakistan

DATE OF BIRTH

- 24/12/1978

LANGUAGE

- Arabic, English, Hindi

COUNTRIES WORKED IN

- Kuwait & Pakistan

#### **NASRULLAH AHMAD ALI**

TITLE Lab Technician

**EXPERTISE** Over 8 years experience in the field of Testing of soil and

construction material at lab and field.

PAST EXPERIENCE

Oct 2006 to Present INCO-LABS, Kuwait

Position: Lab Technician

## **Duties**

- > Testing all type of physical & Engineering property testing on soil, Concrete & Asphalt.
- Conducting field density test, Gradation, Proctor etc.
- ➤ Testing of concrete including compressive strength, pouring inspection, slump test, air content test etc.

# May '06 – Sept '06 Kuwait Company for Process Plant Construction and Contracting Co. (KCPC)

Position: Lab. Technician

#### **Technical duties**

- ➤ Testing of Soil including sieve analysis, proctor, field density, sand equivalent test, liquid & plastic limit, CBR, etc.
- > Testing of concrete including concrete mix design, pouring inspection, slump test, air content test etc.

## Feb '03 - Nov '05 Combined Group

Position: Asst. Lab Technician

## **Technical duties**

- ➤ Testing of loose Asphalt samples, including extraction, gradation, bulk density, marshall stability and density, etc.
- Asphalt core sampling and testing.

ACADEMIC - SSC Board of Intermediate and Secondary Education,

Peshawar N.W.F.P, Pakistan

NATIONALITY - Pakistan

**DATE OF BIRTH** - 30/01/1975

**LANGUAGE** - Arabic and English

COUNTRIES - Kuwait WORKED IN

## ABDUL NASIR SHAIKH ABDUL JABBAR

TITLE Senior Chemist

**EXPERTISE** Over **16 years** of working experience in the field of chemical

and bio-chemical testing of water, soil and materials.

PAST EXPERIENCE

Oct. 2004 to Present INCO-LABS, Kuwait

Position: Sr. Chemist

## **Duties**

Conduct chemical and bio-chemical testing of soil, raw materials, cement, water and waste water samples

Generate the chemical test reports

Maintain the laboratory equipment in good condition

Oct. 1994 to Sept. 2004

Sindhabadgar Sugar Mills

Hyderabad, Pakistan

Position: Production Officer (Chemist)

## **Technical duties**

Check hourly laboratory

Maintain quality of sugar

Report to Production Manager & Deputy Chief Chemist Production

ACADEMIC QUALIFICATIONS

- Higher Secondary School

Pakistan.

- B.sc, (Batchelor of Science)

NATIONALITY - Pakistani

**DATE OF BIRTH** - 24/021966

**LANGUAGE** - English & Urdu

COUNTRIES WORKED IN

- Kuwait & Pakistan

## KAJEENTHIRAN THAYANANTHAN

TITLE Drilling Rig Operator

**EXPERTISE** Over 8 Years of working experience as a Driller, familiar

in handling tools and equipments such as Truck Mounted Mobile Rig, Mind Drill Rig, CP Rig, Tone Tas

Rig, CME Rigs, Diedrich Rig.

PAST EXPERIENCE: March 2018 to Present

**INCO-LABS**, Kuwait

Position: Drilling Rig Operator

#### **Technical duties**

- > Perform boreholes and water well drilling using different techniques such as augering, rotary, and mud drilling
- Perform rock drilling by coring
- Collect soil samples by SPT, Dames & Moore, Shelby and piston samplers
- > Collect rock core samples with core barrel sampler
- Preparation of field soil boring logs
- > Maintain the drilling rigs in good condition
- Perform Cone Penetration Test (CPT)
- > Authorized to stop the drilling rig operation for safety measures of the drilling team and rig

Jan 2013 to Feb 2018 Furgo Middle East & Partners LLC, Muscat, Oman

Position: Driller

## **Technical duties**

- Perform soil & rock strata and sampling of different methods as per strata.
- ➤ Perform trial pit, earth hole drilling, backfilling, sampling and transportation of soil & cores by keeping quality of the samples.
- Assist project management in site & commercial operations, tool box meeting and submit daily drilling progress and use Garmin hand held GPS.
- And experienced for: Cable Percussion, Rotary drilling & Odex, near shore drilling, and in-situ tests: Dynamic Cone Penetrometer, Piezometer installations and ground water monitoring, Electrical Resistivity, Thermal Resistivity and Field Density test and assist to CPT.

Jan 2011 to Oct. 2013 Furgo Middle East & Partners LLC, Doha, Qatar

Position: Assistant Driller

### **Technical duties**

Collection of soil boring logs

- Handing over the soil boring logs to the Geotechnical Engineer
- Handing over the soil and rocks samples to the Materials Engineer
- Authorized to terminate the soil drilling work for safety measures of the drilling fleet and rigs
- Site inspection for site readiness and accessibility prior to mobilize the drilling rigs
- > Report to the Drilling Engineer on daily basis
- Ensure tests are performed according to quality system requirements.

## **Training & Certifications:**

BOSIET Certificate - Basic Offshore safety induction & emergency training PDO (Petroleum Development of Oman)
BP (British Petroleum) HSE Training
FURGO Safety induction & training
H2S Training &
Banksman certificate

ACADEMIC - Secondary School QUALIFICATION From Sri Lanka

From Sri Lanka

**LANGUAGES** English, Hindi, Tamil & Malayalam

NATIONALITY Sri Lankan

COUNTRIES WORKED IN

Kuwait, Oman & Qatar

# **Ashraf Kassem Abdel Shafy**

TITLE Drilling Rig Operator

**EXPERTISE** Over **3** Years of working experience as a Driller, familiar

in handling tools and equipments such as Truck Mounted Mobile Rig, Mind Drill Rig, CP Rig, Tone Tas

Rig, CME Rigs, Diedrich Rig.

PAST EXPERIENCE: Jan.2020 to Present

**INCO-LABS, Kuwait** 

Position: Drilling Rig Operator

## **Technical duties**

- ➤ Perform boreholes and water well drilling using different techniques such as augering, rotary, and mud drilling
- > Perform rock drilling by coring
- Collect soil samples by SPT, Dames & Moore, Shelby and piston samplers
- Collect rock core samples with core barrel sampler
- Preparation of field soil boring logs
- ➤ Maintain the drilling rigs in good condition
- Perform Cone Penetration Test (CPT)
- > Authorized to stop the drilling rig operation for safety measures of the drilling team and rig

ACADEMIC QUALIFICATION

- Secondary School From Pakistan

**LANGUAGES** Arabic, English & Hindi

NATIONALITY Pakistani

COUNTRIES WORKED IN

## **GHULAM-ABBAS**

TITLE Drilling Rig Operator

**EXPERTISE** Over **5** Years of working experience as a Driller, familiar

in handling tools and equipments such as Truck Mounted Mobile Rig, Mind Drill Rig, CP Rig, Tone Tas

Rig, CME Rigs, Diedrich Rig.

PAST EXPERIENCE: July 2008 to Present

**INCO-LABS, Kuwait** 

Position: Drilling Rig Operator

## **Technical duties**

Perform boreholes and water well drilling using different techniques such as augering, rotary, and mud drilling

Perform rock drilling by coring

Collect soil samples by SPT, Dames & Moore, Shelby and piston samplers

Collect rock core samples with core barrel sampler

> Preparation of field soil boring logs

Maintain the drilling rigs in good condition

Perform Cone Penetration Test (CPT)

> Authorized to stop the drilling rig operation for safety

measures of the drilling team and rig

ACADEMIC QUALIFICATION - Secondary School From Pakistan

LANGUAGES Arabic, English & Hindi

NATIONALITY Pakistani

COUNTRIES WORKED IN

## **ABDUL NASSER RASHIDI MOHAMMED**

TITLE Asst. Drilling Rig Operator

**EXPERTISE** Over **13** Years of working experience as a heavy

vehicle driver and **5** years of experience as Assistant Driller, familiar in handling tools and equipments such

as CME Drilling Rigs and Mobile Rig.

**PAST EXPERIENCE:** 

Oct. 1998 to Present INCO-LABS, Kuwait

Position: Asst. Drilling Rig Operator

## **Technical duties**

 Assist the Drilling Rig Operator in performing boreholes and water well drilling using different techniques such as augering, rotary, and mud drilling

 Assist the Drilling Rig Operator in performing rock drilling by coring

Sampling of soil properly in plastic bags or plastic container

Sampling of rock core samples in proper samples wooden box

 Handling the drilling tools under the instructions of the Drilling Rig Operator

• Maintain the drilling tools in good condition

PAST EXPERIENCE: 1994 to 1996

**United Arabian Group, Kuwait** 

Position: Driver

ACADEMIC QUALIFICATION

**Secondary Education** 

DATE &

PLACE OF BIRTH 26/08/1963, Egypt

**LANGUAGES** Arabic and English

NATIONALITY Egyptian

COUNTRIES WORKED IN

## **MUHAMED HANEEFA ISMAYIL**

TITLE Surveyor

**EXPERTISE** Over **6 years** of experience in Surveying.

PAST EXPERIENCE

July 2005 to Present INCO-LABS, Kuwait

Position: Surveyor

## **Duties**

Performing survey and engineering survey works

> Setting out of buildings and structures

Perform under ground utilities detection works

Maintain the survey equipment in good condition

Operation of GPS equipment.

ACADEMIC QUALIFICATIONS

Secondary Education

**NATIONALITY** Indian

**LANGUAGES** English & Hindi.

COUNTRIES WORKED IN

India & Kuwait.

## **UPUL KUMARA DIKMADUGODA**

TITLE Mechanic

**EXPERTISE** Over 11 years of experience in the field of Mechanical works

PAST EXPERIENCE:

March 2013 to Present INCO-LABS, Kuwait

**Position: Mechanic** 

## **Technical duties**

Perform the maintenance of the drilling rigs, vehicles, machines, building and utilities

> Attend breakdowns of drilling rigs, vehicles and machines

> Trouble shooting and repair of machines and vehicles

Maintain the maintenance tools in good and safe condition

> Report to the Maintenance Engineer in daily basis

ACADEMIC - Secondary Certificate

Sri Lanka

QUALIFICATION -Diploma in Mechanics, Sri Lanka

**LANGUAGES** Arabic & English

NATIONALITY Sri Lankan

COUNTRIES WORKED IN

## AHMED ALI MOHAMMED SALIM

TITLE Accountant

**EXPERTISE** Over **5 years** experience in the field of Accounting.

PAST EXPERIENCE

Nov.2010 to Present INCO-LABS, Kuwait

Position: Accountant

### **Duties**

- ➤ Data entry of all Job Orders, Company expenses, revenues, debits, credits, ... etc
- Maintain master records of company expenses, revenues, debits and credits
- > Issue monthly invoices
- > Issue the Company monthly balance sheet
- > Issue the Company annual financial reports
- Review the contracts terms of insurance and method of payment
- Maintain the company insurance policies
- Responsible for all exchanged information with the Company bankers
- > Execute the purchase orders
- Follow up the Company goods shipments with shipping agencies, vendors, and custom clearing agencies

# April 2008 to Oct.2010

# Donner World phones and furniture Center State of Kuwait

Position: Accountant & Marketing Manager

## **Technical duties**

- > Responsible for accounting of monthly and quarterly store inventory counts and control of general ledger.
- ➤ A Reconcile bank statement and Review, investigates and corrects errors and inconsistencies in financial entries.
- > Responsible for intercommunication related to the purchase and costing from the local market.
- Make relation with customers and bring new proposal to the business.
- Monitor the movement of stock and sales. Review, investigates inconsistencies in financial entries.
- > Responsible for payroll, service & Indemnity calculations.
- > Follow up on accounts receivable and payable continuously.
- > Prepare daily and monthly sales report.

- Responsible for accounting of monthly and quarterly store inventory counts -take the quarterly stocks of physical cards and stock of banks to accurate and confirm the balance sheet.
- Assisting closing of monthly and year-end accounts and preparation of Trail balance & Balance sheet for the submitting of the auditor.

# May 2006 to Feb.2008

## Al-Dar Equipment & Trading (KTEL)

State of Kuwait

Position: Accountant

## **Technical duties**

- Assist and control of general ledger, payables, receivables and administration.
- > Responsible for payroll, service & Indemnity calculations.
- Complies and analyzes financial information to prepare entries to accounts.
- Direct responsibility for control of on-site accounting & personal support of staff.
- Determines proper handling of financial transactions and approves transactions within the designated limits.
- Review, investigates and corrects errors and inconsistencies in financial entries, documents, and reports.
- Prepare profit and loss statements and monthly closing reports.
- Coordinate with Credit Customers for timely payment.
- > Cash management and banking operation.
- Reconcile bank statement and providing MIS report for each bank on monthly basis.
- Inform the management regarding the financial situation of the company (monthly financial reports, graphs and charts).
- Responsible for accounting of monthly and quarterly store inventory counts -take the quarterly stocks of physical cards and stock of banks to accurate and confirm the balance sheet.
- Assisting closing of monthly and year-end accounts and preparation of Trail balance & Balance sheet for the submission of the auditor.

# Aug 2005 to April 2006

#### **Nada Magazine**

Kuwait

Position: Accountant

#### **Technical duties**

- Reconciling accounts, records, reports and journals.
- Reviewing and verifying accuracy of data.
- Preparation of monthly Purchase reports.

- > Scrutinizing Invoices and processing payment
- > Keep up to date record of all accounting transaction.
- > Coordinate with auditors and internal controllers and ensure the fulfillment of their entire request.

# ACADEMIC QUALIFICATIONS

- Higher Secondary School

Egypt.

- B.Com, Sues Canal University

Egypt

- Computer knowledge in Dos, Windown NT/98/2000/XP, MS

Office, Visual Basic 2008, Front page.

TECHNICAL QUALIFICATION

- ICDL from Alpha National Training Institute, Kuwait

**NATIONALITY** - Egypt

**DATE OF BIRTH** - 30.11.1983

**LANGUAGE** - Arabic & English

COUNTRIES WORKED IN

## 10 EQUIPMENT LISTING

**INCO-LABS** maintains fully equipped field crews, laboratories and CAD departments. A brief overview of equipment is given here.

# 10.1 <u>FIELD & LABORATORY TEST EQUIPMENT FOR MATERIAL</u> TESTING

The laboratory at the Subhan premises of **INCO-LABS** is equipped with the following major equipment:

# 10.1.1 Equipment for Concrete & Aggregate testing

- ♦ Compression Test
- ♦ Flexure test
- ♦ Los Angeles Abrasion test
- Aggregate Impact test
- ♦ Bulk density test
- ♦ Air Content test
- Depth of cover measurement
- ♦ Slump test
- ♦ Rebound Hammer test
- ♦ Field and Lab Ultrasonic pulse velocity test
- ♦ 10% Fines Value
- Drilling machine for extraction of core

# 10.1.2 Equipment for Soil Testing

- ◆ Field CBR test
- ♦ Plate Load test
- ♦ Field Density test
- ♦ Electric Resistivity test
- ♦ Thermal Resistivity test
- Proctor test (Maximum dry density & Optimum moisture content).
- ♦ Direct Shear test
- ♦ Laboratory CBR test
- ♦ Consolidation test
- ♦ Moisture content / Dry density
- ♦ Sieve analysis
- ♦ Sedimentation analysis
- ♦ Sand equivalent test
- Specific gravity
- ♦ Atterberg limits
- ♦ Triaxial Test

## 10.1.3 Equipment for Asphalt Testing

- ♦ Marshal Stability test & flow value
- Marshal density test
- Extraction and Gradation (Bitument content)
- Degree of compaction for Asphalt core
- Drilling machine for extraction of core

## 10.1.4 Equipment for Chemical Testing

- ◆ Flame photometer
- ♦ Electric furnace (upto 1200°C)
- ♦ pH meter
- ♦ Conductivity meter
- ◆ Digital Balance (Cap 200 gm)
- ♦ Electric Oven
- ♦ Hot Plates

## 10.2 FIELD EQUIPMENT FOR GEOTECHNICAL INVESTIGATION

**INCO-LABS** field crews are equipped with a full range of plant, instruments and accessories:

# 10.2.1 Drilling Rigs

- CME-55 Model drilling rig mounted on all wheel drive GMC truck: Universal, all-hydraulic drill suitable for auger boring with or without casing with direct circulation of mud/water drilling to maximum 100m depth with maximum 300mm diameter.
- Diedrich D-50 Model drilling rig mounted on all wheel drive GMC truck: Universal, all-hydraulic drill suitable for auger boring with or without casing with direct circulation of mud/water drilling to maximum 80m depth with 300mm diameter.
- Diedrich D-50 Model drilling rig mounted on specially designed Marsh Buggy to access mud/water areas: Universal, allhydraulic drill suitable for auger boring with or without casing with direct circulation of mud/water drilling to maximum 80m depth with 300mm diameter for on-shore drilling, and maximum drilling depth of 30m, up to maximum seabed level of 6m for off-shore drilling.
- Diedrich D-120 Model drilling rig mounted on all wheel drive GMC truck: Universal, all-hydraulic drill suitable for auger boring with or without casing with direct circulation of mud/water drilling to maximum 107m depth with 165mm diameter.

## 10.2.2 Coring Equipment

Core Barrels – Single & Double

- Diamond Core Bits Single & Double
- Core Barrel Rimming Single and Double
- Core Catcher for single inside the Bit
- Core Catcher for Double Barrel
- Adapter, Pipes, etc.

#### 10.2.3 Sampling Equipment

- Standard Penetration Test (SPT) samplers
- > Shelby tubes samplers
- Dames & Moore Type U ring liner samplers
- Single and double tube core barrels

#### 10.2.4 Field Testing Equipment

- Cone Penetration Test (CPT) electric machine
- Piezometers and electronic water level indicators
- > Drive in piezometers
- Geotechnical and concrete instrumentation
- Field model testing arrangement

#### 10.3 SURVEY EQUIPMENT

- > 1 x Leica Na2 precise level
- > 1 x Radiodetection underground services locator unit
- ➤ 2 x Total Station Sokkia 500 Series with 5 Second Accuracy.
- 1 x Total Station Sokkia 1130R Laser.
- 1 x Sikkia Precise Level
- ➤ 1 x Sokkia 1010 series Power set 1 second accuracy.
- > 1 x Hand held Level Sokkia
- ➤ Global Positioning System (GPS) Navigator Equipment

The company also has access to:

- > 2 x Trimble 4600 S single frequency GPS units
- ➤ 6 x Leica 200/300 series dual frequency GPS units

#### 10.4 DATA PROCESSING EQUIPMENT

The Company has installed a Local Area Network in its offices, serving both the Administration and the Technical Departments.

A number of workstations and peripherals are linked to the network including:

- 1 DELL with Pentium-(R) Xeo server with 60.0 GB Hard disk
- 7 DELL with Pentium-IV (2.8 & 3.0GHz) Processor

2	IBM with Pentium-IV (2.6 & 2.8 GHz) Processor
1	Compaq Presario with Pentium IV, 1500 processor
3	Compaq Deskpro with Pentium-II 350 processor
3	Compaq Presario with Pentium-II processor
2	Compaq Assembled with Pentium -II processor
1	AMD system with K6-3D Processor
5	Workstations running on the administration drive
1	Hewlett - Packard HP 750C AO colour graphics plotter
1	Hewlett - Packard HP1120C A3 colour graphics plotter
1	Hewlett - Packard HP 5000 A3 Laser Jet
6	Hewlett - Packard Laser Jet and Ink Jet printers-A4 size

Applications packages running on the network include:

AutoCAD Rel 14 & 2002

SDRMap – full suite of programs for survey

Star \* Net – survey adjustment program

WAVE software for GPS observations processing.

SKI software for GPS observations processing.

Windows XP and Office XP Professional

#### 11 MATERIALS AND SOIL TESTS CAPABILITY

#### 11.1 SOIL TESTS

ASTM STANDARD	TEST DESCRIPTION
D 1556	Density of soil in place by the sand-cone method
D 4253	Maximum index density of soils using vibratory table
D 4254	Minimum index density of soils and calculations of relative density
D 698	Moisture-density relations of soils and soil – aggregates mixtures using 2.49 Kg. Hammer and 305mm drop.
D 1557	Moisture – Density relations of soils and soil-aggregates mixtures using 4.54kg. Hammer and 457 mm drop.
D 2435	One dimensional consolidation properties of soils
D 4186	One dimensional consolidation properties of soils using controlled-strain loading.
D 2850	U - U triaxial testing
D 3080	Direct shear test of soil under consolidated drained conditions
D 2573	Field vane shear test in cohesive soil.
D 1140	Amount of material in soils finer than the # 200 sieve
D 421	Dry preparation of soil samples for particle- size analysis
D 422	Particle size analysis of soils
D 2217	Wet preparation of soil samples for particle size analysis
D 2166	Compressive strength, unconfined, of cohesive soil.
D 4219	Compressive strength, unconfined, Index test of chemical grouted soils.
D 1194	Bearing capacity of soil for static load on spread footings
D 3668	Bearing ratio of laboratory-compacted soil-Lime mixtures
D 1883	Bearing ratio of laboratory-compacted soil

#### Soil Tests:(Cont.)

ASTM STANDARD	TEST DESCRIPTION
D 4221	Disperse characteristics of clay soil by double hydrometer.
D 4318	Liquid limit, plastic limit, and plasticity index of soils.
D 2434	Permeability of granular Soils
D 2419	Sand Equivalent value of soils and fine aggregate
D 427	Shrinkage factors of soils
D 854	Specific gravity of soils
D 1411	Water - soluble chlorides present in admixes in graded aggregate road mixes.
D 915	Soil Bituminous mixtures, testing
D 2216	Water content of soil, rock, and soil-aggregate mixtures.
G 51	PH - value of soil for use in corrosion testing
G 57	Field measurement of soil resistivity using the wenner electrode method.
D 2113	Diamond core drilling for site investigation.
D 1586	Penetration test and split-barrel sampling of soils.
D 420	Investigating and sampling soil and rock for engineering purposes.
D 4220	Preserving and transporting soil samples.
D 3550	Ring-lined barrel sampling of soils
D 1587	Thin walled tube sampling of soils.
D 1452	Soil investigation and sampling by auger boring.
D 1196	Non-repetitive static plate load tests of soils and flexible pavement components for use in evaluation and design of airport and highway pavements.

#### 11.2 SOIL - CEMENT TESTS

ASTM STANDARD	TEST DESCRIPTION
D 2901	Cement content of freshly mixed soils current
D 806	Cement content of soil – cement mixtures
D 1633	Compressive strength of molded soil - Cement cylinders
D 1634	Compressive strength of soil - cement-using portions of beams broken in flexure.
D 1635	Flexural strength of soil - cement using simple beams with third point loading.
D 558	Moisture density relations of soil cement mixtures.
D 1632	Soil cement compression and flexure test specimens making and curing in the laboratory.
D 559	Wetting and drying tests of compacted soil - cement mixtures
C 150	Complete chemical and physical analysis of cement
C 109	Compressive strength of hydraulic cement mortars
C 185	Tests of fineness of Portland cement
C 188	Test of Density of Hydraulic cement
C 191	Test time of setting of cement
C 243	Test for bleeding of cement
BS 1377: Part 3: 1990	Water Soluble Chloride, Acid Soluble Chloride, Water Soluble Sulphate, Acid Soluble Sulphate, Organic matter content, Carbonate or calcium carbonate content, Loss on Ignition at 440°C, pH value

#### 11.3 CONCRETE TESTS: ASTM STANDARD

STANDARD	TEST DESCRIPTION
ASTM C231	Air content of freshly mixed concrete by pressure methods.
ASTM C 138	Unit weight and yield of fresh concrete
ASTM C 232	Bleeding of concrete
ASTM C 873	Compressive strength of concrete cylinders cast in place in cylindrical molds.
ASTM C 116	Compressive strength of concrete using portion of Beams Broken in Flexural.
ASTM C 39	Compressive strength of cylindrical concrete specimens.
ASTM C 42	Drilled cores and sawed beams of concrete, obtaining and testing.
ASTM C 293	Flexural strength of concrete with center-Point loading.
ASTM C 78	Flexural strength of concrete with third-point loading.
ASTM C 684	Making, accelerated curing and testing of compression test specimens.
ASTM C 597	Pulse velocity through concrete.
ASTM C 805	Rebound number of Hardened concrete.
ASTM C 143	Slump of Portland cement concrete.
ASTM C 642	Specific gravity, absorption, and voids in hardened concrete.
ASTM C 494	Specification for chemical admixture for concrete.
ASTM C 403	Time of setting of concrete mixtures by penetration resistance.

## Concrete Tests: (Cont.)

ASTM C 172

# ASTM C 567 Unit weight of structural lightweight concrete Examination and sampling of hardened concrete in construction. ASTM C 617 Capping cylindrical concrete specimens. ASTM C 31 Concrete Test specimens, making and curing in the field. ASTM C 192 Concrete test specimens, making and curing in laboratory.

Sampling freshly mixed concrete.

#### 11.4 CONCRETE TESTS: BS STANDARD

<u>STANDARD</u>	TEST DESCRIPTION
BS 1881 Part 101	Method of sampling fresh concrete on site
BS 1881 Part 102	Method for determination of slump
BS 1881 Part 103	Method for determination of compacting factor
BS 1881 Part 104	Method for determination of Vebe time of concrete.
BS 1881 Part 105	Method for determination of flow
BS 1881 Part 106	Methods for determination of air content of fresh concrete.
BS 1881 Part 107	Method for determination of density of compact fresh concrete.
BS 1881 Part 108	Method for making test cubes from fresh concrete.
BS 1881 Part 110	Method for making test, cylinders from fresh concrete
BS 1881 Part 112	Methods of accelerated curing of test cubes.
BS 1881 Part 113	Method for making and curing no-fines test cubes.
BS 1881 Part 114	Methods for determination of density of hardened concrete.
BS 1881 Part 116	Method for determination of compressive strength of concrete cubes.
BS 1881 Part 117	Method for determination of tensile splitting strength.
BS 1881 Part 119	Method for determination of compressive strength using portions of beams broken in flexural.
BS 1881 Part 120	Method for determination of the compressive strength of concrete cores.
BS 1881 Part 121	Method for determination of static modulus of elasticity in comparison.
BS 1881 Part 122 BS 1881: Part 124	Method for determination of water absorption. Cement Content, $SO_3$ Content by the mass of the cement, Chloride content by the mass of the cement $SO_3$ and $Cl^-$ contents by the mass of the Cement, Aggregate – cement ratio

#### 11.5 NATURAL BUILDING STONES TESTS

#### ASTM STANDARD TEST DESCRIPTION

ASTM C – 97 Absorption and bulk specific gravity of natural

building stone.

ASTM C – 170 Compressive strength of natural building stone.

#### 11.6 STEEL TESTS

ASTM 615 Testing tensile strength of RC deformed bars

ASTM A 370 Tensile strength

ASTM A 370 Bend test

#### 11.7 AGGREGATES TESTS: ASTM STANDARD

STANDARD	TEST DESCRIPTION
ASTMD 1411	Chlorides, water-soluble, present as admixes in
	graded aggregate road mixes
ASTM C 142	Clay lumps and friable particles in aggregates
ASTM C 535	Degradation of large-size coarse Aggregate by
	abrasion and impact in the Los Angles machine.
ASTM C 123	Lightweight pieces in Aggregate.
ASTM C 117	Materials Finer than 75mm (No. 200) sieve in mineral
	aggregate by washing.
ASTM C 566	Moisture content, total of aggregate by drying.
ASTM C 87	Organic impurities in Fine Aggregate
ASTM C 40	Organic impurities in fine aggregates for concrete
ASTM D 2419	Sand equivalent value of soils and fine aggregate
ASTM C 88	Soundness of aggregates by use of sodium sulfate or
	magnesium sulfate.
ASTM C 127	Specific gravity and absorption of coarse aggregate
ASTM C 128	Specific gravity and absorption of Fine Aggregate
ASTM 641	Staining materials in lightweight concrete aggregates.
ASTM C 70	Surface moisture in Fine Aggregate
ASTM C 29	Unit weight and voids in aggregates
ASTM D 75	Sampling of Aggregates
ASTM C 702	Reducing field samples of aggregates to testing size.
ASTM C 136	Sieve Analysis of Fine and Coarse Aggregates
ASTM C 289	Potential Reactivity
ASTM C 40	Organic Impurities
-	

#### 11.8 AGGREGATES TESTS: BS STANDARD

#### STANDARD TEST DESCRIPTION

BS 812 Part 102	Methods of sampling
BS 812 Part 103	Methods of Determination of particle size distribution
BS 812 Part 105-1	Methods for determination of particle shape
BS 812 Part 106	Methods for determination shell content in coarse aggregate
BS 812 Part 110	Methods for determination of aggregate crushing
	Value
BS 812 Part 111	Methods for determination of ten percent fines values
BS 812 Part 112	Methods for determination of aggregate impact value.
BS 812 Part 113	Methods for determination of aggregate abrasion
	value
BS 812 Part 114	Methods for determination of the polished stone value
BS 812 Part 117	Water Soluble Chloride content (Cl <sup>-</sup> )
BS 812 Part 118	Acid Soluble Sulfate (SO <sub>3</sub> )

#### 11.9 WATER SAMPLE

#### <u>STANDARD</u>

#### TEST DESCRIPTION

BS 1377 Part 3: 1990 Chloride Content (Cl<sup>-</sup>)

BS 1377 Part 3: 1990 Sulfate Content ( $SO_3$  or  $SO_4^{2-}$ )

Standard Methods Sulfide Content (S<sup>2</sup>-)

Standard Methods Calcium (Ca)

Standard Methods Magnesium (Mg)

Standard Methods Sodium (Na)

Standard Methods Potassium (k)

BS 1377: Part 3: 1990 PH Value

ASTM D 1252 Chemical Oxygen Demand (COD)

Standard Methods Dissolved Oxygen

BS 1377: Part 3: 1990 Total Dissolved Solids (TDS)

Standard Methods Conductivity

Standard Methods Salinity

ASTM D 3875 Alkalinity (CO3<sup>2-</sup>, HCO3<sup>-</sup>, OH<sup>-</sup>)

ASTM D 5907 Total Suspended Solids (TSS)

#### 11.10 CEMENT, CEMENT CLINKER

ASTM C 150 or - Silica (SiO<sub>2</sub>)

Iron Oxide (Fe<sub>2</sub>O<sub>3</sub>)

ASTM C114 - Aluminum Oxide (Al<sub>2</sub>O<sub>3</sub>)

Calcium Oxide (CaO)Magnesium Oxide (MgO)

Sulfur Trioxide (SO<sub>3</sub>)

- Loss on Ignition at 1000°C (LOI)

Insoluble ResidueSodium (Na)Potassium (K)

By calculation Dicalcium Silicate (C<sub>2</sub>S), Tricalcium Silicate (C<sub>3</sub>S),

Tricalcium Aluminate (C<sub>3</sub>A), C<sub>4</sub>AF + 2C<sub>3</sub>A, Lime

Saturation Factor (LSF).

#### **11.11 GYPSUM**

ASTM C 471 - Free Water

- Combined Water

- Silicon Dioxide and Insoluble Residue

- Iron and Aluminum Oxide

Calcium OxideMagnesium OxideSulfur Trioxide

- Sodium Chloride

By calculation Gypsum (CaSO<sub>4</sub>. 2H<sub>2</sub>O)

Anhydrite (CaSO<sub>4</sub>)

Silicon Dioxide and Insolubles (SiO<sub>2</sub>+Ins)

Iron and Aluminum Oxide (R<sub>2</sub>O<sub>3</sub>) Calcium Carbonate (CaCO<sub>3</sub>) Magnesium Carbonate (MgCO<sub>3</sub>)

Sodium Chloride (NaCl)

#### 12 INTERNATIONAL PROFESSIONAL ORGANIZATIONAL MEMBERSHIP

**INCO-LABS** is an organizational member of the following international professional organizations in order to be updated with the latest international standards, new technologies, and safety measures, and attached to the global professional network.



American Society for Testing and Materials (ASTM)

Membership No.900121

Validity till 30.12.2023



**British Standards Institute (BSI)** 

Membership No. 47178541

Valid till 28.02.2024



American Concrete Institute International (ACI-Intl.)

Membership No. 01014463

American Concrete Institute®

Valid till 31.08.2024



National Drilling Association (NDA)
Membership No. C 5235

Valid till 31.12.2023



The American Association for Laboratory Accreditation (A2LA)

Membership No. AM 2487 ID No. 127239

Valid till 31.12.2023

#### **LICENSES & REGISTRATION DOCUMENTS**







#### إدارة الشركات المساهمة

اجازة شركة ممنوحة بموجب قاتون التجارة رقم 68 لسنة 1980 , و قاتون الشركات رقم 1 لسنة 2016 و القوانين المعدله له و قاتون ترخيص المحلات التجاريه رقم 111 لسنة 2013

21235

رقم الملف

2010/2123

رقم الترخيص

27/04/2027

تاريخ انتهاء الترخيص

27/04/2023

تاريخ إصدار الترخيص

3040470

رقم الجهة المدني

1012201280213

الرقم المركزي

شركة مساهمة مقفلة

نوع الترخيص

65947

رقم السجل التجاري

شركة مساهمة مقفلة

الكيان القانوني

شركه مختبرات انكو الصناعيه

تحت الأسم التجاري

لمزاولة الانشطة التالية:

رمز النشاط	اسم النشاط
821118	ادارة اعمال الشركة المساهمة

#### على العنوان التالي:

القسيمة	القطعة		المنطقة	المحافظة	الرقم الآلي للعنوان
000148	001	اعيه	صبحان الصن	مبارك الكبير	13161807
رقم الوحدة	ثوع الوحدة	الدور		اسم الميثى	الشارع
0	ٔ جهه تجاریه	00	9 f		شارع 101

#### جهات الموافقة:

	تاريخ الموافقة	رقم الموافقة	اسم الجهة
r	30/04/2023	1150979	بلدية الكويت



يعتبر الترخيص ملغياً بعد مضى سنة من تاريخ انتهائه. يعتبر هذا النموذج وتيقه رسمية رقمية صادرة من وزارة التجارة والصناعة.

1/1







## مستخرج

تشهد ادارة السجل التجاري بأن شركه مختبرات انكو الصناعيه

1012201280213

الرقم المركزي

شركة مساهمة مقفلة

الكيان القانوني

14/04/2010

تاريخ السجل التجاري

65947

رقم السجل التجاري

شركة مساهمة مقفلة

نوع الترخيص

2010/2123

رقم الترخيص

فعالة

حالة الشركة

3040470

رقم الجهة المدني

العنوان

القسيمة	القطعة	المنطقة	المحافظة	الرقم الألي للعنوان
000148	001	صبحان الصناعيه	مبارك الكبير	13161807
رقم الوحدة	الدور	أسم المبنى		الشارع
0	00			شارع 101

#### الاغراض

رمز النشاط	اسم النشاط
821118	ادارة اعمال الشركة المساهمة



- يعتبر هذا النموذج وثيقه رسميه صادره من وزارة التجارة و الصناعة .

تاريخ الإصدار: 2024/04/18

رقم الصفحة: 1 من 1



## الهيئة العامة للقوى العاملة



#### شهادة نسبة العمالة الوطنية في الجهات غير الحكومية

تفاصيل الملف

رقم الملف

اسم الملف : شركه مختبرات انكو الصناعيه 100003201:

> تصنيف الملف : تجاري عادي : شركة نوع الملف

فئة الملكية : كويتي : محافظة مبارك الكبير ادارة العمل

حالة الملف : فعال 27/07/1996: تاريخ انشاء الملف

الكيان القانوني : شركة مساهمة مقفلة رقم السجل التجاري : 65947

تفاصيل الترخيص

: شركه مختبرات انكو الصناعيه اسم الترخص

الجهه المصدره للترخيص : وزارة التجارة والصناعة

الرقم المدنى للترخيص : 3040470 الرقم الموحد : 157033

قطاع التشغيل : التجاري تصنيف الترخيص : عادي

حالة الترخيص : فعال ترخيص رئيسي : نعم

تاريخ بداية الترخيص : 13/11/2018 تاريخ نهاية الترخيص: 27/04/2027

الترخيص مستوفى نسبة العمالة الوطنية الهيئية العامية للقيوي العاملية

Public Authority of Manpower



## شهدادة تسجيال



# Service Providers Local

مقدمي خدمات محلي

Issue Date:

**Expiration Date:** 

24-10-2023

تاريخ الإصدار:

23-10-2024

تاريخ الإنتهاء:

The Central Agency for Public Tenders certifies that:

يشهد الجهاز المركزي للمناقصات العامة بأن:

شركة مختبرات انكو الصناعية ش م ك م

Country:

Registered at the agency under No.:

Commercial/ Professional License No.:

\$ 1 TO THE REPORT OF THE REPOR

البلدي

مسجلة لدى الجهاز تحت رقم: 7653

رقم السجل التجاري/المهني: 65947

التوقيع و الختم Signature & Stamp

J\_ALODAH

تعتبر هذه الشهادة ملغية في حال إنتهاء صلاحية التسجيل لدى الجهاز أو الترخيص التجاري/المهني الصادر عن الجهة المختصة.





#### **VENDORS & CONTRACTORS EVALUATION COMMITTEE**

M/S INCO INDUSTRIAL LABS K.S.C.C., KUWAIT

DATE: 9TH NOVEMBER 2023

P.O. BOX 21073, 13071 SAFAT REF : COM-EC&PQ-23-0646

FILE NO : C. 1141

13071 SAFAT, KUWAIT

SUBJECT: CONTRACTOR APPROVAL- REQUALIFICATION

GENTLEMEN,

REFERENCE TO YOUR PREVIOUS APPROVAL DATED 18/09/2018 YOUR COMPANY IS APPROVED AS A CONTRACTOR EFFECTIVE 09/11/2023 FOR THE FOLLOWING TYPE(S) OF WORK(S) FOR KNPC REFINERIES:

THE PROPERTY OF THE PARTY OF TH	KD 100 Million					
- 500 Million	- 250 Million	- 100 Million	- 30 Million	- 10 Million	- 1 Million	- 250,000
725)		-	-	- 6	01-A2	7 01-A2
	20	_	-	- 6	01-A2L	7 01-A2L

THE COMPANY (CONTRACTOR) CODE ALLOCATED TO YOUR COMPANY IS 1141.

PLEASE ENSURE TO QUOTE THE ABOVE CODE AND FILE 1990 NOLL OF YOUR FUTURE CORRESPONDENCE.

VERY TRULY YOURS,

AHMAD ISMAIL DASHTI DY. CHAIRMAN V&CEC

THIS LETTER SUPERSEDES OUR LETTER DATED 18TH SEPTEMBER 2018.

NOTE: APPROVAL VALIDITY IS UPTO 12TH SEPTEMBER 2024.

PLEASE REFER OVERLEAF FOR INSTRUCTIONS

SERVICE CATEGORY DESCRIPTION IS ATTACHED.

#### Instructions to the Contractor

This approval letter is issued subject to the following:

- KNPC reserve the right to remove contractor from the approved contractors list without notification, if failed to renew the registration before the expiry date of this approval letter or due to poor performance.
- Contractor is responsible to update KNPC with any information related to contractor such as contact details, change of local agent, amalgamation of companies, relocation of office / headquarter facility.
- KNPC reserve the right to remove the local agent relationship without notification, if failed to submit renewed local agency certificate before the expiry date. Unlimited period local agency certificate will not be accepted.
- Contractor can supply services to KNPC through third parties dealing with KNPC such as EPC Contractors.
- Contractor is committed to participate in KNPC tenders / inquires, if invited. Failing to participate, KNPC reserve the right to remove any contractor from the approved contractors list without notification.
- KNPC reserve the right to shortlist the contractors based on KNPC's interest without any obligation.
- KNPC reserves the right to request any information / documentation at any time in order to update its records and reassess the contractor's status.



## خ رفة تحارة وحناء الكويت KUWAIT CHAMBER OF COMMERCE & INDUSTRY

## شهادة تسجيل لعام 2024

رِمَ الْإِحْمَالَ: 230285316

تتاريخ: 27/12/2023 : 27/12/2023

## تسهد غرفة تجارة وصناعة الكويت أن

🦷 شركة مختيرات انكو الصناعية الأن م ك م سم لعضو رقم لتسجيل ۽ رقم العضوية 50119 : ترقم المدنى لتجهة : 3040470 حالة تعشوية تسالحة ضاحب الترخيص سبجل لديها ملد عام : 1996 كاريخ لتسجيل 1996/07/06 : 2010/2123 ; رقم الترخيص تاريخ التهاء الترخيص : 2027/04/27 رقم لسجل تتجاري رأس المال 65947 : 1350000 أرقام لكاكس البرود الإنكثرولي 24716526 : info@inco lab.com :: أرقام لهراكف تموقع طي الإنتراث 24710780 24752330 : www.inco.lab.com مشوق بريد تعتوان 21073 ( 🥞 الصفاة 13071 القويت رقم اتهائف تجوان 99770989 تعوقع 🧸 صيحان الصناعية قطعة 1 ميني 151 ش 101

تمز وثة

مرجى الإطلاع على الصفحات الإصافية الأنشطة العشق ٥٥٥



لهاقات أنوارة؟ عامل (QR Code) هم النياقات المتونة لذي القرقة عن طريق اعتمالها المسحلين لذيها : ويقد استقراع شهادة التسحيل الانتظرولي بقاءً حلى هذا البيالات ، وتطلي الطرفة مستوليتها عن أي تلييز فيها بالمعافى أو الإناداتة ، نصافتهم بأن هذا البيالات منامة للجميع على مرفع الطرفة الانتظرولي تطبيقاً بدينا أن استعد فية أر الشذائية

ورجى الطم بأن صلاحية الشهادة تتقهي في 2024/12/31

www.Kuwaitchamber.org.kw



27/12/2023 11:23:22

Alie : (-965) 180.55 80 - 18

#### MINISTRY OF EDUCATION

Educational Establishments & Planning Sector Design & Contracts Department



#### وزارة التربية

قطاع المنشأت التربوية والتخطيط إدارة التصميم والعقود

- Hardway	151313131313131313131313131313131313131	10 12
DATE:		التاريخ ، ١٤ ١ ١ ٤ ٢ ٠ ٢
REF. :		الرجع. 8 1913 [19]

المحترمين

السادة/ شركة مختبرات إنكو الصناعية تحية طبية وبعد،،،

## الموضوع: تجديد اعتماد شركة مختبرات إنكو الصناعية

بالإشارة إلى الموضوع أعلاه، وإلى كتابكم المؤرخ في 2024/02/04 (مرفق)، وبعد دراسة كافة المستندات نحيطكم علما بالآتي:

- لا مانع من اعتماد مختبرات إنكر الصناعية كمقاول باطن للقيام بالفحوصات المذكورة أدناه وذلك في مشاريع وزارة التربية.
- البنود المذكورة في شهادة ISO/IEC/17025:2017 الخاصة بالمختبر والتي تحمل رقم (2487.01) سارية لغاية (31/12/2023).
   ( 31/12/2023) والبنود التي تحمل رقم (2487.02) سارية لغاية (31/12/2023).
  - 2. يجب تقديم شهادات ضمان فحص من مختبر معترف به للمنتج المراد استخدامه من ذات المصنع المعتمد قبل التوريد لأي من مشاريع وزارة التربية لاعتماده على أن تحقق هذه الفحوصات جميع المتطلبات والشروط الفنية الواردة في المواصفات العامة والمواصفات الخاصة والمستندات الأخرى لعقود وزارة التربية.
    - يتم التقدم بهذه المادة من خلال المقاولين المعتمدين لوزارة التربية.
  - 4. هذا الاعتماد لا يعفي الأعمال من إجراء الدراسات والفحوصات اللازمة عند التوريد لمشاريع وزارة التربية وذلك طبقا للمتطلبات التعاقدية لعقود وزارة التربية ووفقاً لمعايير إجراءات العالمية للاختبارات والمواد.
  - 5. الموافقة على الاعتماد لا تلزم الوزارة ولا تعني أن تكون الأعمال المذكورة قصراً على شركتكم ويمكن للوزارة الاستعانة بشركة أو شركات تم اعتماد أعمال شبيهة لها مسبقاً أو مؤخراً.
  - للوزارة الحق في إلغاء الاعتماد خلال فترة صلاحيته في حال اكتشاف أي عيوب أو أعطال خلال عملكم في مشاريع الوزارة.
    - 7. هذا الاعتماد ساري المفعول لغاية 2024/05/20 ويراعى التجديد في حينه والوزارة غير ملزمة بالتجديد.

وتفضلوا بقبول فانق التقدير والاحترام،،،

مدير إدارة التصميم والعقود مدير إدارة التصميم والعقود مدير إدارة التصميم والعقود بالتكليف

ميافية من الشركة 2 كو 2 كو المالية المنافية الم



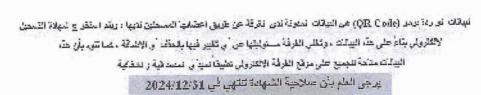
#### All del KUWAIT CHAMBER OF COMMERCE & INDUSTRY

## شهادة تسجيل لعام 2()24

27/12/2023 : 西山田

رهَم الإيسال: 230285316

\*\*\* القيام بلحص مواد قيدًاء الأوقية والمعرفة والصدير شهادات يدلك حول مثانج اللحص المحدة بموجب المواصفات القياسية والقيام بأحمال المساحة تطوعر فية للأراعب والمهامي والتشويدك لمستلطة والمستحة تسترية وكليام بأعمال أسنات التربة والإساسات (ميكاليكية لتربة) وكتسسير شهادات الطسيس وعمل تقارير بالتوصيات الخاصة بنوعية ترية الاساسات واقتراح الاسسات المناسية وانقيام بالقموصات تبينية وابحاث أتبيية وخاصة المتعققة بالمنشات والمباتي واعوامل تحمين البيئة تعرية والمحرية والدراسات تهيدرولوجية وتقيير وتطنيش المبالي وتعلشات من خلال الطحوصات والتقييم الاشائي ووعمع لتوعميات والطول المناسمة تمعالمة تمنشات المنضررة وفننك تحيه الاحمال لتعناني القالمة ونقديم خصة معايرة الاحهرة تنقيقة واتمعدات لاعظمة تقيلين القيرياني والميكاتيكي والكهرساني وتصليح هذه الأجهرة وأصدر شهادة معابرة تهذه الأجهرة وانقيام ياعمال انكشف والثقنيش وانقحص على خطوط الأعليب الحديدية تلتأف من سلامة تشغيلها والقيام بأعمل التقليش والقمعن طي أحمل للميم للتأكد من خارها من العبوب والأصرار ولتكاريث تعليات القمومات تسمنطة والمعايرة من خال مراكز كاريب متخصصة لهذه الأعراض وانشاء المختيرات والمعامل تستخصصة تهذه الاغراض وانشاء فروع تها في دوتة الكويت وخارجها وإنشاء وشراء والدرة مصانع تصدعات الطبقة والمتوسطة بشكل عام ، ويما يتناسب مع متطابات مكانية الشركة وشراء واستيراك الأجهزة والمعدات اللازمة لتنفيذ أغراض الشركة وأحذ توكالات المناعبة المكنصصية لهذه الأخراعين واتعلق تعقارات والعلقولات المنزجة للشاط الشركة في هنود العسموح مها بالقالون وإستقائل تقوانض العاتمية تعكوفرة لدى الشركة عن طريق استثمارها في محافظ مالية وعقارية تدار من قبل الركات وجهات متخصصة ويكون تلشركة سيالكرة الإعمال السابق ذكرها في تكريت وفي الحارج بصلة أصلية أو بالوكالة ويجوز تلشركة أن تكون لها مصلحة أو أن تشكرك بأي وجه مع الهيئات التي تزاول أحمالا شبيهة مأحمالها أو التي قد تعاونها حتى تعقيل أغراضها لمي الكويت أو لمي القارح ونها أن تنتلين و تشارك و تتشرى هذه تهينات و. ن تلعقها بها





www.Kuwaitchamber.org.kw

ماهف: Tel.: (-965) 180 55 80 - الكس: Tel.: (-965) 180 55 80 - عند - 180 - 180 55 80 - الكس: 40 - 180 55 80 - الكسنة - 180 55 80 - الكس دولية الكسويت STATE OF KUWAIT البرية الأليكة ونبي E-Mail: kcci@kcci.org.kw





الإشارة: 13 التاريخ: 2022/10/27

المحترم

السيد/ ممثل التعهد تعينة طيبة وبعند ...

الموضيع: إعتماد السادة/ مختبرات إنكو الصناعية (ش.م.ك.م) لعصل الجسات الخاصة بأعصال فحيص التربة لعباني العقد المشروع: إنشاء وإنجاز وصياتة المباني العامية بالقطيع (01 ، 04 ، 05 & 60) بمشروع جنيوب عباد الله المبارك عقد رقم: م.ع.ر.س / ع / 1486 - 2022 / 2023 تعهد: منسنة إنشاءات الإيمان للتجارة العامة والمقاولات

بالإشارة إلى الموضوع أعلاه، مرفق لكم "تسخة" من أصل محضر الإجتماع المنعقد بتاريخ 2022/10/17 بخصوص إعتماد السادة/ مختبرات إنكو الصناعية (ش.م.ك.م) لعمل الجسات الخاصة بأعمال فحص الترية ثميةي العقد أعلاه، وذلك بعد الإعتماد للعمل بموجبه.

وتفضلوا بقبول فائـق الإحترام ...

مشعل فرج العنرى

السكيت الأفيلي





الإشارة: 13 التاريخ: 2022/10/27

المترم

السيد/ ممثل التعهد تعية طبية وبعيد ...

الموضيوع: إعتماد السادة/ مختبرات إنكو الصناعية (ش.م.ك.م) لعصل الجسات الخاصة بأعصال فحيص التربة لعباني العقد المشروع: إنشاء وإنجاز وصيانية المباني العامية بالقطيع (01 ، 04 ، 05 & 60) بمشروع جنوب عبيد الله المبارك عقد رقم: م.ع.ر.س / ع / 1486 - 2022 / 2023 معهولات تعهد: مؤسسة إنشاءات الإيمان للتجارة العامة والمقاولات

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وتفضلوا بقبـول فائـق الإحترام ،،،

المندس القيم مشعل فرج العنرى

الساعت إلا فمله



## دولَه الكويت وزارة الأشغال العامَة

194/11

C58/11/5.

شهادة اعتماد مختبر أهلي

مختبرات إنكو الصناعية في مجال المواد والتربة

اسم الشركة / المصنع:

شركة مختبرات إنكو الصناعية.

العنوان:

الرمز البريدى: 13071 -

صبحان ت: 24716730 -24752320/30 فاكس : 24716526 ص.ب : 21073 الصفاة

الكوبت

تاريخ الإنتهاء 2024 / 05/20

تاريخ الإصدار 2023 / 11 /21

#### وصف المواد المعتمدة:

- البنود المذكورة في شهادة ISO/IEC/17025:2017 الخاصة بالمختبر والتي تحمل رقم (2487.01) سارية لغاية(2023/12/31) والبنود التي تحمل رقم (2487.02) سارية لغاية (2023/12/31).

#### الإشتراطات:

- وزارة الأشغال العامة لا تتحمل أي مسئولية تجاه نتائج المعايرة لا يتم إجراؤها تحت إشراف وزارة الأشغال.
- ضرورة سريان تراخيص المنشأة وشهادات المعايرة للأجهزة المستخدمة في أعمال المعايرة المشار إليها.
  - إجراء فحوصات المعايرة المشار إليها خاص بأعمال الإنشاءات.
- هذا الإعتماد ساري المفعول لمدة 6 أشهر (شريطة سريان تراخيص الشركة) مع مراعاة تقديم طلب تجديد الإعتماد قبل شهرين من تاريخ
   انتهاء الشهادة.
- يحق للوزارة (متمثلة بفريق من مهندسين إدارة ضبط الجودة) المرور والكشف على المختبر للتأكد من مطابقته لشروط الاعتماد في أي وقت خلال فترة سربان شهادة الاعتماد.
- في حالة المخالفة لأى من متطلبات الإعتماد المتفق عليها يعتبر الإعتماد لاغي ويحق للوزارة أخذ ما تراه مناسباً من الإجراءات القانونية.
- الإلتزام بكتاب الهيئة العامه للبيئة بتاريخ (2022/07/27) بعدم وجود مخالفات بيئيه محررة وفقاً لأحكام قانون حماية البيئة رقم(42) لسنة 2014. لسنة 2014، والمعدل بعض أحكامه بالقانون رقم (99) لسنة 2015.

/ وكيل وزارة الأشغال العامة

وكيل وزارة مساعد فطاع المركز الحكومي للفحوصات وضيط الحودة والأبحيات بالتكليف







## دولَه الكويت وزارة الأشغال العامية

## شهسادة اعتمساد مختبر أهسلى

## مختبرات إنكو الصناعية في مجال العسايسرة

#### اسم الشركة / المختبر:

شركة مختبرات إنكو الصناعية.

#### العنوان

- صبحان الصناعية ت: 24712320/30 - 24710780 - فاكس: 24716526 - ص.ب: 21073 الصفاة -الرمز البريدي: 13071 الكويت.

تاريخ الانتهاء

2024 / 09 / 19

تاريخ الإصدار 2024 / 03 / 20

#### وصف الاختبارات المعتمدة:

- البنود المذكورة في شهادة ISO/IEC/17025:2017 الخاصة بالمختبر والتي تحمل رقم (A2LA Cert. No. 2487.03).

#### الاشتراطات

- وزارة الأشغال العامة لا تتحمل أي مسئولية تجاه نتائج معايرة لا يتم إجراؤها تحت إشراف وزارة الأشغال العامة.
  - ضرورة سريان تراخيص المنشأة وشهادات المعايرة للأجهزة المستخدمة في أعمال المعايرة المشار إليها.
    - إجراء أي معايرة مشار إليها خاص بأعمال الإنشاءات في القطاع الأهلي.
- هذا الاعتماد ساري المفعول لمدة 6 أشهر (شريطة سريان تراخيص الشركة) مع مراعاة تقديم طلب تجديد الاعتماد قبل شهرين من تاريخ انتهاء الشهادة.
  - أفي حالة المخالفة لأي من متطلبات الاعتماد المتفق عليها يعتبر الاعتماد لاغي ويحق للوزارة أخذ ما تراه مناسباً من الإجراءات القانونية.
- يحق للوزارة (متمثلة بفريق من مهندسين إدارة ضبط الجودة) المرور والتحقق من مطابقته لشروط الاعتماد في أي وقت خلال فترة سريان شهادة الاعتماد.
- الالتزام بكتاب الهيئة العامة للبيئة المؤرخ في 2023/07/05 بعدم وجود مخالفات بيئية محررة وفقاً لأحكام قانون حماية البيئة رقم (42) لسنة 2014 والمعدل بعض أحكامه بالقانون رقم (99) لسنة 2015.

/ وكيل وزارة الأشغال العامة

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## دولةالك وزارة الأشغيال العامة

CIGNICIV.

## شهادة اعتماد مختبر أهلى

## مختبرات إنكو الصناعية في مجال الخوازي

#### اسم الشركة / المختبر:

شركة مختبرات إنكو الصناعية.

#### العنوان

- صبحان الصناعية ت: 24752320/30 - 24710780 - فاكس: 24716526 - ص.ب: 21073 الصفاة -الرمز البريدي: 13071 الكويت.

تاريخ الانتهاء

2024 / 06 / 05

تاريخ الإصدار

2023 / 12 / 06

وصف الاختيارات المعتمدة:

- Low Strain test & Crosshole Sonic Logging.
- Pile Integrity Tester (PIT).
- Pile Dynamic Load Test (High Strain Test).

#### الاشتراطات

- وزارة الأشغال العامة لا تتحمل أي مسئولية تجاه نتائج معايرة لا يتم إجراؤها تحت إشراف وزارة الأشغال العامة.
  - ضرورة سريان تراخيص المنشأة وشهادات المعايرة للأجهزة المستخدمة في أعمال الفحص المشار إليها.
    - إجراء أي فحص مشار إليه خاص بأعمال الإنشاءات في القطاع الأهلى.
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  - في حالة المخالفة لأي من متطلبات الاعتماد المتفق عليها يعتبر الاعتماد لاغي ويحق للوزارة أخذ ما تراه مناسباً من الإجراءات القانونية.
- يحق للوزارة (متمثلة بفريق من مهندسين إدارة ضبط الجودة) المرور والتحقق من مطابقته لشروط الاعتماد في أي وقت خلال فترة سريان شهادة الاعتماد.
- الالتزام بكتاب الهيئة العامة للبيئة المؤرخ في (2023/07/05) بعدم وجود مخالفات بيئية محررة وفقاً لأحكام قانون حماية البيئة رقم (42) لسنة 2014 والمعدل بعض أحكامه بالقانون رقم (99) لسنة 2015.

وضبط الجودة والأبحاث بالتكليف







## دولَه الكويت وزارة الأشغال العامية

19/1/ 0.

## شهادة تجديد تعيين جهة تقويم مطابقة (مختبر محابد)

اختيارات الخلطة الاسفلتية وتصميم الخلطة الاسفائية بطريقة المارشال وطريقة السويربيف	أنشطة الجهة	شركة مختبرات اتكو المساعية	الجهة
2023/11/11	تاريخ التعيين الثاني	صيحان الصناعية المنخل الشمالي	العقوان
2024/05/10	تاريخ انتهاء التعين	24752330-24752320 - 24710780	ماتف
a2la / Certificate No. 2487.02	شهادة الايزو 17025	24716526	فاكس
كما هو موضح في مجال التعيين	الاختيارات	21073 الصفاة الرمز البريدي 13071	ص ب

مجال التعيين:

No.	Test Method	Test Description
		AGGREGATES
1	ASTM C 29 Bulk Density ("Unit Weight") and Voids in Aggregate.	
2	ASTM C 40	Organic Impurities in Fine Aggregates for Concrete
3	ASTM C 88	Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate.
4	ASTM C 117	Materials Finer than 75-μm (No. 200) Sieve in Mineral Aggregates by Washing.
5	ASTM C 127	Density, Relative Density (Specific Gravity), and Absorption of Coarse Aggregate
6	ASTM C 128	Density, Relative Density (Specific Gravity), and Absorption of Fine Aggregate
7	ASTM C 131	Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine,
8	ASTM C 136	Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
9	ASTM C 142	Clay Lumps and Friable Particles in Aggregates
10	ASTM C 289	Potential Alkali-Silica Reactivity of Aggregates (Chemical Methods).
11	ASTM C 1252	Standard Test Method for Uncompacted Void Content of Fine Aggregate (as Influenced by Particle Shape, Surface, Texture, and Grading)
12	ASTM C 2419	Sand Equivalent Value of Soils and Fine Aggregate
13	ASTM D 4791	Standard Test Method for Flat Particles, Elongated Particles, Or Flat and Elongated Particles in Coarse Aggregate.
14	ASTM D 5444	Standard Test Method for Mechanical Size Analysis of Extracted Aggregate







### دُولَــة الكــويَـت وزارة الأشغال العامَّة مُرَارِة الأشغال العامَّة مُرَارِة الأشغال العامَّة مُرَارِة الأشغال العامَّة

		5 (710
15	ASTM D 5821	Standard Test Method for Determining the Percentage of Fractured Particles in Coarse Aggregat
16	ASTM D 6928	Standard Test Method for Resistance of Coarse Aggregate to Degradation by Abrasion in Micro- Deval Apparatus
17	ASTM D 7428 -15	Standard Test Method for Resistance of Fine Aggregate to Degradation by Abrasion in Micro- Deval Apparatus
18	AASHTO T164 (Method B only)	Test For Quantitative Extraction of Asphalt Binder from Hot Mix Asphalt.
19	AASHTO T166-16	Bulk Specific Gravity of Compacted Hot Mix Asphalt (HMA) Using Saturated Surface-Dry Specimens
20	AASHTO T230-68: 1993 (Method B)	Compaction Of Bituminous Aggregate.
21	AASHTO T304 Method A	Standard Method of Test for Uncompacted Void Content of Aggregate.
22	AASHTO T335	Standard Method of Test for Determining the Percentage of Fracture in Coarse Aggregate.
23	AASHTO T30	Standard Method of Test for Mechanical Analysis of Extracted Aggregate.
24	BS 812: Part 111: 1990	Ten Percent Fine Value.
25	BS 812: Part 106: 1990	Shell Content in Coarse Aggregate.
26	BS 812: Part 110: 1990	Determination of Crushing Value.
27	BS 812: Part 112: 1990	Aggregate impact value (AIV).
28	BS 812: Part 117: 1988	Chloride Salts for Aggregate.
29	BS 812: Part 118: 1988	Sulfate Content for Aggregate.
		ASPHALT
30	ASTM D 546	Standard Test Method for Sieve Analysis of Mineral Filler for Asphalt Paving Mixtures.
31	ASTM D 979	Standard Practice for Sampling Bituminous Paving Mixtures.
32	ASTM D 2041	Standard Test Method for Theoretical Maximum Specific Gravity and Density of Asphalt Mixtures.
33	ASTM D 3203	Standard Test Method for Percent Air Voids in Compacted Asphalt Mixtures
34	ASTM D 3549	Standard Test Method for Thickness or Height of Compacted Asphalt Mixtures Specimens.
35	ASTM D 4867	Standard Test Method for Effect of Moisture on Asphalt Concrete Paving Mixtures.
36	ASTM D 5361	Standard Practice for Sampling Compacted Asphalt Mixtures for Laboratory Testing.
37	ASTM D 6925	Standard Test Method for Preparation and Determination of The Relative Density of Asphalt Mix Specimens by Means of The Superpave Gyratory Compactor
38	ASTM D 6926	Standard Practice for Preparation of Asphalt Mixtures Specimens Using Marshall Apparatus
39	ASTM D 6927	Standard Test Method for Marshall Stability and Flow of Asphalt Mixtures





## دولَـة الكـويت وزارة الأشغال العامية ١٩١٤/١٨ ١٩١٧/٢٠

40	AASHTO R68	Preparation Of Asphalt Mixtures Specimens Using Marshall Apparatus
41	ASTM D 6648	Standard Test Method for Determining the Flexural Creep Stiffens of Asphalt Binder Using the Bending Beam Rheometer (BBR)
42	ASTM D 7175	Standard Test Method for Determining the Rheological Properties of Asphalt Binder Using a Dynamic Shear Rheometer (DSR)
43	ASTM D 7405	Standard Test Method of Test for Multi Stress Creep Recovery (MSCR) Test of Asphalt Binder Using a Dynamic Shear Rheometer (DSR)
44	ASTM D 8239	Performance Graded Asphalt Binder Using Multiple Stress Creep Recovery (MSCR)
45	ASTM D 6373	Standard Specifications for Performance - Graded Asphalt Binder
46	AASHTO T313	Standard Test Method for Determining the Flexural Creep Stiffens of Asphalt Binder Using the Bending Beam Rheometer (BBR)
47	AASHTO T315	Standard Test Method for Determining the Rheological Properties of Asphalt Binder Using a Dynamic Shear Rheometer (DSR)
48	AASHTO T350	Standard Test Method of Test for Multi Stress Creep Recovery (MSCR) Test of Asphalt Binder Using a Dynamic Shear Rheometer (DSR)
49	AASHTO R29	Standard Practice for Grading or Verifying the Performance Grade (PG) Of an Asphalt Binder
50	AASHTO M332	Performance Graded Asphalt Binder Using Multiple Stress Creep Recovery (MSCR)
51	AASHTO M320	Standard Specifications for Performance - Graded Asphalt Binder
52	AASHTO R30	Mixture Conditioning of Hot-Mix Asphalt (HMA)
53	AASHTO R35, MS-2	Standard Practice for Superpave Volumetric Design for Asphalt Mixtures (Superpave Mix Design
54	Asphalt Institute MS-2	Asphalt Mix Design (HMA)
55	ААЅНТО M 323	Standard Specifications for Superpave Volumetric Mix Design
56	AASHTO T37	Standard Method of Test for Sieve Analysis of Mineral Filler for Hot Mix Design
57	AASHTO T209	Standard Method of Test for Theoretical Maximum Specific Gravity (Gmm) and Density of asphalt Mixtures.
58	AASHTO T245	Standard Method of Test for Resistance to Plastic Flow of Asphalt Mixtures Using Marshall Apparatus.
59	AASHTO T283	Standard Method of Test for Resistance of Compacted Asphalt Mixtures to Moisture -Induced Damage
60	ААЅНТО ТЗ12	Standard Method of Test for Preparing and Determining of the Density of Asphalt Mix Specimens by Means of the Superpave Gyratory Compactor
61	AASHTO T329	Standard Method of Test for Moisture Content of Asphalt Mixtures by Oven Method
62	QCS 2014 SEC, 06 Part 05, CL 5.3.3 Paragraph 16; CDR-C 652-95	Retained Stability, Lost Stability (Per ASTM D 6926, D 6927)
		BITUMENOUS
63	AASHTO T164: (Method B)	Test for Quantitative Extraction of Asphalt Binder from Hot Mix Asphalt







# دُولَــة الكــويَـت وَزَارِةِ الأشغال العامَّة

CEN/11/5.

64	AASHTO T166-16	Standard Test Method for Bulk Specific Gravity of Compacted Hot Mix Asphalt (HMA) Using Saturated Surface-Dry Specimens
65	ASTM D 5	Standard Test Method for Penetration of Bituminous Materials
66	ASTM D 36	Standard Test Method for Softening Point of Bitumen (Ring-And-Ball Apparatus)
67	ASTM D 70	Standard Test Method for Density of Semi-Solid Asphalt Binder (Pycnometer Method)
68	ASTM D 92	Standard Test Method for Flash and Fire Points by Cleveland Open Cup Tester
69	ASTM D 2872	Standard Test Method for Effect of Heat and Air on A Moving Film of Asphalt (Rolling Thin-Film Oven Test)
70	ASTM D 4402	Standard Test Method for Viscosity Determination of Asphalt at Elevated Temperatures Using a Rotational Viscometer
71	ASTM D 5546	Standard Test Method for Solubility of Asphalt Binders in Toluene by Centrifuge (Withdrawn 2017)
72	ASTM D 6521	Standard Practice for Accelerated Aging of Asphalt Binder Using Pressurized Aging Vessel (PAV)
73	AASHTO R28	Standard Practice for Accelerated Aging of Asphalt Binder Using Pressurized Aging Vessel (PAV)
74	AASHTO T48	Standard Test Method for Flash and Fire Points by Cleveland Open Cup Tester
75	AASHTO T49	Standard Test Method for Penetration of Bituminous Materials
76	AASHTO T53	Standard Method of Test for Softening Point of Bitumen (Ring-And-Ball Apparatus)
77	AASHTO T228	Standard Method of Test for Specific Gravity of Semi-Solid Asphalt Materials
78	AASHTO T240	Standard Method of Test for Effect of Heat and Air on A Moving Film of Asphalt Binder (Rolling Thin-Film Oven Test)
79	AASHTO T316	Standard Method of Test for Viscosity Determination of Asphalt Binder Using Rotational Viscometer

#### الاشت إطات

- هذه الشهادة غير صالحة بدون مجال التعين العرفق مع الشهادة.
- الالتزام بكتاب الهيئة العامة للبيئة المؤرخ في (2022/07/27) بعدم وجود مخالفات بيئية محررة وفقاً لأحكام فانون حماية البيئة رقم (42) لسنة 2014 والمعدل بعض أحكامه بالقانون رقم (99) لسنة 2015.
  - تلتزم الجهة المعينة عند اصدار تقرير (نتائج الفحوصات) بأن تتضمن بيان المطابقة (ناجح أو غير ناجح)، وأن يتم قبول أو الاعتراف بأي تقارير تصدر من الجهة المعينة مخالفة لما جاء في هذا الشرط.
    - ضرورة سريان تراخيص المنشأة وشهادات المعايرة للأجهزة المستخدمة في إجراء الاختبارات الواردة في مجال التعيين.
      - تلتزم الجهة المُعينة بمجال التعيين والاختبارات الواردة فيه فقط وتتحمل الجهة المُعينة مخالفتها لهذا الشرط.
    - يحق للوزارة متمثلةً بإدارة ضبط الجودة القيام بالزيارات التفقدية للجهة المعينة للتأكد من استمرارية تحقيق متطلبات التعيين خلال فترة التعيين.
      - تطبق الشروط المذكورة أعلاه على المختبرات الموقعية التابعة للجهة المعينة.
      - في حانة المخالفة لأي من متطلبات التعيين المتفق عليها يعتبر التعيين ملغياً ويحق للوزارة أخذ ما تراه مناسباً من الإجراءات القانونية.
        - "يتم إصدار شهادة تعيين جديدة كل ستة أشهر.

/وكيل وزارة الأشغال العامة

حَرِي الْحَاقِ الْعِيْدُ الْعِيْدُ





# وزارة الأشغال العامسة Ministry of Public Works



REF:

16/5/2023

DATE:

52/18 2.0.6:

2023/5/14:

تعميم إداري رقم ( 52 ) لسنة 2023 اور بسنان تعيين جهة تقويم المطابقة (مختبر محايد) المسابقة (مختبر محايد) المسابق

المساعد لقطاع المركز الحكومي للفحوصات وضبط الجودة والأبحاث:

الاطلاع على المرسوم الأميري الصادر بتاريخ 1979/01/07 في شأن وزارة الاشغال العامة وتعديلاته،

- ى المرسوم بالقانون رقم [15 لسنة 1979] في شأن الخدمة المدنية والقوانين المعدلة له،
- ى المرسوم الصادر في 4 ابريل لسنة 1979 نظام الخدمة المدنية والمراسيم المعدلة له،
- ي كتاب الوكيل المساعد لقطاع المركز الحكومي للفحوصات وضبط الجودة والأبحاث رقم 960/18 المؤرخ في 2023/3/21،
  - ن آلية تعيين جهات تقويم المطابقة (المختبرات المحايدة)،
- ء على القرار الإداري رقم (1145) لسنة 2023 بشأن آلية تعيين جهات تقويم المطابقة (المختبرات المحايدة) الصادر بتاريخ /2023/4
  - ء على ما تقتضيه مصلحة العمل،
    - تناداً للصلاحيات المخولة لنا،

#### يعمد الآتي:

- لى : تعيين شركة مختيرات إنكو الصناعية (ش.م.ك.م) كجهة تقويم مطابقة (مختير محايد) لدى وزارة الأشغال العامة. [شال صبحان ق1 ش101 مبنى رقم 151 متابل محطة إطناء صبحان ت: 24716520 ماكن: 24716520 ماكن 24716520 ماكن عبد 21073 الموادي 13071 الكويت].
- نية : تقوم إدارة ضبط الجودة بقطاع المركز الحكومي للفحوصات وضبط الجودة والأبحاث بالتحقق من الالتزام بكافة اشتراطات التعيين وفي حال المخالفة سيتم ايقاف التعيين والحذف من قائمة الجهات المعينة واتخاذ كافة الاجراءات القانونية.
- الثة : تلتزم الجهة المعينة بتحديث كافة المستندات المطلوبة وتقديمها بكتاب رسمي إلى المركز الحكومي للفحوصات وضبط الجودة والأبحاث قبل شهر من تاريخ انتهاء شهادة التعيين للتجديد.

ابعة : يعمل بهذا التعميم اعتباراً من تاريخه وعلى كل فيما يخصه تنفيذه.

الوكيل المساعد لقطاع المركز الحكومي للفحوصات

وضيط الجودة والأنهاث ر

وكيل وزارة مساعد قطاع المركز الحكومي للفحوصات وضبط الجودة والأبحاث بالتكليف



## STATE OF KUWAIT MINISTRY OF DEFENCE

MILITARY ENGINEERING PROJECTS

272742000931 2023/07/04

المحترمين



دولية الكويت وزارة السدفية المسكرية

السادة / شركة مختبرات إنكو تحية طيبة وبعد،،،

#### الموضوع: طلب اعتمادكم كمختبر طرف ثالث

بالإشارة إلى الموضوع أعلاه، يرجى العلم بأن جهازنا الفني قد قام بزيارات ميدانية لتقييم مختبرات "شركة إنكو" (مرفق تقرير اللجنة الفنية)، وعليه فإنه لا مانع لدينا من اعتمادكم كمختبر طرف ثالث (مرفق شهادة تعيين حهة تقويم مطابقة) في المشروع المذكور أعلاه شريطة التقيد بالآتي:

- ١- ضرورة سريال تراخيص المنشأة وشهادات المعايرة للأجهزة المستخدمة في أعمال الفحوصات المعتمدة طوال فترة الاعتماد.
- المختبر فقط معتمد في الفحوصات الموضحة في مجال التعيين، ولا يحق تنفيذ أي فحوصات إضافية لمشاريع
   وزارة الدفاع دون أخذ الموافقة المسبقة.
- 3- أن يتم سحب العينات طبقاً للمواصفات القياسية الخاصة بكل مادة وتحت إشراف ممثل عن وزارة الدفاع، وأن يتم الاحتفاظ بعينة احتياطية (Split Sample) تمثل العينات المقدمة للفحص لمدة شهر من تاريخ تسليم نسخة من التقرير لمراقبة ضبط الجودة.
  - 4 السليم السخة من ننائج الفحوصات الخاصة بالمشروع لمراقبة ضبط الجودة.
  - ج. وزارة الدفاع لا تتحمل المسئولية تجاه الغير لنتائج الفحوصات التي لا يتم إجراؤها تحت إشراف وزارة الدفاع.
- مناوز ارة الحق في الغاء الاعتماد خلال فترة سريان صلحية الاعتماد في حال اكتشاف اي عيوب أو تجاوز الشروط الاعتماد.
- 7- هذا الاعتماد سلماري لمدة مسنة فقط حتى تاريخ 2024/06/23، وعلى أن يتم تقديم طلب الاعتماد من خلال المعقاول الرئيسي في مشاريع وزارة الدفاع.

برجاء الإطلاع واتخاذ ما ترونه مناسباً.

عن/ وكيل الوزارة وكيل الوزارة المساعد لهندسة المنشآت العسكرية (بالتكليف) عامر محمد ناصر النسيم

73000-74240-74210 : فسنة







## 

73450694

الإشارة:

2023/07/05

التاريخ :

المحترم

السيد / ممثل المتعهد - الشركة الكويتية لبناء المعامل والمقاولات تحية طبية وبعد،،،

الموضوع : عقد رقم (1682919) تصميم وإنشاء وإنجاز وصيانة حظائر طائرات ومستودعات

لزوم قاعدتي عبدالله المبارك الجوية ونواف الأحمد الجوية في الموقع المؤقت

المتعهد : الشركة الكوبتية لبناء المعامل والمقاولات KCPC

بالإشارة إلى الموضوع أعلاه، وإلى كتابكم رقم 2023/1/2023 بخصوص طلب اعتماد شركة مختبرات انكو الصناعية (مختبر خارجي) لإجراء الاختبارات الموقعية واختبارات المواد بالعقد المذكور أعلاه (مرفق صورة).

وبناءً على كتاب السيد/ مراقب المختبرات رقم 742100050 بتاريخ 2023/06/26 نحيطكم علماً بالموافقة على اعتماد السادة / شركة مختبرات انكو الصناعية (كمختبر طرف ثالث) للعقد أعلاه، شريطة النقيد بالأتى:

- 1- ضرورة سريان تراخيص المنشأة وشهادات المعايرة للأجهزة المستخدمة طول فترة الاعتماد.
- 2- المختبر معتمد فقط في الفحوصات الموضحة بالجدول المرفق في تقرير اللجنة الفنية، ولا يحق للمتعهد إسناد أي فحوصات إضافية دون أخذ الموافقة المسبقة.
- 3- إعطاء أولوية الفحص لمواد المشروع المذكور أعلاه لمراقبة المختبرات في قطاع هندسة المنشآت العسكرية بوزارة الدفاع.
- 4- أن يتم سحب العينات طبقاً للمواصفات القياسية الخاصة بكل مادة وتحت إشراف ممثل عن وزارة الدفاع، وأن يتم الاحتفاظ بعينة احتياطية (Split sample) تمثل العينات المقدمة للفحص لمدة شهر من تاريخ تقديم نسخة من التقرير لمراقبة ضبط الجودة.
  - 5- تسليم نسخة من نتائج الفحوصات بالخاصة بالمشروع لمراقبة ضبط الجودة.
- 6- وزارة الدفاع لا تتحمل المسئولية تجاه الغير لنتائج الفحوصات التي لا يتم إجراؤها تحت إشراف وزارة الدفاع.
- 7- للوزارة الحق في إلغاء هذا الاعتماد خلال فترة سريان صلاحية الاعتماد في حال اكتشاف أي عيوب أو تجاوز لشروط الاعتماد.
- 8- هذا الاعتماد ساري طوال فترة المشروع المذكور أعلاه، ولا يسمح باستخدام هذا الاعتماد لأي مشروع أو أعمال أخرى إلا بموافقة خطية من إدارة الشئون الفنية بوزارة الدفاع.

مرسل لإجراءاتكم.

شاكرين لكم حسن تعاونكم معنا،،،

رئيس لجنة انتقال القواعد العسكرية مراقب قاعدة عبدالله المبارك الجوية بالتكليف مهندس / فيصرل تركيى الهاجدي

✓ المرفقات: كما ذكر أعلاه.محمود



## وزارة الأشغال العامية Ministry of Public Works



REF:

الإشارة: ١/ / ١٤/

التاريخ: ٢٢ ١١٥٠٠

السادة / شركة مختبرات إنكو الصناعية (ش.م.ك.م) المحترمين

67622216: فاكس = 24716526 رقم ممثل الشركة = 24752320/30 ت

الرمز البريدي: 13071 الكويت

ص.ب: 21073 الصفاة

تحية طيبة وبعد،،،

الموضوع: "شهادة إعتماد شركة مختبرات إنكو (ش.م.ك.م) الصناعية في مجال (الإسفلت/البيتومين/الصلبوخ المستخدم في الخلطة الإسفلتية) "

بالإشارة إلى كتابكم رقم (INCO/BK/L 0120) بتاريخ (2022/06/19)، والخاص بالموضوع أعلاه.

يطيب ثنا أن نرفق لكم طيه شهادة الاعتماد الخاصة بكم والتي تحمل رقم (Q4374).

وتفضلوا بقبول فائق الاحترام،،،

وكيل وزارة الأشغال العامة

الهنالل مبو الحسل فالد العنزي الوكليل المساعد نقطاع المركز المحكومي تلفحوصات وضيط المحرادة والابحاث



ص . ب: 8 الكويت – الصفاة 13001 – تلفون : 25385520 – فاكس: 25380829 – برقيا: الأشغال – الكويت P.O. Box: 8 Safat, 13001, Kuwait – Tel: 25385520 – Fax: 23580829 – Cable: Works Kuwait www.mpw.gov.kw



المحترمين

## الهيئة العامة للطرق والنقل البري Public Authority For Roads and Land Transport





Ref:

Date:

الإشارة: ١١١٦ - أو ١١٧

الد. ا م ۱۱۱ ۱ م : في الما

السادة/ شركة مختبرات إنكو الصناعية

ص.ب 21073 الصفاة 13071 - الكويت - تلفون 24752320 \ 30 فاكس 307555

تحية طيبة ويعد،

الموضوع: حصر وتدقيق أجهرة فحوصات الأسفلت لأعمال الطرق

بالإشارة إلى الموضوع أعلاه ، و إلى كتابكم المرسل إلينا المؤرخ بتاريخ 9\9\2019 و يحمل رقم 2024 INCO\BK\L 0242 "مرفق" نفيدكم بأن قسم مواد الطرق (الحقل) التابع لإدارة مختبرات الطرق قد قام بالمرور على المختبر المذكور أعلاه بتاريخ 2019/10/23 هذا وقد تم حصر أجهزة وأدوات بعض فحوصات الأسفلت التي يقوم بها المختبر لأعمال الطرق وتبين بعد التدقيق انه تم استكمال كافة الأجهزة والأدوات المطلوبه لإنجاز تلك الفحوصات , كما تم عمل المعايرة اللازمة لبعض الأجهزة , ولذا تم اعتماد المختبر "مرفق طيه" .

- مرسل لكم نسخة بالأجهزة المتوفرة بالمختبر .
- مرسل لكم نسخة بشهادات المعايرة لأجهزة المختبر.

وتفضلوا بقبول فائق الإحترام ،،،،

مدير عام الهيئة العامه للطرق والنقل البري (بالإنابة)

المرفقات : كما هو مذكور أعلاه .

الهنداسة/ سهى جاسة اشكناني مدير عام الدينة العابة للطرق والنين البري بالإنابة



## الهيئة العامة للطرق والنقل البري Public Authority For Roads and Land Transport





Ref:

الإشارة:

Date:

التاريخ:

LAB NO. 11203 \ 19

LAB & FIELD TESTING FOR ASPHALT

NO.	TEST	STANDARD	EQUIPMENTS	REMARKS
1	Bulk Specific Gravity (Gmb) of Compacted Hot Mix Asphalt (HMA) Using Saturated Surface - Dry Specimens	AASHTO Designation: T 166	(1)Weighing Device (2) Suspension Appratus (3) Water Bath	Available
2	Quantitative Extraction of Asphalt Binder from Hot Mix Asphalt (HMA)	AASHTO Designation: T 164 and T -130	(1)Oven (2) Pan (3) Balance (4) Cylinder (5) Extraction Appratus (6) Glass Jar (7) Cylindrical Motal Frames (8) Condenser (9) Electric Hot Plate Sieve Set (1½ ,1,¾,½,3\8,4,8,16,30,50,100,200)	Available
3	Determining Degree of Pavement Compaction of Bituminous Aggregate Mixtures	AASHTO Designation: T 230	(1)Asphalt Core Extraction  Machine	Available
4	Marshall Density & Stability Test	AASHTO Designation: T 245 & T-166	(1) Water Bath (2) Marshall Tester (3) Dial Gauge	Available

رئيس قسم مواد الطرق المالا المهندسة المالا الدوسري المالا الدوس المالا المالا

المدققين: فايز العنزي فار عبدالله العجمي







Calibration Of Speedy Moisture Apparatus					
Date:	08/05/2023	ON:	12/03/2023		
App.No.:	189/2023	Date of test :	02/05/2023		
Applicat:	مختبرات انكو	Serial No.:	IN-ML-402		
Location:	=				

Apparatus:

SPEEDY TEST

Serial No.:

IN-ML-402

Manufactured:

Moisture content determinations were done using the Speedy Moisture Apparatus and by Oven method for different moisture contents. The results are given below:

Sample No.		1	2	3	4	5
By Speedy	(%)	5.2	7.2	9.6	11.1	12.2
By Oven	(%)	4.66	7.73	10.72	12.11	13.34
Difference in	n Value	0.54	-0.53	-1.12	-1.01	-1.14

#### NOTE:

1 - "Speedy" result maybe lower than "Oven -dry" result since volatile particles, other than moister may be resent in soil.

Manager, Construction Labs. Department.

المحديس/ أَنْ الحَيْرِيُّ فَي الْكُلُّا اللهِ اللهُ ا







CALIBRATION OF THERMOMETER					
Date:	19/03/2023	ON:	12/03/2023		
App No.	184/2023	Date of test	14/03/2023		
Application:	INCO-LABS	Machine Name:	Thermometer		
Contract No.:	-	Machine No.:	T-1		

**Apparatus** 

: Digital Thermometer

Measuring range

: 0 °C to 240 °C

Accuracy

:-2 °C to +2 °C

LAB DEGREE (°C)	THERMOMETER DEGREE (°C)	ERROR (°C)	% ERROR
3	0	3	0.00
18	16	2	12.5
22	20	2	10
23	20	3	15
36	34	2	5.88
84	82	2	2.43

REMARKS:

This Thermometer has been adjusted according to our laboratory temperature degrees and , therefore , it can be used in determining the temperature degrees.

Manager, Construction Labs. Department.

مُلايِرً إِدَارةَ مِحْتَبِرُاتِ الإِنشَاءاتِ







	Calibration of	of sand-cone	
Date:	21/03/2023	ON:	12/03/2023
App No.	187/2023	Date of test	15/03/2023
Application:	INCO-LABS		
Project:	Sand Cone		

**Identification:** Sand Cone Apparatus

Cone No. : SC-01 Plate No. : SC-01

1- Diameter of the funnel: 165 mm

2- Weight of the standard sand in cone and plate: 1723.33 gm.

3- Bulk Density of standard sand submitted 1.549 gm/cc.

4- Capacity of jar: 5 L

\* The Jar and Cone conform to the specification ( ASTM D1556 )

Manager, Const. Labs. Department

مدير إدارة مختبرات الإنشاءات







Calibraction Of Balance					
Application No:	182/2023	Date:	20/03/2023		
Applicant:	INCO LABS	Date Of Test :	15/03/2023		
Full Medium Balance Scale (Kg)	<u>30 KG</u>	Date on:	12/03/2023		
Location:	صبحان -المختبر	Serial No.:	8340150249		
Machine No:	R21PHE30	Type:	OHAUS		

LAB WEIGHT (Kg)	BALANCE SCALE (Kg)	ERROR (Kg)	% ERROR WITH RESPCT TO SCALE IND.LOAD
3.000	2.996	0.004	0.13
6.000	5.998	0.002	0.03
9.000	8.993	0.007	0.08
12.000	11.997	0.003	0.03
15.000	14.997	0.003	0.02
18.000	17.994	0.006	0.03
21.000	20.997	0.003	0.01
24.000	23.991	0.009	0.04
DIV: 0.001 (Kg)			Full Scale: 30 (Kg)

#### **REMARKS:**

This material balance has been adjusted according to the zero reading .

Manager, Construction Labs. Department.

المحذري / (أَوْرُ كُورُ عَلَى اللهِ المُلْمِي المِلْمُولِي المِلْمُلِي المِلْمُلِي اللهِ اللهِ اللهِ اللهِ اللهِ اللهِ اللهِ اللهِ



# شهادة عدم وجود محاضر مخالفات بيئية



## شهادة لمن يهمه الامر

تفيد الهيئة العامة للبيئة بعدم وجود محاضر مخالفات بينية محررة وفقاً لاحكام قانون حماية البيئة رقم 42 لسنة 2014 وتعديلاته ولوائحه التنفيذية, بشأن شركة " شركة مختبرات المتوفرة الدي الهيئة في تاريخ تحرير هذه الشهادة

اعطيت هذه الشهادة للشركة المذكورة بناء على طلبها, دون ادني مسئولية على الهيئة تجاه الغير.

## وهذه شهادة من الهيئة بذلك

المدير العام

سمر المركزة المرافق المركزة المدير العام بالوكالة مدير أدارة الالتزام البيئي رئيس قسم البلاغات والمخالفات البيئية مرجم مرجم تم البلاغات والمخالفات البيئية مرجم ما الشهادة ما الشهادة عام ميلادي من تاريخ الاصدار: (2023-07-07.

Mona AlBasman للتنسيق والمتابعة



## وزارة الكهرباء والماء MINISTRY OF ELECTRICITY & WATER



الإنسارة: \\\ 20\\ \ \ \ الإنسارة: \\

الموافق : .....

المحترمين

السادة / شركة مختبرات إنكو الصناعية

ص.ب: 21073 الصفاة

الرمز البريدى: 13071 الكويت

هاتف رقم: 24710780

فاكس رقم: 24716526

تحية طيبة وبعد ،،،،

الموضوع: تجديد إعتماد شركة إنكو الصناعية - ش.م.ك.م

بالإشارة إلى الموضوع أعلاه ، وإلى كتابكم رقم 1NCO/BK/L 0070 المؤرخ 2017/3/5 ، نود الإفادة بأنه لا مانع من إعتماد شركة إنكو الصناعية – ش.م.ك.م لأعمال فحص التربة والأعمال المساحية وذلك من خلال المقاولين المعتمدين لدى وزارة الكهرباء والماء حيث أن المختبر معتمد لدينا شريطة تجديد شهادات الإعتماد لدى وزارة الأشغال العامة بشكل دورى . شاكرين لكم حسن تعاونكم .

وتفضلوا بقبول فائق الإحترام والتقدير ،،

وكيل وزارة الكهرباء والماء

المرفقات : كما هو وارد أعلاه .





Ref: 71.7/3/ () 1500 18

التاريخ ، ١٢/١١٥ Date: الموافق :

المحترمين

فاکس رقم: ۲۴۹۲۱۷۶۲

السادة / شركة مختبرات انكو الصناعية

صندوق بريد: ٢١٠٧٣ - الصفاة

الرمز البريدي: ١٣٠٧١ - الكويت

هاتف رقم: ۵۸۰،۷۱۹

تحية طيبة وبعد ،،،

الموضوع: طلب تجديد اعتماد شركة انكو الصناعية في مجال المعايرة

بالإشارة إلى كتابكم رقيم بالإشارة إلى كتابكم رقيم الموضوع المنكور أعيلاه ، وإلى كتابكم رقيم INCO/EQ/L0168 والمؤرخ في ١٠١٣/٠٥/٠٧ (مرفق صورة) وإلى كتابنا إليكم رقم و ك م ٢٠١٣/٢/٢/٢ والمؤرخ في ٢٠١٢/٠٦/٢ (مرفق صورة).

نود الإفادة بأنه لا مانع لدينا من تجديد اعتماد مختبرات انكو الصناعية في مجال المعايرة حتى شهادة الاعتماد الاعتماد الدولي A2LA (مرفق نسخة عنها).

مع أطيب التمنيات ،،،

ر وكيال وزارة الكهرياء والماء/ ر ال

المرفقات :- كما جاه أعلاه .

State Of Kiwait
Public Authority Of Agriculture
Affaires & Fish Resources

دولة الكويت الهيئة العامة لشئون الزراعة والثروة المسكية إدارة الشئون المالية - مراقبة المشتريات والخازن قسم الملقصات

شهادة تسجيل لعام 2013 ®

السادة / شركة مختبرات إنكو الصناعية ش.م.ك.م ( 873 ) مسجلة إدى الهيئة العامة لشئون الزراعة والثروة السمكية للعمل بالقطاع الحكومي في المجالات التخصصية التالية : القيام بأعيال فحوصات المواد ـ أبحاث التربة ـ أعيال المساحة ـ أعيال المعايرة ـ التقييم الإنشائي ـ فحوصات البيئة .

رئيس المتسم ع) ) المرافع المر



ملاحظة : تشبي صلاحية الشهادة بنهاية العام الحالي 2013

a dala

2 : تجديد التسجيل سنويا لدي غرفة التجارة والصناعة ولجنة المناقصات المركزية وتزويد الهيئة بشهادة الغرفة وشهادة لجنة المناقصات تهيدا لتجديد التسجيل . 1 : بجب إخطار الهيئة في حالة أي تغير يطرأ على الشركة / المؤسسة في النواحي القانونية وأي تعديل بالنشاط التجاري .



بطاقة إثبات مقاول / مورد

السيد / السادة ، المركبة عقيم التراكبة السيد / السادة ، المركبة عقيم التركبة السيد / السادة ، المركبة عقيم التركبة التحاري التركبة التحاري والمستاعة وقع ، المركبة التحاري والمستاعة وقع ، المركبة التركبية الترك

الماريك والمامة والعارة والعارة والعارة والعارة الماريك	الرقم المدني المحرف
	. 6 4
	2 all







التاريخ: 1432/3/11 هـ الموافق: 2011/2/14م الرقم: أ.ف/ق.م/ش.هـ/ ٧٧ > / 2011م

المترمين

السادة/ شركة مختبرات إنكو الصناعية

السلام عليكم ورحمة الله وبركاته ،،،

## الموضوع/ اعتماد شركة مختبرات انكو الصناعية

بالإشارة إلى الموضوع أعالاه، وإلى كتابكم بخصوصه رقم الإشارة إلى الموضوع أعالاه، وإلى كتابكم بخصوصه رقم INCO/EQ/L.0024 تابكم بتغير اسم INCO/EQ/L.0024 في المحتكم ولا مانع لدينا من اعتماد شركتكم ضمن المختبرات المعتمدة لأعمال فحص مواد البناء الأولية والمواد المصنعة والمساحة الطبوغرافية للأراضي والبناء وأبحاث التربة والأساسات وتقييم وتفتيش المباني والمنشآت من خلال الفحوصات والتصميم الإنشائي ووضع التوصيات والحلول لمعالجة المنشآت المتضررة وكافة الأعمال الواردة بشهادة غرفة تجارة وصناعة الكويت المرفقة بكتابكم سالف الذكر.





وزارة الكهرباء والماء

29900 الإشارة . و21010 الإشارة .

التاريخ : المحال المديد التوافق : المعالم الموافق : المعالم الموافق : المعالم المعالم

المحتومين

السادة / شركة خالد على الخرافي وإخوانه

ص.ب: ٢٨٨٦- الصفاة ١٣٠٢٩ الكويت فاكس: ٤٨٣٥٥٠١

تحية طيبة ٠٠٠٠ وبـعد ،،،،

الموضوع: - العقد رقم و ك م / ع /۲۰۰۸ - ۲۰۰۸ العذبة إنشاء وإنجاز وصيانة عدد (٣) خزانات أرضية من الخرسانة المسلحة للمياه العذبة سعة كل منهما ٥٥ مليون جالون إمبراطوري والأعمال الملحقة بمجمع تخزين وتوزيع المياه بمنطقة الصبية (C1 - المرحلة الثانية ) بخصوص: - فحص مختبر إنكو لعمل فحص التربة

بالإشارة إلى الموضوع أعلاه ، وإلي كتابكم رقم KAK/3677/07 ، نحيطكم علماً بأنه لا مانع من إعتماد مختبر إنكو لعمل فحص التربة لعدد "٣" خزانات الخاصة بالمشروع المذكور أعلاه .

مع أطيب التمنيات،،،،

طوكيل وزارة الكهرباء والماء

حاكم حبيب الخالدي الوكيل المساعد الوكيل المساعد لمشاريع وتشغيل وصيانة المياه ومحطات القوى الكهربانية وتقطير الميا

## Ministry of Energy State of Kuwait

Ref. الإشارة: الإشارة: الإشارة

المحترمين



## وزارة الطاقة دولة الكويت

التاريخ: ٢٧ / ٢٤ التاريخ: الدريغاء

السادة/ الشركة الوطنية للأعمال الميكانيكية والكهربانية المحدودة

ص.ب: ٨٠٨٠ الصفاة - فاكس: ٤٨٠٨٠ الصفاة

تحية طيبة وبعد ؟؟؟

الموضوع: عقد رقم وط/ك م/ع ص/٣٢٣٠-٥٠٠٥ ٢٠٠٠٠ الموضوع: الأعمال الجارية لخطوط وارتباطات المياه في جميع مناطيق الكويت بخصوص: اعتماد شركة انكو لفحص التربة والمواد الهندسية

بالإشارة إلى الموضوع أعلاه ، والى كتابكم رقم 1275/AE/A1/017/05 بتريخ بالإشارة إلى الموضوع أعلاه ، والى كتابكم رقم 1275/AE/A1/017/05 بتريخ المراد الإفادة بأنه لا مانع لدينا من إعتماد السادة/ شركة إنكر لفحص التربة والمواد الهندسية لأعمال العقد أعلاه .

مع أطيب التمنيات ؟؟؟؟

الديرانات المالية الم

رنيس مهندسان مشاريع الشبكات والمشآت المانية ما مي الشبكات والمشآت المانية

## بسم الله الزجمان الرحية





وزارة الكهرتباء والماء

التاريخ: الموافق: ١٠١١ / ١٠١١ الاشارة: والمارة: والمارة: والمارة المارة المارة

المجترم...

السيد / مدير مختبر إنكو لقحوصات المواد

والتربة والمساحة وابحاث البيئة

العنوان : صبحان الشمالي - شارع ١٠١ص.ب. ( ٢١٠٧٣ ) - الكويت.

الرمز البريدي ( ١٣٠٧١) - الكويت.

تحية طيبة وبعد،،،

الموضوع: - طلب إعتماد

-=-=-=-=-

بالإشارة إلى كتابكم رقم: Inco/L 1870 م Inco/L 1990 م، والخاص بإعتماد مختبركم لدى الوزارة، يرجى العلم بأنه لا مانع لدى الوزارة من إعتماد المختبر لإجراء الفحوصات الخاصة بأعمال التربة والمواد الإنشائية فقط شريطة معايرة الأجهزة الخاصة بالفحوصات كل سنة أشهر بواسطة المركز الحكومي للفحوصات والأبحاث، وتقديم الشهادات الدالة على ذلك عند إجراء الفحوصات الخاصة بالوزارة.

مع أطيب التمنيات ؟ ؟ ؟

روكيل وزارة الكهرباء والماء

على عرق قري اللفية . تميني المواجدة ال

- الدين في الماد - أبير ما في المائي عن الانم -العم ما لا بن على الانم ا

م.ص (۲۲)

بت إلله الرحمة التحييم

d/18/10 : 60000 KUWAIT MUNICIPALIT

13001 - SAFAT - KUWAIT

TEL.: 2449001

TLX: BALDIA 22570 KT.

بلدية الكويت ا . ن ب . م الكويت \_ الصفاة 13001 هاتف: ١٠.١٤٤٢ تلكس: بلدية / ٢٢٥٧.

التاريخ الثاريخ

الإشارة \_ 354 Ref. \_

السيد / رئيس المهندسين لشئون البناء و الرقابة و المتابعة

تحية طيبة و بعدهه،

الموضوع: - اعتماد مختبر انكو لفحوصات الموادي التربة و المساحة و ابحاث التربة .

بالاشارة الى الموضوع اعلاه ، و بالاشارة الى الكتاب المقدم من قبل المختبر المذكور اعلاه ، فقد تم عرض موضوع اعتماد النتائج الصادرة عن ـ مختبر انكو لفحوصات المواد و التربة و المساحة و ابحاث البيئة ـ على لجنة مزاولة المهنة للمكاتب الهندسية . و بعد الاطلاع على كتاب وزارة الاشغال العامة ، و مناقشة الموضوع في اللجنة ، رات اللجنة المو افقة على اعتماد نتائج المختبر المذكور لفحوصات المواد الهندسية و التربة و المساحة و ابحاث البيئة .

و تفضلوا بقبول فائق الاحترام ،،،

رئيس لجنة مزاولة المهنة للمكاتب الهندسية م. قيصل عبد الله الخلف وثليس لجنة مزاولة المهشة للعكاتب الهددستية

المنتواء العانيات نسخة الى/ ادارة البناء (مزاولة المهنة)

Ministry of Public Works



وزارة الأشغال العامت

Ref: 16/3-703 Date: 21/7/2008

M/s. Pacific Consultant International, & Dar Al Dowailah Engineering Consultants P.O. Box 2022 Safat 13021 Safat KUWAIT

Sub: Agreement No. EF/R/118

Upgrading of Western Part of 5th Ring Road and

Central Part of Jahra Road

Selection of Company for Geological Investigation Works

Dear Sirs,

With reference to your letter No. (KW5/062) dated (6-7-2008) regarding Geological Investigation works.

Please be informed that following our review of "resumes" of proposed companies, we have no objection for "INCO-LAB" to perform the task recommended by you.

Yours sincerely

Assistant Under Secretary Roads Administration

> Eng. Habib Al-Ali Dir. Of Construction Dep. Road Administration

TO MS MURACKS/CRAND/ KILLUGAWA.

Ministry of Public Works

وزارة الاشغال العامل

J - 101-10 :) F. SIENI

Ref

Date:

البادة / مختبر إنكو لفحوطات المواد و التربة و المسلحة و أبحاث البيئة المحترمين تحية طية وبعاء ،،،

## الموقوع: طلد اعتماد

بالإشارة لكتابكم رقم ١٨٢٥١،١٨٥٥ بالإشارة ٩٨/٢/١٦ بخصوص المرضوع أعلاه، نود إفادتكم بأن فريقاً من مهندسي المركز الحكومي للفحوصات والأبحاث التابع للوزارة قام بزيارة مختبراتكم الكائنة في منطقة صبحان ، وقال لوحظ توفر بعض أجهزة الفحص المخبرية مشل جهاز فحص المكعبات والجمور الخرسائية ، وأجهزة المطرقة ومعدات لفحص الخلطات الخرسائية وهزاز مع مناخل ، ركالك أجهزة فحص التربة مثل جهاز القص المباشر وعاد ( ٢) حفارة مرقعية رمرازين وجهاز إستخلاص البيتومين ، وتحليل العينات الإسفلتية وبعض المعدات والمحاليل اللازمة للفحوصات الكيميانية لتحديد نسبة السافيت والكلوريدات والمواد العضوية وغيرها .

وعليه فإن وزارة الأشغال العامة ترى إن يامكان مختبركم القيام بفحرصات التربة للأغراض الهناسية و أيضا فحوصات مواد البناء كالخرسانة , الطابوق , الرصل , الصلبوخ و الأسفلت و ذلك حسب المراصفات الهندسية المبعة.

ولود التنويه إلى أن وزارة الأشغال العامة لاتتحمل أدني مسؤولية قجاه أي نتائج لفحوصات لاتم تحت إشراف الوزارة.

وتفضارا بقبول فائق الإحترام ،،،

وكيل وزارة الأشغال العامة

مربالمناس م على القولان P.O. Box: 8, 13001 Safat, Kurrait - Tel: 2449301 - Telex: 227

وزارا الأشاق الدالم الدالم الدالم الدائم ال



Ministry Of Public Works

vt. Center For Testing & Research
Const. Labs. Department

Kailan - Kuwait

lel: 4842529 - 4840381 (1004)

Fax No. 4841931

التاريخ : 96/12/30 رتم الطلب : 96/8331

المحترمين.

السادة / مختبر الكو لفحوصت المواد والتربة والمساحة وأبحاث البيئة تحبة طيبة وبعد ,,,

## الموضوع: إعتماد حفارة نوع MOBILE DRILL موديل 24 B

بالإشارة الى كتابكم رقم 0058: INCO:MO بتاريخ 96/12/16 بخصوص الموضوع أعلاه فقد تمت معاينة الحفارة وتجربتها وتبين الآتي: -

#### المشاهدات :-

ا - الحفارة نوع ( MOBILE DRIIII موديل 24 ) ومحمولة على GMC TRUCK موذيل 1996

-2 طول ذراع الرفع (LIFTING MAST) حوالي 7, 4 متر ويعمل الذراع بطريقة يدوية وليست ميكانيكية .

3- تم عمل إختبار الغرس القياسي الـ ( ser ) لجسة عمقها 4 متر بإستخدام متقاب عادي قطرة الخارجي 4 إنش وذلك لكل متر .

4- حسب المواصفات المرفقة من الشركة فإنه يمكن الحفارة عمل جسة بمتقاب عادي 9- إنش راحمق (15 - 23 متر) أو باستخدام المتقاب المجوف كما يمكن الحفر بطريقة المتقاب الماس لعمق (23 - 30 م) .

## التوصيات والتعليق: -

ا- يرى المركز الحكومي للفحرصات والأبحاث بأنه يمكن للشركة العمل بهذا الجهاز لإختبار الغرس للقياسي ( SIIALLOW-FOUNDATION ) المشاريع الصغيرة.

2- المركز الحكومي للفحوصات والأبحاث (وزارة الأشغال العامة) لايتحمل أي مسؤولية تجاه دقة وسرعة الحفارة في إنجاز الأعمال الروتينية المشار إليها أعلاه.

وتفضلوا بقبول فائق الإحترام,,,



Retai Date: الإثبارة: ١٠-٣/ ١٤٠١ حـ ٥٠٠٥ التاريخ: ١٠-٣/ ١٤٠١ التاريخ: ٨ نوننبر ٢٠٠٠٠

السادة / مختبر انكو لقحوصات المواد والترية والمساحة وابحاث البيئة المحترمين

ص ب : 21073 الصفاة 13071 الكويت

تليفون : 4738824/4716520/4710780 فاكس : 4738824/4716520

تحية طيبة وبعد ،،،

## الموضوع :- " اعتماد المختبر لأعمال المساحة "

اشارة إلى الموضوع أعلاه وإلى مايلي :-

- كتابكم رقم INCO\AO\LO514 بتاريخ 2000/9/12 بشأن اعتماد مختبر انكو لأعمال المساحة .
  - نتائج فحص معايرة أجهزة المساحة الآتية :-
- 1- Geotronics Geodimeter model 422Lr total station.
- 2- Geotronics Geodimeter model 506B total station.
- 3- Leica Na2 precise level .

وبعد الاطلاع على المستندات الرسمية والكتالوجات الفنية الخاصة بأجهزة المساحة ونتائج فحص المعايرة المشار اليها بالإضافة إلى الأعمال السابقة .

نحيطكم علماً بأنه لا مانع لدينا من اعتماد مختبر انكو الكائن بمنطقة صبحان الصناعية لأعمال المساحة طبقاً للشروط الآتية :-

- يتقدم المختبر لأعمال المساحة من خلال المقاولين المعتمدين لمشاريع وزارة الأشغال كمقاول باطن لأعمال المساحة أو من خلال المكاتب الاستشارية التي لديها عقود عمل مع وزارة ألأشغال العامة .
- ضرورة العمل على الالتزام بإجراء فحوصات معايرة الأجهزة المساحية بصفة دورية وطبقاً لإرشادات الشركة المصنعة والكتالوجات الفنية الخاصة بها وتقديم صورة عنها لمن يلزم .
  - هذا الاعتماد ساري المفعول لمدة سنتين من تاريخة ويراعى التجديد في حينه .

وتفضلوا بقبول فائق الاحترام ،،،

مم / وكيل وزارة الاشغال العامة

Called Deco

المه المدين تميال م المسري تميال م المعلم على لا

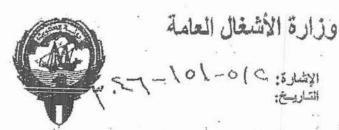
ص. ب: ٨ الكويت الصفاة 13001 تلفون: ٥٣٨٠٥٠ فاكس: ٥٣٨٠٨٢٩ برقيا: الاشغال الكويت

P.o. Box: 8,13001 safat, kuwait - Tel:5385520-Fax: 5380829 - cable: Works Kuwait

LAD ?

## Ministry of Public Works

Ref.: Date:



1 1 Em 1007

السادة / شركة كويت داينمكس المحدودة للمقاولات ص ، ب رة ( 23575 ) الصفاء - الرمز البريدي ( 13096 ) كريت

تحية ظيبة ويعد...

المحترمين

الموضوع: إنشاء وانجاز وتشغيل وصيانة مبنى مركز المعلومات ومبنى السادة أعضاء مجلس الأمة العقد رقم هـم-خ/116 اعتماد مختبر لفحوصات المواد والترية

بالإشارة إلى الموضوع أغلاه، والى كتابكم رقم 0069/MPW/NA/KDL/2008 المورخ في 2008/11/19 (مرفق نسخة)، نحيطكم علما بأنه لا مانع الدينا من إعتماد مختبر إنكو الفحوصيات المواد والتربة والمساحة وأبحاث البيئة كمختبر متخصص في حالة عدم إمكان الفحص في المركز الحكومي أو في أي جهة حكومية أخرى شريطة إلتزامه ببنود وشروط العقد وشريطة إلتزامكم بما جاء بالمادة رقم (36-3) من المسبتند (1-11) الشروط العامة والمعستند (1-12) الشروط الخاصة (مرفق نسخة).

وتقضلوا بقبول فلق الاحترام والتقدير،،،

المحاسعة المستوالة المستو

رثيس مهندسي المشاريع الخاصة محوقق فهد الفليج رئيس مهندسي الماريم الخاصة

المرققك كلعنكور أعلاه

Ministry of
Social Affairs & Labour
Cable:IJtmaiya – Kuwait
P.O.Box 563 Safat
Telex No.Social 30329 K T



وزارة الشنون الاجتماعية والعمل برقياً:اجتماعية ـ الكويت ص . ب: ٢٢٥ ـ الصفاة تلكس: ٣٠٣٩ ـ اجتماعية الرقم: و . ش . ج . ع / /

المحترمين

السادة/ شركة برقان الدولية التجارة العامة والمقاولات

تحية طيبة وبحد ،،،،

## الموضوع: العقد رقم و ش.ج. ع/٢٦/ ٢٠٠ ٢- ٢٠٠ ٢م انشاء موقف السيارات خلف ببني المعالمين بدور الرعاية الاجتماعية

بالإشارة إلى الموضوع أعلاه، وإلى كتابكم الوارد (لبنا بتاريخ ١٠٠٢هم بشأن السادة شركة مختبر الكو لأعمال الفحوصات اللازمة على أعمال المشروع، تحيطكم علماً بأله لا مانع لدى وزارة الشيئون الاجتماعية والعمل (إدارة خلمات دور الرعاية الاجتماعية) من اعتماد الشركة سالفة الذكر.

على (إداره حدول مراس المراس ا

مدير إدارة فدهات دور الرعاية

مسلخت تعتبد أمارة خدمات دار الرحاية المطون المتابعة

المحرقارية والتحريين المحرقارية المحرقارية

وزارة الششر. بساعية والعمل إدارة خدست دور الرحاية ضادر الرحاية الرئيم: ٢٠٠٠ حمادر الرئيم: ٢٠٠٠ حمام التاريخ: ٢٠٠٠ حمام حماد التاريخ: ٢٠٠٠ حمام حماد التاريخ: ٢٠٠٠ حمام حماد التاريخ: ٢٠٠٠ حمام حماد التاريخ: ٢٠٠٠ حماد التاريخ: ٢٠٠ حماد التاريخ: ٢٠٠٠ حماد التاريخ: ٢٠٠٠ حماد التاريخ: ٢٠٠٠ حماد التاريخ: ٢٠٠ حماد التاريخ: ٢٠٠٠ حماد التاريخ: ٢٠٠ حماد الت

- نسخة لمساعد للدير
- لمنخة للسم اختمان
- لسخة للنشم المالي والإداري
  - نسخة للملك



## Category (109): Services For Topography Survey, Soil Investigation And Slit Trenching Works

Contractors Name (E)	Address	Telephone	Fax	Email	Contact Person	Correspondan
1 GULF INSPECTION INTERNATIONAL CO., KSC	SUBHAN INDUSTRIAL AREA, BLOCK NO. 6 STREET 61 P.O. BOX 24993, SAFAT 13110 - KUWAIT	2474-8859 / 2473-5121	2473-3045	mgmt@giico.n et	REEM AL-SALEH - CHIEF EXECUTIVE OFFICER	KUWAIT
2 INCO INDUSTRIAL LABS K.S.C.C	SUBHAN INDUSTRIAL AREA, BLOCK 1, STREET 101, PLOT 151, P.O. BOX 21073 SAFAT 13071 KUWAIT	2471-0780 / 9977-0989	2471-6526	info@inco- lab.com	ABDULAZIZ A. AL-OBAIDAN - CEO	KUWAIT
3 NATIONAL PETROLEUM SERVICES CO. (K.S.C.P.)	P.O. BOX 9801, AHMADI 61008, KUWAIT	22251000	22251010	BDG@NAPESC O.COM / KJEYAKUMAR @NAPESCO.CO	K. JEYAKUMAR - COMMERCIAL MANAGER	KUWAIT
4 VISION INTERNATIONAL GENERAL TRADING & CONTRACTING COMPANY WLL	OFFICE 18, FIRST FLOOR, TOWER B, AL HASHAN COMMERCIAL COMPLEX, STREET 67, BLOCK 7,	2228-9778 / 9799-1983	2228-9779	eid@visionkuw ait.com	EID NASSER AL-ADWANI - CHAIRMAN AND MANAGING DIRECTOR	KUWAIT
5 WATANIYA ENVIRONMENTAL SERVICES CO. K.S.C.C.	P.O. BOX 27781, SAFAT 13135, KUWAIT, FOURTH FLOOR, MUBARAK AL-KABEER STREET, SHARQ	22498390	22474126	WALID@WES.C OM.KW; INFO@WES.CO M.KW	WALID AMIN - CONSULTING SERVICES MANAGER	KUWAIT

Monday, 17 February, 2020 Page 1 of 1

#### KUWAIT OIL COMPANY (K.S.C.)

#### COMMERCIAL SUPPORT GROUP

#### SUPPLIER RELATIONSHIP MANAGEMENT. TEAM

FACSIMILE TRANSMISSION COVER SHEET
OUR FAX NO. (965) 23980429



FRB/20/FX/ DATE: OUR REF .: APPLICANT INCO INDUSTRIAL LABS K.S.C.C COMPANY NAME: COUNTRY: KUWAIT SUBHAN INDUSTRIAL AREA, BLOCK 1, STREET 101, PLOT 151, P.O. BOX 21073 SAFAT 13071 KUWAIT ADDRESS FOR CORRESPONDENCE: ABDULAZIZ A. AL-OBAIDAN To: TITLE: CEO FAX No.: 2471-6526 e-mail: Info@inco-lab.com **FROM** FAWAZ JASSIM AL-SHAIBANI DESIGNATION AG. TEAM LEADER SUPPLIER RELATIONSHIP MANAGEMENT SIGNATURE

SUBJECT:

PQ 18/02

PRE-QUALIFICATION FOR SERVICES FOR TOPOGRAPHY SURVEY, SOIL INVESTIGATION AND SLIT TRENCHING WORKS

#### NO. OF PAGE(S) 2 INCLUDING THE COVER SHEET

This is to advise that your application for the subject Pre-qualification exercise has been evaluated and found acceptable to KOC. Accordingly, your name "INCO INDUSTRIAL LABS K.S.C.C" shall be enrolled under the following KOC's Related Category of Work:-

CAT – 109 : SERVICES FOR TOPOGRAPHY SURVEY, SOIL INVESTIGATION AND SLIT TRENCHING WORKS

In view of the above, we would like to emphasis that, you need to immediately confirm on the name of your company and to inform KOC of any change in your company related to the following:-

- Change of status of any item listed under the Mandatory Questions as indicated in the subject PQ.
- Change of your company's name or corporate structure.
- Divesture of core business.

In addition to the above, a copy of your company's audited financial statement for the next year and consequent years should be also forwarded to KOC for retention and necessary updating of your financial status. Failing to fulfill the requirements may lead to suspension of your company from the above mentioned category of work.

Moreover, please find attached a list of required information which we need in order to create a profile of your company in KOC's electronic system and you are kindly requested to complete and submit to us within two (2) weeks.

In this context, we would like to thank you for your participation in the subject Pre-qualification exercise.





Heavy Engineering Industries & Shipbuilding Co. KSC (Public)

Shipbuilding Building

Date: 04 March 2024

Ref: 23059633/KC/L/103

Shuwaikh Port Western Extension Gate Number 7 P.O. Box 21998 Safat 13080 Kuwait

Attention: Mr. Rajmohan Kaliyamurthi (Project Manager)

Contract No. 23059633

Construction of New 11KV, 10MW Substations each in Abduliah and Dharif Area

#### Sub: Request for Subcontractor Approval - M/s. INCO Industrial Labs (KSCC)

Reference to the above-mentioned subject, and in response to your letter #23059633/CK/L/0123 dated 08 January 2024. Please note that the Company has reviewed the submitted documents, and the status of our review is as follows:

Sl. No.	Name of Subcontractor	Scope of Work	Status
1	M/s. INCO Industrial Labs (KSCC)	Third Party Testing Laboratory for Civil Works (Soil, Concrete, Asphalt & Rebars)	Approved as Noted

The above review by the Company shall in no way relieve the Contractor from his obligation to fulfill all the requirements of the Contract: Should further requirements of the Contract be detected later in compliance with the Contract, the Contractor shall be obliged to fulfill the same at no additional cost and/or time impact to the Company.

#### Notes:

Company's approval is subject to the following:

- 1. It is limited to the subject Contract only.
- 2. Contractor shall bear full responsibility for all consequences arising of such sub-letting and your compliance with all the requirements of Clause #5 of General Conditions of Contract.
- 3. The above shall be at no additional cost and/ or time impact to the Company.

This is for your information and necessary action.

Yours faithfully,

For KUWAIT OIL COMPANY (K.S.C)

NAWAF J. AL-SHEHAB

Team Leader Projects Management (44)





Ref: PM-43/23059571/102/23

Date:

2 2 OCT 2023

M/s. Mechanical Engineering & Contracting Co. W.L.L.

Kuwait.

Tel. No.: 23970100 Fax: 23984321/2

Attention:

Mr. Mohammad Neyaz Kamil – Project Manager

## Contract No: 23059571 Upgrade of Chemical Injection and Monitoring System at NK Facilities

#### <u>Subject: Subcontractor – Geo-Technical Investigation Works</u>

This has reference to Contractor's letter ref. 23059571/CK/L/059 dated 09 October 2023 regarding the above subject. Please note that we have reviewed your proposal and our comment is given below:

SI. #	Subcontractors Name	Work Description	Status
1	M/s. Inco Industrial Labs (KSCC) (As per Category 109 of KOC Approved list of Contractor)	Geo-Technical Investigation Works	Acceptable

The above approval is subject to your compliance with Contract, you shall remain fully responsible for acts and omissions of your Subcontractor. It is also understood that such subcontracting shall not create any contractual relationship between any subcontract and the Company, scope of works shall as applicable, incorporate and impose the requirements of the Contract on the subcontractor.

This is for your information and further necessary action.

For Kuwait Oil Company (K.S.C)

Mohammad Al-Adwani

Team Leader PM (43)







**HOT Engineering & Construction Co. KSCC** 

East Ahmadi, Area 7 Block 25, Ahmadi

Kuwait

Tel: 22251818 / 23986197 Fax: 22251819 / 23982160 Date: 22 June 2023

Ref: 22058197/KC/L/356

Attn: Mr. Nader Allam Elziny, Contractor's Representative

#### Contract No. 22058197 **New Laboratory for Export Operations**

#### Subject: Submission of Approval for Third Party Testing Laboratory for Civil Works-INCO LABS

Reference to the above-mentioned subject, and in response to your letter #22058197/CK/L/393 dated 25 May 2023. Please note that the Company has reviewed the submitted documents, and the status of our review is as follows:

Sl. No.	Name of Sub Contractor	Scope of Work	Status
1	INCO LABS (KSCC)	Third Party Testing Laboratory for Civil Works	Approved as Noted

The above review by the Company shall in no way relieve the Contractor from his obligation to fulfill all the requirements of the Contract. Should further requirements of the Contract be detected later in compliance with the Contract, the Contractor shall be obliged to fulfill the same at no additional cost and/or time impact to the Company.

Company's approval is subject to the following:

- 1. It is limited to the subject Contract only.
- 2. Contractor shall bear full responsibility for all consequences arising of such subletting and your compliance with all the requirements of Clause #5 of General Conditions of Contract.
- 3. Work performance shall be strictly in accordance with the requirement stipulated in Clause #2 of the Contract specification.
- 4. The above shall be at no additional cost and/ or time impact to the Company.

This is for your information and necessary action.

Yours faithfully,

For KUWAIT OIL COMPANY (KSC)

NAWAF J. AL-SHEHAB

Team Leader Projects Management I (WK)

Main office - P.O.Box 9758, 61008 Ahmadi, Kuwait - Telephone: (965)2398 9111





1 0 OCT 2018

Ref: 17052549/KL/L/00 65

Date:

**Larsen & Toubro Limited** 

L&T House, Ballard Estate, Mumbai, India

Tel: +91-265-245 1030 Fax: +91-265-245 1251

Attention: Mr. Pradeep Singh

Project Manager

**CONTRACT NO.: 17052549** 

NEW 48" CRUDE TRANSIT LINE FROM NORTH KUWAIT TO CMM

Subject: SUBCONTRACTOR M/S. INCO Labs (KSCC) FOR THIRD PARTY TESTING FOR CIVIL WORKS

Contractor Letter EF1927/TL5/L&T-KOC/L-0600 dated 27th September 2018 Ref:

In response to the Contractor's referenced letter, Company accepts the Subcontractor listed below for the work described therein for the above Contract only. Approval is subject to the Contractor's compliance with Clause 7.0 "Subcontracting" of General Conditions of Contract and Clause 17.0 of Appendix D, Project Administration and Coordination Procedure and that Contractor remains fully responsible for the acts and omissions of its Subcontractor. Contractor shall note that such subcontracting shall not create any contractual relationship between any subcontractor, at any tier, and the Company, and that the Scope of Works shall, as appropriate, incorporate and impose in the Subcontractor the requirements of the Contract.

Subcontractor's Name	Category of Work
M/s. INCO Labs (KSCC)	Third party testing for civil works
	Duration: from 7-Oct-18 to 25-May-20

The Contractor shall ensure that the technical and commercial requirements of Appendix D, Clause 17.4 as appropriate, are incorporated and imposed on the subcontractor and submit for Company's information at the time of issue, unpriced copies of the confirmed subcontract.

Contractor shall expedite to float further enquiries to other experienced Subcontractors (Laboratories) to obtain successful, complying offers to fulfill Contract requirement as per Clause 17.4.2 of Appendix D and Clause 8.8.1 (a) (iii) of Appendix E of Contract. Contractor shall complete the Subcontractor Approval Form and confirm its compliance to the clauses referred above for any request for Company's approval of Subcontractor.

Company's acceptance shall not absolve Contractor from any of its liabilities and obligations under the Contract.

This is for your information and necessary action.

Very truly yours,

For Kuwait Oil Company (K.S.C)

MOHD. AL-QAHTANI

Ag. Team Leader (Major Projects-IV)









## شركة نفط الكويت ش م ك فريق عمل الامن الخدمات المساندة

## نموذج طلب إضافة مقاول باطن

1 8 OCT 2021

التاريخ:

TL Rig Contracts Management : من

رقم المرجع: 2021 / EN11/11444

إلى: رئيس فريق عمل الامن الخدمات المساندة

## بيانات المقاول الرئيسى

رقم العقد	المقاول الرئيسي
15052187,18052302,18052308,18052320,18052294,21056239,21056240,21056241, 21056242,21056243,21056244,21056245,	M/s. Sinopec International Petroleum Service Corporation
21056246,21056247 & 21056248	شركة ساينوبيك الدولية لخدمات البترول

### بيانات المقاول الباطن

تاريخ الانتهاء	اسم المقاول الباطن الثاني (ان وجد)	اسم المقاول الباطن
22 FEB 2027	NIL	M/s. Inco Industrial- Labs (KSCC) شركة مختبرات إنكو الصناعية (ش.م.ك.م) م

اعتماد رئيس الفريق المسئول الاسم: Khaled Saleh TL Rig Contracts Management

#### ملاحظات:

- اسم الشركة يكتب باللغة العربية كامل.
- مم المسلم المسل





Sinopec International Petroleum Service Corporation Bldg No.6, Plot No.C28/D1-D10

Date: 3 1 MAR 2015 Ref: EN-11 / 5\6 /2015

Phase 2-Future Area, Kuwait Free Trade Zone Shuwaikh, Kuwait. Fox: 2461 0528

Attn: Mr. Zhang Congbang

General Manager (Kuwait Project)

## Subject: Subcontractor Approval-M/s. INCO LABS Contract numbers- 40526, 41767, 14051336, 14051338 & 14050528

With reference to your letter number Sinopec service-Admin- HK-24/03/2015/01 dated 24-Mar-15; we have no objection for your subcontracting the following services against the above mentioned contracts as per the dates mentioned below:

S/N	NAME OF SUBCONTRACTOR	SCOPE OF SERVICE	Contract no	Sub contract period
l	M/s. INCO LABS	Drilling borehole for soil investigation works	40526, 41767,14051336, 14051338 & 14050528	28-MAR-2015 TO 27-MAR-2016

This is to advise you that in accordance with the terms and conditions of above mentioned Contracts, this approval shall not act as a waiver of any of your liabilities or obligations under the Contracts and SINOPEC shall be responsible for the acts, defaults and neglects of its subcontractor as if they were the acts, defaults and neglects of the Contractor. Subcontracting shall not create any contractual relationship between the Subcontractor and the Company.

Yours sincerely,

For Kuwait Oil Company (K.S.C)

Bader M. Al-Azmi

Team Lender Rig Contracts Management







1.2 SEP 2019 M/s. Sinopec International Petroleum Service Corporation, Date: Ref: EN11/1037-/2019

Floor 8, Abdullah Abdulatif Al Othman Street.

Plot No. 19806, Hawali Area, Block 3, Kuwait.

Tel: +965-22054800 Fax: +965-22054888

Attention: Mr. Zhang Congbang

**General Manager (Kuwait Project)** 

#### **Subject: Sub Contractor Approval** Title - Supply of Rigs for Drilling & Workover Operations

With reference to your letter numbers Sinopec service-GM- 20190901 ADM/01 dated 01 SEP 2019 and Sinopec service-GM- 20190904ADM/01 dated 04 SEP 2019 the Company approves the below mentioned Subcontractors, for the work described hereunder. Company's acceptance is subject to the Contractor's compliance with Clause No. 39 "Assignment of Sub-Contract" under the mentioned Contract and that Contractor remains fully responsible for the acts and omissions of its Subcontractor stated below:

Name of Subcontractor	Scope of Service	Contract Numbers	Validity ( Up to )
M/s. Al-Hunaidi for Transport	Water and Fuel Transportation services	15052180, 15052182, 15052183, 15052184, 15052185, 15052186, 15052187, 15052229, 15051707, 15051708, 15051709, 15051757, 15051783, 15051784, 18052285, 18052286, 18052288, 18052289, 18052290, 18052291, 18052292, 18052293, 18052294, 18052301, 18052302, 18052303, 18052304, 18052305, 18052306, 18052307, 18052308, 18052320, 18052418	31 AUG 2022
M/s, Naser M. Al-Baddah & partner Gen. Trading & Contg Co. (NBTC)	Third party general inspection and Civil lab services	15052187, 18052320, 18052294, 18052302 & 18052308	
M/s. INCO Labs	Drilling bore hole for soil investigation works	15052187,18052302, 18052308, 18052320 & 18052294	

It is also understood that such subcontracting shall not create any contractual relationship between any subcontractor and the Company or create any obligation on the part of the Company to any subcontractor of any tier.

The Contractor shall ensure the following:

- Endorse / include the Subcontractor its Insurances.
- ii) That the technical and commercial requirements of the Contract as appropriate are incorporated into the subcontract.

Further, to note that no separate visa quota will be allotted under the subject Contracts for the sub-contractor. You are advised to coordinate with the concerned Operations Group / Team for issuing of passes for the above sub contractor's personnel / vehicles for carrying out the scope of services as mentioned.

Yours sincerely,

For Kuwait Oil Company (K.S.C)

Abdulaziz K. Al-Shayji **TL Rig Contracts Management** 





# SHUAIBA REFINERY P.O. BOX 9202, 61003 AHMADI, KUWAIT (965) 23205342 OR 23263236 FAX # 23263098 / 23205350 FACSIMILE MESSAGE

DATE: 29th April, 2009

REF. NO.: SHU-ESAB4-09-043

FROM: TASK LEADER - CS/1902/CNSL - SHU

	COMPANY	ATTN.	FAX NO.
то	FINÈSCO .	MR. ABDUL RAHMAN ABDUL HADI ALI PROJECT MANAGER	23984188
CC	FINESCO	MR. NABIL NABOUT - MANAGER, SPECIALITY DIVISION	23984188
1	1	MR. HISHAM AFIFY - PROJECTS & PLANNING MANAGER	

SUBJECT:

CS/1902 - CONSTRUCTION OF AB # 4 ANNEX - SHU REFINERY

Submittal of Laboratory for Soil & Materials Testing

ASD /cp

APPROVED:

Yousef M. Al-Qallaf Task Leader, CS/1902/CNSL

PAGE(S) TO FOLLOW EXCLUDING COVER SHEET - ONE

#### SPECIAL INSTRUCTIONS OR COMMENTS

Reference to your letter # FIN/1902-L/029/09 dated 28.04.09 (copy attached) on the above subject, please note that the Laboratory's (M/s. INCO-LAB Contracting & Trading Company) profile for the supply of soil & Material testing has been reviewed and found acceptable.

This is for your information and further action.

REGARDS.

#### IF COPY RECEIVED IS INCOMPLETE PLEASE CALL TEL: 965 23205377

#### CONFIDENTIALITY STATEMENT

This facsimile contains private or other sensitive information of the sender and is intended solely for the recipient named above. If you are not the intended recipient, you should hold this message in confidence and be aware that any disclosure, copying, distribution or use of this information is prohibited. (1) Do not use this information or disclose to others. (2) Please notify the sender by telephone. (3) Please return this message, via fax, to the sender named above. We appreciate your co-operation with this request.

cc: TL, Elect. & A/C Maint. - SHU TL, W/Shops & Gen. Works - SHU File: 09/57

O-LAB	1	النب الدير الاسام	الدير النذري	نغيس تحسم المواد	يتسر يتسم المساحة	رئيس قسم التسويق	رئيس الترياء	אינות וובניה	مهتدس الحفر	1 Goat le ray	مندس الخنير	وثبس قسم الميالة والجغر	Thelmit	28.50
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## KUWATT NATIONAL PETROLEUM COMPANY (KSC) PROJECTS DEPARTMENT

#### FACSIMILE TRANSMISSION COVER SHEET

DATE 02 FEB 2005

FAX NO.

: (971) 3 6272506

FROM :

: SUPDI. CONST. G-IU - PROJECTS DEPARTMENT

REF. NO.

1:KNPC-TP-F-0854

10:

: TECHNIP, ABU DHABI

במשעים אלו

PARTY VA

ATTN

: MR JAMAL BEN AMOR

SNR PROJECT MANAGER

CC

: TECHNIP SITE OFFICE - SHU

CONTRACT NO. CS/PD/1656

TAIL GAS TREATING UNIT (TGTU) SHU REFINERY

SUB.

APPROVAL OF SUB CONTRACTOR FOR CIVIL QUALITY CONTROL WORKS

( I) PAGE (S) INCLUDING COVER SHEET

APPROVED BY:

KHALIL ESMAIL SUPDT. CONST. GIH - PD

FAFIKPSINON

#### SPECIAL INSTRUCTIONS OR COMMENTS

Reference to your transmittal TPSO/KNPC/TGTU/05-T-0054 dated 24/01/2005 on the above subject, please be informed M/s/INCO-LAB\*is approved as your sub-contractor to perform the quality control works related to civil works.

This is for your information and necessary action.

Regards.

IF COPY IS ILLEGIBLE OR INCOMPLETE SEND MESSAGE BACKFACSIMILE NO.: (965) 3260932



## وزارة الكهرباء والماء MINISTRY OF ELECTRICITY & WATER



7-10 27 11 : Files

Date	110	 5	التاريخ:
		 	الموافق:

INCO-LABS (KSCC) P.O.Box: 21073 13071 Safat, Kuwait

Ref: Project RA-211("Relocation of 33Kv and 132Kv overhead lines at the Main road access to Jaber Al Ahmed City").

Sub: Approval of Soil Investigation Company.

With reference to your letter No.MITAS/049/2017 dated 19/11/2017 regarding the above mentioned subject, we would like to inform you that we have no objection to approve (MS. INCO-LABS (KSCC) Company) to carry out the soil investigation study for the above project.

With Best regards,

Under Secretary Ministry of Electricity & Water

> Eng. Jassem M. Al-Nouri Assistant Under-Secretary Transmission of Electrical Networks



#### **DEPARTMENT OF THE ARMY**

#### CORPS OF ENGINEERS, TRANSATLANTIC MIDDLE EAST DISTRICT 201 PRINCE FREDERICK DRIVE WINCHESTER, VA 22602-4373

25 April 2022

INCO Labs Block No. 1, Plot No. 1515, Street 101 North Subhan, Safat 13701 Kuwait

E-mail: info@inco-lab.com

SUBJECT: INCO Labs at Kuwait - Laboratory Validation

**VALIDATION EXPIRES 10 March 2025** 

Dear Dr. Majeed,

This letter confirms the completion of inspection and validation for the INCO Labs materials testing laboratory located at Kuwait.

This laboratory is approved to perform the materials tests listed on the attached Tables 1-5 for Middle East District (MED), U.S. Army Corps of Engineers (USACE) projects. This validation is based on the laboratory inspection performed by MED 9-10 March 2022.

This validation record will be included with records that are maintained at the MED Headquarters in Winchester, Virginia. This approval is valid until **10 March 2025**. To maintain validation past **10 March 2025**, the laboratory must be re-inspected by MED. The laboratory must request renewal prior to **10 March 2025**.

This validation applies only to the location(s) listed above and is contingent upon the laboratory's continued adherence to applicable testing and quality control standards and equipment calibrations. MED may revoke this certification or require re-inspection at any time.

The inspection and validation process for the laboratory adhered to procedures outlined by the Materials Testing Center (MTC), which is located at the Geotechnical and Structures Laboratory (GSL), U.S. Army Engineer Research and Development Center (ERDC) in Vicksburg, Mississippi, USA. To facilitate construction in Gulf Region countries, MED conducts laboratory validations in accordance with MTC protocol.

Questions about this certification or requests for renewal should be sent to <a href="DLL-CETAM-CONSTRUCTION-LAB@USACE.ARMY.MIL">DLL-CETAM-CONSTRUCTION-LAB@USACE.ARMY.MIL</a>.

Edward O. Upson, P.E., PMP Middle East District U.S. Army Corps of Engineers

Enclosure: Tables 1-5

#### **TABLE 1 - AGGREGATE**

	Test Procedure	No.	Validated
	REQUIRED TESTS PER ASTM C 1077		
ASTM C 117	Material Finer than 75 m (No. 200) Sieve	A1	٧
ASTM C 127	Specific Gravity & Absorption in Coarse Aggregate	A2	٧
ASTM C 128	Specific Gravity & Absorption in Fine Aggregate	A3	٧
ASTM C 136	Sieve Analysis of Aggregates	A4	٧
	OPTIONAL TESTS PER ASTM C1077		
ASTM C 88	Sulfate Soundness	A5	√
ASTM C 123	Lightweight Particles	A6	√
ASTM C 131/535	Los Angeles Abrasion Resistance on Small/Large-Size Coarse Agg	A7	√
ASTM C 142	Clay Lumps	A8	√
ASTM C 227	Potential Alkali Reactivity of Cement-Agg Combinations (Mortar-Bar)	A9	
ASTM C 289	Alkali-Silica Reactivity of Aggregates (Chemical Method)	A10	
ASTM C 566	Total Moisture Content	A11	√
ASTM C 702	Reducing Samples to Testing Size	A12	√
ASTM C 1252	Uncompacted Void Content	A13	√
ASTM C 1260	Potential Alkali Reactivity of Aggregates (Mortar-Bar Method)	A14	
ASTM D 75	Sampling	A15	√
ASTM D 2419	Sand Equivalent Value	A16	٧
ASTM D 4791	Flat or Elongated Particles	A17	٧
ASTM D 5821	Percentage of Fractured Particles in Coarse Aggregate	A18	٧

#### **TABLE 2 - BITUMINOUS**

Test Method	Test Procedure	No.	Validated
ASTM D 140	Sampling Bituminous Materials	B1	
ASTM D 1461	Moisture or Volatile Distillates in Bituminous Paving Mixtures	B2	
ASTM D 2041	Theoretical Maximum Specific Gravity & Density (Rice)	B3	√
ASTM D 2172	Quantitative Extraction	B4	√
ASTM D 2726	Bulk Specific Gravity and Density	B5	<b>√</b>
ASTM D 2950	Density of Bituminous Concrete in Place by Nuclear Methods	B6	
ASTM D 3203	Percent Air Voids	B7	$\checkmark$
ASTM D 4125	Asphalt Content by Nuclear Method	B8	
ASTM D 4867	Effect of Moisture on Asphalt Concrete Paving Mixtures	B9	$\sqrt{}$
ASTM D 6307	Asphalt Content of Hot-Mix Asphalt by Ignition Method	B10	
ASTM D 6926	Preparation of Bituminous Specimens using Marshall	B11	$\sqrt{}$
ASTM D 6927	Marshall Stability and Flow	B12	V

#### **TABLE 3 - CONCRETE**

Test Method	Test Procedure	No.	Validated
	Required Tests Per ASTM C 1077		
ASTM C 31	Making and Curing Test Specimens in the Field	C1	٧
ASTM C 39	Compressive Strength of Cylindrical Specimens	C2	٧
ASTM C 138	Unit Weight and Air Content by Gravimetric	C3	
ASTM C 143	Slump	C4	٧
ASTM C 172	Sampling	C5	٧
ASTM C 173	Air Content by Volumetric	C6	
ASTM C 231	Air Content by Pressure	C7	٧
ASTM C 1064	Temperature of Concrete	C8	٧
	Optional Tests Per ASTM C 1077		
ASTM C 78	Flexural Strength by Third Point Loading	C9	٧
ASTM C 192	Making and Curing Test Specimens in Laboratory	C10	٧
ASTM C 469	Static Modulus of elasticity and Poisson's Ratio	C11	
ASTM C 511	Moist Cabinets, Moist Rooms, Water Storage Tanks	C12	٧
ASTM C 617	Capping Cylindrical Specimens	C13	٧
ASTM C 666	Freezing & Thawing Concrete Specimens	C14	
ASTM C 805	Rebound Number of Hardened Concrete	C15	٧
ASTM C 1231	Unbonded Caps	C16	٧

**TABLE 4 - MASONRY** 

Test Method	Test Procedure	No.	Validated
ASTM C 109	Compressive Strength of Cmnt Mortars Using Cubes	M1	٧
ASTM C 140	Sampling and Testing Concrete Masonry and Related Units	M2	٧
ASTM C 1019	Sampling and Testing Grout	M3	٧

**TABLE 5 - SOIL** 

Test Method	Test Procedure	No.	Validated
ASTM D 422	Particle Size Analysis	S1	٧
ASTM D 698	Compaction Characteristics by Standard Effort	S2	٧
ASTM D 854	Specific Gravity of Soils	S3	٧
ASTM D 1140	Material Finer than 75 ™ (No. 200) Sieve	S4	٧
ASTM D 1556	Density & Unit Weight by Sand Cone	S5	٧
ASTM D 1557	Compaction Characteristics by Modified Effort	S6	٧
ASTM D 1883	CA Bearing Ratio (CBR)	S7	٧
ASTM D 2216	Water Content	S8	٧
ASTM D 2435	One-Dimensional Consolidation Properties	S9	٧
ASTM D 2937	Density by Drive Cylinder Method	S10	
ASTM D 3080	Direct Shear Test in Consolidated Drained Conditions	S11	٧
ASTM D 4318	Liquid & Plastic Limits & Plasticity Index	S12	٧
ASTM D 4643	Determination of Water Content of Soil by Microwave Oven	S13	٧
ASTM D 6913	Particle-Size Distribution Using Sieve Analysis	S14	٧
ASTM D 6938	Density and Wtr Content by Shallow Depth Nucl Method	S15	
ASTM D 7928	Particle-Size Analysis Using Sedimentation (Hydrometer)	S16	٧





Date: 21 September 2017

Letter Reference: KIPIC-HDKC-LNGI-L-17-0906

Your Reference: HDKC-KIPIC-LNGI-L-17-0795

M/s Hyundai Engineering Co., Ltd Hyundai Annex Building, 75, Yulgok-ro, Jongno-gu Seoul, 03058, Republic of Korea

Attention: Mr. Chan Soo Kim

Project Manager

Copy: Mr. Fahad Bou-Zobar

Team Leader, Major Projects - V (LNGI)

Work Order No.: 052 - LNG Import Project Work Order:

PMC Services for Al-Zour LNG Import Project (LNGI) Kuwait

Reply Required: Yes / No

Recommendation of Approval of Independent Third Party Consultant Subject:

Dear Sir,

Reference is made to Contractor's letter HDKC-KIPIC-LNGI-L-17-0795 dated 6 August 2017, where Contractor submitted for approval the short list and prequalification documents for the Independent Third Party Consultant regarding Laboratory Operation of Civil Works; Company advises as follows:

After reviewing the submitted information, the below bidder list, is deemed approved for Independent Third Party Consultant regarding the Laboratory Operation of Civil Works:

- M/s. INCO-LABS (K.S.C.C) -Kuwait
- M/s. Naser M AI Baddah & Partner Gen. Trad. & Cont. Co. (NBTC) -Kuwait

Sincerely yours,

Eduardo Lopez Lobo **Project Director** 

PMC Project Manager for LNGI Al-Zour Terminal

AMEC Foster Wheeler - Madrid - Spain

28.232 Las Rozas Madrid (Spain) T +34 (0) 91 336 25 00

C/ Gabriel García Márquez, 2 AMEC FOSTER WHEELER IBERIA S.L.U. Registered office:

C/ Gabriel García Márquez, 2. 28.232, Las Rozas-Madrid (Spain)

Registered in Spain No. C.I.F.-B-28/138.733

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DESIGN, BUILD, COMPLETE AND MAINTAIN SHAIKH JABER AL-AHMAD AL-SABAH

CAUSEWAY PROJECT (MAIN LINK)



**TYLIN**INTERNATIONAL

**Employer:** 

STATE OF KUWAIT
MINISTRY OF PUBLIC WORKS
ROAD ENGINEERING SECTOR



Request No.
On Shore
RA140-32-DOC-GENPIL-C-0019-00

Date

**Contractor:** 

HYUNDAI 
COMBINED GROUP
CONTRACTING COMPANY
CONTRACTING COMPANY

18/10/2014

	Tra	nsmittal of	Documents		
1. Documen	it Type				
	Material samples	Catalogues	Tests	Techn	ical Sheets
	Manufacturer certificates	Schedules	Other	Daily production Repo	rt .
2. Submitta	l details				
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## The Louis Berger Group in JV with Pan Arab Consulting Engineers

**Project:** Contract No. RA 167 – Construction, Completion and Maintenance of Roads, Overpasses, Storm Water Drainage, Sewer and Other Services for Jamal Abdul Nasser Street

Date: 15-Mar -2012

## <u>Subject: Comments on Submission for approval of INCO LABs Sonic Test for Piles Submittal no.167-NS-GN-GN-OT-182 REV 0</u>

- 1. We do not have any objection to use INCO LABs to carry out the Integrity Test for Piles using Sonic Logging Method.
- 2. Use of testing results submitted by this Laboratory shall be at your own risk and your supervision.
- 3. Approval Certificate from MPW shall be valid at time of Testing during the Project's Period.
- 4. All the instruments and equipment used to carry out the Test should be calibrated.

Name Position Signature

Prepared: Abdel Aziz Ahmed Construction Specialist

Roy Mathew Sec. Engineer (Mat/Geot.)

RA 167

Head Fifting:

P.D.Box 70 Safat 13001 Safat - Kuwait

Shusiba Hafinery:

P.D.Box 9202 Ahmadi 51003 Ahmadi - Kuwait

Mina Abdulla Hafinery:

P.D.Box 69 Safat 13001 Safat - Kuwait

Mina Af-Ahmadi Rafinery:

P.D.Box 10252 Shusiba 65453 Shusiba - Kuwai



الرئيس :
(٢٠) مباتا 1001 مباتا ـ الكويت
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(٢٥) الشعية 2543 ـ الشعنية ـ الكريت

## KUWAIT NATIONAL PETROLEUM CO. (K.S.C.)

OCTOBER 16, 1999

To .:

Inco Leb for Testing Materials.
P. O. Box 65947
13071, Safat,
KUWAIT.

Gentlemen,

## APPROVED CONTRACTOR FOR NEW TYPE OF WORK Our Ref. No. 1141

We refer to your application submitted to us through the Central Tenders Committee, and are pleased to advise you that we have included your name in our List of Approved Contractors' for the categories and type of work as per New Type of Work stated below effective from October 12, 1999.

Category	Type of Work	Section
2-5	01	A2

You will be invited to submit your offer for tenders that falls within these types of works.

Regards,

chairman - C.E.C

NHai

## Kuwcit Patroleum Corporation



विशेष कार्या में में में में में में में में

Date:28th December 1999 Ref.: KPC-CP/E/OSC/595-99

Mr. Rudolph Bissinger
Project Manager
Kuwait Bruckner General Contracting WLL - Bruckner
Grundbau GmbH, Joint Venture
P.O. Box 23015
Safat, 13091
Kuwait

Subject

Agreement No. KPOC/2/B/1998
Oil Sector Complex Project
Bid Pack 2 — Piling Works
Subcontractor — Materials Testing

Dear Mr. Blssinger,

Reference is made to your letter ref. K80/HG-ea/L863/99 dated 14th December 1999, regarding the above subject.

You are advised that M/s iNCO Labs are approved as your subcontractor for material testing on the above Project.

The above is for your information and necessary action without any change to the time/cost of the Contract.

Yours Sincerely,

Fort Bader A. Al-Baljan Manager – Corporate Projects

C: Mr. C. Allison, SSH

Mr. M. Taxson, BP-JY

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KUWAIT OIL COMPANY (ks.c.) - SAUDI ARABIAN TEXACO INC.

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7. C. 30X 9720 AIDEADI. STOCK TOWATT TELEPHONE 3817187 FACTORE 8: 3810925 WAFEA

Kuwait Oil Ca 2.03ox 9758 Ahmadi 67,008 See of Kirwait Telephone: 3989111 Faccinile 3983661

Saudi Ambian Tower Inc. P.O. Box 5. AL Zour 66051 State of Kuwait Telephone 3950444 Facricile: 3951022

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28 AUG 2001

Melvin khalid.

Date : August 28, 2001

Ref

: MP426/094

M/s House of Trade and Contracting Co. wll

P.O. Box 2518, Safat

13026, Knwait

Fax No. (965) 398-6198

Attn.: Mr. Omar Abu Hayyah

Contractor's Representative

SUBJECT:

CONTRACT # JO/HC47/MP00

Installation of the Fire Fighting System Phase II @ MGC (MP426)

"Document Submitted"

With reference to your transmittal ref. #HOT/IDT/081 received on August 26, 2001 regarding the above mentioned subject, please be advised that the following proposed Third Party Agencies:-

(1) INCO LAB

GULF INSPECTION INTERNATIONAL CO. (2)

Are acceptable as the Third Party Inspector for Soil Investigation and Concrete Laboratory Testing.

This is for your information and action

Regards,

MAHMOUD M. KOTOB

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انه في يوم السبت الموافق ١٩٩٧/١١/١ تم الاتفاق بين كل من: ١- معهد الكويت للأبحاث العلمية ويشار اليه فيما بعد بـ "المعهد" طرف أول ٢- شركة مختبر الكو على الأمور التالية:

## lek - Ikaall :

يتهذ المقاول بأن يقوم على حسابة بتشغيل وصيانة المشروع التجريبي لصرف المياه الجرفية بمنطقة الشامية وكيفان وتسمى فيما بعد "الأعمال" للموقع التابع للمعهد والكالن بكيفان والشامية وذلك طبقا للشروط بالمقابل الشامل المقطوع المبين في هذا العقد وقيمت -- الشامية وذلك طبقا ثلاثة وثلاثون ألف وخمسمائة وتسعون دينار كويتي لاغير) لمدة ٣٢ شهرا ،

وتشمل التزامات المقاول من جملة ما تشمله تهيئة جميع المواد والايدي العاملة والاشراف والمعدات والالات وكافحة الخدمات والاعمال اللازمة أو المتعلقة بها أو الناشئة عنها سواء ذكرت صراحة في هذا العقد أو لم تذكر ،

## ثانيا- نطاق الاشفال والتغيرات:

حدد نطاق الاشغال بالبيانات الواردة في وثائق العقد أي أن التزامات المقاول تشمل جميع ما يلزم اطلاقا لتنفيذ الاشغال ويلتزم المقاول بقبول تنفيذ أية أوامر تغيير على حجم ونطاق الاشغال بالزيادة أو باللقص بشرط ألا تزيد في مجملها عن حد أقصى قدره ١٠٪ (عشرة بالمائة) من القيمة الاجمالية للعقد بنفس الاسعار التفصيلية المتفق عليها وذلك بناء على طلب ناظر العقد كتابة خلال مدة سريان العقد ٠

واذا أراد المعهد اضافة أو استبدال بنود غير واردة في جدول المقايسة ولم يحدد لها اسعار في المقايسة فعلى المقاول أن يحصل على موافقة كتابية مسبقة من لاظر العقد على البدود واسعارها وذلك قبل البدء في العمل ،

## Euwait Petroleum Corporation



Date: 18th January: 2000 Ref.: KPC-CP/E/OSC/608-00

Mr. Rudolph Bissinger
Project Manager
Kuwait Bruckner General Contracting WLL - Bruckner
Grundbau GmbH, Joint Venture
P.O. Box 23015
Safat 13091
Kuwait

Subject

Agreement No. KPOC/2/8/1998 Oil Sector Complex Project Sid Pack 2 - Pilling Works Subcontractor - Survey Works

Dear Mr. Bissinger,

Reference is made to your submittal No. 01-16/11/99, regarding the above subject.

You are advised that M's INCO Labs are approved as your subcontractor for survey works on the above Project.

The above is for your information and necessary action without any change to the time/cost of the Contract:

Yours sincerely,

For / Bader A. Al-Baijan

Manager - Corporate Projects

Mr. C. Alison, SSH Mr. M. Tamon, SP-JV

من ب ١٥٦٥٦ المبناد ١٥٦٥٥ الكويت م المنزان المبني : بتكورب م المائي معة ١٤١٥ الكوية من ١٤٦٥٠ م ١٤٢٦٦ م ١٤٢٦٥ الكوية

P. O. BOX : THESE BAPAT ISIDE - KUWAIT - CABLE ADDRESS : PETCORP - TELEPHONE : 2462455 TELEX : 54674 - 54675 - 44575 - 44577 - 54576 PETCORP - FAX : 2467155 - 247257

TUTAL P. 91



وزارة الأشفيال العام قطأ ع التحطيط والتنمية أدارة التطوير الإداري

متمسنان لكم مزيسارا مسن النسقسام والنسجاح

مدير إدارة التطوير الاداري

عادلة عبدالرجم الشاري

منير ادارة التماوين الاداري



#### Contract RA/106 (Ministry of Public Works- Roads) Completion of First Ring Road - Jahra Gate, Package 1

Resident Engineer's Office Parsons Brinckerhoff International in association with Gulf Consult



Memorandum

Ref:

060705-C-RE-3

Date:

5 July 2006

From:

Anas Kassem, Resident Engineer

To:

Dimitros Kaziales, Project Manager, AKTOR-COPRIJV M/S. INCO. LAB.

Subject:

Soil Tests Laboratory

Copies: File, DRE, SE-Geo

In reference to your letter dated 17/6/2006 Ref:Q8/102/106/37 submitting profile of INCO laboratory company, we do not have an objection to their use as testing laboratory for Soil as long as they maintain their calibration and certification from relevant authorities valid.

Use of testing results submitted by this laboratory or any other laboratory shall be at your own risk and no claim against any other party shall arise from such use.

Regards,

l: 1. Kassem

Eng. Jihad Forah.

	INCOLAB	_
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-Kharafi & Bros. Co. W.L.L. General Contractors & Steel Fabricators Kharafi Steel

شركة خالدعلي الخرافي وإخوانه ذم.م. منارلات عامة واعمال ح التربخ : 10/2007/ ِ خرافي سننبل

الإشارة: 70/ /3677/ /43

المترمين

السيد/ وكيل وزارة الكهريساء والمساء وزارة الكهرباء والماء دولة الكويت

قسم مشاريع الميله

تحية طيه وبعد،،

الموضيوع : العقيد رقيم وك م /١٤٧٧/١/ ٢٠٠٧ - ٢٠٠٨

إنشاء وإنجاز وصيانة عدد (٣) خزانات أرضية من

الخرسانة السلحة للمياه العذبة سعة كل منهما

٥٩٥) مليون جالون إمبراطوري والأعمال الملحقة

جمع تخرين وتوزيع الياه بمنطقة الصبية (C1)

الرحلحة الثاني

السيد/ ر.م.م. الشبكات والمنشات المانية الحترم اللدراسة والإفادة و لاتخاذ اللازم 🛘 للعلم والحفظ

بدفع وا:- اعتماد مذتبر انكو لعمل قدم التربة

بالإشارة إلى الموضوع أعلاه ، برجى التكرم بإعتماد منتبر إنكو لعمل فحص التربة لعدد "٣" خزانات الخاصة بالمشروع المذكور أعلاه. ادارة سداريع المندآت المانية وان عم : (م المحرام ا 16 دائرة ساريع المياه

شاكرين لكم حسن تعاونكم معنا،،،

وتفضلوا بقبول فائق التقدير والإحترام،،، مكتب الوكيل الساعد

الشاريح وتشفيل ومسانة اشاه

tいた, ソアハタ c.\_V/、/ v / 性 ) (1)

وأس المال ١٠٠٠،٠٠٠ د.ك

شركة / خالد على الخرافي وإخوانك

مصندس / محمد إبراهيم خليل

شركة ذالد على الخرافي وأخوالها ولات الانشائية

Khalid Ali Al-Kharafi And Brothers Co. مشروع خزالاات الصديدة الكيولية الاستام

Contract No.: MEW/MC/3677/2007-2008

وزارة الكهرياء والماء دارة النَّ جل المام - قسم الوارد لإشارة : . ـ ـ و \_ ] \_ \_ \_ \_ . التاريخ ١٠٠٧ / ١٠٠٧

إدادة مشاريع المنشآت اغافية

ص.ب، ٢٨٨٦ الصفاة 13029 الكويت تلفون ١٠٠١ (١٩١٥) خمسة خطوط - فاكس ١١٠٥٥١١ (١٩١٥) ست ۲۲۲۱۱ - البريد الإنكتروني . 217 @f 248ksteel @ qualitynet.net و 217 يون

P.O.Box: 2886, Safat 13029, Kuwait Tel.: (0965) 4845100 (Five Line) - (0965) 4835501

Capital K.D. 1,000,000



Website: www.kharafisteel.com

رنيس ميندسي مشاريع المياه مشررع المديية 3 ::: 1963. الرقم: 17/10/9007: Tull

C.R.: 22364 - Email: kaksteal@qualitynet.net





### FOSTER WHEELER ENERGY LIMITED

P.O. BOX 9796, 61008, Al-Ahmadi, Kuwait Tel.: (965) 3262888 Ext.: 1080 Fax: (965) 3261423

Consortium of Fluor Limited & SK Engineering & Construction Co.Ltd. 192-18 Kwanhun-Dong Chongro-Gu Seoul 110-300 Korea

Date: 25 October 2001

Letter No.: PMC/FL.SK-L-937

Attention:

Mr. Frank J. yan Heijningen

Project Director

Fluor - SKEC Consortium

Subject:

Reconstruction Project (Contract No. RP-MAA-001)

Mina Al-Ahmadi Refinery

Laboratory and Site Testing Services

Reference

FL.SK(K)/KNPC-L-0474 dated 22 October 2001.

Dear Mr. Van Heijningen,

We refer to your above proposal to use the services of M/s INCO-LAB FOR TESTING MATERIALS, SOIL, SURVEYING & ENVIRONMENTAL RESEARCH for its specific services.

Company approves your selection of M/s INCO+LAB FOR TESTING MATERIALS, SOIL, SURVEYING & ENVIRONMENTAL RESEARCH as subcontractor for the subject works.

Sincerely yours,

Fred C. Ochs Project Manager

Cc: A Al-Yaseen

G. Ineson

P. Berry

T. Kapsalis

File No .

ENI	NCO LAE	ارد رف بتاری
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36216114021 --1/1-109ATTHI MON. JAMAL RATEB.



## JOINT OPERATIONS



KUWAIT OIL COMPANY (K.S.C.) - SAUDI ARABIAN TEXACO INC.

: 0. BOX 9720 ANNUO! 61001 XUMAT TELEPHONE: 1812152 7ACSINGLE: 3610926 WAFRA

Knyall Off Co. F.O.Box 9718 Abanadi 61 cos That of Rowald Telephoon 1989111 Facalmin: 1981661

Saudi Ambian Texasas loa P.C. Box. S. AL-Zour 66051 Yuse of Kuwali Talephonet 3950441 Facairallo: 1951022

August 22, 2001 Date : Ref.

: MP430/097

To

: Ms. Mohamed Saud Al-Subai Est.

P.O. Box 542, Jubail 31951 Kingdom of Saudi Ambia

Attn. : Mr. Mohamed Abdul Azeem, Manager - Engineering

Mr. Andrei Marusciae, Project Manager

Fax # : (966) 3 362 2938 - Jubail

(965) 3812383 Ext 2497

SUB. : Contract # JO/HC33/MP00

Construction of 5000 Bbis. Underground

Fresh Water Tank At Administration Camp (MP430)

"Third Party Inspecting Agency/Testing Agency"

Reference is made to your letter # MSS78/30/HC33/MP00/01 received on August 21, 2001 and further to your letter # MSS69/JO/HC33/MP00/01 received on August 04, 2001 pertaining the above-captioned subject. Please be advised as follows:

 M's. Inco Lab, your proposed third party inspection / testing agency for all civil works related to the subject project, is acceptable.

2. Mr. Jamal Rateb Alberni is acceptable as Chief Inspector subject to his satisfactory performance for above-mentioned project.

3. Mr. Ahmed Ahmed Ezz Eldin is acceptable as Civil Inspector subject to his satisfactory performance for above-mentioned project.

This is for your information and action.

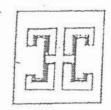
Regards,

MAHMOUD ETRY

Moch Boer (FAC) Che homeone (KA)

INCO LAB وارد رقع : تساريخ ، السكرتارية وثيس المواد رئيس الترية عندر الانشاءات مسؤول المختبر شؤول انعاملين الحنسة مساول الحفر والمكانيات

FACIAN



# Al-Jazera Consultants ARCHITECTS - M.ANNERS - ENGINEERS مهندسون - مخططون - معماريون المجالم المجالم

2000/13/11 ± 2000/07/27

الاشارة: ... ....

M/S. Al, Argan Gen. Trd. & Contt.

Subject

SHEIKHA COMPLEX - HAT SALMIYA
Material Testing

We have no objection to approve INCO - LAB. For material testing.

Thanking you

Yours Faithfully, For AL JAZERA CONSULTANTS

Eng. AHMAD A. ALJIHAYEM
- DIRECTOR

OWNER/SUPV RE/QS-SUPV.

1 . 0.404440 For . 0441010

vectata . eta veritta di

الرئاسة العامة للحرس الوطني الهيئ المامة الإداري الهيئ مديرية الشئون الهندسية ركن أول أشراف هندسي الرقم: حمال التاريخ: ١٠٠٨ ١٠٠٨م



الحرس الوطني

المحترمين،،،

السادة/شركة ٢٦ فبراير للمقاولات الإنشائية

تحية طيبة وبعد،،،

الموضوع/ عقصد رقصم (۳۰۵–۳۰۰۹/۲۰۰۸) إعادة تأهيل معسكر التحرير (مختبر فحوصات المواد)

بالإشارة إلى الموضوع أعلاه والى كتابكم رقم 1/1 بتاريخ ٢٠٠٨/٧/١٥ نحيطكم علما بأنه لا مانع لدينا من اعتماد مختبر انكو وذلك لعمل الفحوصات اللازمة حسب شروط ومواصفات العقد.

وتفضلوا بقبول فائق الاحترام...



## شهادق شكر ونقدير

## يتقدم معهد الكويت للأبحاث العلمية إلى

مختبر إنكو نفحوصات المواد والتربة والمساحة وأبحاث البيئة

بجزيل الشكر والثناء على الجهود الحثيثة التي بذلت لدعم وتنفيذ مشروع "تقييم المواد الخام الأولية لإتاج الأسمنت البورتلادي في الكويت"

نائب المدير العام لشئون الأبحاث



#### PUBLIC AUTHORITY FOR APPLIED EDUCATION & TRAINING (PAAET)

ontracto	r : Al Hamra Kuwait	Co.		Date:	26.Jun.200	
	A CONTROL OF THE PARTY OF THE P			1. SUBMITTED	FOR	coc
RANSMISS	ion of Drawings, D	OCUMENTS, S	SAMPLES, ETC.	APPROVAL, YOUR INFORMATION		1 2
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Contract	: Extension of Telecom	hmunication & h	Vavigation Institute Contract No.: PA/AFA/22-2005/2003	2. ACTION		T
TO :	The Engineer			APPROVED		A
10 .	1110 Cildinaer			APPROVED AS		8
WE ARE	SENDING HEREWITH	DOCUMENTS 7	HAT COMPLIES WITH THE CONTRACT DOCUMENTS	NOT APPROVE	:D	C
	DEWS SPEC OR	TYPE	CODE	D		
QTY DRYS, SPEC. OR ITEM SEQ DESCRIPTION DESCRIPTION				, tree	Submittal 1	Actio
		1				
3			APPROVAL OF TESTING LABORATORY AGENCY	OT	1	R
22	111 - 2 / 01457	1.05A				
			PROPOSED: W/S INCO - LAB Co.			
			SCOPE OF WORKS:			
)			The Project required Tests			
	III CONTRACTOR OF THE		ATTACHMENTS:			
			* Company Profile which contains:			
			a) Company Data.			
	3 1011113/3		b) Organization Chart,			
A	\$ A		c) List of Project Undertaken by the Company.			
100/	RECEIVED	高	d) Curriculum Vitae of Company Staff		1	
. 10	2 7 JUN 2007	11	e) Equipment Listing.			
[7]	TP-PARET		f) Material and Soil Tests Capability.			
- 4	4	35	h) International Professional Organization Membership.			
	(00/65/25/75		Licenses and Registration Documents.			
740			J) Company Brochures.			

A: Jenter Action Codes and Remarks, and return to Contractor REMARKS:

1. M/s. INCO lab is approved as a testing laboratory for soil test and concrete tests only.

2. Submit valid calibration certificates for all relevant equipment.

 Submit for the Engineers approval a full time registered Engineer, as stipulated by contract specification section # 1457 clause (1.04-D).

4. Comply fully with all related contract specification section.

COPIES TO PAAET (The Engineer) CM (TP)			2/4	7/7/2007
NE (DAY Al-Dabboots)  11 Gode to be column by Contractor (Al-Hawes)	-	piginee	ND - Manufacturers Circle	DATE:
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Jul. 08 2007 11:29AM Pt

FROM : AL-HAMRA



## الكلية الأسترالية في الكويت Australian College of Kuwait

مرجعنا رقم: OS/32064

التاريخ: 5/3/7007

المحترم

المهندس / عبدالعزيز العبيدان مختبر انكو

تحية طيبة وبعد،

تهديكم الكلية الأسترالية في الكويت أطيب تحياتها، وتتقدم بخالص الشكر لكم على قيامكم بتوفير أدوات التعليم التطبيقية لمساعدة طلاب برنامج دبلوم الهندسة المدنية.

حيث أن وجود مختبرات مجهزة بالكامل، وفرت لطلابنا الإمكانيات اللازمة لإستخدام الأدوات الهندسية المختلفة والتي مكنتهم من الدمج بين الدراسة النظرية والتطبيق العملي.

كما نشيد بدعمكم المستمر لتطوير التعليم في مجال الهندسة، متمنين استمرار التعاون المثمر فيما بيننا.

وتفضلوا بقبول فائق الاحترام والتقدير ؟؟؟

كوثر حاتم أبوغزالة ن الكلية لشؤون الطلبة

P.O.Box: 1411 Safat - 13015 Kuwait Tel: (965) 537 6111, Fax: (965) 537 6222 E-mail: info@ackonline.com www.ackonline.com



## الكلية الأسترالية في الكويت Australian College of Kuwait

Ref: SA/32068

March 6, 2007

Mr. Abdulaziz A. Al Obaidan Managing Director Inco-Lab North Sabhan St. No. 101 Kuwait

Dear Mr. Al Obaidan,

We are writing to express our appreciation for your help in providing our students with the practical learning component of their civil engineering diploma course.

The access to your well-equipped materials testing laboratory provided our students with a valuable insight into how a wide range of engineering materials are tested. This allowed them to connect theory to practice and, in the process, enhance their understanding.

We commend your commitment to putting something back into the education of Kuwait's engineering students, and look forward to continuing this co-operation in the future.

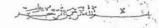
Thank you again for your assistance.

Yours sincerely,

Mr.John Florescu

Acting Head of Engineering Studies

वां प्रविधार विद्या गीव मामार्व





### Kuwait Petroleum Corporation

Date: 27/10/ 1998 Ref.: KPC-CP/E/232-98

Mr. Ashraf Anwar-Project Manager M. A. Al-Kharafi & Sons for General Trading, General Contracting and Industrial Structures, P.O. Box 886 Safat 13126 Kuwait

Subject:

Agreement No. KPOC/1/A/1998
Oil Sector Complex Project
Bid Pack #1 – Demolition & Site

Establishment Works

Testing Laboratory for Reclamation Fill

Dear Mr. Anwar,

Reference is made to your letter Ref. MAK/KPC/HH/55/98 dated 6/10/ 1998, regarding the above subject.

We advise that M/s Inco-Lab is acceptable as the geotechnical testing laboratory for reclamation fill.

The above is for your information and necessary action without change to the time/cost of the contract.

Yours sincerely,

Bader A. Al-Baijan

Manager - Corporate Projects

CC

Mr.G. Blake - SSH





صادر رقم: 127 التاريسخ: 2023/09/25

إدارة مشاريع المنطقة الأولى عقد رقم 1485

المحترم

السيد/ ممثل المتعهد تحيــة طيبــة وبعـــد ،،،

الموضوع: طلبكم إعتماد مختبر (طرف ثالث) لإجراء فحوصات الأسفلت بالعقد رقم (1485) للإسفلت للضاحية NA غرب عبد الله المبارك عقد رقم: م.ع.ر.س / ع / 1485 ـ 2022 / 2023 تعهد: شركة الفرقان الكويتية للتجارة العامة والقاولات

بالإشارة إلى الموضوع أعالاه، وإلى كتابكم رقم (FKC/PAHW-C1485-2023/210) بتاريخ 2023/09/21 بخصوص طلبكم اعتماد مختبر السادة/ شركة مختبرات أنكو الصناعية رطرف ثالث لإجراء فحوصات الأسفلت بالعقد أعلاه رالعينات الساخنة وفحص الكور).

نفيدكم علما بأنه لا مانع لدينا من اعتماد مختير السادة/ شركة مختبرات أنكو الصناعية رطرف ثالث لإجراء فحوصات الأسفلت بالعقد أعلاه شريطة تجديد الاعتمادات اللازمة في الموعد المحدد وبدون أي مطالبات من قبلكم تجاه المؤسسة العامة للرعاية السكنية وتحتفظ المؤسسة العامة للرعاية السكنية وتحتفظ المؤسسة العامة للرعاية السكنية بما تراه مناسبا بهذا الخصوص.

وتفضلوا بقبول فائق الاحترام...

الهندس القيم

م. فيصل عوض الطيري



Diml Juni

MAIN

## المؤسسة العامة للرعاية السكنية PUBLIC AUTHORITY FOR HOUSING WELFARE



سادر 7453-1/8 2013-08-05



المحترمين

## السادة / شركة مختبرات إنكو الصناعية

صبحان - قطعة (1) - شارع 101 قسيمة 151

ص.ب: 21073- الصفاة - الرمز البريدي: 13071

تليفون: 24716526 - فاكس: 24716526

تحية طيبة وبعد،

الموضــوع:أمـر تكليف بأعمـال تثبيت أركان قسائم بمنطقـة الصباحية قطعـة 4

بالإشارة إلى الموضوع أعلاه ، وإلى عرضكم المذكور بالكتاب رقـــم: INCO/MS/GO9/Q01 بتاريخ 2013/5/13م بخصوص القيام بأعمال تثبيت أركان قسائم بمنطقة الصباحية قطعة (4) .

يرجى العلم أنه قد تقرر تكليفكم للقيام بأعمال تثبيت أركان القسائم لعدد ( 133 ) قسيمة وذلك حسب التفاصيل والإشتراطات التالية:

(1) قيمة تنفيذ الأعمال بإجمالي قدره (-/4990 د.ك) فقط أربعة آلاف وتسعمائة وتسعون دينارا كويتيا لا غير.

## (2) نطاق العمل المطلوب تنفيذه :-

أ- مراجعة مناسيب الأركان للقسائم والخاصة بكل قسيمة بالنسبة للمخطط العام .

ب- تحديد وتثبيت أركان القسائم بناء على مخطط الإحداثيات والأبعاد مع ما يتطلبه ذلك من أعمال وفقا المستندات والمخططات المسلمة لكم. للمستندات والمخططات المسلمة لكم.

ج- عمل كروكيات نهائية لمناسيب الأركان على أن يدون بكل منها :-

- يقوم المواطن المخصص له القسيمة بمراجعة الوزارات التالية:-
  - وزارة الأشغال العامة لتحديد نقطة ربط الصرف الصحي.
- وزارة الكهرباء والماء بخصوص تحديد نقاط ربط شبكة المياه العذبة والربط الكهربائل
  - وزارة المواصلات لتحديد نقاط الشبكة الهاتفية.

د- تقديم مخطط تفصيلي لكل قسيمة على حده مع بيان تفاصيل المناسيب والأبعاد وموقع القسليمة بالنسبة المشروع ( KEY- PLAN ) وتكون قياسات وأبعاد المخطط المذكور ( 42 سم × 29.5 سم ) ويتم عمله و إعداده بعد مو افقة المؤسسة.



## المؤسسة العامة للرعاية السكنية PUBLIC AUTHORITY FOR HOUSING WELFARE



- ه\_\_ تقديم عدد (3) نسخ ورقية من جميع مخططات ما تم تنفيذه علي الطبيعة (AS BUILT) مع تقديم نسخة منسوخة على أقراص مضغوطة (CD) بملف (IMAGE) وليس (AUTO CAD) عند انتهاء المشروع لتسليمها لإدارة التخطيط.
- (3) الترامكم التام والعاملين لديكم وكل من له علاقة بهذا التكليف بتوخي الحيطة والحذر خصوصاً في الأماكن المفتوحة والترابية تحسباً لوجود أي متفجرات من أي نوع كانت وعدم التعامل معها حال اكتشافها إلا عن طريق الجهات المعنية ، حيث إنكم ستتحملون وحدكم ما قد ينجم عنها من مسئوليات أياً كانت .
  - (4) مدة تنفيذ أمر التكليف ( 60 يوما ) تبدأ من تاريخ أمر المباشرة (استلام الموقع ).
- (5) تقوم المؤسسة بسداد قيمة الأعمال على هيئة دفعة واحدة بعد الانتهاء من تتفيذ الأعمال واستلامها من قبل المؤسسة بموجب محضر استلام يتم اعتماده من مديرها العام.
- (6) يلزم تقديم خطاب ضمان لصالح المؤسسة صادر من بنك محلي معتمد أو شيك مصدق بقيمة (10%) من قيمة إجمالي الأعمال وبحيث يكون ساري المفعول طوال مدة أمر التكليف.
- (7) إذا تأخرت الشركة في إنجاز الأعمال موضوع التكليف عن المدة المقررة والمحددة بستين يوما ، توقع غرامة تأخير مقدارها يعادل ربع قيمة أمر التكليف الإجمالية اليومية وذلك عن كل يوم تأخير أو جزء من اليوم، وبحد أقصى (10 %) من القيمة الإجمالية لأمر التكليف دون تنبيه أو إنذار أو اتخاذ أي إجراءات قضائية أو إثبات الضرر الذي يعتبر متحققا في جميع الأحوال ، وفي حالة عدم قيامكم من إستكمال الأعمال يكون من حق المؤسسة استكمالها بمعرفتها خصما من مستحقاتكم لديها أو إي جهة وزارية أخري مع تحميلكم كافة المترتبات.

وتفضلوا بقبول وافر التحية ،،،

www.housing.gov.kw

المديسر العسام

E-mail: webmastr@housing.gov.kw

The Walati de dis



## Certificate of BSI Membership

This is to certify that

INCO-LAB for Testing Materials, Soil

Membership Number

47178541

Sus Cu

is a BSI Subscribing Member

Start date: 1 March 2024 End date: 28 February 2025

For and on behalf of BSI:

Dr Scott Steedman CBE FREng, Director of Standards, BSI

The British Standards Institution is incorporated by Royal Charter and the rules relating to Subscribing Members are contained in its Bye-laws. This certificate remains the property of the Institution and is only valid for the period ending on the 'End date' specified above.

BSI Group, 389 Chiswick High Road, London, W4 4AL, UK. Tel: +44 345 086 9001



## ORGANIZATIONAL MEMBER

## INCO-LAB

2004

Anthony E. Fiorate President William R. Tally

William R. Tolley Executive Vice President



Standards Worldwide

Standards for Materials, Products, Systems, and Services

Organizational Member



## 2004 Mr. Abdulla A. Al-Obaidan

hereby certifies that

## INCO-LAB

is a member in good standing

and is granted all the rights and priviledges pertaining thereto.

Executive Director

President

		JWAIKH BUILDING
•		Transmittal No: 5 Rev
		Date: 16 August 2003
CONTRACTOR: SAYED HAMID	SUBMITTED FOR	
TRANSMISSION OF DRAWING	APPROVAL	
		YOUR INFORMATION
RE: CONTRACT		
. Central Bank of Kuwaii	t - Shuwaikh Building	ACTION
TO: RE/GC	CC: PM/KUCM	APPROVED
	APPROVED AS NOTED	
E ARE SENDING HEREWITH / UNDE	NOT APPROVED	
OCUMENTS LISTED BELOW.	FOR INFORMATION	
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Ministry of Public Works Govt. Center For Testing, Quality Control and Research Construction Lab. Department



رقم الطلب: 445/2023

التاريخ : 6/9/2023

المحترمين.

شركة مختبرات انكو الصناعية (ش.م.ك.م)

السادة

## الموضوع/ معايرة الحفارة الخاصة بفحص التربة

بالإشارة إلى كتاب -المؤرخ في 28/8/2023 بخصوص الموضوع اعلاه، فقد تمت معايرة الحفارة

التي تحمل المواصفات الأتية:

GMC-C6500	نوع الشاحنة
1GDG6C1G57F408636	رقم تسلسل الشاحنة
9/21990	رقم اللوحة المرورية المثبتة
2007	سنة صنع الشاحنة
DIEDRICH	أسم الحقارة
BF4L913	موديل الحفارة
223	رقم تسلسل الحفارة
AUTOMATIC	· · نوع مطرقة الأختراق
2	عدد مفاتيح الأمان الموجودة
0	عدد مفاتيح الأمان التي لا تعمل

ملاحظة:

من الفحص تبين أن الحفارة تعمل بحالة جيدة ومزودة بالملحقات الخاصة لعملية الحفر والغرز القياسي

Manager, Const. Labs Department

المحندس/ (فَيْرَاكِكُ فِي الْكُلْلُةُ اللهُ الل







رقم الطلب: 452/2023

التاريخ: 07/09/2023

المحترمين.

شركة مختبرات انكو الصناعية (ش.م.ك.م)

السادة /

## الموضوع/ معايرة الحفارة الخاصة بفحص التربة

بالإشارة إلى كتابكم-المؤرخ في ٢٠٢٣/٨/٢٨ بخصوص الموضوع اعلاه، فقد تمت معايرة الحفارة التي تحمل المواصفات الأتية:

HYUNDAI - HD 170	نوع الشاحنة
KMFDA18V3GC093078	رقم تسلسل الشاحنة
16/31772	رقم اللوحة المرورية المثبتة
2016	سنة صنع الشاحنة
DIEDRICH	أسم الحقارة
D-50 ·	موديل الحفارة
418	رقم تسلسل الحفارة
AUTOMATIC	نوع مطرقة الأختراق
. 4	عدد مفاتيح الأمان الموجودة
0	عدد مفاتيح الأمان التي لا تعمل

ملاحظة

من الفحص تبين أن الحفارة تعمل بحالة جيدة ومزودة بالملحقات الخاصة لعملية الحفر والغرز القياسي

Manager Construction Labs. Department.







رقم الطلب: 446/2023

التاريخ : 12/9/2023

المحترمين.

شركة مختبرات إنكو الصناعية

السادة

### الموضوع/ معايرة الحفارة الخاصة بفحص التربة

بالإشارة إلى كتابكم-المؤرخ في 28 - 8 - 2023 بخصوص الموضوع اعلاه، فقد تمت معايرة الحفارة التي تحمل المواصفات الأتية:

GMC HD 3500	نوع الشاحنة
1GDJK34K48E207819	رقم تسلسل الشاحنة
4/73917	رقم اللوحة المرورية المثبتة
2008	سنة صنع الشاحنة
Diedrich	أسم الحقارة
D - 25	موديل الخفارة
139	رقم تسلسل الحفارة
Automatic	نوع مطرقة الأختراق
2	عدد مفاتيح الأمان الموجودة
0	عدد مفاتيح الأمان التي لا تعمل

ملاحظة:

من الفحص تبين أن الحفارة تعمل بحالة جيدة ومزودة بالملحقات الخاصة لعملية الحفر والغرز القياسي

Manager, Const. Labs Department

المحدث (فن محنيك الإن الم

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رقم الطلب: 449/2023

التاريخ : 6/9/2023

المحترمين.

شركة مختبرات انكو الصناعية (ش.م.ك.م)

السادة

### الموضوع/ معايرة الحفارة الخاصة بفحص التربة

بالإشارة إلى كتاب -المؤرخ في 28/8/2023 بخصوص الموضوع اعلاه، فقد تمت معايرة الحفارة

التي تحمل المواصفات الأتية:

GMC-3500 HD	نوع الشاحنة
1GDJK34K28E209665	رقم تسلسل الشاحنة
3/81684	رقم اللوحة المرورية المثبتة
2008	سنة صنع الشاحنة
DIEDRICH	أسم الحفارة
D-25	موديل الحقارة
141	رقم تسلسل الحفارة
AUTOMATIC	نوع مطرقة الأختراق
2	عدد مفاتيح الأمان الموجودة
0	عدد مفاتيح الأمان التي لا تعمل

ملاحظة:

من الفحص تبين أن الحفارة تعمل بحالة جيدة ومزودة بالملحقات الخاصة لعملية الحفر والغرز القياسي

Manager, Const. Labs Department

منع الدائد مخترات الانشاوان







رقم الطلب: 2023/451

التاريخ : 2023/9/6

المحترمين.

شركة مختبرات انكو الصناعية (ش.م.ك.م)

السادة

### الموضوع/ معايرة الحفارة الخاصة بفحص التربة

بالإشارة إلى كتاب -المؤرخ في 2023/8/28 بخصوص الموضوع اعلاه، فقد تمت معايرة الحفارة

التي تحمل المواصفات الأتية:

GMC - 3500 HD	نوع الشاحنة	
1GDJK34KX8E214595	رقم تسلسل الشاحنة	
3/81728	رقم اللوحة المرورية المثبتة	
2008	سنة صنع الشاحنة	
Diedrich	أسم الحقارة	
D-25	موديل الحفارة	
142	رقم تسلسل الحفارة	
Automatic	نوع مطرقة الأختراق	
2	عدد مفاتيح الأمان الموجودة	
0	عدد مفاتيح الأمان التي لا تعمل	

ملاحظة

من الفحص تبين أن الحفارة تعمل بحالة جيدة ومزودة بالملحقات الخاصة لعملية الحفر والغرز القياسي

Manager, Const. Labs Department

مديئ إدارة مختبرات الإنشاءات







رقم الطلب: 448/2023

التاريخ: 07/09/2023

المحترمين.

شركة مختبرات انكو الصناعية (ش.م.ك.م)

السادة /

## الموضوع/ معايرة الحفارة الخاصة بفحص التربة

بالإشارة إلى كتابكم-المؤرخ في ٢٠٢٣/٨/٢٨ بخصوص الموضوع اعلاه، فقد تمت معايرة الحفارة التي تحمل المواصفات الأتية:

HINO 52827	نوع الشاحنة
JHDFM8JR8P7710872	رقم تسلسل الشاحنة
21/71953	رقم اللوحة المرورية المثبتة
2023	سنة صنع الشاحنة
DIEDRICH	أسم الحقارة
D-120	موديل الحقارة ،
086	رقم تسلسل الحفارة
AUTOMATIC	نوع مطرقة الأختراق
4	عدد مفاتيح الأمان الموجودة
ď	عدد مفاتيح الأمان التي لا تعمل

ملاحظة:

من الفحص تبين أن الحفارة تعمل بحالة جيدة ومزودة بالملحقات الخاصة لعملية الحفر والغرز القياسي

Manager Construction Labs. Department.

مكدير إدارة وختبرات الإنشاءات







رقم الطلب: 2023/447

التاريخ : 2023/9/6

المحترمين.

شركة مختبرات انكو الصناعية (ش.م.ك.م)

السادة

### الموضوع/ معايرة الحفارة الخاصة بفحص التربة

بالإشارة إلى كتاب -المؤرخ في 2023/8/28 بخصوص الموضوع اعلاه، فقد تمت معايرة الحفارة

التي تحمل المواصفات الأتية:

HINO 51927	نوع الشاحنة
JHDGH8JM9N7711782	رقم تسلسل الشاحنة
21/65629	رقم اللوحة المرورية المثبتة
2022	سنة صنع الشاحنة
Diedrich	أسم الحفارة
D-50	موديل الحفارة
220	رقم تسلسل الحفارة
Automatic	نوع مطرقة الأختراق
3	عدد مفاتيح الأمان الموجودة
0	عدد مفاتيح الأمان التي لا تعمل

ملاحظة

من الفحص تبين أن الحفارة تعمل بحالة جيدة بسبب ومزودة بالملحقات الخاصة لعملية الحفر الغرز القياسي

Manager, Const. Labs Department

مُديرُ إِدَارة مِحْتَبُرَاتِ الإِنشَاءات







رقم الطلب: 2023/450

التاريخ : 9/9/2023

المحترمين.

شركة مختبرات انكو الصناعية (ش.م.ك.م)

السادة

### الموضوع/ معايرة الحفارة الخاصة بفحص التربة

بالإشارة إلى كتاب -المؤرخ في 2023/8/28 بخصوص الموضوع اعلاه، فقد تمت معايرة الحفارة

التي تحمل المواصفات الأتية:

GMC - C8500	نوع الشاحنة
1GDP7H1P2VJ518922	رقم تسلسل الشاحنة
6/1458	رقم اللوحة المرورية المثبتة
1997	سنة صنع الشاحنة
Central Mine Equipment	أسم الحقارة
CME-55	موديل الحفارة
282675	رقم تسلسل الحفارة
Automatic	نوع مطرقة الأختراق
2	عدد مفاتيح الأمان الموجودة
0	عدد مفاتيح الأمان التي لا تعمل

ملاحظة:

من الفحص تبين أن الحفارة لا تعمل بحالة جيدة بسبب تهريب زيت في بايب الهمر اثناء الفحص.

Manager, Const. Labs Department

مدير إذارة مختبرات الإنشاءات



Jereh Oil & Gas Engineering Corporation 6th Floor, Building A, 21st Century Tower, No.40 Liangmaqiao Road, Chaoyang District, Beijing 100125, China +86-010- 8444 7006 (Ext. 776673) www.jereh.com

To:

Mr. Abdulaziz A.Al-Obaidan

INCO-LABS P.O. Box 21073, Safat-13071, Kuwait. Date: 25th April 2022

Letter No.: 21057423-J-INL-LET-001

Reply Required: ☐YES⊠NO

Subject:

**CONTRACT NO. 21057423** 

JURASSIC PRODUCTION FACILITY - 5 (JPF-5), AT NORTH KUWAIT

**Performance Appraisal Letter** 

Dear Mr. Abdulaziz A.Al-Obaidan and INCO-LABS team,

We would like to extend this appraisal letter for your dedication and contribution to the JPF-5 project. Your performance in current work proves your commitment to our project that is Geotechnical investigation for soil exploration and sampling as per the specification provided by the Owner/Company.

We would also like to appreciate your cooperation and understanding of work scope criticalities and work progress schedule. Jereh admires INCO-LABS's professional approach to site works, safety issues, and generating report status. We believe that the ongoing work will also be self-evident for INCO-LABS quality and working standards to accomplish it successfully as per KOC standards.

Jereh congratulates you on your contribution and look forward to your better performance in the future.

Yours faithfully,

For and on behalf of

**JEREH OIL & GAS ENGINEERING CORPORATION** 

Ms. Fujuan Cheng Project Manager







### عقد هـ هم في / ١١١ – مشروع مبتى مركز المعلومات و مبتى المسادة اعض

التاريخ: 11/19/2008 0069/MPW/NA/KDL/2008

السلاة / وزاره الاشقال العامه

عَنَّايَةَ الْمَعِيدُ / رئيس مهندسي المشاريع القاصة

تحية طبية و بعد ،،،٠

### المشروع : إنشاء و إنجاز وتشعل وصيلة مبنى مركز المعلومات ومبنى السادة/ اعضاء مجلس الأمة \_ العقد رقم هم خ/ 116

المحترمين

المحترم

### الموضوع : إحتماد مدتير لقحوصات المواد والتريه

بالإشارة الى الموضوع أعلاه عرفق لكم طيه عدد (3) نسخ من ملف مختبر إنكو اقدوصات المواد والتربة والمساحة وابحاث البيئة. يرجاه الدراسة والاعتماد للمشروع المتكور أعلاه

> شاكرين أكم حسن تعاوتكم ،،، وتفضلوا يقيول فلتق الإحترام ءء،

ممثل المتعهد مهندس / طارق الله

· المرفقات: كما هو مذكور أعلاه



Topis (102) - meid 2/31





### Submittal Fo

### Others

# Projacs

#### BOULEVARD PROJECT

TO : PROJACS

DATE: 11 April 2011

CC : SALMIYA GROUP; GULF CONSULT

PACKAGE NO. :

8.1- HARD LANDSCAPE & INFRASTRUTURE WORKS

CONTRACTOR:

WARA CONSTRUCTION Co.

SUB CONTRACTOR

INFRASTRUCTURE WORKS (AL-Oemaa Al-Th

A: Approved
B: Approved As Noted
C: Not Approved
D: Information Noted

Submittal No.:  Submittal Title:  Company Profile (M/s. INCO-LABS) (KSCC) As a Laboratory for Inspection all Earth Works & Aphalt Works  Item Dwgs, Specs, No. BOQ Ref.  Type: CCS Contractor's Detailed Construction Schedule FOP Projected Cashilow  CLS Cost loaded schedule Finite firm Payment MPD Manifoly Report OT Others  CLS Cost loaded schedule Finite firm Payment MPD Manifoly Report OT Others  CLS Cost loaded schedule Finite firm Payment MPD Manifoly Report OT Others  CLS Cost loaded schedule Finite firm Payment MPD Manifoly Report OT Others  CLS Cost loaded schedule Finite firm Payment MPD Manifoly Report OT Others  CLS Cost loaded schedule Finite firm Payment MPD Manifoly Report OT Others  CLS Cost loaded schedule Finite firm Payment MPD Manifoly Report OT Others  CLS Cost loaded schedule Finite firm Payment MPD Manifoly Report OT Others  CLS Cost loaded schedule Finite firm Payment MPD Manifoly Report OT Others  CLS Cost loaded schedule Finite firm Payment MPD Manifoly Report OT Others  CLS Cost loaded schedule Finite firm Payment MPD Manifoly Report OT Others  CLS Cost loaded schedule Finite firm Payment MPD Manifoly Report OT Others  CLS Cost loaded schedule Finite firm Payment MPD Manifoly Report OT Others  CLS Cost loaded schedule Finite firm Payment MPD Manifoly Report OT Others  CLS Cost loaded schedule Finite firm Payment MPD Manifoly Report OT Others  CLS Cost loaded schedule Finite firm Payment MPD Manifoly Report OT Others  CLS Cost loaded schedule Finite firm Payment MPD Manifoly Report OT Others  CLS Cost loaded schedule Finite firm Payment MPD Manifoly Report OT Others  CLS Cost loaded schedule Finite firm Payment MPD Manifoly Report OT Others  CLS Cost loaded schedule Finite firm Payment MPD Manifoly Report OT Others  CLS Cost loaded schedule Finite firm Payment MPD Manifoly Repor		ACTOR : INFRASTRUCTURE WORKS (AI-Qeillag AI-	- Thomacia o	o., _	Prince	1 21 1
As a Laboratory for Inspection all Earth Works & Aphalt Works  Description  Type Copies  Action  Dwgs, Specs, No. BOQ Ref.  Type:  CCS Contractor's Detailed Construction Schedule PD Production Rates SOV Schedule of Values PD Projected Cashflow SL Submittal Log MPL Material Procurement Log MPL Material Pro	Submittal No. :	BP8.1 / 02 / GN / OT / 041	Revision.:		00	
No. BOQ Ref. Type: CC Contractor's Detailed Construction Schedule PD Production Rates SOV Schedule of Values Sov S	Submittal Title:		Aphalt Work	s		
CCS Contractor Plan MPD ManPower Distribution PD Production Rates SOV Schedule of Values IP Interim Payment PD Producted Cashihow SL Submittal Log MPL Material Procurement Log MPL Morthly Report OT Others  Company Profile (W.S. INCO-LABS) (KSCC)  As a Laboratory for Inspection all Earth Works & As A Laboratory for Inspection all Earth Works & As A Laboratory for Inspection all Earth Works & As A Laboratory for Inspection all Earth Works & As A Laboratory for Inspection all Earth Works & As A Laboratory for Inspection all Earth Works & As A Laboratory for Inspection all Earth Works & As A Laboratory for Inspection all Earth Works & As A Laboratory for Inspection all Earth Works & As A Laboratory for Inspection all Earth Works & As A Laboratory for Others  BP 3.1 Contractor's Representative Aratan Haig EIH  April 2011  Date:  MI 4 2011  Phate  Builey and to benform  As NOTED.  The proposed Company is appared as a Laboratory to Inspect all earthworks ashalt works and to benform  All test and submit reports  Builey and Project  Builey and Tomber ashalt  Cashino from relevent authorities is Valid.  Received by Contractor:  Wall Company to Others  Browner and Ashalt works and to benform all Earth Works and to benform  Builey and Project  Builey and Project  Builey and Tomber ashalt  Builey and Tomber ashalt  Builey and Tomber ashalt  Builey and the profile (M.S. INCO-LABS) (KSCC)  As a Laboratory of Others  Builey and Tomber ashalt  Buile	70.00	Description		Туре	Copies	Actio
As a Laboratory for Inspection all Earth Works & Asphalt Works and to perform all tests and submit reports.  We certly that the materials submitted betweith have been reviewed and are in conformance with the contract drawings and disciplination (a) accept an otherwise stated BP B.1 Contractor's Representative  Wartan Haig  EIH  Wartan Haig  Date:  MILY 2011  Date:  MILY 2011  Project  Review comments:  B' - Approved As Noted.  The proposed company is approved as a laboratory to inspect all earthwarks ashhalt works and to perform all test and submit reports.  Review comments:  B' - Approved As Noted.  The proposed company is approved as a laboratory to inspect all earthwarks ashhalt works and to perform all test and submit reports.  Received by Contractor:  Received by Contractor:  Bread Const. Co. Kand Project  SALMIYA PARK PROJECT  Date:  Date:	CP Construction Plan MPD ManPower Distrib	ution PD Production Rates SOV Schedule of Values IF	Interim Payme	ent		
BP 8.1 Contractor's Representative R	1. 3-8 (1.07)	As a Laboratory for Inspection all Earth Works & Asphalt Works and to perform all tests and submit	7 1	John Strain	3 (2) JEN	B
B'-APPROVED AS NOTED.  The proposed company is approved as a laboratory to inspect all earthworks asphalt works and to perform all test and submit repusts as long as their certification from relevent authorities is Valid.  PROJACS Project Manager Date:  Date:  Date:  Date:  Date:	BP 8.1 Contractor's Representative EIH	Contractor's Representative  Vartan Haig	1 13	2Receive	2011	
The proposed company is approved as a laboratory to inspect all earthworks asphalt works and to perform all test and submit reports as long as their certification from relevent authorities is valid.  PROJACS Project Manager  Date:  Date:  Date:  Date:	Review comments:		\ZEZ/	22/12/5	2/8/	
inspect all earthworks / asphalt works and to berform  all test and submit reports as long as their  Certification from relevent authorities is valid.  PROJACS  Project Manager  Date:  Date:  Date:		B'- APPROVED AS NOTE	٥.			
PROJACS Project Manager  Date:  Date:  Date:  Project Manager  Date:  Part and Submit reports as long as their  Authorities is Valid.  Ward Const. C.G. Kucol  SALMIYA PARK PROJECT	The bro	obused company is approved a	sal	abora	tory t	SO.
PROJACS Project Manager  Date:  Date:	inspect	all earthweeks / asphalt werks	and to	ber	form	
PROJACS Project Manager  Date:  Received by Contractor:  SALMIYA PARK PROJECT  Date:	all test	and submit reports as long	23 7	Her o		
Project Manager SALMIYA PARK PROJECT Date: Date:	certificat	ion from relevent authorities	s is	Val	id.	
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Project Manager SALMIYA PARK PROJECT Date: Date:			141		11	
Date: Date:		Received by Contractor :				ļ
			SALMI	YA PARK P	ROJECT	
	Date:	Date:	1	1 APR	2011	



#### الهيئة العامة للطرق والنقل البري Public Authorities for Roads & Transportation





Ref:

Date:

Snr. QA/QC Snr. Planning Snr. forografic survey Snrety Eng.

Sub Contractors

الإشاريخ: ١ /١٦] - ١ /٩١٦ التساريخ: ١ /١١/١٥ - -

السادة/ شركة المقاولون العرب الكويتية ص.ب:21370 الصفاة مرزالبريدي13074 الكويت ت:22273050 فاكس:22451026

تحية طيبة وبعد ،،،

الموضوع :عقد رقم ه ظ/265 إنشاء وإنجاز وصيانا شارع المغوص من الدائرى السابع إلى طريق الفحيحيل - الأحمدى (212)

بخصوص: اعتماد طرف ثالث لاعمال اختيارات الخوازيق

بالإشارة إلى الموضوع أعلاه ، وإلى كتابكم رقم KAO/AGR/RA/0076/2021 المؤرخ العلام المؤرخ المؤر

2021/10/14 (مرفق نسخه) ، بخصوص إعتماد طرف ثالث لأعمال اختبارات الخوازيق .

وبعد المراجعة من قبل إستشاري العقد للأوراق والمستندات المقدمة من قبلكم وسابقة الأعمال.

فأننا نرى انه لا مانع لدينا من اعتماد السادة / مختبرات إنكو (Inco Labs) كطرف ثالث وأننا نرى انه لا مانع لدينا من اعتماد السادة / مختبرات إنكو (Third Party) لاعمال اختبارات الخوازيق للعقد ه ط / 265 ، على أن يقوم بتقديم الطريقة النقصيلية (Method Statement) لطريقة الفحوصات قبل بدأ الأعمال بالمشروع ، وذلك شريطة الالتزام بكافة المتطلبات وطبقا لشروط ومواصفات ومستندات العقد.

وتفضلوا بقبول فائق الاحترام ،،،

مدير عام الهيئة العامة للطرق والنقل البري

مر رجاء حسن المؤمن المير عام المينة المناه المناه



#### العامن للطرق والنقل البري Public Authorities for Roads & Transportation





Ref:

Date:

المحترمين

السادة/ شركة المقاولون العرب الكويتية ص.ب:21370 الصفاة مرالبريدي13074 الكويت ت:22273050 فاكس:22451026

تحية طيبة وبعد ،،،

الموضوع : عقد رقم ه ط/265 إنشاء وإنجاز وصيانه شارع الغوص من الدائرى السابع إلى طريق الفحيحيل – الأحمدى (212)

### بخصوص: اعتماد طرف ثالث لاعمال اختبارات الخوازيق

بالإشارة إلى الموضوع أعلاه ، وإلى كتابكم رقم KAC/AGR/RA/0076/2021 المؤرخ في 2021/10/06 والسى كتاب إستشارى العقد رقم EG/SSH/RE/RA265/123 المؤرخ في 2021/10/14 (مرفق نسخه) ، بخصوص إعتماد طرف ثالث لأعمال اختبارات الخوازيق .

وبعد المراجعة من قبل إستشاري العقد للأوراق والمستندات المقدمة من قبلكم وسابقة الأعمال.

فأننا نرى انه لا مانع لدينا من إعتماد المادة / مختبرات إنكو (Inco Labs) كطرف ثالث فأننا نرى انه لا مانع لدينا من إعتماد المادة / مختبرات إنكو (Third Party) لاعمال اختبارات الخوازيق للعقد ه ط / 265 ، على أن يقوم بتقديم الطريقة التقصيلية (Method Statement) لطريقة الفحوصات قبل بدأ الأعمال بالمشروع ، وذلك شريطة الالتزام بكافة المتطلبات وطبقا لشروط ومواصفات ومستندات العقد.

وتفضلوا بقبول فانق الاحترام ،،،

مدير عام الهيئة العامة للطرق والنقل البري

كم رجاء حسن المؤمن مدير عام البينة العامة العزة وانقل المرد والتكلام





Your Reference:

Our Reference: EG/SSH/RE/RA265/123

Date: 14 October 2021

المترمين

إشارتكم رقم:

إشارتنا رقم :

التاريـــخ :

السادة / الهيئة العامة للطرق والنقل البري

عناية السيد / مهندس المشروع

تحية طبية وبعد،،،

الموضوع: العقد رقم (ه ط/265) إنشاء وإنجاز وتطوير وصيانة شارع الغوص من الدائري السابع إلى طريق الفحيحيل – الاحمدي (212) بخصوص: إعتماد طرف ثالث لأعمال أختبارات الخوازيق

بالإشارة إلى الموضوع أعلاه، وإلي كتاب السادة / شركة المقاولون العرب الكويتية رقم للإشارة إلى الموضوع أعلاه، وإلي كتاب السادة / شركة المقاولون العرب الكويتية رقم KAC/AGR/RA/0076/2021 ، بخصوص إعتماد طرف ثالث لأعمال أختبارات الخوازيق.

وبعد المراجعة للأوراق والمستندات المقدمة فإننا نوصي بإعتماد السادة / مختبرات إنكو (Inco Labs) كطرف ثالث (Third Party) لأعمال إختبارات الخوازيق على أن يقوم بتقديم الطريقة التفصيلية (Method Statement) لطريقة الفحوصات قبل بدأ الأعمال بالمشروع، وذلك شريطة الإلتزام بكافة المتطلبات وطبقاً لشروط ومواصفات ومستندات العقد.

تفضلوا بقبول فانق الإحترام والتقدير ،،،،،

المهندس المقيم

01 . . . . . .

PART RA-265

14 OCT 2021

RECEIVED

المرفقات: كما ذكر أعلاه.

**Egis International** 

15, Avenue du Centre, 78280 Guyancourt - France Tel.: +33 1 39 41 40 00 - Fax: +33 1 39 41 57 63

Tel: 22050090 - Fax: 22050094 <u>Commercial muddleeast@egis.fr</u> www.egis-middle-east.com Tel: 22265600 Fax 22265700

Address P.O. Box 1913, Safat 13020, Kuwait





Printed on the Paris of the Par	06/10/2021	التاريخ:	مشروع إنشاء وإنهار وصيلة شارع الفوص من الدائرى السابع الى طريق الفحيحيل – الأحمدي (212) عقد رقم هـ ط/265 – إعدا طرح	
Section Committee	KAC/AGR/RA /0076/2021	المرجع:		الموضوع:
Periton motorine	(1)	الصفدات	اعتماد طرف ثالث لأعمال إختبارات الخوازيق	
Spatterionies.	کما هو مذکور	المرفقات		

السادة / الهيئة العامة للطرق والنقل البري عناية المهندسة / سهى جاسم اشكناني المديس العام بالإسابة

تحية طيبة وبعد...

بالإشارة إلى الموضوع أعلاه ، مرفق طيسه مستندات التأهيل الخامسة بالسادة/

مختبرات انكر (Inco labs) كطرف ثالث (Third party) لأعمال إختبارات الخوازيق

يرجى التكرم بالمراجعة والاعتماد.

وتفضلوا يقبول فائق الإحترام ...

Beat Contrated

الهيسة السامة لسفعرق والمنشل البري ارتم الد 9577 الله الد 7.57 كا ٢٠٢٧

المرفقات:-

(CPMPANY PROFILE) EAT 2 14

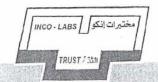
عد 2 فرص مدمج عظام شربة برياتر رام (KBC/KAC/HA-mr/L0768/21) ثمخة إلى ;

مهندس تعشروع (Part)

المهندس المقرم (Egle - SSH)

### INCO - LABS (KSCC)

Paid up Capita! K.D. 900,000 ( C.R. No. 65947 )



### شرکة مختبرات إنکو الصناعیة (ش.م.ك.م)

رأس المال المدفوع ٩٠٠,٠٠٠ دك (س.ترقم: ٢٥٩٤٧)

حاصل على الآيز و ٢٠٠٥ : ١٧٠٢٥

Accredited to ISO/IEC 17025: 2005

فحوصات الشواد \* أبحاث التربة \* المساحة \* المصايرة \* التقسيم الإنشائي \* فحوصات البيئة \* فحوصات الأوتاد

Material Testing \* Soil Investigation \* Surveying \* Calibration \* Structural Evaluation \* Environmental Testing \* Piles Testing

رفسام الوارد 0/	التار	1120 2	17 16
قم الصادر	التان	1 2	20 /
<ul> <li>رئیس السم ان</li> <li>رئیس السم ان</li> <li>رئیس السم ان</li> </ul>	بعة المصانح والم	للتجات التخر	سانية
		O للإفادة	1

التاريخ: 19/04/19 الإشارة: 1NCO/BK/L 0126 السادة / وزارة الأشغال العامة

عناية المهندس/ طلال الأذينة

الوكيل المساعد للمركز الحكومي للفحوصات وضبط الجودة

تحبه طبيه و بعد ١١١

الموضوع: تجديد اعتماد "شركة مختبرات إنكو الصناعية " في مجال الخوازيق

نود أن نحيطكم علماً بأن إعتماد " شركة مختبرات إنكو الصناعية " من قبل وزارتكم الموقرة ينتهي في تاريخ 2017/05/01 ، وبذلك الخصوص ، يرجى التكرم بتجديد الإعتماد لدى وزارتكم الموقرة في مجال فحوصات الخوازيق للأنشطة التالية:

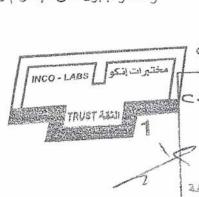
- 1. pile Integrity test.
- Low Strain test & Crosshole Sonic Logging. 2.

و نر فق لكم طيه المستندات التالية:

- ترخيص وزارة التجارة والصناعة.
- صورة ضوئية من الاعتماد السابق.
- عضوية غرفة التجارة والصناعة.

املين بذلك الحصول على تجديد الإعتماد في مجال قحوصات الخوازيق من قبل وزارتكم الموقرة.

وتفضلوا بقبول فائق الإحترام والتقدير ،،، شركة مختبرات انكو الصناعية (ش.م.ك.م) الرئيس التنفيذي م. عبدالعزيز عبدالله العبيدان



تتعللع الموكل المحكومي للشحوم in hele 427/ helps 6/ 3/1/2 النجال المساعد الشماع و العد المدسين المدسين المدسين الإنشاءات D lestes aster o

1) سعكرالير الزمّهل الساعد

العلى والمعتنف والممل اللازم والإهادة والمتاهقة

P.O.Box 21073 Safat 13071, Kuwait Tel.: +965 2471 0780

2475 2320 2475 2530 2471 6520 Fax: +965 2471 6526





ISO/IEC 17025:2005 TESTING CERT#2487.01 & 2487.02 CALIBRATION CERT # 2487 03



Organizational Member





ص ب. ٢١٠٧٢ الصفاة ١٣٠٧١ - الكوييت تليفون: ۲٤٧١٠٧٨٠ 12741111 TEVOTTY. "FV1704" فاكس: ٢٦٥٢١٢٤٢ ٥٦٠-





Fluor Consultants BV
East Ahmadi, Industrial Area, Block No.8, Building No. 42
P.O. Box 9763, Ahmadi 61008
Kuwait

+965.2.398.9783 tel +965.2.398.5314 fax

Correspondence No.: FI-30-K001-FDH/ALG-0228-L

29 Jan 2017

Mr. Fadi Haddad President Alghanim International General Trading & Cont. Co. W.L.L. P.O. Box 2118 Safat 13022 Kuwait

Dear Mr. Fadi Haddad

Subject: Subcontractor/Sub-Tier Consultants/Supplier Requests – Non-Objection Reply Required: No Reference(s): FI-30-K001-ALG/FDH-0379-L

Attached hereto please find Company's Notices of Non-Objections (Form B17 Subcontractor Request Form) for the following Contractor appointed Subcontractor(s)/Sub-Tier Consultant(s):

No.	Letter Requested	Service Description	Contractor's Appointed Subcontractor/Sub-Tier Consultant
1	FI-30-K001-ALG/FDH-0364-L	3rd Party Testing – Piling Works, Material, Soil and Concrete Works	Inco - Labs (KSCCC)
2	FI-30-K001-ALG/FDH-0225-L	Production and Supply of Ready Mix Concrete	Lafarge Ready Mix

Notices of Non-Objections are contingent upon Contractor's agreement with the following:

- Conditions listed and agreed to by Contractor in Section 5 of the attached B17 Form. Particular attention to Item 3, whereby Contractor shall provide subcontractor's completed insurance certificate to Company prior to mobilization of subcontractor at site, if applicable.
- Submittal of Contractor's proposed unpriced subcontract/purchase order.
- Applicable to Sub-Tier No. 1: Material listed in Service Description is limited to the materials related to Piling, Soil and Concrete Works only.
- Applicable to Sub-Tier No. 2: Qualification of concrete provider's mix designs and materials.

Please acknowledge receipt of this correspondence by signing where indicated below and returning a copy to the undersigned within two (2) business days.

Yours sincerely,	Receipt Acknowledged	
94. L-		
Gr/goly/Louie		Date
Gr/gory_ouie Consags Management	Alghanim International General	
*	Trading & Cont. Co. W.L.L.	





Contract No.:L9ZR-FI-30-K001 Level 1 Administration Buildings

FI-30-K001-FDH/ALG-0228-L Mr. Fadi Haddad 29 Jan 2017

Attachment(s): 1. B17 3rd Party Testing\_Inco\_NO

2. B17 Concrete\_Lafarge\_NO

cc: Mr. Peter Hassinger, JV Subcontracts Manager

Mr. Jasper de Gooyer, Fluor Lead Subcontracts Manager

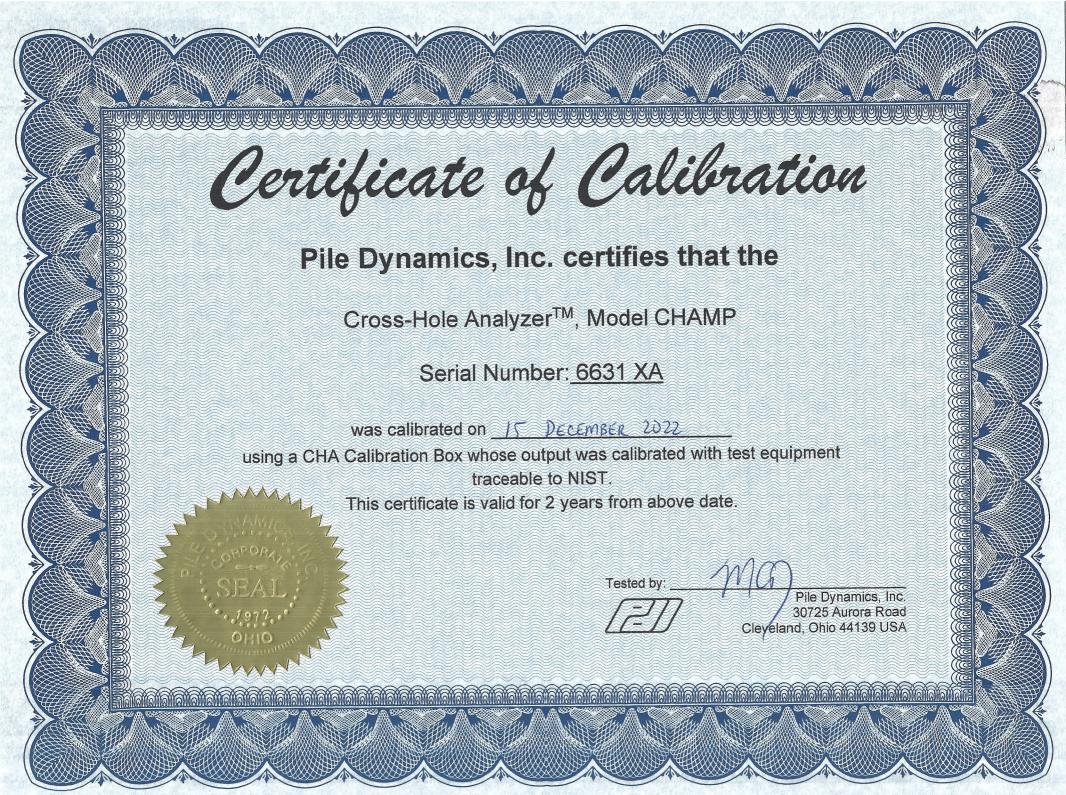
Mr. Eric Armstrong, JV Site Subcontracts Manager

Mr. Duncan Lisle-Fenwick, Project Manager, Campus Development

Mr. Matei Kevenaar, Project Engineer, Campus Development

Mr. Tim Cox, JV Quality Director

Mr. Sami Ajaltouni, Alghanim K001 Project Director Mr. Dory Douaihy, Alghanim K001 Technical Manager Mr. Barry Murphy, Alghanim K001 Contracts Manager





Calibrated by Pile Dynamics, Inc. Calibration performed on 07Dec2022

Serial No:

LW177684

Temperature: 68.9 °C

Model:

PE

**Humidity:** 

36%

Calibrated on: Channel 3 on 8G 5161 LE

Ref Acc 1:

LW423806!

Cal on:

02Aug2022

10 g's/volt

Ref Acc 2:

LW423794! 10 g's/volt

Cal on:

28Jul2022

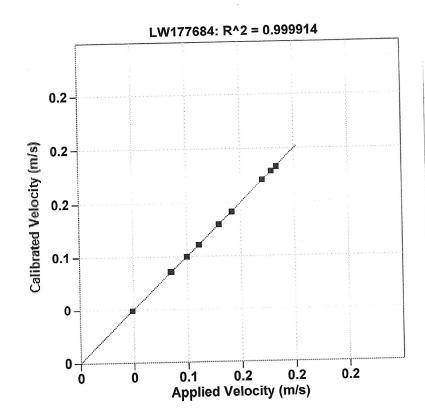
Reference accelerometer calibrations are traceable to the United States National Institute of Standards and Technology (NIST).

PDA CALIBRATION FACTOR

10.8 g's/volt

R^2: 0.999914 [No chip]

Operator: William Johnson



Reference Velocity	S/N LW177684 Velocity
m/s	m/s
0.049	0.049
0.085	0.086
0.085	0.085
0.100	0.100
0.111	0.111
0.130	0.130
0.142	0.142
0.170	0.171
0.179	0.179
0.184	0.183
	Acceleration: 21 d's

Maximum Acceleration: 21 g's







PDA CALIBRATION FACTOR

Operator: William Johnson

R^2: 0.999989 [Chip programmed]

9.9 g's/volt

Calibrated by Pile Dynamics, Inc. APR 1 8 2023 Calibration performed on

Serial No:

LW452037

Temperature: 71.5 °C

Model:

PΕ

**Humidity:** 

37%

Calibrated on: Channel 3 on 8G 5161 LE

Ref Acc 1:

LW423794!

Cal on:

28Jul2022

10 g's/volt

Ref Acc 2:

LW423806!

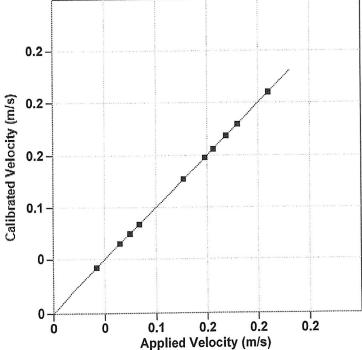
Cal on:

02Aug2022

10 g's/volt

Reference accelerometer calibrations are traceable to the United States National Institute of Standards and Technology (NIST).





Reference	S/N LW452037
Velocity	Velocity
m/s	m/s
0.042	0.042
0.065	0.065
0.075	0.074
0.084	0.084
0.127	0.127
0.148	0.148
0.156	0.156
0.168	0.168
0.179	0.179
0.210	0.210

Maximum Acceleration: 24 g's









Calibrated by Pile Dynamics, Inc. Calibration performed on APR 1 5 2022

Serial No:

72806

Temperature: 71.5 °F

Model:

PE

Humidity:

35%

Calibrated on: Channel 3 on 8G 5161 LE

Ref Acc 1:

72505!

Cal on:

24Mar2022

1035 g's/volt

Ref Acc 2:

72517! 1049 g's/volt Cal on:

24Mar2022

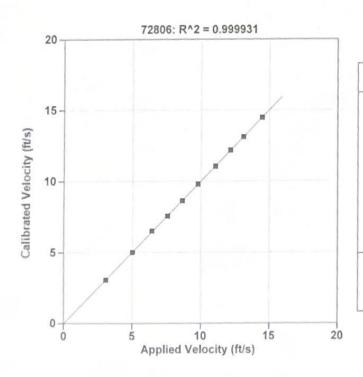
Reference accelerometer calibrations are traceable to the United States National Institute of Standards and Technology (NIST).

PDA CALIBRATION FACTOR

979.5 g's/volt

R^2: 0.999931 [Chip programmed]

Operator: William Johnson



Reference	S/N 72806
Velocity	Velocity
ft/s	ft/s
3.069	3.055
5.020	5.003
6.432	6.511
7.568	7.550
8.653	8.624
9.776	9.779
11.051	11.036
12.152	12.167
13.099	13.101
14.465	14.461

Maximum Acceleration: 985 g's



Calibrated by Pile Dynamics, Inc. APR 1 5 2022 Calibration performed on

Serial No:

72807

Temperature: 71.5 °F

Model:

PE

Humidity:

35%

Calibrated on: Channel 3 on 8G 5161 LE

Ref Acc 1:

725051 1035 g's/volt Cal on:

24Mar2022

Ref Acc 2:

725171

Cal on:

24Mar2022

1049 g's/volt

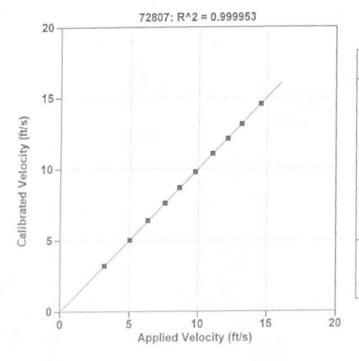
Reference accelerometer calibrations are traceable to the United States National Institute of Standards and Technology (NIST).



966.6 g's/volt

R^2: 0.999953 [Chip programmed]

Operator: William Johnson



Reference	S/N 72807
Velocity	Velocity
ft/s	ft/s
3.199	3.216
5.020	5.007
6.332	6.375
7.615	7.598
8.632	8.665
9.767	9.766
11.043	11.067
12.143	12.110
13.147	13.129
14.541	14.539

Maximum Acceleration: 987 g's



Pile Dynamics, Inc. Transducer Model: PDI Strain Transducer

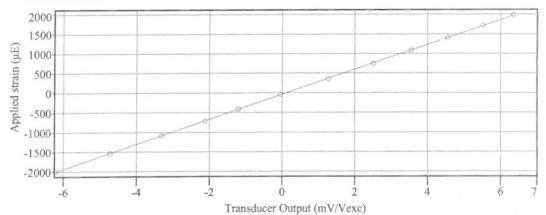
Serial Number: X226

PDI Gage Factor: 92.4 Mean Linear Correlation Coefficient: 0.999935

Table 1: Representative Calibration Data

Applied strain (µE)	Gage Output (mV/Vexc)	Applied strain (µE)	Gage Output (mV/Vexc)
-1988.2	-6.215	354.3	1.270
-1535.4	-4.725	748.0	2.511
-1082.7	-3.321	1089.2	3.551
-702.1	-2.123	1404.2	4.545
-406.8	-1.208	1725.7	5.516
-39.4	-0.050	1994.8	6.345

#### Calibration Curve



PDI Strain Transducer Calibration System (PDI STCS)

PDI Strain Transducci Cantilation System	(IDISICS)
PDI STCS Serial Number:	1000HA
Firmware version number:	0.8.0.0
Transducer Gage Length:	3 inches (76.2mm)
Excitation Voltage for Calibration:	5.0 VDC

PDI certifies the above STCS instrument meets or exceeds published specifications and has been verified using standards and instruments whose accuracies are traceable to the National Institute of Standards and Technology (NIST), an accepted value of a natural physical constant or a ratio calibration technique.

Calibrated By: Kay Tol

PDI Gage: X226

APR 1 5 2022 Calibration Date:

Signature: Kay Jul



Pile Dynamics, Inc. Transducer Model: PDI Strain Transducer

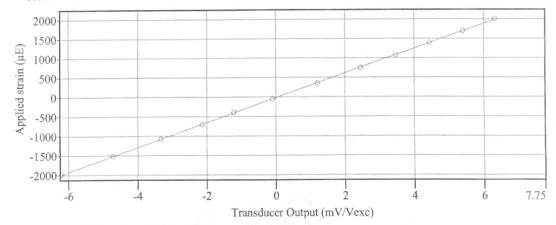
Serial Number: X225

PDI Gage Factor: 92.7 Mean Linear Correlation Coefficient: 0.999956

Table 1: Representative Calibration Data

Applied strain (µE)	Gage Output (mV/Vexc)	Applied strain (µE)	Gage Output (mV/Vexc)
-1981.6	-6.208	354.3	1.199
-1515.7	-4.723	748.0	2.446
-1076.1	-3.343	1078.3	3.467
-695.5	-2.136	1397.6	4.441
-393.7	-1.223	1706.0	5.402
-45.9	-0.102	2007.9	6.319

#### Calibration Curve



PDI Strain Transducer Calibration System (PDI STCS)

PDI STCS Serial Number:	1000HA	
Firmware version number:	0.8.0.0	
Transducer Gage Length:	3 inches (76.2mm)	
Excitation Voltage for Calibration:	5.0 VDC	

PDI certifies the above STCS instrument meets or exceeds published specifications and has been verified using standards and instruments whose accuracies are traceable to the National Institute of Standards and Technology (NIST), an accepted value of a natural physical constant or a ratio calibration technique.

Calibrated By: Kay Tol

Signature: Kay Jul

PDI Gage: X225 APR 1 5 2022 Calibration Date:



Pile Dynamics, Inc. Transducer Model: PDI Strain Transducer

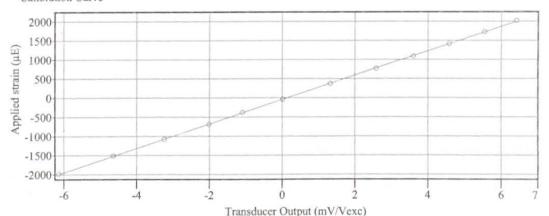
Serial Number: X224

PDI Gage Factor: 92.7 Mean Linear Correlation Coefficient: 0.999943

Table 1: Representative Calibration Data

Applied strain (µE)	Gage Output (mV/Vexc)	Applied strain (µE)	Gage Output (mV/Vexc)
-1981.6	-6.145	374.0	1.317
-1509.2	-4.646	767.7	2.580
-1076.1	-3.248	1095.8	3,601
-682.4	-2,016	1417.3	4,581
-380.6	-1.096	1725.7	5.543
-39.4	0.009	2021.0	6.409

#### Calibration Curve



PDI Strain Transducer Calibration System (PDI STCS)

PDI STCS Serial Number:	1000HA	
Firmware version number:	0.8.0.0	
Transducer Gage Length:	3 inches (76,2mm)	
Excitation Voltage for Calibration:	5.0 VDC	

PDI certifies the above STCS instrument meets or exceeds published specifications and has been verified using standards and instruments whose accuracies are traceable to the National Institute of Standards and Technology (NIST), an accepted value of a natural physical constant or a ratio calibration technique.

Calibrated By: Kay Tol	Signature: Kay Jal	
PDI Gage: X224	APR 1 5 2022	[=]
Calibration Date:		Pile Dynamics, Inc.



Pile Dynamics, Inc. Transducer Model: PDI Strain Transducer

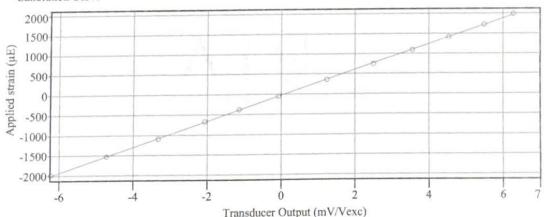
Serial Number: X223

PDI Gage Factor: 92.6 Mean Linear Correlation Coefficient: 0.999896

Table 1: Representative Calibration Data

Applied strain (µE)	Gage Output (mV/Vexc)	Applied strain (µE)	Gage Output (mV/Vexc)
1981.6	-6.226	360.9	1.234
-1528.9	-4.730	748.0	2,499
-1089.2	-3.332	1095.8	3.553
-669.3	-2.068	1417.3	4.538
-374.0	-1.139	1730.1	5.493
-52.5	-0.079	1994.8	6.282

Calibration Curve



neducer Calibration System (PDI STCS)

PDI Strain Transducer Cambration System	((B) STes)	
PDI STCS Serial Number:	1000HA	
Firmware version number:	0.8.0.0	
Transducer Gage Length:	3 inches (76.2mm)	
Excitation Voltage for Calibration:	5.0 VDC	

PDI certifies the above STCS instrument meets or exceeds published specifications and has been verified using standards and instruments whose accuracies are traceable to the National Institute of Standards and Technology (NIST), an accepted value of a natural physical constant or a ratio calibration technique.

Calibrated By: Kay Tol	Signature: Kay Ill	
PDI Gage: X223	APR 1 5 2022	[=]]
Calibration Date:		Pile Dynamics, Inc.



Pile Dynamics, Inc. Transducer Model: PDI Strain Transducer

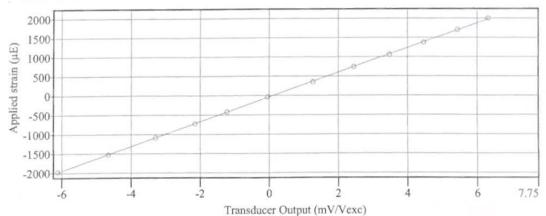
Serial Number: X222

PDI Gage Factor: 93.0 Mean Linear Correlation Coefficient: 0.999933

Table 1: Penresentative Calibration Data

Applied strain (µE)	Gage Output (mV/Vexc)	Applied strain (µE)	Gage Output (mV/Vexc)
-1975.1	-6.122	354.3	1.258
-1522.3	-4.664	741.5	2.446
-1082.7	-3.298	1063.0	3.475
-721.8	-2.150	1378.0	4.464
-419.9	-1.226	1706.0	5.436
-39.4	-0.054	2001.3	6.314

#### Calibration Curve



PDI Strain Transducer Calibration System (PDI STCS)

FDI Strain Transcreet Cambration System	(IDIDICO)
PDI STCS Serial Number:	1000HA
Firmware version number:	0.8.0.0
Transducer Gage Length:	3 inches (76.2mm)
Excitation Voltage for Calibration:	5.0 VDC

PDI certifies the above STCS instrument meets or exceeds published specifications and has been verified using standards and instruments whose accuracies are traceable to the National Institute of Standards and Technology (NIST), an accepted value of a natural physical constant or a ratio calibration technique.

Calibrated By: Kay Tol		Signature:	Kay	Sel	
PDI Gage: X222	APR 1	5 2022 Signature:_			[=]
Calibration Date:					Pile Dynamics, Inc



Calibrated by Pile Dynamics, Inc. Calibration performed on

APR 1 5 2022

Serial No:

K12648

Temperature: 70.0 °F

Model:

PR

Humidity:

33%

Calibrated on: Channel 3 on 8G 5161 LE

Ref Acc 1:

725171

Cal on:

03Feb2022

Ref Acc 2:

1049 g's/volt

Cal on:

72505! 1035 g's/volt 03Feb2022

Reference accelerometer calibrations are traceable to the United States National Institute of Standards and Technology (NIST).

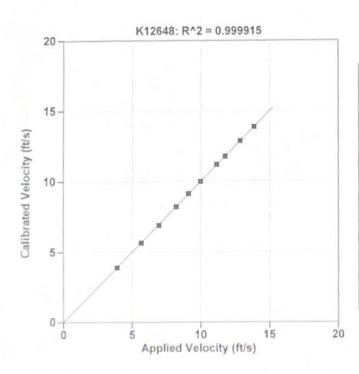


440.2 mv/5000g

(88.0 µv/g)

R^2: 0.999915 [Chip programmed]

Operator: William Johnson



Reference	S/N K12648		
Velocity	Velocity		
ft/s	ft/s		
3.890	3.880		
5.647	5.628		
6.938	6.867		
8.186	8.182		
9.082	9.110		
9.953	9.964		
11.131	11.169		
11.750	11.749		
12.842	12.846		
13.867	13.856		

Maximum Acceleration: 942 g's



Calibrated by Pile Dynamics, Inc. Calibration performed on 1 5 2022

Serial No:

K12647

Temperature: 70.0 °F

Model:

PR

Humidity:

33%

Calibrated on: Channel 4 on 8G 5161 LE

Ref Acc 1:

725171

Cal on:

03Feb2022

Technology (NIST).

1049 g's/volt

Ref Acc 2:

72505! 1035 g's/volt Cal on:

03Feb2022

Reference accelerometer calibrations are traceable to the United States National Institute of Standards and

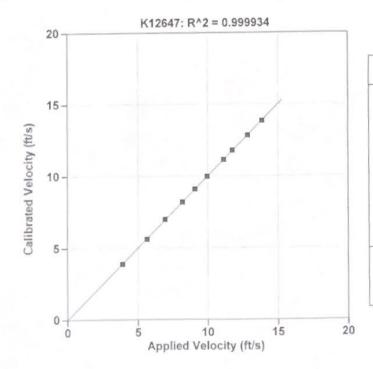
### PDA CALIBRATION FACTOR

447.3 mv/5000g

(89.5 µv/g)

R^2: 0.999934 [Chip programmed]

Operator: William Johnson



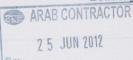
Reference	S/N K12647
Velocity	Velocity
ft/s	ft/s
3.890	3.873
5.647	5.614
6.938	6.987
8.186	8.193
9.082	9.092
9.953	9.967
11.131	11.128
11.750	11,777
12.842	12.826
13.867	13.836

Maximum Acceleration: 942 g's

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То	: LBG- PACE JV		Your Reco	ord (2)			: 12 Mar'2012	
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	UT Utilities		<b>EP</b> Environmental	SC Sub-Contra	actor	<b>QU</b> Quality related submittals (Quali Plan, Inspection and Test Plan,		
	LI Landscaping an Irrigation	ıd	Protection	Submittal  MS Method		HS H	ISE and logisti	cs related
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Corr equ	rections and comment irements of drawings	s made and spe	relative to submittals durin	ng this review do n	ot relief	the Cor	ntractor from th	e conpliance with the
	ACTION: A: Accepted			C: Revise and Resubr			D: For record On	-
Nam	ne: A. Aziz Alm	ed	Designation:- Cowst.	specialist	Signatur	e & Dat	te:- 15 -03-2.	12
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Project: JAHRA ROAD - Construction, Completion and Maintenance of Roads, Overpasses, Sewage, Storm Water Drainage and other Services. Contract - RA / 166









	Jahra Road Pr	oject (RA/	[66] Phase (3,5) LBG / PAGE		ARAB (	CONTRACTOR
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YTÇ	REF	ITEM	DESCRIPTION	TYPE	Submittal	Action
5	2012/RA166/AC/SU/150		INCO LABS. as an Independent Testing Agency(Third Party) for the soil testing,concrete testing,pile integrity test(Cross hole sonic logging,low strain test)	SU	1	В
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C	onsultant roject Director	11	SC-SUBCONTRACTOR RP- REPORT SM - Sample  2 0 SEP 2012	EDMD -	Manufacturer's Certificates	Data
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Proj. No.: RA 140

DESIGN, BUILD, COMPLETE AND MAINTAIN SHAIKH JABER AL-AHMAD AL-SABAH

CAUSEWAY PROJECT (MAIN LINK)



**TYLIN**INTERNATIONAL

**Employer:** 

STATE OF KUWAIT
MINISTRY OF PUBLIC WORKS
ROAD ENGINEERING SECTOR



Request No.
On Shore
RA140-32-DOC-GENPIL-C-0019-00

Date

**Contractor:** 

HYUNDAI 
COMBINED GROUP
CONTRACTING COMPANY
CONTRACTING COMPANY

18/10/2014

	Tra	nsmittal of	Documents		
1. Documen	it Type				
	Material samples	Catalogues	Tests	Techn	ical Sheets
	Manufacturer certificates	Schedules	Other	Daily production Repo	rt .
2. Submitta	l details				
Item no.	Description of items sub	mitted / quant	rity	Ref.	Contract co. Ref. & Compliances
1	Pre-Qualification of Third P INCO LABS (KSSCC) As Per Below List of Inspection		from	General Condition of Contract Clause 7.2	Doc.III.2 Sec.5 (Drilled Piles & Shafts)
	Integrity Test     Senia Test				
	Sonic Test     Material Testing				_
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	Your information	Approval	Review and	18 OCT 2014	1.00.1
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3. Engineer	's Representative's comm	ents		☐ Approved	
Subjec	t to submission	- accepte	b/e quality car	Approved as n	oted
a) the	t to submission Personnels & equ	ipment to	cat will	Revise and Re	submit
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lisons	ces, certifica	bes mus	the be	upl valid	throughout
the p	reject durate			35	
Signature	R			Date: 4	111/14
Approval shall no	t relieve Contractor of his liabilities u	nder the Contract or	constitute authorization	of any change to Contra	ct Documents

RA140-Hdec/CGC form 2 rev O

J.R. Parde 9/11/14

ZAL 09/11/14

## **PIT-W Professional**

Software for In-Depth Analysis of Data Collected with the Pile Integrity Tester

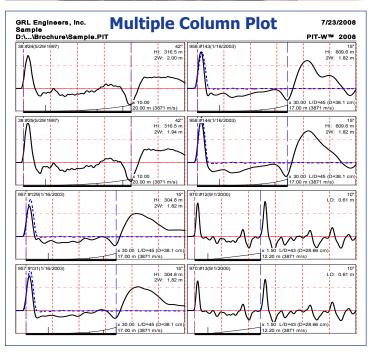
Pile Dynamics, Inc.

PIT-W Professional maximizes the information you can extract from data collected with the Pile Integrity Tester (PIT). PIT-W Pro is particularly useful for

- Comparing records from several piles on the same site
- Analyzing data from foundations of existing structures
- Assessing unknown foundation length
- Evaluating the severity and location of anomalies along the shaft

PIT reveals information on the integrity of a shaft. All models are furnished with the Standard version of the PIT-W software, which permits data uploading and adjustment, analysis in the time domain, record organizing and report preparation.







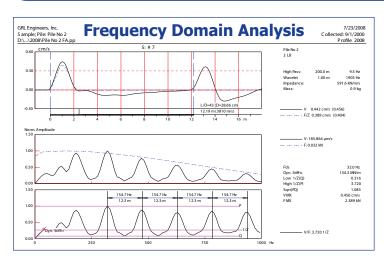
PIT-W Professional License is available with hardware or software key

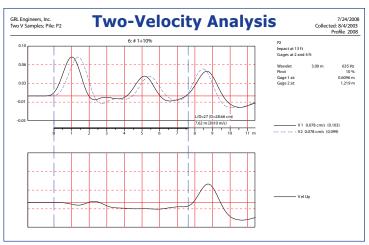
# PIT-W Pro enhances PIT-W Standard with Advanced Features:

- Profile Analysis generates a pile impedance versus depth plot to help estimate the shape of the foundation
- β-Analysis quantifies impedance changes to help assess the severity of defects
- Frequency Domain Analysis calculates and displays velocity spectra and peaks to assist in defect detection and location.
   If force data is available, also calculates Mobility and Dynamic Stiffness. Mobility may help the detection and location of defects in special situations where velocity spectra alone does not.
   Dynamic stiffness is useful to single out potentially weak piles (when several similar adjacent piles are tested).
- Two-Velocity Analysis calculates wave speed using two velocity measurements and separates upward from downward traveling velocities, aiding in the interpretation of data from foundations of existing structures and/or foundations of unknown length.
- Multiple Column Plot generates user customized summary sheets for easy record comparison.

## **Quality Assurance for Deep Foundations**

	Features	PIT-W Standard	PIT-W Professional
Velocity	PIT data import	<b>√</b>	<b>√</b>
	Record filtering and averaging	<b>/</b>	<b>√</b>
Data	Exponential amplification	<b>/</b>	<b>√</b>
Velocity Data  Force & Velocity Data	Re-analysis of saved data files	<b>/</b>	<b>√</b>
	Customized tabular output	<b>/</b>	<b>√</b>
	Customized report	<b>/</b>	<b>√</b>
	Data transfer to other applications	<b>/</b>	<b>√</b>
	SI, Metric and English units	<b>/</b>	<b>√</b>
	On screen help	<b>/</b>	1
	Velocity plot display	<b>/</b>	1
	Time Domain Analysis	<b>/</b>	<b>√</b>
	Frequency Domain Analysis (velocity)		1
	Profile Analysis		<b>√</b>
	ß-Analysis		/
	Multiple Column Plot		1
Force &	Force-Velocity Plot	<b>/</b>	1
<b>Velocity Data</b>	Frequency Domain Analysis (complete)		1
Two Velocity	Surface (Rayleigh) Wave Analysis	<b>/</b>	1
Data	Two-Velocity Analysis		<b>/</b>

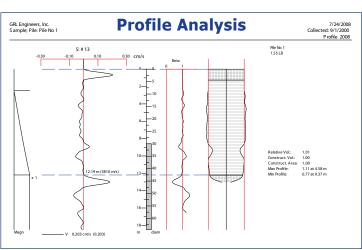




## **Minimum System Requirements**

- Windows XP or newer
- 16 MB RAM
- 10 MB of free hard disk space
- USB port if Hardware Key is selected for licensing
- Display device
- · Mouse or compatible pointing device
- Data obtained with any PIT produced after 3-27-98









# SITE TRANSMITTAL of Shop Drawings, Materials, etc.

TRANSMITTAL NO :	OT-0011	
REV:	0	

To: Resident Engineer

PROJECT	OWNER	CM	CONSULTANT	CONTRACTOR
Hessah Al Mubarak Residential	Mena Homes Real Estate	KEO International Consultants	SSH International	United Building Company
Project	Company	REO International Consultants	Consultants	Officed building Company
1 TOJECT	Company		OGRISHICATO	

WE ARE SENDING HEREWITH THE DRAWINGS / DOCUMENTS / SAMPLES LISTED BELOW FOR YOUR REVIEW

TEM NO.	DRW., SPEC. OR BOQ. REF	GENERAL DESCRIPTION AND REVISION DETAILS	TYPE (i)	COPIES	ACTION CODE (ii)
1		INCO LAB Company profile (third party testing agency)for pile testing	ОТ	2	B
Auryland Auryland			15	(112)	

We certify that the otherwise stated.	items submitted herewith have bee	en reviewed in detail and are in strict conformance w	vith the Contract	Drawings and Specificat	tions except as
CONTRACTOR:	Alex	RECEIVED	BY R.E: 02	1 9 OCT 2019	6 7
DATE:	19/10/2019		DATE:	SSH	8
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CONSULTANT'S REMARKS:

sents on the attached sheet.

Corrections or comments made relative to submittals during this review does not relieve the contractor from compliance with the requirements of his Contract, drawings and specifications. This review is only in respect of general conformance with the design intent of the project and general compliance with the information given in the Contract documents. The contractor remains responsible, among other things, for the design of the project or such parts of the project he has design responsibility for (if design forms part of the Contract), for confirming and correlating all quantities and dimensions, selecting fabrication processes and techniques of construction, coordinating his work with that of other trades, and performing his work in a safe and satisfactory manner, all in accordance with the Contract.

RESIDENT ENGINEER:

DATE:

Hessah Al Muharak, Plot no.

RECEIVED BY CONTRACTOR:

Hessah Al Mubarak, Plot no. 160

DATE:

UNITED BUILDING COMPANY
Hessah Al Mubarak - Residential Towers
(Plot 160)

2 0 OCT 2019

(i) TYPE: SD: Shop Drawings

MD: Manufacturer's Data

SM: Sample

OT: Guarantee / Certificates / Others

(ii) ACTION CODE:

- A: No objection
- B: No objection subject to incorporation of all comments as noted
- C: Rejected, to be resubmitted
- D: Further Information Required

cc: Construction Manager



MASTER PLANNING . INFRASTRUCTURE . BUILDING DESIGN . CONSTRUCTION SUPERVISION

Date:	19-Oct2019	cc:	KEO, URC		
To:	UBC	Reference:	OT-0011 rev.00 19-Oct2019		
From:	SSH				
Subject:	INCO lab Company pro	INCO lab Company profile - Third party agency for pile testing			

Action Code: B - No objection subject to incorporation of all comments as noted

INCO Lab Third Company profile for piles testing have been reviewed and found accepted, Final approval is subject to complying with following comments:

- INCO lab. Is responsible to attend, monitoring, apply (if required) and provide reports for applied tests on piles, in full compliance and fulfillment with project's specifications and documents, as follow:
  - Integrity test by low strain hammer for 100% of working/permeant piles.
  - Integrity test by sonic logging method for 25% of working/permeant piles.
  - Static load test for 1 no. of each piles type of working/permeant piles.
  - Static load test for 1 no. of each piles type of non-working/preliminary piles.
  - Steel reinforcement tests.
- 2. Contractor to provide/submit third party lab. To apply the balanced required tests for piles or concrete, incorporating with project's requirements and specifications.



## SITE TRANSMITTAL of Shop Drawings, Materials, etc.

Bb.01

TRANSMITTAL NO: OT-0085

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PROJECT	OWNER	CM	CONSULTANT	CONTRACTOR
Hessah Al Mubarak Residential Project	Mena Homes Real Estate Company	KEO International Consultants	SSH International Consultants	-United Building Company
WE ARE SENDING HEREWIT	TH THE DRAWINGS / D	OCUMENTS / SAMPLES	LISTED BELOW	

## FOR YOUR REVIEW

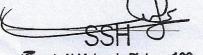
NO.	DRW., SPEC. OR BOQ. REF	GENERAL DESCRIPTION AND REVISION DETAILS	TYPE (i)	COPIES	ACTION CODE (ii)
1		INCO LAB Company profile (third party testing agency)for pile testing	ОТ	2	В
				(1127	

We certify that the otherwise stated.	items submitted herewith have been reviewed in	n detail and are in strict conformance with the Cont	ract Drawings and Specifications except as
CONTRACTOR:	M. Bakir	RECEIVED BY R.E :	1 6 SEP 2019
DATE:	16/9/2019	DATE:	SSH SSH
			BEGEIVED

**CONSULTANT'S REMARKS:** 

Corrections or comments made relative to submittals during this review does not relieve the contractor from compliance with the requirements of his Contract, drawings and specifications. This review is only in respect of general conformance with the design intent of the project and general compliance with the information given in the Contract documents. The contractor remains responsible, among other things, for the design of the project or such parts of the project he has design responsibility for (if design forms part of the Contract), for confirming and correlating all quantities and dimensions, selecting fabrication processes. has design responsibility for (if design forms part of the contract), for comming and conceaning an quantity of the safety management of the construction, coordinating his work with that of other trades, and performing his work in a safe and satisfactory management with the construction, coordinating his work with that of other trades, and performing his work in a safe and satisfactory management with the construction of t

RESIDENT ENGINEER:



RECEIVED BY CONTRACTOR:

17 SEP 2019

DATE:

Hessah Al Mubarak, Piot no. 160

DATE:

(i) TYPE: SD:

Shop Drawings

مشروع حصة المبارك ٢٠٠

(ii) ACTION CODE:

MD: Manufacturer's Data

A: No objection

OT: Guarantee / Certificates / Others

- B: No objection subject to incorporation of all comments as noted
- C: Rejected, to be resubmitted
- D: Further Information Required

cc: Construction Manager



Subject:	Reply for the Comments from SSH related to the Inco-Lab Testing Agency (Third Party Agency for Pile Testing)		
Project:	Hessah Al Mubarak District Package 1 (Plot No. 160)	Rev.	01
Client:	First Homes Real Estate Company	Date:	16.09.2019
Consultant:	SSH		
Main Contractor:	United Building Company		

Reference to the comments sheet from SSH with ref. #. OT-0013 rev.00 the following reply herein below,

- 1. Inco-Lab testing agency (third party) will conduct the following test in the project as mentioned below,
  - 1.1 Cross-hole Sonic Test
  - 1.2 Pile Integrity Test (PIT)
  - 1.3 Static Load Test for non-working & working pile load test
- 2. Inco-Lab testing agency (third party) is obliged to submit the detailed reports for material testing, analysis and results for the conducted test in the project.
- Inco-Lab testing agency (third party) will include their recommendations/clear conclusion for the materials under their observation as per project specifications and related tender documents.



MASTER PLANNING . INFRASTRUCTURE . BUILDING DESIGN . CONSTRUCTION SUPERVISION

Date:	17-Sep2019	cc: KEO, URC
To:	UBC	Reference: OT-0085 rev.01 16-Sep2019
From:	SSH	
Subject:	INCO lab Company profile - Third	d party agency for pile testing

Action Code: B - No objection subject to incorporation of all comments as noted

INCO Lab Third Company profile for piles testing have been reviewed and found accepted, Final approval is subject to complying with following comments:

- 1. INCO lab. Is responsible to attend, monitoring, apply (if required) and provide reports for applied tests on piles, in full compliance and fulfillment with project's specifications (316213.13), as follow:
  - Integrity test by low strain hammer for 100% of working/permeant piles.
  - Integrity test by sonic logging method for 25% of working/permeant piles.
  - Static load test for 1 no. of each piles type of working/permeant piles.
  - Static load test for 1 no. of each piles type of non-working/preliminary piles.
- Contractor to provide/submit third party lab. To apply the balanced tests required on piles and concrete, incorporating with project's requirements and specifications.

Sender	Mohamed Ahmed Abdelkader
Title	Senior Civil Engineer



# The Louis Berger Group in JV with Pan Arab Consulting Engineers

**Project:** Contract No. RA 167 – Construction, Completion and Maintenance of Roads, Overpasses, Storm Water Drainage, Sewer and Other Services for Jamal Abdul Nasser Street

Date: 15-Mar -2012

# <u>Subject: Comments on Submission for approval of INCO LABs Sonic Test for Piles Submittal no.167-NS-GN-GN-OT-182 REV 0</u>

- 1. We do not have any objection to use INCO LABs to carry out the Integrity Test for Piles using Sonic Logging Method.
- 2. Use of testing results submitted by this Laboratory shall be at your own risk and your supervision.
- 3. Approval Certificate from MPW shall be valid at time of Testing during the Project's Period.
- 4. All the instruments and equipment used to carry out the Test should be calibrated.

	Name	Position	Signature
Prepared:	Abdel Aziz Ahmed	Construction Specialist	4
A CONTRACTOR OF THE CONTRACTOR	Roy Mathew	Sec. Engineer (Mat/Geot.)	Han









هختبرات انکو INCO-LABS



# ROBERTSON GEOLOGGING LIMITED

## **Calibration Certificate of Conformity**

This is to certify that the following equipment conforms to the specification detailed below

Equipment type: Extra Long Arm Caliper Sonde

RG Internal Order No: ORD02468

Calibration Procedure(s):

Channel

CAL1

CAL2

CAL3

CAL4

CAL5

Serial No: XLCS 10807

Caliper

Calibration date: 16/11/16

Communications Type: Standard 4-Core

**Calibration Coefficients:** 

Coefficient

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Test & Inspection Procedures:

BS EN ISO 9001:2008

Tested by: T Hamflett

Date: 16/11/16

Approved by: T Hamflett

2 4

Date: 16/11/16

Robertson Geologging Ltd

Deganwy Conwy LL31 9PX United Kingdom

Office: +44 (0)1492 582 323 Website: www.geologging.com

QUALITY ASSURANCE





## **Borehole Test Log**

Borehole Logged: Robertson Geologging Test Borehole, Deganwy, UK

Main Pass: 70–25m

Repeat Pass: 70-55m

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**Robertson Geologging Ltd** 

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Office: +44 (0)1492 582 323 Website: www.geologging.com







# ROBERTSON GEOLOGGING LIMITED

## Calibration Certificate of Conformity

This is to certify that the following equipment conforms to the specification detailed below

Equipment type: Mini Winch

RG Internal Order No: ORD02468

Serial No: Mini 10886

Cable Length: 175m

Cable Type: Standard 4-Core

Test & Inspection Procedures:

BS EN ISO 9001:2008

Calibration Procedure(s):

Depth Wheel Circumference Verification

Calibration date:

> 16/11/2016

Depth Wheel Calibrated Size:

500.574 mm

'Mega' test result:

At 1000V, Resistance = ∞ Ω

Line Resistance Values:

Line No		Resistance (Ω)		
	1	13.6		
	2	13.8		
	3	14.8		
	4	13.7		

Tested by: T Hamflett

Date: 16/11/16

Approved by: T Hamflett

Date: 16/11/16

Robertson Geologging Ltd

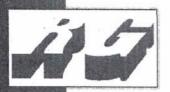
Deganwy Conwy LL31 9PX United Kingdom

Office: +44 (0)1492 582 323 Website: www.geologging.com



QUALITY ASSURANCE





# **Borehole Test Log**

Borehole Logged: Robertson Geologging Test Borehole, Deganwy, UK

Sonde Used: XLCS 10807 MicroLogger Used: ML 10863

Main Pass: 70-25m Repeat Pass: 70-55m

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Office: +44 (0)1492 582 323 Website: www.geologging.com







# ROBERTSON GEOLOGGING LIMITED

## **Certificate of Conformity**

This is to certify that the following equipment conforms to the specification detailed below

**Equipment type:** 

MicroLogger II

RG Internal Order No:

ORD02468

Serial No:

ML 10863

**Test & Inspection Procedures:** 

BS EN ISO 9001:2008

Tested by: T Hamflett

Date: 16/11/16

Approved by: T Hamflett

Date: 16/11/16

Robertson Geologging Ltd

Deganwy Conwy LL31 9PX United Kingdom

Office: +44 (0) 1492 582 323 Website: www.geologging.com







# **Borehole Test Log**

Borehole Logged: Robertson Geologging Test Borehole, Deganwy, UK

Sonde Used: XLCS 10807 Winch Used: Mini Winch 10886

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Deganwy Conwy LL31 9PX United Kingdom

Office: +44 (0)1492 582 323 Website: www.geologging.com



QUALITY ASSURANCE







مختبرات انکه INCO-LABS

## **PIT-W Professional**

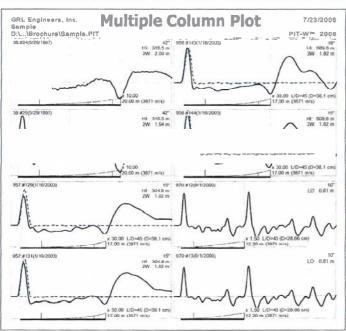
### Software for In-Depth Analysis of Data Collected with the Pile Integrity Tester

PIT-W Professional maximizes the information you can extract from data collected with the Pile Integrity Tester (PIT). PIT-W Pro is particularly useful for

- · Comparing records from several piles on the same site
- Analyzing data from foundations of existing structures
- Assessing unknown foundation length
- Evaluating the severity and location of anomalies along the shaft

PIT reveals information on the integrity of a shaft. All models are furnished with the Standard version of the PIT-W software, which permits data uploading and adjustment, analysis in the time domain, record organizing and report preparation.







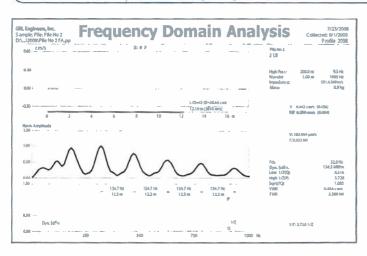
PIT-W Professional License is available with hardware or software key

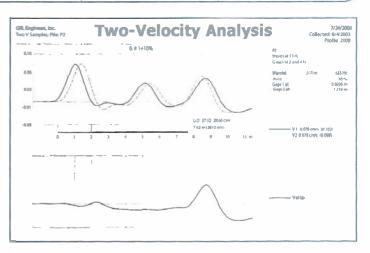
# PIT-W Pro enhances PIT-W Standard with Advanced Features:

- Profile Analysis generates a pile impedance versus depth plot to help estimate the shape of the foundation
- B-Analysis quantifies impedance changes to help assess the severity of defects
- Frequency Domain Analysis calculates and displays velocity spectra and peaks to assist in defect detection and location.
   If force data is available, also calculates Mobility and Dynamic Stiffness. Mobility may help the detection and location of defects in special situations where velocity spectra alone does not.
   Dynamic stiffness is useful to single out potentially weak piles (when several similar adjacent piles are tested).
- Two-Velocity Analysis calculates wave speed using two velocity measurements and separates upward from downward traveling velocities, aiding in the interpretation of data from foundations of existing structures and/or foundations of unknown length.
- Multiple Column Plot generates user customized summary sheets for easy record comparison.

**Quality Assurance for Deep Foundations** 

14 %	Features	PIT-W Standard	PIT-W Professional
Velocity	PIT data import	1	1
Data	Record filtering and averaging	1	1
Data	Exponential amplification	/	1
	Re-analysis of saved data files	/	1
	Customized tabular output	1	1
	Customized report	/	1
	Data transfer to other applications	/	1
	SI, Metric and English units	/	1
	On screen help	1	1
	Velocity plot display	/	1
	Time Domain Analysis	/	1
	Frequency Domain Analysis (velocity)		1
	Profile Analysis		1
	B-Analysis		1
	Multiple Column Plot		1
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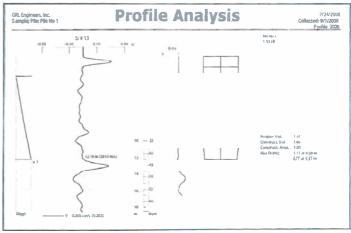




## **Minimum System Requirements**

- Windows XP or newer
- 16 MB RAM
- 10 MB of free hard disk space
- USB port if Hardware Key is selected for licensing
- Display device
- Mouse or compatible pointing device
- Data obtained with any PIT produced after 3-27-98









# CROSS HOLE ANALYZER Data Acquisition and Review May 2009

Pile Dynamics, Inc. 30725 Aurora Road Cleveland, Ohio 44139 USA phone: 216-831-6131 fax: 216-831-0916 e-mail: info@pile.com © 2001 Pile Dynamics, Inc. All rights reserved.

# **CROSS HOLE ANALYZER**

**Model: CHAMP** 

# **DATA ACQUISITION AND REVIEW**

May 2009



www.pile.com

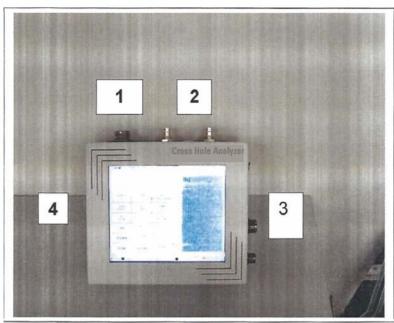
#### **Table of Contents**

	<u>Page</u>
Cross Hole Analyzer – CHAMP - Data Acquisition and Review	1
The CHAMP – Getting Started	
Main Menu	4
Probes Screen	5
Creating or Selecting a PROJECT	
To COLLECT New Data - Tube Wizard	
Tube Configuration	9
Tube Wizard-Edits	
Setup for Data Collection	13
Zeroing the Depth Encoders	13
Control Keys in Data Acquisition Window	14
Profile Monitor Window (Raw Data Window)	
Tracking Depth of TX and RX	
Keys in Data Acquisition	
Hardware Monitor Screen	18
Data Review – Data Selection	
Data Review – Data Screen	
Data Transfer and Final Report	23

Technical note: In this document, the word "pile" is used generically to cover any deep foundation or other structural element to be tested with CHAMP. This may include:

- "bored piles" (often called "drilled shafts" or "caissons" in the USA)
- "larger "augercast piles" (also called ACIP or CFA: FHWA GEC #8 suggests CSL testing for such piles with diameters greater than 30 inches)
- "barrettes"
- "slurry wall panels"

## **Cross Hole Analyzer – CHAMP - Data Acquisition and Review**



The Cross Hole Analyzer (CHA) is the term used by Pile Dynamics for its Crosshole Sonic Logging (CSL) equipment. The specific hardware described in this manual is the "CHAMP" which is a portable device that runs Windows CE for data acquisition. It has an internal rechargeable battery that will last between five and six hours of data acquisition. With Windows CE, CHAMP integrates the convenience of touch screen operation with traditional windows formatting. This unit has the following ports:

- 1. Main Cable Port: The encoder data cable (Twist-lock quarter turn) connects here. Note: The same main cable that is used for Pile Driving Analyzer® can be used with CHAMP if an extension is required, such as when encoders are placed in the access tubes on the pile a considerable distance from the CHAMP. In normal operation with encoders on a tripod, the data encoder cable plugs in directly here, and an extension cable is not needed.
- 2. TX and RX Sensor Ports: These two ports are used to connect the RED Receiver probe (RX) and Black Transmitter probe (TX). One port has three prongs that protrude for the BLACK Transmitter (TX) connection. While the other port has two prongs for the RED (RX) receiver probe.
- 3. <u>Two Power Ports:</u> 12V power port accepts office 110 or 220 V AC power brick, or 12 DC battery clamps to field car battery. To charge the internal batteries, attach the charger to the charger port **and** the AC power brick to the 12 V port.
- 4. PCMCIA Card Slot: houses the PCMCIA card usually 128-256 MB that comes with the system. This memory card can be transferred into the PCMCI slot of your laptop PC and further processing performed by the CHA-W software program for final analysis of the data and reporting.

### The CHAMP - Getting Started

The CHAMP has internal batteries which should allow a full day's normal operation if the batteries have been properly charged immediately prior to use. To charge the batteries before use, connect the external charger to the charger connector (middle of the right side). Connect also the 110/220 V AC external power supply to the CHAMP through the 12V input connector. This external supply can also be used in the office to power the CHAMP.

If the battery power is insufficient to last the day (perhaps because the unit was not charged the previous night), a 12V battery clamp cable is provided. Connect to the car battery, making sure that the red is connected to the positive battery terminal.

The probes should be deployed in the access tubes for the shaft to be tested. The nylon tube top inserts should be employed to protect the cables from wear on the edge of the access tubes. Then, to avoid twists in the cables, extra cable is played out <u>prior to connecting the cables to the CHAMP</u> unit (the TX and RX probes have different connectors so can only be connected to the proper input connectors). The Red or Golden topped probe is the Receiver. The Black topped probe is the Transmitter.

Connect the CHAMP to the encoders in one of two ways:

- 1. <u>Preferred:</u> The encoders on the encoder tripod assembly should be connected to the CHAMP with the 19 pin connector. Make sure the TX cable is connected to the encoder on the "black" side of the tripod, and the RX cable to the red side encoder (<u>Receiver</u> is <u>Red</u>). Thread the receiver (receiver cable is red) through the fingers on the red side of the tripod head assembly and over the encoder wheel. Thread the transmitter through the black fingers of the tripod head.
- 2. Optional: Separate encoder assemblies can be placed in the access tubes, and the encoder data cable attached (as in option 1). A long "main cable" extension may then be required if the CHAMP is a long distance from the shaft.

Turn on the CHAMP with the on/off switch on the right side of the CHAMP.

To access the program, double click MY COMPUTER, the STORAGE CARD, then CHAE.EXE, or

- click the START button (lower left of screen)
- click Programs
- click Windows Explorer
- click the STORAGE CARD to highlight it
- click FILE / OPEN
- click on CHAE.EXE to highlight it
- click FILE / OPEN

The "CHAMP Welcome Screen" is now in view (contains a large PDI logo). The software version and the FPGA version then displayed. If the battery power is low, the "LOW BATTERY" warning will be shown in the upper left corner of the screen.

To update your software, simply upload the new CHAE.EXE file to the storage card prior to running the software.

Click START to enter the program and begin operation.

#### Main Menu

After pressing START, the user will be in the Main Menu screen below.

DATE/TIME 3/28/2006 9:24:49 AN	1	PROJECT PIER #1	
UNITS	MODE 1	PROBES	
REVIEW		COLLECT	
HARDWARE MONITOR		EXIT	

Figure 1

The DATE/TIME BUTTON displays the main clock which is important because all data is stamped with the time and day at which the data was taken. Press this key if a change is needed. Any field (YEAR, MONTH, DAY, HOUR or MINUTE) can be changed by pressing the left half of that key to decrease, or the right half to increase the current value. Press "OK" to save changes, or "CANCEL" to retain the current value.

The **UNITS** Button allows the users to toggle between **SI** and **English** units. The **EXIT** button terminates the program. To turn off the CHAMP, follow normal Windows shut-down procedures. The **Mode 1** button is currently inactive.

If the battery power is low, a "LOW BATTERY" warning will be shown in the upper left corner of the screen.

The other functions (PROBES, REVIEW, COLLECT, and HARDWARE\_MONITOR) are discussed in upcoming sections. In some cases it will be necessary to type data like the names of a New Project (see page 5) or New Pile (see page 6). In those cases a data input screen resembling a keyboard will be shown. Most buttons are self explanatory. The "Key" button on the lower left of those screens toggles the key arrangement between a normal "QWERTY" keyboard and "ABCD" which is a sequential presentation of the alphabet.

#### **Probes Screen**

Before starting a test, it is important to make sure that the correct probes information has been entered. From the **MAIN MENU** (Figure 1), pressing **PROBES** brings up the window menu of Figure 2.

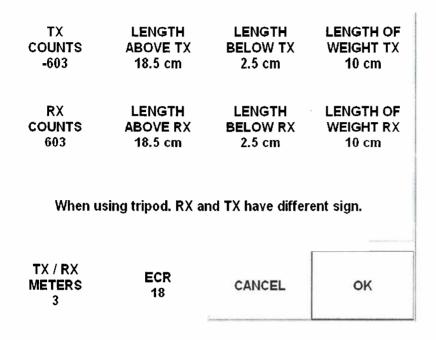


Figure 2

TX Counts and RX Counts are the encoder calibration for the specific encoder pulleys and cable diameter to cause the TX/RX METERS distance. Typical current values are around -603 for the currently used encoders and a METERS of 3 (meaning 3 meters equals 603 Counts). User can contact Pile Dynamics for recommended calibrations, or experiment himself to find the proper COUNTS.

Note: In the CHA-W software for reporting final results, the REPORT feature allows direct determination of the calibration if and only if the probes are pulled the entire distance of the tubes and the dimensions are properly entered.

When using encoders on the PDI tripod, TX and RX will have opposite sign values (one positive and one negative). If the encoders are directly on the shaft tubes, both TX and RX will be negative (e.g. -603).

The total length of the probe should be measured and the sensor location considered and both **LENGTH ABOVE** and **LENGTH BELOW** the sensing element (TX or RX) should be entered. The actual transmitting and sensing elements are about 25 mm above the bottom of the main probe (e.g. "LENGTH BELOW"). The currently offered entire probe length is about 210 mm, leaving 185 mm for the LENGTH ABOVE the

sensing element. However, if the nylon tube top inserts are employed, then this length should also be included in the LENGTH ABOVE distance for the "calibration" described in the above "Note" to be accurate.

The length of any optional add-on weight BELOW the probe (if any) must be entered for the appropriate probe as the **LENGTH OF WEIGHT**. These weights are useful to help allow the probes to descend in the water and overcome friction effects. Larger or longer weights are generally helpful for longer tube lengths. Enter a value zero if no weight is used.

The ECR (energy calculation range) can be specified here. For typical concrete cover dimensions, values of 18 allow the first arrivals only, and may be the most appropriate, while larger values (e.g. 50) also capture reflection signals. To capture only the first cycle (Chinese code), values as low as 6 may be used.

### Creating or Selecting a PROJECT

Before any work on Cross-Hole Analyzer begins (collecting new data or reviewing existing data), a "PROJECT" should be created or selected. To create a new project or select an existing project, click "PROJECT" from the main menu (Figure 1). The PROJECT button will open a window where the user can add a NEW PROJECT or select an existing project (Figure 3).

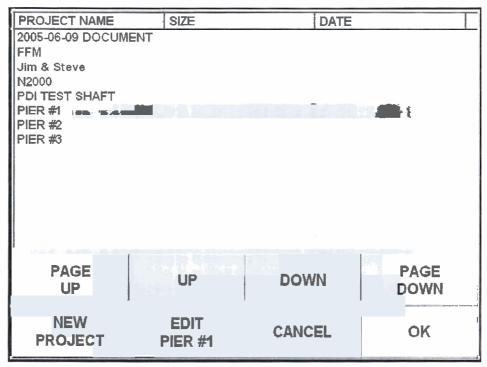


Figure 3

While in this Project window, the user has the following options

- a.) With the 'NEW PROJECT' button the user can define a "new project" (which will become the name for a folder in the memory card).
- b.) With UP and DOWN buttons (or simply click on desired project name) a user can move the highlight to select an existing project if data is to be added into or reviewed from an existing project. (Page up and Page down perform similar functions to UP and DOWN.)
- c.) The EDIT button allows the user to edit the specific chosen project name.

NOTE: Once a project is selected or created, all new data files (.chx files) will be placed into that project folder. All projects and (.chx files) will be saved automatically on the PCMCIA card; no data is unintentionally erased or lost. It should be mentioned that eventually, this project folder and the files it contains should be downloaded to the office computer (or network server) for permanent storage and this temporary CHAMP folder then deleted to provide room for new data to be acquired.

#### To COLLECT New Data - Tube Wizard

After selecting the PROJECT from the 'Main Menu' (Figure 1), click the "COLLECT" button (Fig 1) to go to the 'Tube Wizard' screen (Figure 4). User can either:

- Click NEW to create a NEW pile, directing the user to the Tube Configuration dialog box (described in next section, Figure 5).
- Select an existing PILE (using the UP and DOWN buttons, or just click on the desired pile in the list. EDIT allows the user to change the parameters of the selected PILE. DELETE removes the selected PILE from the project (active only if more than one pile exists).

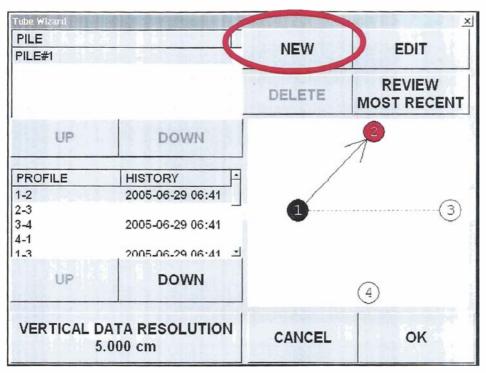


Figure 4

Using UP or DOWN keys (or scroll-click desired PROFILE), User selects the **PROFILE** for tube pair of the next data collection (HISTORY shows data already collected, if any). **REVIEW MOST RECENT** opens the latest data (quick way to inspect the last data).

**RESOLUTION** is the incremental depth for data collection. A data sample will be collected along the pile every time the probes move this incremental length spacing. Generally, many specifications require inspection at 1 or 2 inch depth intervals (25 to 50 mm). The recommended range of values is 0.5 in to 2 inches (12 to 50 mm). **NOTE:** This value affects the maximum pull rate of the user. At high values, user can pull faster. At low values, user must pull slower.

Click **OK** to continue in data collection, or **CANCEL** to return to the Main Menu.

### **Tube Configuration**

After clicking the 'NEW' Button in the Tube Wizard screen (Figure 4 above) the User is instructed to enter a 'Pile Name'. Do so, and press the 'OK' button. The next window is the 'Tube Configuration' window (Fig. 5) where User enters all approximate values.

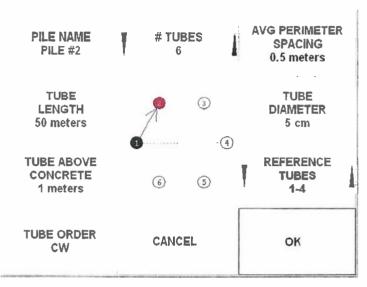


Figure 5

Enter number (#) of access "TUBES" for the shaft. The user should arrow up or down (press on left or right of this button) to add or delete tubes. It is absolutely critical to measure and enter the tube lengths and spacings between tubes to obtain the most reasonable results. (PILE NAME can be edited.) The following entries are the "nominal" values:

# TUBES

TUBE LENGTH is the nominal Total Length (total inner length of the access tube). (Can/must change individual tube lengths later if different. Fig. 6) 'TUBE ABOVE CONCRETE' is the nominal tube length protruding above the top of concrete surface. (Can/must change individually later if needed. Fig. 6)

**NOTE:** Difference between **TUBE LENGTH** and **TUBE ABOVE CONCRETE**' is the tube length embedded in concrete (top of concrete will be at zero depth).

The Average Perimeter Spacing should be entered (spacing center-to-center; the program will then calculate all tube spacings assuming the tubes are spaced uniformly around the perimeter. This **Spacing** is the average distance between adjacent pairs of perimeter tube centers (affects calculated wavespeed). Usually the spacings are not uniform, and the correct individual spacings should be adjusted later in the "Tube Wizard Edit" screen (**Fig. 7**).

• Tube Diameter is the diameter of each access tubes.

- Reference Tubes is the major diagonal indicating two particular tubes (user selected) from which all other measurements are referenced to minimize the measurements required to define the tube geometry. One of the longest spacings (typically a major diagonal as shown) is used as reference (and likely produces the most precision in defining the pile geometry).
- TUBE ORDER defines the labels as clockwise (CW) or counter-clockwise (CCW).

Click **OK** to continue.

#### **Tube Wizard-Edits**

For most shafts tubes lengths and tube pair spacings are all non-uniform, so the user must edit the parameters for each individual tube length and tube spacings.

The next request contains a listing for editing of the individual tubes (Fig.6). Generally the tubes are not identical, so User selects a tube (by click, or by UP or DOWN buttons) and then enter the correct value for each tube of the **TOTAL LENGTH**. In the Fig 6example, both tubes 2 and 5 are now altered.

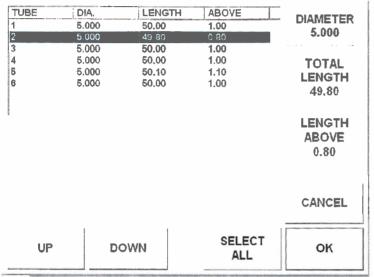


Figure 6

When all changes have been entered, click OK to continue.

Since the spacings are almost always different than the "average", enter each new measured spacing by clicking the **SPACING** button for the selected tube pair.

The next request allows changes to the spacings between tubes. Only combinations of tubes that have one or the other reference tube included are contained in this list. For example, with the reference being 1-4, only spacings containing either tubes 1 or 4 will be required, as shown in Fig 7. Click to select the tube pair, or use UP or DOWN, and then click **SPACING** to access entry of a new value. The geometry will be redrawn to reflect the data entry. Only these measurements need be made and entered, and all other tube spacings will be computed.

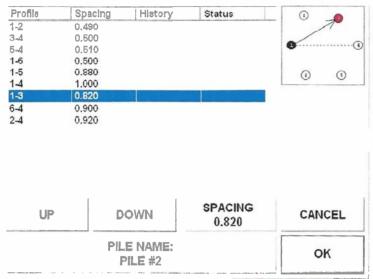


Figure 7

When all changes have been entered, click **OK** to continue.

Once the user completes inputting all the pile information (Total Tube Length, Stick-up, Tube Diameter, spacings, etc... click the **OK** button, and return to the **Tube Wizard** (Fig 4) where the profile to be tested is selected.

Note: In Figure 4 the 'Profile' selected displays the tube configuration at the right. Clicking on a Profile combination in the Table (or using the UP and DOWN buttons) will highlight the selection in the graphical diagram. Note this defines the next test configuration (which in this example shows the black transmitter in tube 1 and the red receiver in tube 2; it is critically important to place the designated probes in the proper tubes, as indicated. Failure to follow these assigned tubes may result in strange results, particularly when the tube lengths differ).

### Setup for Data Collection

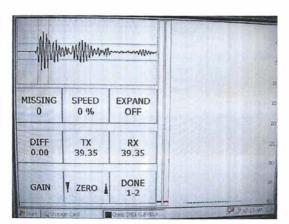
Once a profile and resolution are selected (Figure 4) the user will click 'OK' the CHA will go to the Data Acquisition screen.

### Zeroing the Depth Encoders

Initially, the right half of the Data acquisition screen is blank, because no data has yet been collected. For each profile the user must first define the current probe location to set the depth reference (or "ZERO"). There are basically two methods of referencing the probe depths: either to the top of the tubes, or to the bottom of the tubes.

The first (preferred) method of referencing is when both probes are physically located at the BOTTOM of their respective tubes. Pressing the DOWN arrow side of the **ZERO** 

button sets the current probe depth to the total tube length minus length above concrete (with probe correction as described below). You should see one line of "waterfall" data (right half of screen) at the pile bottom (Fig 8). If MISSING shows anything but zero (as in Fig 8b), press the ZERO button a second time.



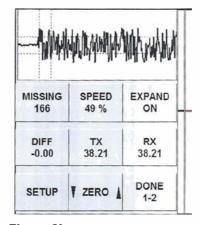


Figure 8

Figure 8b

An additional minor adjustment for the probe depths occurs because the active transmitter and receiver probe elements are located near the bottom of the main probes. Note: these values are set in the PROBE button of the MAIN MENU (Figure 1), and remain unchanged unless new different probes are used, or if the length of bottom weights are changed.

The other optional method (but only infrequently used method) is when both TX (transmitter) and RX (receiver) are physically located at the TOP of their respective

tubes. Pressing the UP arrow side of the ZERO button sets the current reference depths to zero minus the length above concrete of the tubes (if tubes protrude

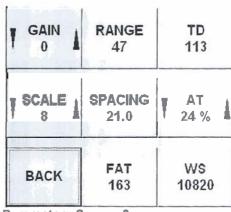
sufficiently above the concrete, the reference or current locations will be a negative number indicating the probes are above the concrete surface), and one line of data is shown near top of the tubes. Again a small adjustment is made for probe length above the sensing element, which should also include the length of the nylon tube top inserts, if used.

Both of these methods effectively reference "zero" depth to nominally the top of the concrete, and show the current probe location referenced to the top of concrete (defined as ZERO depth). Accurate measurement of depths requires that carefully measured dimensions of each tube (such as: total tube length and length of tube above concrete) have been entered properly in the tube wizard, and that the probes are in the correct tubes indicated by the Tube Wizard.

### Control Keys in Data Acquisition Window

MISSING	SPEED	EXPAND	
166	49 %	ON	
DIFF	TX	RX	
-0.00	38.21	38.21	
SETUP	ZERO 1	DONE	

Figure 9: Parameters Screen 1



Parameters Screen 2

The Parameters Screen 1 contains nine function keys. A second set of nine control keys are the Parameters Screen 2. Both sets of parameters are utilized during data acquisition and the User must toggle between these screens to access these functions using the setup and buttons.

Using the **TD- trigger delay**button, immediately after zeroing the TX and RX probes at the bottom of the screen the user must check and, if necessary, adjust TD. TD is the wait time between generating a sonic pulse and the start of data acquisition for detecting and capturing the received signal (needed because of the finite time window of data collection and variable distances between tubes). Ideally, trigger delay TD should be set so that the leading edge of the sonic pulse is about 20-30 percent from the left edge of the graph. This allows for variation of "First Arrival Time" ("FAT" – left edge of the waterfall diagram) when tubes are not parallel (adequate margin to the left of, or prior to, the real first arrival), or allows for slower wavespeeds due to a defect.

The CHA automatically calculates a suggested value for TD (based on tube spacing and wave speed).

#### (TD [in "microseconds"] = 10<sup>6</sup> \* (tube spacing / wave speed) – 100)

Tube spacing divided by wave speed is the theoretical travel time for a pulse between tubes. Subtracting 100 (micro-seconds) offsets the arrival time by 40% (of 250 points which is 0.5 milliseconds at a sampling frequency of 500,000 Hz), or 20% (of 500 data points which is 1 millisecond). Note that the TD value can not be re-adjusted in post-processing so it is crucial that TD be set properly during data acquisition to display the left edge of the waterfall. The signals must contain the desired ("left edge" of waterfall) First Arrival Time data during data collection. Adjust TD until FAT or true left edge of the waterfall is observed (the suggested value is based on an assumed wavespeed; if you do not see data, the assumed wavespeed or tube spacing at deeper depth is different).

The GAIN of the signal processing circuitry can be adjusted up or down using the GAIN button in the Parameters Screen 2 (Figure 9b). This adjusts the strength of the signal data display graph (Upper left of the data acquisition screen). Ideally, the gain should be set high enough so that the signal is nominally at least 60% of full scale, yet low enough so that (most) larger peaks are less than full scale. Usually the same GAIN is used for all perimeter profiles. Larger tube spacings (such as the main diagonals) require higher gain.

The entire profile (for one tube pair) MUST use the SAME GAIN. If the GAIN needs adjusted, the entire profile must be repeated (probes returned to tube bottoms, the "zero" reset, and probes re-pulled). It is often best to make all adjustments for TD and GAIN when the probes are raised about one or two meters (3 or 6 ft) above the shaft toe where the shaft is likely to be more uniform, so that a potential "soft bottom" does not influence the input selection.

NOTE: use the 'RANGE' display to determine the proper GAIN. The Range should ideally be between 70 to 95%. Since concrete is not homogeneous, the signal strength, and hence Range, will vary with depth. It may also be helpful to capture an additional profile with significantly higher gain for the same tube pair if an anomaly is detected; for this higher gain scan, then peaks for normal concrete will be clipped, but the first arrival time (FAT) of any weak signal can be then determined with better confidence (e.g. an early FAT but still weak signal strength might be caused by small pinholes caused by bleeding of the concrete, such that the basic concrete strength might still be sufficient).

#### Profile Monitor Window (Raw Data Window)

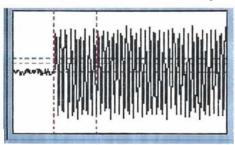


Figure 10: The Data Acquisition Signal

This upper left corner graph is **actual data acquisition signal** graph (250 data points, or 500 data points, or 1000 data points, either sampled at 500 kHz or 1 MHz or 2 MHz) at the current probe depths, and is offset by the trigger delay (TD). The graph represents a range of –10 to +10 volts (center is zero). This trace is nested with others versus depth to comprise the "waterfall diagram" shown on the right half of the screen. The signal strength and user selected **SCALE** factor (Parameters Screen2) define the color intensity in the "Waterfall Diagram". Increase the color intensity by pressing the right half of the **SCALE** button, or decrease color intensity by pressing the left half. Lower scale factors will more clearly show anomaly, if there is any doubt what **SCALE** to use.

### Tracking Depth of TX and RX

Parameter Screen 1 has \_\_\_\_\_\_ buttons that display the transmitter TX and receiver RX depth locations (in large font), and a Depth Difference ("DIFF"), which is the difference between the TX and RX locations (useful if the probes are to be kept at a certain vertical offset, either positive or negative, as when a defect is found and extra angled, or "offset", ray paths are desired).

TX

39.92

RX

39.92

DIFF

0.00

### Keys in Data Acquisition

EXPAND

The "Expand" button is permanently set to ON during data acquisition to increase the vertical resolution of the waterfall display. This is useful for very long piles where the entire depth cannot be displayed with sufficient resolution. For example a 50 meter pile with data resolution of 5 cm, or a 25 m pile with 2.5 cm vertical resolution, would require at least 1000 pixels in the vertical direction to display every data set - this would not be possible on a 640x480 screen. With the expand button ON, CHAMP allocates 4 screen pixels for every data set in the vertical direction and then automatically scrolls to the proper current location.

In Parameters Screen 1, Missing Data Sets reports the number of missed scans (occurs if the cable is pulled too fast for the scan/second rate and the signal is therefore skipped). Obviously, if a data set is missing, stop pulling, and lower the probes until the data set is recovered ("Missing" value returns to zero), and then resume pulling the probes. The "SPEED" button in Parameters Screen 1 displays the rate at which TX/RX probes are being pulled or lowered (relative to the max allowed rate determined from the resolution and the scan/sec inputs). Generally SPEED should be less than 50% (if hand pulling the cables) to prevent frequent missed data sets.

The Arrival Time Thresholds as described in the data acquisition section of this manual) can be adjusted for the current profile by toggling the up or down arrows associated with each quantity. The AT adjustment threshold is immediately displayed in the raw data window AT affects the FAT and WS (wavespeed) values shown in Parameters Screen 2.

FAT WS 163 10820

DONE

Increasing or decreasing the SCALE adjusts the intensity of the waterfall diagram. You can further specify your own color scheme for the waterfall sonic map by clicking on COLORS in the DATA REVIEW SCREEN (see Figure 13B).

"SPACING"

shows the spacing of the current tube pair being tested (and cannot be changed here – it is for information purposes only).

Press "DONE" to finish the data collection (the active tube pair is shown on this button). CHAMP then shows the full length data for the just collected tube pair. Press "DONE" again to exit to the MAIN MENU (Fig 1).

#### Hardware Monitor Screen

The HARDWARE MONITOR (Figure 11) is accessed through the main Menu (Figure 1), and allows the user to test the CHAMP Components such as the: TX and RX probes and Depth encoders (e.g. view signals even with probes held in air some distance apart), and set certain system parameters (e.g. sample frequency, sample length).

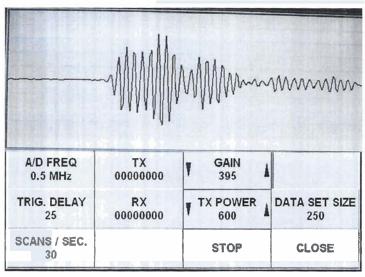


Figure 11

**TX POWER:** This key adjusts the TX transmitter power. Normal setting is 600 volts. Use higher values for longer spacings, or smaller values for very short spacings.

The TX and RX boxes display the hex number proportional to the rotation of the encoders (useful to check that they change when the encoder wheels spin – the actual values are not important).

**GAIN** can be selected based on good signal strength in the data window. This could be set here, with the probes at location of known good concrete (typically a couple meters above the pile bottom), or could be set during data collection in the **SETUP** menu.

SCANS/SEC: This button allows the User to input the number of scans ("pings" of the TX probe) per second that the CHAMP produces. A high scans/second rate allows the probes to be pulled at a faster rate (maximum pull rate is the product of scans/second times the "Resolution" see Tube Wizard in Figure 4). The maximum allowed scan rate is 30 scans/sec. For a typical resolution of 2 inch (5 cm), and fast sampling at 30 scans/sec, the maximum pull rate becomes 60 inches (1.5 m) per second. The maximum scan rate, as defined by the A/D FREQ and DATA SET SIZE, cannot be exceeded (those adjustments may result in a lower SCANS/SEC.

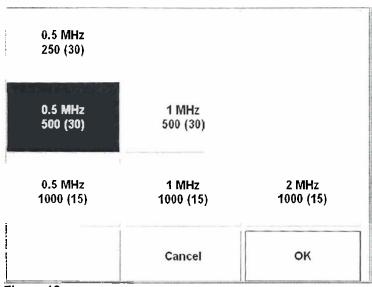


Figure 12

A/D Freq and DATA SET SIZE: These buttons display the same (Fig 12) selection menu which shows the User the current A/D sampling frequency and sample length, and the current selection among the various choices is highlighted. The A/D sampling frequency is defined as the rate at which the acquired data is processed and convert to digital format. The sampling frequency can be either 0.5 MHz, 1.0 MHz, or 2 MHz. DATA SET SIZE can be toggled between 250, 500 or 1000 samples per record. The maximum sample rate is shown in ( ). Higher sampling rates require a larger data sample size to retain the same real time sample. After selection, press OK to continue.

Note: Larger sample time are often helpful for larger shafts. (e.g. using 0.5 MHz sampling with 250, 500, or 1000 data points would give 0.5, 1, or 2 msec total sample time, respectively. By comparison, a 2 m "spacing" for normal concrete wavespeed of 4000 m/sec would create a travel time of 0.5 msec, while a defect with wavespeed of 2000 m/sec would require a 1.0 msec travel time).

#### Data Review - Data Selection

The **REVIEW** button (activated in the Main Menu) opens the window below (Figure 13) to initiate selection in the PROJECT data folder of the specific data file to review. Find the desired file (with UP or DOWN function buttons, or use Page Up and Page Down if there are many files in the PROJECT folder) and click OK.

NAME	DATE	SIZE	
PILE#1 1-2-1.chx	6/29/2005 6:4	1:00 AM 146738	3
PILE#1 1-2.chx	6/29/2005 6:4	11:00 AM 162030	)
PILE#1 1-3.chx	6/29/2005 6:4		
PILE#1 3-4.chx	6/29/2005 6:4		3
PILE#2 1-2-1.chx	3/28/2006 9:5		
PILE#2 1-2.chx	3/28/2006 9:4	12:46 AM 434530	)
C:\Storage Card\PIER #2\PILE#1 1-2-1.chx			
PAGE UP	UP	DOWN	PG. DOWN
PROJECT	DELETE	CANCEL	ок

Figure 13

The NAME shows the Pile/Shaft name followed by the tube pair tested (e.g.1-2 indicates tubes 1 and 2). If the tube pair has more than one test, then the name is appended with additional characters (e.g. 1-2-1 indicates the second test of the tube pair 1-2, while 1-2-3 would indicate the fourth test of tube pair 1-2). The DATE includes also the time of the file creation. SIZE shows the file size (which reflects the pile length and resolution of the data).

NOTE: The **DELETE** function is disabled; the files can be deleted by using Windows Explorer.

Select the PROJECT by pressing the **PROJECT** button and select the desired project (you can add a **NEW PROJECT** in the **PROJECT** screen).

User should transfer data eventually to his office computer. After this transfer, the original data on the storage card can be deleted (e.g. delete the entire folder and its contents for a project). Eventually, if this deletion is not made, the storage card becomes "full" and the CHAMP will no longer acquire new data.

#### Data Review - Data Screen

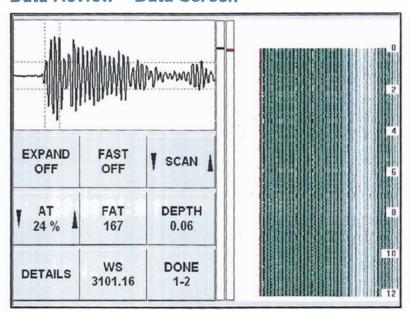


Figure 14A

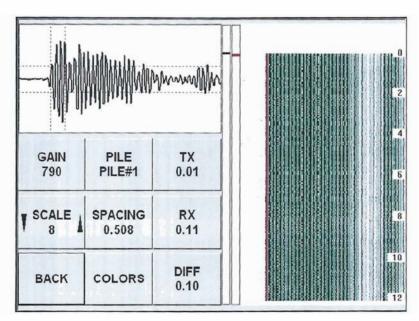
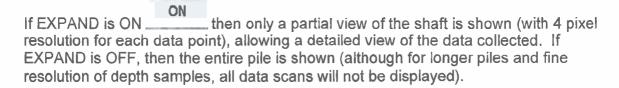


Figure 14B

Two review screens are possible (Figures 14A and 14B) and user can choose between them using the **DETAILS** and **BACK** buttons. **DEPTH** is the average of **TX** and **RX** probe locations. **COLORS** and **SCALE** adjust the waterfall color pallet and intensity.



**EXPAND** 

The button is either ON or OFF and designates the speed of the which scrolls the depth cursors up and down (while in the EXPAND ON mode only). Continuously pressing the UP or DOWN arrow on the SCAN button (e.g. right or left half of the button) will cause continued movement until the desired shaft detail is in view.

allows the FAT to be estimated. Of course, final data processing will be done with the CHA-W program on User's PC, and the EDGE FINDER is then the highly recommended best way to assess the FAT.

Many other keys show "information only", and are described in the data collection area.

#### Data Transfer and Final Report

When data collection is complete, return to the MAIN MENU and press EXIT. Turn off the CHAMP, and remove the memory storage card.

The memory storage card is of the PCMCIA type and can be inserted into any PCMCIA slot in the User's laptop computer (or using an external PCMCIA card reader connected to the USB port of your computer). The data on the storage card can then be accessed by the User, either to transfer it to his computer or to a CD, DVD, some memory device (e.g. SD card, memory stick, flash drive), or Network Server for more permanent storage.

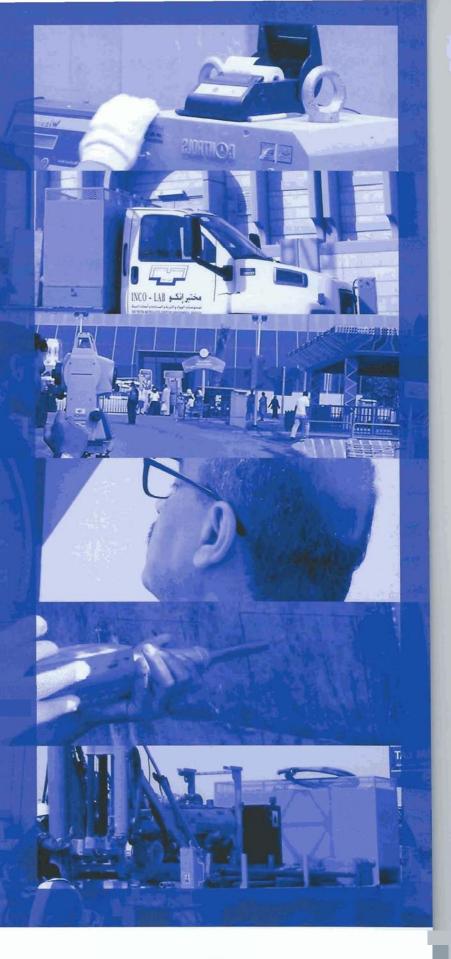
The data is then accessible by the CHA-W software program for final data processing. That would include final selection of FAT by the EDGE FINDER, analysis for defects by the DEFECT ANALYSIS feature, and final report preparation. A separate Manual for the software program CHA-W describes that program's operation (or use the F1 function key to bring up the HELP manual).

COMPANY BROCHURE



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Materials Testing Soil Investigation Surveying Calibration Structural Evaluation **Environmental Testing** Piles Testing



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TESTING CERT # 2487.01 & 2487.02











#### **OUR COMPANY**

INCO-LABS is a leading Kuwaiti firm specialized in the field of laboratory and in-situ testing of materials, soil investigation, surveying, calibration, environmental testing, piles testing and structural evaluation. The company is serving the contractors, engineering and design firms, government and private sectors.

INCO-LABS has establishing a modern calibration laboratory in 2011 to cover a wide range of calibration activities such as thermometry, humidity, force, pressure, electricity, dimension, mass, volume, flow and time. All of our calibration services are internationally accredited according to ISO/IEC 17025:2005.

Our company is located in North Subhan Industrial Area, and equipped with the latest advanced equipment to perform all of the company activities in accordance to the international standards to offer a wide range of integrated services for its clients.

#### **OUR TECHNICAL STAFF**

INCO-LABS has a professional engineering staff with experience ranging between 10 to 30 years in different engineering specialties such as geotechnical, materials, geology, survey, metrology and environmental. Our technical staff is committed to carry out the services according to the international standards and offer engineering consultancy in the field of geotechnical investigation, construction materials, topographic survey, bathymetric survey, volumetric survey, engineering survey, structural evaluation, environmental monitoring programs and quality programs.

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The higher management of INCO-LABS is committed to reach three major goals to satisfy its clients:

- Offer Quality work.
- Provide results in a timely manner.
- Offering good fees to clients at reasonable levels by carrying out work using cost-effective methods.

To ensure the satisfaction of the above goals, INCO-LABS management has established systematic procedures for office, laboratory, and site activities.







#### INTERNATIONAL ACCREDITATION

INCO-LABS is accredited by The American Association for Laboratory Accreditation (A2LA) for technical competence in the field of Geotechnical and Construction Materials Testing since 2007 (Certificates No. 2487.01 & 2487.02) and in the field of Calibration since 2012 (Certificate No. 2487.03) in accordance with recognized International Standard ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories.

Accredited Tests: ASTM C29, C39, C40, C117, C127, C128, C136, C142, C289, D422, D511, D698, D854, D1126, D1452, D1556, D1557, D1586, D1883, D2216, D2419, D2487, D3080, D3875, D4318, D4719, D5778, D5907, D6928, D7428, D7928, AASHTO T164, T166 & T230-68(93), BS 1377:Part3:1990, Section 3, 4, 5, 6, 7, 8.1 & 9, BS 1377:Part7:1990, BS 1377:Part9:1990, Section 3.3, BS 1881:Part 102(83), 107(83), 108(83), 114(83), 116(83), 120(83), 122(11) &124(15), BS 812 Part 111(90), 106(90), 110(90), 112(90), 117(88) & 118(88), BS 6068, Standard Methods 317, 320 & 422.

Accredited Calibration: Calipers/Height Gauges (up to 600mm), Micrometers (up to 100mm), Dial Indicators (up to 100mm), LVDT (up to 50mm), Feeler Gauges (0.05~5mm), Test Sieves (0.06~125mm), Profile Projector (up to 200mm), Dial Calibrator (up to 50mm), Coating Thickness Gauges (up to 1000μm), Steel Rule (up to 1000mm), Linear Measurements (up to 600mm), DC/AC Voltage-Generate (up to 1000kV), DC/AC Current-Generate (up to 20.5A), DC Power-Generate (up to 20.91kW), AC Power-Generate (up to 20.5kW), Resistance-Generate (50μ $\Omega$ ~110M $\Omega$ ),

Capacitance-Generate (0.19nF~1.1mF), Phase-Generate (0°~180°), DC/AC Voltage-Measure (up to 1000V), DC High Voltage-Measure (up to 40kV), AC High Voltage-Measure (up to 25kV), AC/DC High Current-Measure (20~200A), DC Current-Measure (up to 10A), Resistance-Measure (up to 200M $\Omega$ ), DC/AC Clamp-Generate

(10~1025A), Frequency (0.01Hz~120kHz), Thermocouples (-250 ~ 1820 °C), Thermometers, Ovens, Incubators, Furnaces & Chambers (-60 ~ 1100 °C), Hygrometers & Humidity Chambers (10~90 % RH), Laboratory Volumetric Apparatus (0.1 ~ 2000 ml), Piston Operated Volumetric Apparatus (50 ~ 5000  $\mu$ l), Liquid Flow (Rate: 0.5~3 m3/h,



Velocity: 0.1~25 m/s), Compression Load Cells (200~3000 kN), Proving Rings (200~1000 kN), Tension (200~1000 kN), Hydraulic Jacks (200~3000 kN), Balances (1mg ~ 2000kg), Standard Weights (2g, 5g, 10g, 20g, 50g, 100g, 200g, 500g, 1kg, 2kg, 5kg, 10kg, 20kg), Pressure/Vacuum Gauges, Transducers & Calibrators (Pneumatic: -1 ~ 140 bar, Hydraulic: 0 ~ 2000 bar), Time (60~86400 sec) and Rotational Speed Optical (10~99000 rpm).

The calibration equipments of INCO-LABS are periodically calibrated by National Institutes approved by National Institute of Standards and Technology (NIST) based in U.S.A., and by high quality metrology laboratories accredited to ISO/IEC 17025:2005.

INCO-LABS is participating in Proficiency Testing programs provided by AASHTO Materials Reference Laboratory (AMRL) for soil and aggregates testing, Cement & Concrete Reference Laboratory (CCRL) for concrete testing, both based in U.S.A., and Canadian Association for Laboratory Accreditation (CALA) based in Canada for chemical testing. In addition, the company is participating in Proficiency Testing programs with accredited centers for all calibration activities. INCO-LABS participation in Proficiency Testing programs is essential to maintain the quality of testing and calibration by comparing the tests result among laboratories from all around the world.





#### **GEOTECHNICAL DEPARTMENT**

INCO-LABS with its experienced staff in the field of geotechnical engineering provides geotechnical services such as bearing capacity analysis, foundation analysis, settlement analysis, slope stability analysis and other related engineering analysis. Our Geotechnical staff consists of engineers with higher education degrees of Master and PhD from well recognized universities around the world with minimum of 10 years experience.

INCO-LABS is capable to carry out soil investigation (on-shore and off-shore), rock core drilling, shallow water well drilling, monitoring well drilling and installation with monitoring, groundwater survey drilling, environmental drilling, and geotechnical engineering & consultancy.

Our drilling fleet consists of modern truck mounted drilling rigs with drilling capabilities up to 120 meters depth. INCO-LABS has the latest technology for accessing mud and sea watery areas for soil and rock drilling by using Marsh Buggy specially made from light weight aluminum in order to minimize the surface contact pressure against mud and watery areas. The marsh buggy has the ability of maneuvering in water, with D-50 drilling rig mounted on the deck. The marsh buggy is capable to perform drilling in shallow sea water at the coasts up to 1.5 meters from the sea bed level. INCO-LABS owns two 20-Tons capacity Electrical Cone Penetration Testing (CPT) units both are mounted on light-weight crawler with testing capabilities up to 40 meters depth or refusal of 20-tons load capacity. A small CPT testing unit with augers used for reaction load is used for small access or muddy area job sites, where the Gouda CPT testing units with self loaded weights of 20-tons are used for massive testing production in large scale projects.

Our geotechnical department is equipped with various

instrumentation for obtaining precise soil properties data such as Crosshole Seismic Test device to measure the shear wave survey for determination of soil mechanical parameters at field up to 70 meters depth, and Pressuremeter Test instrument to determine the soil properties up to 70 meters depth including settlement and strength parameters of soil (stress -strain), bearing capacity of shallow or deep foundations, and at rest pressure (Ko).

#### MATERIALS DEPARTMENT .

INCO-LABS offers a wide range of laboratory and in-situ testing of materials to determine the physical and chemical properties of materials according to International Standards. Our Materials Department is handling the testing of soil, soil-cement, concrete, cement, aggregates, asphalt, natural building stones, bricks, steel, concrete additives and other construction materials. Our laboratories are equipped with machines for measuring the compressive and flexural strength of concrete, core sampling and testing tools, Proctor and California Bearing Ratio testing apparatus, direct shear and one dimensional consolidation testing device, triaxial and sand equivalent apparatus, lab falling head permeability testing unit, aggregate impact value and Los Angeles testing device, concrete permeability testing unit, and chemical testing facility for testing materials such as aggregates, concrete, cement, water and soil, and other various equipment for determination of soil classification. strength and deformation characteristics.

Our Materials Department is equipped with field testing devices to perform tests such as field density cone-method, plate load test, field CBR, electrical resistivity testing, ultrasonic / Schmidt hammer / digicover tools for concrete testing, Impact-Echo system for measuring concrete thickness / cracks and voids within concrete, Half cell digital meter to perform steel corrosion test for measuring the actual thickness/diameter of steel within the reinforced concrete.









#### SURVEY DEPARTMENT

INCO-LABS Survey Division is fully equipped, both to assist in the work carried out by the geotechnical crews, and to work independently for Clients to carry out various range of survey services such as topographic survey, engineering survey, measured building survey, volumetric survey, utilities survey, bathymetric survey, survey project management and provide survey training.

Our survey crews are equipped with survey instruments such as total stations, Global Positioning System (GPS), automatic level units, radio detection underground services locators, ground penetrating radar (GPR) and Echo sounder. The survey works are planned and supervised by experienced survey engineers, and supported with AutoCad stations for survey drawings generation.

Our Survey Division has a long experience in survey works within oil fields and refineries, and especially for precise survey for locating oil wells, and well experience in above and underground pipelines survey. INCO-LABS has a long term commitment with outstanding companies in Kuwait for periodical volumetric survey of stocks of aggregates or raw materials due to the quality work offered by our Survey Department.

#### **ENVIRONMENTAL TESTING**

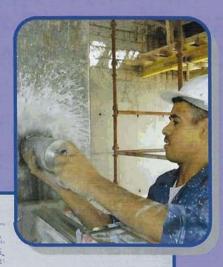
INCO-LABS is capable to undertake projects involved in environmental monitoring programs, environmental studies, and consultancy. Our chemical laboratories are fully equipped to serve the environmental monitoring of soil, sludge, groundwater, industrial waste and waste water. INCO-LABS is working in association with local environmental consultants to provide the necessary environmental consultancy to its clients.

Our Environmental Department offers services for ground water level & quality monitoring, H2S monitoring program, waste water analysis & studies, and soil erosion studies & solutions. INCO-LABS is capable of drilling and installation of water monitoring wells for ground water sampling for H2S testing as per the requirement of Environmental Public Authority (EPA) and Kuwait Institute for Scientific Research (KISR).









#### STRUCTURAL EVALUATION

INCO-LABS with experienced staff in the field of structural and materials engineering is capable to perform a structural analysis of old and damaged buildings by carrying out various field and laboratory testing to observe the structural conditions of the building, using the existing material strength. The structural analysis is carried out using finite element method following the math-model using advanced professional

In general, the structural evaluation consists of detail survey of existing buildings, visual inspection of the building, material testing, structural analysis using existing conditions of the materials and superimposed loads, conclusion on the existing structural conditions, and recommendations on structural system with strengthening program

According to the tests results of the construction materials and the site investigation, INCO-LABS will propose a repair and strengthening program to the distress areas, if any is required.

Structural Evaluation Testing performed by INCO-LABS but not limited to the following:

- Non-destructive testing of estimating concrete compression strength using Schmidt Hammer test.
  - Compressive Strength of concrete cores.
- Measurement of concrete cover
- · Chemical composition of concrete
  - Steel tensile strength

#### CALIBRATION DEPARTMENT

INCO-LABS has advanced calibration laboratories established in 2010 based on the company's management believe that calibration of measurement device is the most important concept upon which the industrial standardization is based on, where that the measurement





process not be in the form that meets the strict quality requirements in a time characterized by globalization and intense competition between manufacturers unless the result of measurement error accompanied by specific proportion error in the process. In addition, it can not survive in the current environment for any organization which is productivity or assembly System without the correct measurements based on scientific bases for the information of metrology insuring largely free of measurement errors, and this is not only through a series of measurements to ensure that the reference measurement instrument is traceable to the international system of units of measurement through the periodical calibration for the instrument.

INCO-LABS started the operation of its calibration laboratories by June 2011 after obtaining the approvals from Ministry of Public Works (MPW) and Ministry of Electricity & Water (MEW), and later obtained the international accreditation for calibration activities according to ISO/IEC 17025:2005 from the American Association for Laboratory Accreditation (A2LA) in 2012. Our Calibration Department is offering the following calibration Services:

Thermometry: Calibration of ovens, incubators, water baths, autoclave devices, refrigerators, thermal calibrators, thermometers (bimetal, glass, digital) and thermocouples.

Humidity: Calibration of air humidity, digital hygrometers, chart recorders and humidity chambers.

Force: Calibration of compressive strength testing machines, hydraulic compression machines and universal testing machines (tensile and compression).

Electricity: Calibration of multi meters, clamp meters, voltmeters, frequency meters, capacitance and ohm meters for both DC & AC currents.

**Pressure:** Calibration of liquid pressure gauges, gases pressure gauges and vacuum gauges.

Dimensions: Calibration of vernier calibers (digital, analogue and dial), depth gauges, height gauges, micrometers, dial indicators, steel rules, steel tapes, mechanical sieves, and accurate dimensional measurements for the spare parts and engineering objects.

Mass: Calibration of sensitive balances, plate type balances and standard weights.

Volume: Calibration of volume of variety of glassware and pipettes.

Flow: Calibration of various types of liquid flowmeters.

Time: Calibration of digital watches.





#### PILES TESTING

INCO-LABS performs pile integrity testing and cross-hole sonic logging test of piles. Cross-Hole Sonic Logging Test (CSL) is performed to evaluate the homogeneity and relative integrity of the concrete in a deep foundation. The test measures the wave propagation time and relative energy of an ultrasonic pulse between parallel access ducts installed in the pile or structure. The testing is performed in general accordance with ASTM D 6760-08 "Standard Test Method for Integrity Testing of Concrete Deep Foundation by Ultrasonic Cross-hole Testing". INCO-LABS utilizes the Cross Hole Analyzer (Model Champ) manufactured by Pile Dynamics, Inc. (USA). The set up generally consists of computer based CSL data acquisition system.

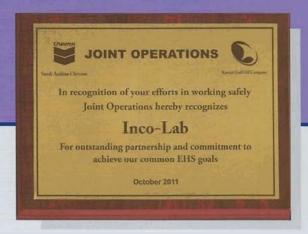
Plie Integrity Testing (PIT) is a Non-Destructive integrity test method for foundation piles. It is a "Low Strain" method since it requires the impact of only a small hand-held hammer. The evaluation of PIT records is conducted either according to the Pulse-Echo (or Sonic Echo – a time domain analysis) or the Transient Response (frequency domain analysis) procedure. This test is standardized by ASTM D-5882 "Standard Test Method for Low Strain Impact Integrity Testing of Deep Foundations", and INCO-LABS uses Pile Integrity Tester (PIT) manufactured by Pile Dynamics, Inc. (USA).

Pile Axial Compression/Tension Load Test is performed to measure the load capacity of the piles. The testing is performed by applying incremental load until reaching the maximum design load by using hydraulic jacks. This test is performed according to ASTM D-1143 & ASTM D-3689.

Mechanical Caliper Logging Test is performed to measure the verticality and internal diameter of the borehole for bored-piles. The test is performed according to ASTM D-6167.

### **SPECIAL TESTING**

INCO-LABS performs special testing as required for major projects such as ground monitoring services and concrete temperature monitoring. Normally, the ground monitoring services are provided to monitor any change or abrupt behavior of the ground or the existing structure due to the disturbance of the ground conditions caused by construction activities or natural ground movement.



INCO-LABS can provide several methods for ground monitoring such as settlement marker, inclinometer, deep datum, vibrating wire piezometer and magnetic extensometer. The settlement marker is used to monitor the vertical settlement or movement of embankment, soil and masses, where the inclinometer measures the lateral movement of the ground. The deep datum is used to measure the subsurface settlements in soft ground due to the placement of surcharges, fill and embankments on the ground surface. The vibrating wire piezometer is installed for long term measurement of fluid and/or pore water pressures in standpipes, boreholes, embankments, pipelines and pressure vessels. The magnetic extensometer is used to measure the vertical compression in embankments, foundations and fills, and used to measure the movement of settlements in soft ground due to the placement of fills and embankment.

INCO-LABS can provide temperature logging system for continuous monitoring of concrete temperatures for long term measurements. Monitoring the temperature of concrete during the curing process is a critical factor in making sure the product sets to its full strength and knowing when it is safe to build on.

#### **HSE SYSTEM**

The HSE management system and manual is implemented within the activities of the Company. Its implementation is a necessity to show and declare our commitment of considering health, safety and environmental aspects in all of our operations. An important part of the HSE activities will be to continuously improve activities involved and ensuring that HSE excellence becomes acknowledged by all those associated with the Company. We all have a part to cooperate in achieving HSE; therefore together we actively share this commitment in the development and execution of the HSE plan in pursuit of an incident and injury free work. Health, Safety and Environment Policy Statement is committed to the achievement of a Safe, Healthy, Injury free and environmentally sound business. The Company Management Team recognizes that, to ensure well being of General public, employees, contractors and environmental

sustainability, they must do all that is reasonably practicable to identify potential Health, Safety and Environmental risks; eliminate them where possible and/or implement effective Risk control measures.

INCO-LABS has received an award from Joint Operations (Kuwait Gulf Oil Company / Saudi Arabian Chevron) in 2011 for the excellent outstanding of HSE performance and commitment to the HSE goals of the Joint Operations.

APPROVALS

INCO-LABS due its quality work has obtained the approval from the majority of the governmental sectors such as:

Public Authority of Housing Welfare (PAHW), Ministry of Public Works (MPW), Ministry of Electricity & Water (MEW), Ministry of Education (MOE), Kuwait Municipality, Kuwait National Petroleum Co. (KNPC), Kuwait Oil Company (KOC), Joint Operations (JO), Kuwait Institute for Scientific Research (KISR), Kuwait Integrated Petroleum Industries Co. (KIPIC) and National Guards.

INCO-LABS has a long experience working with local engineering design firms, international consultants and contractors for major projects in Kuwait such as: Buro Happold, Halcrow, Turner, NORR, Mouchel, S.K. Engineering, Doosan Heavy Industries & Construction, MENARD, FLUOR, WOOD, Hyundai Engineering & Construction and G.S. Engineering & Construction.

#### INTERNATIONAL ORGANIZATIONS

INCO-LABS is an organizational member at the following professional international organizations:

- American Society for Testing and Materials (ASTM)
- British Standards Institute (BSI)
- American Concrete Institute (ACI)
- National Drilling Association USA (NDA)
- The American Association for Laboratory Accreditation (A2LA)
- GCCLAB









### الإعتمادات

نظراً لجودة العمل بمختبرات إنكو الصناعية ، فإن الشركة معتمدة من قبل الجهات الحكومية المختصة:

المؤسسة العامة للرعاية السكنية ، وزارة الإشغال العامة ، وزارة الكهرباء والماء ، وزارة التربية ، بلدية الكويت، شركة البترول الوطنية الكويتية (KOC) ، شركة نفط الكويت (KOC) ، العمليات المستركة (JO) ، معهد الكويت للأبحاث العلمية (KISR) ، الشركة الكويتية للصناعات البترولية المتكاملة (KIPIC) والحرس الوطني.

مختبرات انكو الصناعية لها خبرة طويلة بالتعامل مع المكاتب الهندسية الإستشارية وشركات المقاولات المحلية ، والمكاتب الإستشارية العالمية وكبار المقاولين العالميين لمشاريع ضخمة في دولة الكويت مثل:

Buro Happold, Halcrow, Turner, NORR, Mouchel, S.K. Engineering, Doosan Heavy Industries & Construction, MENARD, FLUOR, WOOD, Hyundai Engineering & Construction, G.S. Engineering & Construction

# العصوبة لدى المنظمات العالمية

شركة مختبرات إنكو الصناعية عضوفي المنظمات المهنية العالمية التالية:

- المنظمة الأمريكية لاختيار المواد (ASTM)
  - المعهد البريطاني للمعايير (BSI)
  - المعهد الأمريكي للخرسانة (ACI)
- منظمة الحفر الوطنية الأمريكية (NDA)
- المنظمة الأمريكية لاعتماد المختبرات (A2LA)
  - التجمع الخليجي للمختبرات (GCCLAB)











الصحة والسلامة والبيئة (HSE)

يتم تطبيق نظام إدارة الصحة وألسلامة والبيئة ضمن فعاليات الشركة، وذلك إيماناً من إدارة الشركة في ضرورة تنفيذه الإظهار وإعلان والتزام الشركة في الصحة والسلامة والجوانب البيئية في جميع عملياتها، بما أن الشركة تعتبر جزء من المجتمع فإن من ضرورياتها المساهمة في جانب الصحة والسلامة والبيئة، الجزء المهم في الشركة من أنشطة الصحة والسلامة والبيئة هو التطوير المستمر من مستوى الشركة بما يخدم المحافظة على صحة العاملين وسلامتهم والمحافظة على بيئة العمل، حيث يعمل الجميع بجهود متعاونة في الشركة للوصول إلى مستوى عالى من المحافظة على الصحة والسلامة والبيئة، فبالتالي تشاطر الشركة هذا الإلتزام بنشاط في وضع وتنفيذ خطط الحفاظ على الصحة والسلامة والبيئة والسلامة والبيئة.

وتلتزم سياسة الشركة في الصحة والسلامة والبيئة إلى تحقيق بيئة عمل صحية مأمونة الأعمال وحرة من الإصابات وسليمة بيئياً ، فريق إدارة الشركة يعمل جاهداً لضمان صحة وسلامة عامة الناس والموظفين والمقاولين والاستدامة البيئية، وعليه يعمل فريق الإدارة كل ما هو معقول عملياً لتحديد جميع الأخطار المكنة التي تضر بالصحة أو السلامة والمخاطر البيئية ، والعمل على القضاء عليها حيثما كان ذلك ممكناً وتنفيذ التدابير الفعالة والرقابة للمخاطر.

تلقت مختبرات إنكو الصناعية تكريما من العمليات المشتركة بالوفرة (الشركة الكويتية لنفط الخليج / شيفرون العربية السعودية) في عام 2011 الأدائها المتميز في الحقول النفطية بالعمل معها منذ عام 2003 للحفاظ على الصحة والسلامة والبيئة والإلتزام بأهداف الصحة والسلامة والبيئة الخاصة بالعمليات المشتركة.

الخرسانية تدريجياً بإستخدام روافع هيدروليكية حتى الوصول إلى الأحمال التصميمية القصوى، حيث يتم الفحص بموجب المواصفة القياسية الأمريكية ASTMD-3689 وASTMD-1143 وASTMD-3689 وقطر حفرة الأوتاد فحص (Mechanical Caliper Logging) يستخدم لقياس عمودية وقطر حفرة الأوتاد الخرسانية لكامل العمق، حيث يتم إجراء الفحص بموجب المواصفة القياسية الأمريكية ASTM D-6167.

# الفحوصات الخاصة

شركة مختبرات إنكو الصناعية تقدم بعض الفحوصات الخاصة التي تخدم المشاريع الرئيسية مثل مراقبة هبوطات وتحرك التربة ومراقبة درجات حرارة الخرسانة ، خدمات مراقبة هبوطات وتحرك التربة أي تغير مفاجئ أو تغير مع مرور الوقت للتربة بسبب تأثيرات خارجية مثل أعمال الإنشاءات المجاورة أو بسبب التحرك الطبيعي للتربة .

شركة مختبرات إنكو الصناعية تقدم العديد من الطرق المهنية المستخدمة في مراقبة المراقة المستخدمة في مراقبة (SettlementMarker) ومقياس الميل (SettlementMarker) والمقياس العميق (Deep Datum) ومقياس التمدد المغناطيسي (Deep Datum) وجهاز المراقبة (Vibrating Wire Piezometer) وجهاز المراقبة (Vibrating Wire Piezometer) موجميع تلك الأساليب تستخدم لمراقبة تحرك التربة العامودي والأفقي وتحديد مستوى الهبوطات السطحية والعميقة التي تطرأ على التربة.

كما تقوم شركة مختبرات إنكو الصناعة بأعمال مراقبة درجات حرارة الخرسانة على مدار الساعة ولفت رات زمنية طويلة وذلك بإستخدام برامج متكاملة لقياس درجات الحرارة بصفة مستمرة ، لأن مراقبة درجات الحرارة للخرسانة خلال وبعد صبها ضروري جداً للتأكد من حصول الخرسانة على قوتها الكاملة والتأكد من سلامتها الإستكمال أعمال الإنشاءات .





الكهرباء: معايرة أجهزة قياس ومصادر التيار والجهد الكهربائي والمقاومة الكهربائية والتردد الكهربائي والسعة الكهربائية وذلك للتيار المتغير والثابت.

الضغط: معايرة عدادات الضغط للسوائل وعدادات الضغط للغازات وعدادات التفريغ (الضغط السالب).

الأبعاد؛ معايرة جميع أنواع القدمات الورنية (الرقمية ، التماثلية ، ذات المبين) وأجهزة قياس الأعماق والارتفاعات والميكرومترات الخارجية ومبينات القياس والمساطر الصلب وشرائط القياس الصلب والمناخل الميكانيكية ، والمختبر لديه الإمكانيات اللازمة لإجراء قياسات الأبعاد لقطع الغيار والمكونات الهندسية بدقة عالية.

الكتلة: معايرة الموازين الحساسة والموازين الرقمية والموازين الميكانيكية والأوزان (الصنج) العيارية.

الحجوم: معايرة الزجاجيات والماصات بأنواعها المختلفة. التدفق: معايرة جميع عدادات قياس التدفق للسوائل. الزمن: معايرة أجهزة قياس الزمن الرقمية.

# فحوصات الأوتاد الخرسانية (Piles)

شركة مختبرات إنكو الصناعية تقدم خدمات متقدمة لفحوصات الأساسات العميقة (الأوتاد الخرسانية) مثل فحص (Cross-Hole Logging Test) للتأكد من تجانس وصلاحية الخرسانة في الأوتاد العميقة، ويعتمد الفحص على سرعة ومدى إنتشار الموجات والطاقة المنبعثة عبر الجسم الخرساني للأوتاد، حيث يتم عمل الفحص وفقاً للمواصفة القياسية الأمريكية ASTMD-6760، وتستخدم الشركة أحدث الأجهزة للفحص والمتمثلة في نظام حسابي الي لتجميع المعلومات.

وكما تقوم الشركة بفحص (Pile Integrity Testing) ويعتبر فحص غير هدام يستخدم للتأكد من سلامة الأوتاد الخرسانية (Piles) لخلوها من الفجوات أو الفراغات أو العيوب الإنشائية وكذلك للتأكد من تجانس مقطع الوتد لكامل الطول، ويتم هذا الفحص من خلال انتقال الموجات الصوتية التي يتم إصدارها بإستخدام مطرقة يدوية، ومن خلال معرفة سرعة الموجات المرتدة يتم تحديد مدى سلامة الوتد، ويتم عمل هذا الفحص معرفة سرعة المقياسية الأمريكية STM D-5882.

فحص تحميل الأوتاد الخرسانية يتم للضغط والشد وذلك لتحديد قدرة الأوتاد الخرسانية لمقاومتها للأحمال التصميمية ، ويتم الفحص بتطبيق أحمال على الأوتاد





بناءً على نتيجة فحوصات المواد الإنشائية والحالمة الإنشائية للمباني ، مختبرات إنكو الصناعية تقترح برامج متكاملة لعمل الإصلاح أو التقوية اللازمة للمباني . فحوصات التقييم الإنشائي التي تقوم بها الشركة تشمل وليست مقتصرة على التالي :

- إختبار صلادة السطح الخرساني بإستخدام مطرقة شميدت.
- تحديد مقاومة الضغط للخرسانة (عينات القلب الخرساني).
  - تحديد سماكة غطاء الخرسانة.
    - التحليل الكيميائي للخرسانة.
  - إختبار قوة الشد لحديد التسليح.

# قسم المعايرة

مختبرات إنكو الصناعية لديها مختبرات معايرة متقدمة، حيث تم تأسيسها في عام 2010 الإقتناع إدارة الشركة بأن معايرة أجهزة القياس من بين أهم المفاهيم التي يبنى عليها التقييس الصناعي، إذ أن عملية القياس لا تكون بالشكل الدقيق الذي يلبي متطلبات الجودة في زمن اتسم بالعولمة و التنافس الحاد بين المصنعين إلا إذا رافقت نتيجة القياس تحديداً لنسبة الخطأ الموجودة في العملية، إضافة إلى ذلك فإنه لا يمكن البقاء في المحيط الحالي لأي منظمة كانت إنتاجية أو تجميعية بدون منظومة قياسات صحيحة تبنى على الأسس العلمية لعلم التقييس تضمن الى حد كبير خلو عملية القياس من الأخطاء، وهذا لا يتم إلا عبر سلسلة من القياسات التي تضمن مرجعية جهاز القياس (إسناد الجهاز) إلى الوحدات الدولية للأجهزة.

مختبرات إنكو الصناعية بدأت بتشغيل مختبرات المعايرة إعتباراً من شهر يونيو لعام 2011 وذلك بعد حصولها على إعتماد وزارة الأشغال العامة ووزارة الكهرباء والماء ، ومن ثم الحصول على الإعتماد الدولي لجميع أنشطة المعايرة وفقاً لمتطلبات الأيزو 17025،2005 من قبل المنظمة الأمريكية لإعتماد المختبرات (A2LA) في عام 2012 ، مختبراتنا تقدم خدمات المعايرة التالية الحرارة ، معايرة الافران و الحضائات والحمامات المائية والثلاجات والترمومت رات وأجهزة الكاليبراتور والإزدواجات الحرارية.

الرطوبة: معايرة أجهزة قياس رطوبة الجو وأجهزة قياس الرطوبة الرقمية وأجهزة مسجلات الرطوبة وغرف الرطوبة بجميع استخداماتها.

الشوة؛ معايرة ماكينات فحص قوة الضغط والمكابس الهيدروليكية وماكينات الفحص للشد والضغط بأنواعها المختلفة





قسم المساحة لديه الخبرة العريقة في الأعمال المساحية في حقول النفط ومصافي التكرير، وبالأخص الخبرة في تحديد مواقع آبار النفط لما يتطلب من دقة فائقة في العمل، وخبرة ممتازة بأعمال رفع خطوط البايبات الأرضية والسطحية، مختبرات إنكو الصناعية لديها اتفاقيات طويلة الأجل مع كبار الشركات بدولة الكويت للرفع الدوري لتشوينات الصلبوخ والمواد الأولية لتحديد أحجامها نظراً لجودة العمل المقدمة من قبل قسم المساحة.

# الفحوصات البيئية

تشارك مختبرات إنكو الصناعية بالمشاريع المتعلقة بالمراقبة البيئية وتقديم الدراسات والإستشارات المتعلقة بالتربة والمياه الجوفية.

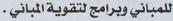
مختبراتنا الكيميائية مجهزة بأحدث الأجهزة للقيام بالفحوصات المساعدة بالرقابة البيئية للتربة والمياه الجوفية ومخلفات المياه الصناعية ، وتعمل مختبرات إنكو الصناعية بالتعاون مع شركات متخصصة بالإستشارات البيئية لتقديم الدراسات والإستشارات البيئية لعملائها .

الأبحاث البيئية التي تقوم بها مختبرات إنكو الصناعية تشمل مراقبة مستوى المياه الجوفية وجودتها ، ومراقبة كبريتيد الهيدروجين بالمياه الجوفية والتربة ، دراسات وتحليل مخلفات المياه الصناعية ، ودراسات ووضع حلول لمشاكل تعرية التربة (erosion) ، وبالإضافة تقوم المسركة بحضر وتركيب آبار المياه الجوفية لأخذ العينات لغرض فحص كبريتيد الهيدروجين وفقاً لمتطلبات الهيئة العامة للبيئة ومعهد الكويت للأبحاث العلمية

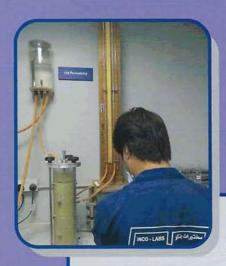
# التقييم الإنشائي

مختبرات إنكو الصناعية بخبرتها العريقة في مجال الهندسة الإنشائية وفحوصات المواد تقدم برامج متكاملة للتقييم الإنشائي للمباني القديمة أو المتضررة وذلك بعمل فحوصات موقعية ومخبرية متعددة لملاحظة الحالة الإنشائية للمباني ، التحليل الإنشائي يتم بإستخدام طريقة العناصر اللامتناهية ( Finite Element Method ) مع نموذج حسابي وفقاً لمعايير قياسية .

بشكل عام يحتوي التقييم الإنشائي على إستكشاف مفصل للمباني ، وتفتيش أولي بالعين المجردة ، وفحوصات المواد ، والتحليل الإنشائي وفقاً لحالة المواد المفحوصة والأحمال العمول بها بالمباني ، ووصف للحالة الإنشائية للمباني ، وتوصيات متعلقة بالنظام الإنشائي









# قسم المواد

مختبرات إنكو الصناعية تقدم مجالاً واسعاً من الفحوصات المخبرية والموقعية للمواد لتحديد الخواص الفيزيائية والكيميائية للمواد الإنشائية وفقاً للمواصفات القياسية العالمية، قسم المواد يتناول فحوصات التربة، الإسمنت، الخرسانة، الصلبوخ، الأسفلت، العجر الطبيعي، الطابوق، إضافات الخرسانة، الحديد وغيرها من المواد الإنشائية، مختباراتنا مجهزة بأحدث الأجهزة لقياس قوة تحمل ضغط الخرسانة، ومعدات قص قلب الخرسانة (الكورات)، وجهاز فحص خواص الدمك للتربة سواء بإستخدام طريقة الدمك القياسية أو الجهد المعدل، وجهاز فحص نسبة تحميل كاليفورنيا، وجهاز إختبار القص الباشر للتربة وإختبار الضغط ثلاثي المحاور للتربة المتماسكة وجهاز تحديد نفاذية التربة، وجهاز تحديد قيمة التصادم، وجهاز تحديد قيمة التصادم والسحق للصلبوخ، وجهاز تعيين مقاومة الصلبوخ للتآكل (لوس أنجلوس)، وجهاز فحص نفاذية الخرسانة، ومختبر كيميائي متكامل لفحوصات الصلبوخ والخرسانة والتربة والأسمنت والمياه والمواد الإنشائية بمختلف أنواعها.

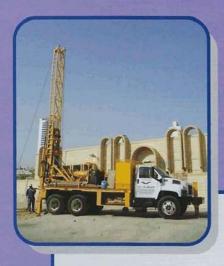
قسم المواد مجهز بأجهزة للفحوصات الموقعية للمواد والتربة مثل جهاز فحص نسبة تحميل كاليفورنيا بالموقع ، وجهاز تعيين كثافة التربة بالموقع بطريقة المخروط الرملي وجهاز فحص المقاومة الكهربائية للتربة بالموقع ، جهاز تحديد سماكة الخرسانة وتحديد أماكن حديد التسليح ، جهاز إختبار صلادة السطح الخرساني (مطرقة شميدت) ، جهاز تحديد أبعاد التشققات والفراغات بالخرسانة ، جهاز تحديد نسبة تآكل حديد التسليح بالخرسانة وغيرها .

### قسم المساحة

قسم المساحة لدى مختبرات إنكو الصناعية يخدم جميع إحتياجات قسم التربة لرفع موقع جسات التربة والعمل بشكل مستقل لتلبية متطلبات العملاء لتقديم خدمات متعددة مثل المساحة الطوبوغرافية ، والمساحة الهندسية ، ومساحة المباني ، والمساحة الكمية ، ومساحة المباني ، والمساحة الكمية ، ومساحة المباني ، والمساحة الكمية ، ومساحة الخدمات ، والمساحة البحرية ، وإدارة المساحية المساحية ، وتقديم التدريب المساحي . فرق المساحة مجهزة بأحدث الأجهزة المساحية مثل محطات الرصد المتكاملة (Total Station) وأجهزة الرصد بالأقمار الصناعية (GPS) وأجهزة قياس المناسيب ، وأجهزة الرادار للكشف على الخدمات الأرضية (GPR) ، وجهاز تحديد عمق قاع البحر ، بحيث يقوم بالتخطيط والإشراف على الأعمال المساحية مهندسي مساحة ذوي خبرة بشتى أنواع الأعمال المساحية ومدعمة بوحدات رسم الأتوكاد لإصدار المخططات المساحية .









# قسمالترية

مختبرات انكو الصناعية لديها طاقم فني متخصص في هندسة التربة لتقديم جميع الخدمات المتعلقة بالتربة مثل دراسات قوة تحمل التربة ، وتحديد العناصر الأساسية لتصميم القواعد بمختلف أنواعها ، تحليل الهبوطات بالتربة ، دراسات إستقرار الميول وغيرها من الدراسات المتعلقة بميكانيكية التربة والصخور . طاقمنا الفني يشمل مهندسين متخصصين بمجال هندسة التربة حائز على شهادات جامعية عالية بدرجة ماجستير ودكتوراه بخبرات لاتقل عن عشرة سنوات .

مختبرات إنكو الصناعية تقوم بأبحاث التربة ويشمل أعمال الحضر البحري ، وحضر الطبقات الصخرية ، وحضر الطبقات الصخرية ، وحضر آبار المياه الضحلة ، وحضر وتركيب ومراقبة آبار مراقبة المياه الجوفية ، والحضر البيئي لغرض جمع عينات التربة والمياه الجوفية ، وتقديم جميع الإستشارات المتعلقة بهندسة التربة .

إسطول الحفريحتوي على حفارات حديثة الصنع مركبة على شاحنات وبقدرة حفرحتى عمق 120 م من سطح الأرض، مختبرات إنكو الصناعية لديها أحدث المعدات للحفر بالمناطق الطينية والساحلية حتى عمق 1.5 م لقاع البحروذ لك بإستخدام مارش بوجي مصنوعة من الألمني وم الخفيف وتتحرك بواسطة الجنزير ومركب عليها حفارة حديثة الصنع، كما يحتوي إسطول الحفر على جهازي فحص مخروط الإختراق الإستاتيكي (CPT) مركب على مركبة جنزير خفيفة للوصول الى الأماكن الطينية ولها قدرة للفحص حتى عمق 40 متر وبقدرة حمل حتى 20 طن، حيث يستخدم الجهاز الصغير لإجراء الفحوصات في الأماكن الطينية أو الأماكن الضيقة نظراً لصغر حجم الجهاز، وأما الأجهزة الأخرى التي تتخذ من وزنها حمل يعادل 20 طن فتستخدم للمشاريع الكبرى ذات كميات هائلة من الفحوصات.

قسم التربة يحتوي على أحدث الأجهزة لفحوصات التربة الموقعية للحصول على معلومات عن خواص التربة الميكانيكية تمثل الواقع ومنها فحص الاحتمال الذي يعتمد على سرعة الموجات الصوتية الإختراق طبقات التربة لتحديد خواص التربة حتى عمق 70 م، وفحص Pressure Meter المدي يعمل بواسطة ضغط الجدار الداخلي لجسات التربة لتحديد خواص التربة المتعددة حتى عمق 70 م.



Chambers (10~90 % RH), Laboratory Volumetric Apparatus (0.1 ~ 2000 ml), Piston Operated Volumetric Apparatus (50 ~ 5000  $\mu$ l), Liquid Flow (Rate: 0.5~3 m3/h, Velocity: 0.1~25 m/s), Compression Load Cells (200~3000 kN), Proving Rings (200~1000 kN), Tension (200~1000 kN), Hydraulic Jacks (200~3000 kN), Balances (1mg ~ 2000kg), Standard Weights (2g, 5g, 10g, 20g, 50g, 100g, 200g, 500g, 1kg, 2kg, 5kg, 10kg, 20kg), Pressure/Vacuum Gauges, Transducers & Calibrators (Pneumatic: -1 ~ 140 bar, Hydraulic: 0 ~ 2000 bar), Time (60~86400 sec) and Rotational Speed Optical (10~99000 rpm).

أجهزة ومعدات المعايرة بمختبرات إنكو الصناعية معايرة دورياً من قبل معاهد وطنية وقومية معتمدة من قبل المعهد القومي للقياس والتكنولوجيا (NIST) الكائن بالولايات المتحدة الأمريكية ومن قبل مختبرات رفيعة المستوى معتمدة دولياً بموجب متطلبات الأيزو 2005:2005

مختبرات إنكو الصناعية مشتركة ببرامج الكفاءة الفنية (Proficiency Testing) من قبل مختبرات مرجعية تابعة للمعهد القومي للقياس والتكنولوجيا (NIST) بالولايات المتحدة الأمريكية لفحوصات التربة والصلبوخ (AMRL) وفحوصات الخرسانة (CCRL) والفحوصات الأمريكية من قبل الجهة الكندية (CALA) ، بالإضافة إلى المقارنات التي تتم لمختلف أنشطة المعايرة من قبل مراكز معتمدة وحاصلة على الأيزو ، مشاركة مختبرات إنكو الصناعية بمثل تلك البرامج مهم جداً وذلك لمقارنة نتائج الفحوصات والمعايرات مع باقي المختبرات بالعالم للحفاظ على جودة عمل الفحوصات والمعايرات.







الإعتماد الدولي

مختبرات إنكو الصناعية معتمدة من قبل المنظمة الأمريكية لإعتماد المختبرات (A2LA) للكفاءة الفنية في 2007 (شهادة رقم 2487.01 (شهادة رقم 2007.02 (شهادة رقم 2487.02) وفقاً للمواصفات القياسية والمائة الأبرة و2487.03 (للمتطلبات العامة لكفاءة مختبرات الفحص والمعابرة .

# الفحوصات المعتمدة

ASTM C29, C39, C40, C117, C127, C128, C136, C142, C289, D422, D511, D698, D854, D1126, D1452, D1556, D1557, D1586, D1883, D2216, D2419, D2487, D3080, D3875, D4318, D4719, D5778, D5907, D6928, D7428, D7928, AASHTO T164, T166 & T230-68(93), BS 1377:Part3:1990, Section 3, 4, 5, 6, 7, 8.1 & 9, BS 1377:Part7:1990, BS 1377:Part9:1990, Section 3.3, BS 1881:Part 102(83), 107(83), 108(83), 114(83), 116(83), 120(83), 122(11) &124(15), BS 812 Part 111(90), 106(90), 110(90), 112(90), .117(88) & 118(88), BS 6068, Standard Methods 317, 320 & 422

# المعايرات المعتمدة

Calipers/Height Gauges (up to 600mm), Micrometers (up to 100mm), Dial Indicators (up to 100mm), LVDT (up to 50mm), Feeler Gauges (0.05~5mm), Test Sieves (0.06~125mm), Profile Projector (up to 200mm), Dial Calibrator (up to 50mm), Coating Thickness Gauges (up to 1000µm), Steel Rule (up to 1000mm), Linear Measurements (up to 600mm), DC/AC Voltage-Generate (up to 1000kV), DC/AC Current-Generate (up to 20.5A), DC Power-Generate (up to 20.91kW), AC Power-Generate (up to 20.5kW), Resistance-Generate (50µ  $\Omega$ ~110M $\Omega$ ), Capacitance-Generate (0.19nF~1.1mF), Phase-Generate (00~180o), DC/AC Voltage-Measure (up to 1000V), DC High Voltage-Measure (up to 40kV), AC High Voltage-Measure (up to 25kV), AC/DC High Current-Measure (20~200A), DC Current-Measure (up to 10A), Resistance-Measure (up to 200M $\Omega$ ), DC/AC Clamp-Generate (10~1025A), Frequency (0.01Hz~120kHz), Thermocouples (-250 ~ 1820 °C), Thermometers, Ovens, Incubators, Furnaces & Chambers (-60~1100 °C), Hygrometers & Humidity



### الشركة

شركة مختبرات إنكو الصناعية (ش.م.ك.م) شركة كويتية رائدة في مجال فحوصات المواد المخبرية والموقعية وأبحاث التربة والمساحة والمعايرة وفحوصات الأوتاد الخرسانية والفحوصات البيئية والتقييم الإنشائي التي تخدم القطاع الهندسي في شركات المقاولات والمكاتب الإستشارية الهندسية والجهات الحكومية والقطاع الخاص.

قامت شركة مختبرات إنكو الصناعية في عام 2011 في تأسيس مختبرات معايرة حديثة وبمستوى عالي من الجودة لتغطية مجال واسع من أنشطة المعايرة مثل الحرارة والرطوبة والمقوة والضغط والكهرباء والأبعاد والكتلة والحجوم والتدفق والزمن ، جميع خدمات المعايرة معتمدة دولياً بموجب متطلبات الأبزو 17025،2005.

وقد تم تجهيز مختبرات الشركة التي تقع في منطقة صبحان الصناعية بأحدث المعدات والأجهزة التقنية للقيام بجميع أعمال الشركة وفقاً للمواصفات العالمية لتقديم مجال واسع من الخدمات المتكاملة لعملائها.

# الجهاز الفني

لدى شركة مختبرات انكو الصناعية مهندسون ذوو كفاءة عالية وبخبرات تتراوح بين 10 – 30 سنة في شتى المجالات الهندسية المتعلقة بأنشطة الشركة مثل هندسة التربة والمواد والجيولوجيا والمساحة والمعايرة والبيئة ، طاقم الشركة الفني يقدم جميع خدمات الشركة وفقاً للمواصفات الدولية ويقدم الإستشارات المتعلقة بأبحاث التربة والمواد الإنشائية والمساحة الطوبوغرافية والمساحة البحرية والمساحة الهندسية والتقييم الإنشائي وبرامج المراقبة البيئية وبرامج الجودة المختلفة.

### الأهداف

وضعت الإدارة العليا لمختبرات إنكو الصناعية ثلاثة محاور رئيسية لخدمة العملاء؛

- تقديم خدمة ضبط الجودة
- الإلتزام بتقديم الخدمات في الوقت الحدد وضمن البرامج الزمنية المتفق عليها
  - تقديم الخدمات بتكلفة معقولة وذلك بالإعتماد على طرق مدروسة

ولتحقيق هذه الأهداف فقد قامت الشركة بتجهيز المختبرات بأحدث المعدات للقيام بأعمال الحفر والفحوصات والمعايرات الموقعية والمخبرية إضافة إلى قاعدة للبيانات وبرامج كمبيوتر حديثة للعمل بفاعلية.





رأس المال المدفوع 1,350,000 دك حاصل على الآيزو 17025:2005

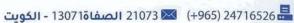
فحوصات المواد أبحاث التربة المساحة المعايرة التقييم الإنشائ الفحوصات البيئية فحوصات الأوتاد الخرسانية





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شركة مختبرات إنكو الصناعية (ش.م.ك.م)





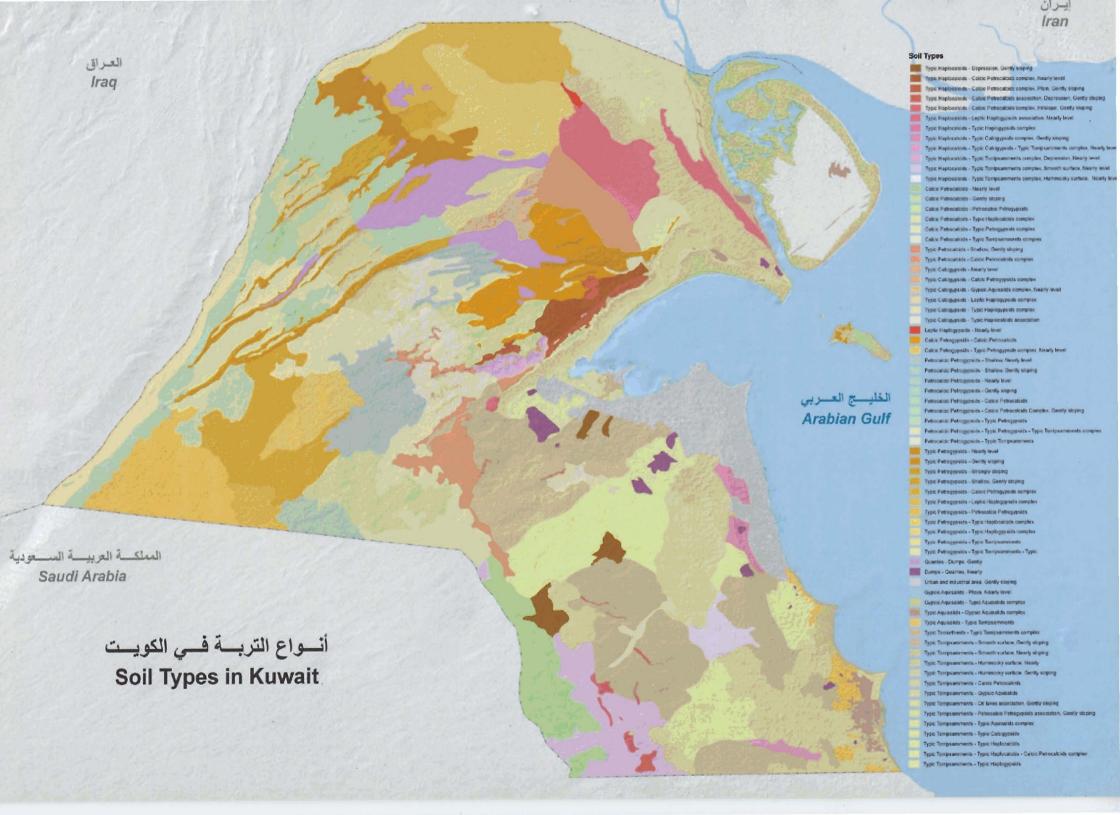












# تجربة الفرز الخروطي (Cone Penetration Test – CPT) : (ASTM D-3441) (ASTM D-5778)



يصنف هذا الفحص بالفحص الموقعي فقط ، حيث أنه لا يتم إستخراج عينات من التربة للفحص المختبري ، إلا أنه فحص دقيق جداً لمعرفة طبقات التربة وحساب مقاومتها للأحمال الواقعة عليها .

يتكون جهاز الفحص المخروطي من أنبوبة حديدة يحتوي في أحد أطرافها على مخروط بزاوية الرأس 600 ومساحة مقطعه العلوي 10 سم2 أثناء إجراء التجربة يتم غرس الأنبوبة مع الرأس المخروطي داخل التربة بسرعة ثابتة

تساوي 20 مم/الثانية ، حيث يتم تقدير وتسجيل مقاومة التربة كل 20 سم وذلك بواسطة أجهزة خاصة مرتبطة بالرأس المخروطي بواسطة أسلاك كهربائية خاصة .

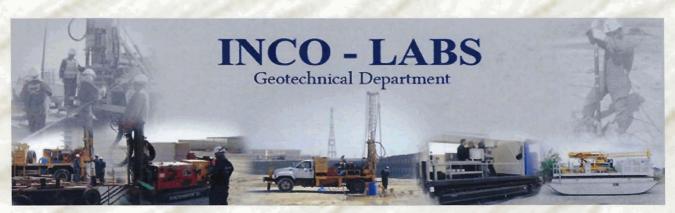
المواصفة الأمريكية (ASTM D-3441) ومواصفات عالمية أخرى تشرح بالتفصيل كيفية إجراء التجربة وكيفية تحاليل نتائجها وذلك للإستفادة منها في تقدير جهد التربة .

# الخلاصة :

بالمعنى العام تعتبر هندسة الأساسات فن من فنون الإختيار والتصميم لأجزاء وعناصر من المبنى المسؤولة عن نقل الأحمال إلى طبقات التربة أسفل هذه الأساسات ، وللوصول إلى تصميم آمن من الناحية الإقتصادية ، فإنه يستوجب معرفة خواص وقوة تحمل وسلوك التربة تحت هذه الأساسات نتيجة الأحمال الواقعة عليها .

التجارب ومعدات الفحص المستخدمة في فحص التربة في الموقع وفي المختبر، هي تجارب ومعدات موحدة إلى حد كبير ومنصوص عليها في معظم المواصفات القياسية العالمية ، إلا أن تحليل نتائج هذه الإختبارات والفحوصات تخضع لإجتهادات مختلفة ومعادلات متعددة في هذا المجال . وتقلام مسؤولية إحراء هذه الاختبارات وتحليل نتائجها لله صول إلى توصيات ملائمة على

وتقع مسؤولية إجراء هذه الإختبارات وتحليل نتائجها للوصول إلى توصيات ملائمة على مختبرات فحص التربة والمهندسين والفنيين العاملين بها.



طريقة علمية واحدة للتعامل مع مشاكلها . مع العلم بان طرق الفحص والقياس هي موحدة نوعاً ما ، ومنصوص عليها في معظم المواصفات القياسية العالمية .

بإستثناء المؤسسة العامة للرعاية السكنية وبعض المكاتب الإستشارية العالمية ، لاتحدد أي جهة حكومية أو أهلية إستخدام معادلة معينة لإيجاد قوة تحمل التربة المسموح بها ، بل تترك هذا الأمر لجهة الفحص لتحديد ذلك ، والتي هي غالباً ما تلجأ إلى معادلة ترزاقي (Terzaghi) لحساب ضغط التربة المسموح به .

أما المؤسسة العامة للرعاية السكنية فهي تعتمد على معادلة مايرهوف (Meyerhof) لتقدير جهد التربة المسموح به في مشاريعها الإسكانية .

# تأثير المياه الجوفية :

تُبين الأبحاث المنشورة على أن وجود المياه الجوفية عند منسوب التأسيس أو قريب منه بمسافة لاتزيد عن عرض القاعدة ، يُسبب إنخفاضاً في قيمة قوة تحمل التربة بنسبة قد تصل إلى %50 ، مما يستوجب مراعاة ذلك عند تحديد قوة تحمل التربة بواسطة الجهة الفاحصة ، إضافة إلى ذلك ، هناك ظاهرة تُعرف بظاهرة إرتفاع منسوب المياه الجوفية في الكويت ، بمعنى أنه عند فحص أي موقع ولم يتبين وجود مياه جوفية هذا لايعني أن الموقع سوف يبقى خالي من المياه إلى الأبد ، بل هناك إحتمال كبير أن تتجمع المياه الجوفية مع مرور الزمن ، وتتسبب في مشاكل ضعف التربة أو دخول المياه في السراديب للمباني التي بها سراديب ، لذا ، يستوجب على الجهات الفنية الفاحصة أخذ هذه الأمور بعين الإعتبار ، والتنبيه على ذلك لأخذ الإحتياطات اللازمة لمنع إنهيارات التربة تحت الأساسات أو دخول المياه إلى السراديب فيما بعد .

# فحص التربة الطينية أو التربة الناعمة :

المصطلحات الرئيسية التي يستخدمها المهندس المدني في وصف التربة هي الحصى ، الرمل ، الطمى ، والطين ، والتربة في حالتها الطبيعية تحتوي على إثنين أو أكثر من هذه المكونات وبنسب متفاوتة ، وفي بعض الحالات قد تحتوي عينة من التربة على بعض المواد العضوية والناتجة غالباً من جذور النباتات المتحللة كلياً .

ولكل من هذه المكونات تأثيره على أداء التربة في سلوكها وفي مقاومتها للأحمال الواقعة عليها من البنسآت ، فالتربة التي تحتوي على نسبة عالية من الرمل الخشن أو المسمى بالتربة الرملية لها قوة تحمل أعلى من التربة الطينية أو التي تحتوي على نسب عالية من الطمى أو الطين ، حتى مع وجود قليل من الطين أو الطمى على شكل طبقات بين طبقات التربة الرملية يستدعى الإنتباه لها وأخذ الحيطة والحذر من حدوث مشاكل في التربة فيما بعد .

ولهذه الأهمية تم إيتكار طريقة فحص خاصة للتربة الناعمة مثل الطين والطمى وحتى التربة الرملية المتراصة جيداً تُعرف بفحص الغرز المخروطي (Cone Pénetration Test – CPT)، وكان ذلك في عام 1930 من قبل وزارة الأشغال العامة في هولندا.

آمان والذي هو بحدود من 2 إلى 3.

والتربة أسفل أي قاعدة لكى تعمل بأمان يجب أن تحقق شرطين أساسيين هما:

- أن تقاوم أي إنزلاق نتيجة الأحمال الواقعة عليها.
  - أن لايزيد هبوطها عن مقدار معين مسموح به .

وقوة تحمل التربة المسموح بها هي تلك القوة التي تحقق هذين الشرطين ، وهناك شرط آخر غير مباشر وهو أن لا تتأثر المبانى المجاورة وخطوط الخدمات في المنطقة أثناء تنفيذ القواعد .

# معادلات لإيجاد قوة تحمل التربة :

يُعتبر الدكتور/ كارول ترزاقي (يعتبر الدكتور/ كارول ترزاقي (ي 1883 - 1963) مؤسس علم التربة والأساسات الحديث، وهو أول من وضع أول معادلة حسابية لحساب قوة تحمل التربة، وذلك في عام 1943. اعتمد ترزاقي في أبحاثه على التربة على تجارب حقلية وأخرى مختبرية بسيطة، وذلك حسب الإمكانيات البسيطة والمحدودة المتوفرة في ذلك الله قت.

جرى بعد ذلك تطور كبير في علم التربة والأساسات بواسطة عدد كبير من علماء آخرين ، وذلك تماشياً مع التطور في سائر العلوم الأخرى .

الجدول المرفق طيه يوضح بعض المعادلات المختلفة والهامة ، مقرونة بأسما أصحابها اللذين ساهموا في وضعها.

يوضح الجدول بعض من المعادلات المستخدمة لإيجاد قوة تحمل التربة ، وهناك معادلات أخرى يضيق المجال هنا لذكرها جميعاً.

#### Bearing-capacity equations by the several authors indicated

Terzaghi (1943)

$$\begin{aligned} q_{\text{obt}} &= cN_c s_c + \overline{q}N_q + 0.5\gamma BN_\gamma s_\gamma & N_q &= \frac{a^2}{a\cos^2(45 + \phi/2)} \\ & a &= e^{(0.75\pi - \phi/2)\tan\phi} \\ & N_c &= (N_q - 1)\cot\phi \\ & N_\gamma &= \frac{\tan\phi}{2} \left(\frac{K_{p\gamma}}{\cos^2\phi} - 1\right) \end{aligned}$$

For: strip round square  $s_e = 1.0 1.3 1.3 s_{\gamma} = 1.0 0.6 0.8$ 

Meyerhof (1963)

Vertical load:  $q_{uk} = cN_cs_ed_c + \overline{q}N_qs_qd_q + 0.5\gamma B'N_\gamma s_\gamma d_\gamma$ Inclined load:  $q_{uk} = cN_cd_ci_c + \overline{q}N_qd_qi_q + 0.5\gamma B'N_\gamma d_\gamma i_\gamma$   $N_q = e^{-r \exp \phi} \tan^2 \left(45 + \frac{\phi}{2}\right)$   $N_c = (N_q - 1) \cot \phi$   $N_\gamma = (N_q - 1) \tan (1.4\phi)$ 

Hansen (1970)

General:†  $q_{ak} = cN_c s_c d_c l_c g_c b_c + \overline{q} N_c s_q d_q l_q g_q b_q + 0.5 \gamma B' N_\gamma s_\gamma d_\gamma l_\gamma g_\gamma b_\gamma$ when  $\phi = 0$ use  $q_{ak} = 5.14 s_a (1 + s'_c + d'_c - l'_c - b'_c - g'_c) + \overline{q}$   $N_q = \text{same as Meyerhof above}$   $N_c = \text{same as Meyerhof above}$   $N_\gamma = 1.5 (N_q - 1) \tan \phi$ 

Vesic (1973, 1975)

Use Hansen's equations above.

 $N_q = \text{same}$  as Meyerhof above  $N_c = \text{same}$  as Meyerhof above  $N_{\gamma} = 2(N_q + 1) \tan \phi$ 

Joseph E. Bowles

"Foundation Analysis And Design"

Fifth Edition, 1996

(Table 4.1, P.220)

وبإستخدام أي معادلة سوف تحصل على قوة تحمل للتربة تختلف عن الأخرى ، فبعض هذه المعادلات تُعرف بأنها متحفظة ، وأخرى أقل تحفظاً ... وهكذا ، ومن هنا يأتي دور المهندس المختص في التربة والأساسات لتقدير قوة تحمل التربة بإستخدام المعادلة المناسبة لموقع معين أو لمنطقة معينة ، آخذاً بالإعتبار كل الظروف المحيطة والمتغيرة .

نستخلص من هذا أن علم التربة والأساسات علم مرن ، لايخضع لتفسير معين ، ولا توجد هناك

# كيفية فحص التربة :

يتم فحص التربة الرملية موقعياً، وذلك بإجراء تجربة في موقع المشروع تُعرف بتجربة الغرز القياسي (Standard Penetration Test – SPT)، ويتم هذا الفحص بواسطة مجهزة على سيارة نقل ، تنتقل للموقع مع فنيين مختصين ، ويتم إجراء تجربة الغرز القياسي (SPT) في الموقع ، وأخذ عينات من التربة إلى المختبر لتصنيفها وإجراء بعض التجارب المخبرية عليها ، وعلى ضوء هذه التجارب يتم تحديد قوة تحمل التربة بواسطة المهندس المختص ، كما يتم تحديد منسوب المياه الجوفية للموقع ، بحيث يستفاد من هذه التجارب معرفة نوع ومنسوب التأسيس للمنشأ المراد إنشائه في هذا الموقع .

# م تجربة الفرز القياسي (SPT) ASTM D1586:

في عام 1902 قامت شركة أمريكية (Raymond Pile Co) بتعريف وإستخدام هذه التجربة لأول مرة في فحص التربة الرملية بالموقع ، وفي العشرينات من القرن الماضي تطورت هذه التجربة إلى ما هي عليه الآن . وتبقى هذه التجربة وهذا الفحص ليومنا هذا من أكثر التجارب المستخدمة وأهمها والمعتمدة في فحص التربة الرملية في العالم .

وتتلخص هذه التجربة في عمل حفرة في الأرض بقطر 10 سم تقريباً إلى عمق معين ، ومن ثم يتم إنزال معدة الفحص وغرزها في التربة لمسافة قدم واحد (30 سم) بواسطة مطرقة تزّي 63.5 كجم ، تسقط سقوطاً حراً مسافة 0.76 متر ، وتُحسبُ عدد الضربات اللازمة لغرز المعدة مسافة قدم واحد (30 سم) ، تُسجل عدد الضربات وتُعرف هذه القيمة بـ (N) ، يستمر الحفر إلى عمق آخر ، وتُجري نفس

وهكذا حتى نهاية عمق حفرة الفحص ، المواصفة الأمريكية

(ASTM D1586) تلقي مزيداً من الضوء على كيفية إجراء هذه التجربة بالتفصيل ، وتعتبر هذه التجربة سهلة الإجراء ، إلاً أن تحليل نتائجها في غاية الصعوبة .

# قوة تحمل التربة :

تعرف قوة تحمل التربة القصوى بأقوى ضغط تستطيع التربة أن تتحمله جراء الأحمال الواقعة عليها نتيجة المباني والنشآت المقامة عليها ، بالإضافة إلى الأحمال الترابية الأخرى وذلك مباشرة قبل إنزلاقها . وقوة تحمل التربة المسموح بها هي قوة تحمل التربة القصوى مقسوماً على عامل





في إتخاذ الحلول المناسبة لمشاكل التربة المختلفة.

من الأسباب الرئيسية لفحص التربة هو معرفة سلوك التربة تحت تأثير الأشكال المختلفة للتحميل ولشروط التصريف ودراسة توازنها تحت مختلف الظروف. وكذلك تقدير مستوى المياه الجوفية في موقع ما ، ومعرفة مدى تأثير الرطوبة وتغيراتها على التغيرات الحجمية في التربة ، وكيفية التحكم في هذه التغيرات ، وعلى ضوء ذلك ، يتم وضع برنامج حفر الإستكشاف وذلك لتحديد عدد وأنواع ومنسوب القواعد لمشروع ما .

ويتحتم على الجهة الفاحصة عند إجراء فحص التربة -سواءً في الموقع أو في المختبر ، الإجابة على الأسئلة التالية

ما معنى قوة تحمل التربة القصوى ، وما هي قوة تحمل التربة المسموح بها ؟ كيف أحدد الطريقة التي يحسب بموجبها قوة تحمل التربة المسموح بها ، وما هو الفرق بين الطرق المختلفة لحساب قوة تحمل التربة القصوى ؟

ما هي الإفتراضات التي بموجبها أحسب قوة تحمل التربة المسموح بها ؟ ما هي خواص التربة الضرورية التي يجب أن أعرفها لحساب قوة تحمل التربة المسموح بها ؟ ما تأثير المياه الجوفية على حساب قوة تحمل التربة ؟

هذه بعض الأسئلة الهامة التي يجب أن يتداركها مهندس التربة عند إجراء فحص التربة ، وإجراء التحاليل اللازمة لنتائج الفحص ، وعلى ضوء ذلك يتم تقدير قوة تحمل التربة المسموح بها لكي يقوم بعد ذلك المهندس الإنشائي المصمم بتحديد عدد وأنواع ومنسوب القواعد للمشروع .

# أنواع القواعد :

تُعرف القاعدة أو الأساس في أي مبنى بالجزء السفلي الملامس للأرض ، والتي يرتكز عليها العمود أو الحائط ، وهي تعتبر من الأجزاء أو العناصر الإنشائية التي تنقل الأحمال إلى طبقات التربة أسفل المباني والمنشآت ، ومن أهم أنواع هذه القواعد أو الأساسات :-

- القاعدة المنفصلة (Isolated Footing) وهي القاعدة التي تحمل عمود واحد .
- القاعدة المستمرة (Continuous Footing) تعمل كأساس مستمر تحت الحوائط.
- القاعدة المشتركة (Combined footing) هي القاعدة التي تحمل أكثر من عمود في المبنى .
- الفرشة أو الحصيرة (Raft or Mat Foundation) هي قاعدة مشتركة تحمل جميع أعمدة وحوائط المبنى .
- الأوتاد أو الركائز الأرضية (Piles) هي عناصر إنشائية ذات مقاطع عرضية صغيرة نسبياً من المرافقة وأطوال مختلفة تستخدم لنقل الأحمال إلى باطن الأرض متخطياً بذلك طبقات التربة السطحية الضعيفة، وهذا النوع من الأساسات تعرف بالأساسات العميقة.

# وقدوته :

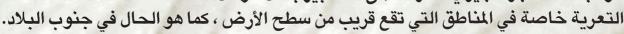
التربة هي من المواد الإنشائية التي يتعامل معها المهندس المدني أكثر من غيرها ، فهي تشكل المادة الإنشائية لبعض المنشآت (كالسدود الترابية وطبقات الطرق) ، كما يشكل الأساس الذي تستند إليه كل المنشآت الأخرى من أبنية وجسور وغيرها ، ولكي يتعامل المهندس مع التربة ، فإنه يجب عليه أن يتعرف على طبيعتها وخواصها الفيزيائية والميكانيكية والكيميائية ، وأن يدرس توازنها ومقاومتها وسلوكها في الظروف المختلفة التي ترد في الحياة العملية ، وبما أن التربة هي أكثر المواد إنتشاراً ، فإن لدراستها إنعكاسات إقتصادية هامة . فعلى ضوء الدراسة يمكن تحديد إمكانية إختيار التربة كمادة إنشائية لمنشأة ما ، أو تحديد مدى مناسبة موقع معين الإقامة مشروع ما ، أو لتحديد نوع وطبيعة الأساسات المناسبة التربة معينة ، أو إختيار طريقة المعالجة لتحقيق هدف معين.

# أنواع التربة في الكويت:

تتكون التربة في الكويت من عدة طبقات ، الطبقة السطحية منها تتكون من رمال ناعمة إلى متوسطة الخشونة وقد تكونت بفعل الرياح ، ويتراوح عمق هذه الطبقة من 0 إلى 7 أمتار تقريباً – حسب كل منطقة وظروفها ، وهذه الطبقة عادة تكون هشة ذات نفاذية عالية ، وهي التي عادةً ما يتم عليها التأسيس من المبانى السكنية وغيرها .

تلي هذه الطبقة طبقة صلبة ومتراصة من الرمل صماء لاتسمح بمرور المياه ، وتسمى محلياً بـ«الجاتش».

تلي هذه الطبقة طبقة ترسبات كلسية ، وهذه الطبقات مجتمعة تعرف بمجموعة الكويت ، والتي تتراوح سماكتها من 30 م في الجنوب قرب منطقة الأحمدي إلى حوالي 360 م في المناطق الشمالية قرب منطقة الصبية وجزيرة بوبيان . طبقة الدمام والتي تتكون غالباً من الحجر الجيري مخلوطاً بحجر الصوان في بعض الأماكن تأتي بعد مجموعة الكويت ، وطبقات الحجر الجيري مشرخة إلى حد كبير بفعل عوامل







# فحص التربة للأغراض الهندسية :

التربة في حالتها الطبيعية مادة إنشائية معقدة متبدلة الخواص ، ولا يمكن معرفة ظروفها في الأعماق ومن هذه الصعوبات على سبيل المثال ، أنها مادة غير متجانسة تماماً وغير مرنة ، وبالتالي يصعب تقدير التغيرات فيها بدلالة الإجهادات ، ومن هنا تأتي الخبرة والممارسة والإطلاع

# INCO - LABS (KSCC)

Paid up Capital K.D. 900.000

Accredited to ISO/IEC 17025: 2005



# شركة مختبرات إنكو الصناعية (ش.م.ك.م)

رأس المال المدفوع ٩٠٠,٠٠٠ دك

حاصل على الآيزو ٢٠٠٥: ١٧٠٢٥

فحـوصـات الـمواد \* أبحاث التربـة \* المساحـة \* المعايرة \* التقييـم الإنشائي \* فحـوصـات البيئة Material Testing \* Soil Investigation \* Surveying \* Calibration \* Structural Evaluation \* Environmental Testing







# نبذة عن فعص التربة للأغراض المندسية

إعداد د.م. عبدالمجيد جراغ المستشارالضني









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ISO/IEC 17025:2005 TESTING CERT # 2487.01 & 2487.02 CALIBRATION CERT # 2487.03



Organizational Member





ص.ب. ۲۱۰۷۳ الصفاة ۱۳۰۷۱ - الكويت تليفون : ۲۲۷۱۰۷۸۰ ۹۳۵ ۲۲۷۵۲۳۲۰ ۲۲۷۵۲۳۳۰

فاکس: ۲۲۵۲۱۷۲۱ ۵۲۹+

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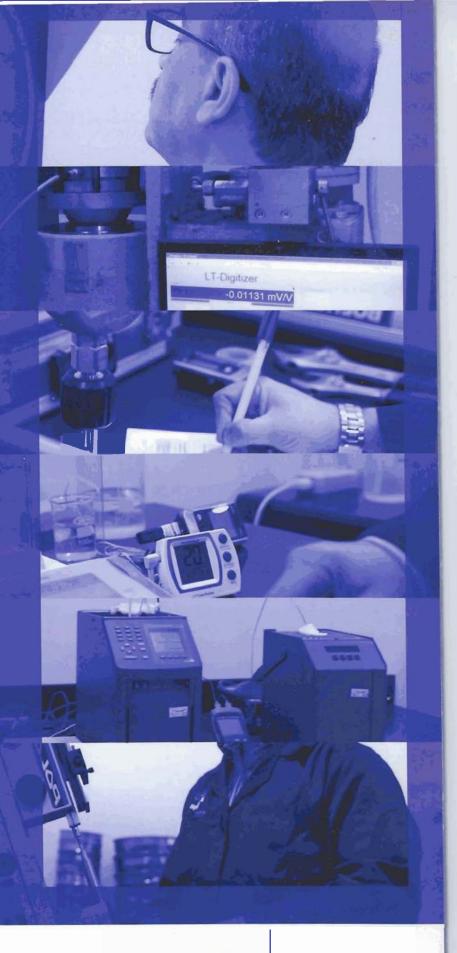


Paid up capital 1,350,000 KWD Accredited to ISO/IEC 17025:2005

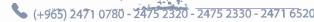
Temperature Humidity Mass Force Pressure

**Dimensions** Electrical Volume Flow Time

# Calibration Laboratories



INCO - LABS (KSCC)













O/IEC 17025:2005 ESTING CERT # 2487.01 & 2487.02 ALIBRATION CERT # 2487,03









#### INTRODUCTION

INCO-LABS is a leading engineering and industrial services provider in the field of Geotechnical, Materials & Soil testing, Surveying, Calibration, Environmental Testing, Structural Evaluation and Piles Testing since 1996.

In its on-going quest to provide services to its customers with high quality measurements, INCO-LABS has built calibration laboratories to meet customer's quality needs in line with ISO 17025:2005 requirements in the field of force, pressure, electrical, mass, dimensions, temperature, humidity, volumes, flow and time.

INCO-LABS has established the Calibration Department with a guidance and consultancy provided from the National Institute for Standards (NIS) based in Egypt, an associate member of the International Bureau of Measurements and Weights (Bureau International des Poids et Mesures - BIPM) in Paris (France). Accordingly, INCO-LABS has obtained the international accreditation of ISO/IEC 17025:2005 in the field of calibration from the American Association for Laboratory Accreditation (A2LA) based in USA since March 2012 (Certificate No. 2487.03).

Composed of experienced engineers in the field of metrology and calibration, the staff is working as a team to ensure customer satisfaction, quality and productivity of service. Since the operation of its calibration laboratories, INCO-LABS has expanded its customers base to cover governmental sectors and private companies in the field of manufacturing, construction and laboratories.

#### **CAPABILITIES**

Our instruments used in calibration are traceable to international standards, stringent to environmental conditions as per ISO/IEC 17025:2005 requirements and handled by highly qualified engineers & technicians. Whether in our laboratories or on-site, INCO-LABS is capable of providing testing and calibration of precision measuring instruments, develops test & calibration procedures and offers consultancy services.

#### **MISSION**

The management of INCO-LABS has formulated a defined mission of the Calibration Department to provide accurate, precise & high-quality calibration services to customers

under the areas of industrial, construction, oil & gas, aviation, medical, food and other fields.

INCO-LABS is committed to its customers through fast turn-around time, providing quality measurements by means of state-of-the-art reference standards, highly qualified engineers & technicians with years of experience in the field of metrology.

#### VISION

INCO-LABS has a vision to be recognized as a world class calibration and testing provider in the State of Kuwait and in the Middle East region, committed to customers in achieving their goals through quality service & people excellence.

#### **ACCREDITATION**

The Calibration Department of INCO-LABS is certified by the Ministry of Public Works (MPW) and Ministry of Electricity & Water (MEW) beside the international accreditation of ISO/IEC 17025:2005 obtained from the American Association for Laboratory Accreditation (A2LA) granted in March 2012 (Certificate No. 2487.03).

Please refer to the American Association for Laboratory Accreditation (A2LA) website www.A2LA.org to know more about the status and scope of accreditation.

#### **QUALITY ASSURANCE**

The quality of calibration services provided to our customers are assured by our participation in Proficiency Testing Programs with internationally accredited National Institutes for Standards and Metrology.

Our calibration instruments are periodically calibrated by National Institutes approved by National Institute of Standards and Technology (NIST) based in U.S.A. and/or by high quality metrology laboratories accredited to ISO/IEC 17025:2005. The calibration instruments are undergoing of intermediate checks periodically in order to ensure the competence of the performance of all equipment used in calibration.







Moreover, our calibration laboratories are periodically audited by external and internal consultants to ensure the implementation of the quality system according to ISO/IEC 17025:2005.

#### **DIMENSIONAL LABORATORY**

With fully equipped Dimensional Calibration Laboratory, the lab consists of gauge block sets, optical projector, electronic digital gauges and micrometers for various applications, digital protractor, granite surface plates and other standard accessories.

INCO-LABS is capable to calibrate the following dimensional tools:

Instrument	Range
Vernier/Caliper (Dial or Digital)	0 - 600 mm
Depth & External Micrometer	0 - 300 mm
Depth Caliper	0 - 300 mm
Dial Indicator	0 - 100 mm
Mechanical Test Sieves	0.06 - 5 mm
Height Gauge	0 - 600 mm
Feeler Gauge	0.05 - 5 mm
Molds	up to 600 mm
Paint Thickness Device	up to 1 mm
Steel Rules	up to 1000 mm
Profile Projector	up to 200 mm

#### **TEMPERATURE LABORATORY**

The Temperature Laboratory consists of sophisticated measuring instruments such as metrology wells (ovens), liquid baths, reference thermocouples type "S" and reference platinum resistance thermometers (Pt-100) with capability of calibrating varieties of temperature sensors ranging from -60 °C to 1100 °C and heat mediums from -200 °C to 1100 °C. Instruments for calibration are shown below:





Platinum Resistance Thermometers

Ovens

Thermistor

Liquid Bath

Liquid-in-glass Thermometers

**Temperature Calibrator** 

Digital/Analog Thermometers

Freezers

**Temperature Controllers** 

Refrigerators

Incubators

Autoclaves

Data Loggers

Climatic Chamber

Thermocouples

Calibrator

#### **HUMIDITY LABORATORY**

Capable of calibrating all kinds of hygrometers ranging from 10% to 90% using high precision humidity chamber and reference hygrometers. INCO-LABS is capable to calibrate the following instruments:

Moisture Content Meter

**Humidity Chambers** 

**Speedy Moisture Tester** 

Digital & Analog Hygrometers

Data Loggers

**Chart Recorder** 

**Humidity Sensors/Transmitters** 

#### **MASS LABORATORY**

The Mass Laboratory is equipped with the latest technology of comparators (balances) to cover the calibration of various ranges of masses ranging from 1 mg to 20 kg, and reference standard weights ranging from 1 mg to 20 kg class E1, E2, F1 and M1.

Our Mass Laboratory is capable to calibrate the following:

- Precision/Industrial Balances up to 4000 kg
- Laboratory/Industrial weights class E2, F1, F2, M1, M2, M3 ( 1 mg up to 20 kg )







#### **VOLUME LABORATORY**

The calibration of volumes is performed using the comparator (balances) of the Mass Laboratory in connection with a special computation program. For Volume laboratory, we can offer the calibration of glassware from 0.1 ml up to 2000 ml for several types of glassware such as:

#### PRESSURE LABORATORY

The Pressure Laboratory is using reference standards for hydraulic and pneumatic pressure calibration as per the following:

- Fluke PPC4 Gas Pressure Controller Calibrator
- Fluke PPCH Hydraulic Pressure Controller Calibrator
   Standard Pressure Gauges for site calibration

The Pressure Laboratory provides the calibration of pressure gauges in lab and on site for the following ranges:

- Pneumatic pressure gauges ranging from -1 bar to 140 bar
- Hydraulic pressure gauges ranging from 0 bar to 2000 bar

#### **FORCE LABORATORY**

The Force Laboratory is capable of calibrating Universal Testing Machines up to 3000 kN for compression and up to 1000 kN for tension using precise load cells of various ranges.







The following load cells are used for force calibration:

- 1000 N tension & compression
- 5 kN tension & compression
- 25 kN tension & compression
- 100 kN tension & compression
- 250 kN tension & compression
- 500 kN tension & compression
- 1000 kN tension & compression
- . 3000 kN compression only

#### **ELECTRICAL LABORATORY**

The Electrical Laboratory is established to meet the calibration needs of various electrical instruments for DC & AC (low & high) voltage and current, resistance, frequency, power and capacitance.

Our capabilities for electrical calibration are shown below:

DC Voltage Meter	Up to 1000V	
AC Voltage Meter	Up to 1020 V (10 Hz - 500 kHz)	
DC Current Meter	Up to 20.5 A	
AC Current Meter	Up to 20.5 A (10 Hz - 10 kHz)	
Resistance Meter	Up to 1100 MΩ	From 2 1/ digit up
Capacitance Meter	From 0.19 nF to 110 mF	From 3 ½ digit up to 6 ½ digit only
Frequency Meter	Up to 2 MHz	
DC Power Meter	Up to 11 kW	
AC Power Meter	Up to 11 kW (10 Hz - 10 kHz)	
DC Clamp Meter	From 10 A to 1025 A	
AC Clamp Meter	From 10 A to 1025 A (45 Hz - 440 Hz)	
DC Voltage Source	Up to 1000 V	
AC Voltage Source	Up to 1000 V (20 Hz - 1 MHz)	From 3 ½ digit up
DC Current Source	Up to 20 A	



AC Current Source	Up to 20 A (10 Hz - 10 kHz)	to 7 1/2 digit only
Resistance Source	From 200 micro Ω up to 20 GΩ	
Centrifuge	Up to 99999 RPM	
Stop Watch	Up to 24 hours	

#### **FLOW LABORATORY**

The Flow Laboratory performs calibration of mechanical flowmeters of fluids with high accuracy using on-site ultra-sonic standard flowmeter, and the calibration to be performed while the flowmeter is online. In addition, INCO-LABS calibrates digital flowmeters by ultra-sonic flowmeter or electricity depends on the customer request.

The Flow Laboratory performs calibration for volumetric flow rate, mass flow rate and flow velocity for pipes diameter in the range of 2 - 133.9 inch and fluid velocity in the range of 0.1 - 25 m/sec.

#### **OTHER SERVICES**

INCO-LABS with its experienced staff has the ability to provide consultation for its customers in the industry in matters related to measurements and calibration, and assist its customers to fulfill the requirements of ISO 17025 and ISO 9001.

With its unique experience, INCO-LABS is capable to consulate its customers to establish their own calibration laboratories according to ISO/IEC 17025:2005 requirements. According to its customers requirements, INCO-LABS is able to provide site calibration mobile laboratory for long term agreement.

Moreover, INCO-LABS provides calibration training courses in the field of temperature, humidity, dimensional, mass & balance, volume, pressure, force, electrical & flow, and evaluation of uncertainty measurements in coordination with international professional organizations in metrology.

أجهزة قياس الطاقة للتيار المستمر والمتردد	حتى 11 كيلو واط
أجهزة قياس التردد	حتى 2 ميجاهيرتز
أجهزة قياس الكهرباء (مشبك) للتيار المستمر	من 10 أمبير حتى 1025 أمبير
أجهزة قياس الكهرباء (مشيك) للتيار المتردد	من 10 أمبير حتى 1025 أمبير
مصدر جهد للتيار المستمر	حتى 1000 فولت
مصدر جهد للتيار المتردد	حتى 1000 فولت
مصدر للتيار المستمر	حتى 20 أمبير
مصدر للتيار المتردد	حتى 20 أمبير
مصدر مقاومة	من 200 مايكرو أوم حتى 2 جيجا أوم
جهاز الطرد المركزي	99999 دورة/دقيقة
ساعة إيقاف	24 ساعة

#### مختبر التدفق

مختبر التدفق لديه القدرة على معايرة عدادات التدفق الميكانيكية لتدفق السوائل بدقة عالية بإستخدام جهاز فوق الصوتيات بالموقع وبدون نقل العداد من مكانه ، كما يمكن معايرة عدادات التدفق الرقمية ميكانيكياً أو كهربائياً حسب متطلبات العميل ، ومختبر التدفق يقوم بمعايرة بعض الخواص مثل معدل التدفق الحجمي ومعدل التدفق الكتلي وسرعة التدفق في الأنابيب بقطر 2 - 133.9 بوصة وسرعة السائل بمعدل 0.1 - 25 متر/ثانية.

## الخدمات الأخرى

مختبرات إنكو الصناعية لها القدرة لتقديم الإستشارات الفنية لعملائها في مجال الصناعة للأمور المتعلقة بالقياسات والمعايرة ومساعدتهم لتحقيق المتطلبات الفنية والإدارية للآيزو ISO17025 و ISO9001. بخبرتها الفريدة ، تقدم مختبرات إنكو الصناعية لعملائها الإستشارات اللازمة لإنشاء مختبرات المعايرة الخاصة بها وفقاً لمتطلبات الأيزو 17025:2005.

حسب إحتياجات العملاء ، مختبرات إنكو الصناعية لها القدرة على توفير مختبر معايرة موقعي متنقل لإتفاقيات طويلة الأمد. مختبرات إنكو الصناعية لديها الإمكانية لعقد دورات تدريبية في مجال قياسات الحرارة والرطوبة والأبعاد و الكتلة و الحجوم والقوة والضغط والكهرباء والتدفق والزمن وطرق حسابات اللايقين بالتنسيق مع منظمات دولية متخصصة بمجال علم القياس (المترولوجيا)





## مختبر القوة

مختبر القوة لديه القدرة على معايرة ماكينات الضغط و الشد في مدي حتى 3000 كيلو نيوتن للضغط وحتى 1000 كيلو نيوتن للضد وذلك بإستخدام خلايا تحميل ذات دقة عالية . ويحتوي مختبر القوة على مجموعة من خلايا التحميل التالية :

- = N 1000 الشد و الضغط
- 5 كيلو نيوتن الشد و الضغط
- 25 كيلونيوتن الشد والضغط
- 100 كيلو نيوتن الشد والضغط
- ا 250 كيلو نيوتن الشد والضغط
- 500 كيلو نيوتن الشد والضغط
- 1000 كيلو نيوتن الشد والضغط
  - 3000 كيلو نيوتن ضغط فقط

#### مختبر الكهرباء

تم تجهيز مختبر الكهرباء لتلبية احتياجات عملاء الشركة لمعايرة جميع أجهزة قياس الوحدات الكهربائية مثل الفولت (المنخفض والعالي) والتيار والمقاومة والتردد والسعة الكهربائية والقدرة للتيار المستمر والتيار المتردد.

مختبر الكهرباء لديه الإمكانية لمعايرة الأجهزة الكهربائية التالية:

المدى	اسم الجهاز
حتى 1000 فولث	أجهزة قياس الفولت للتيار المستمر
حتى 1020 فولت	أجهزة قياس الفولت للتيار المتردد
حتى 20.5 أمبير	أجهزة قياس الأمبير للتيار المستمر
حتى 20.5 أمبير	أجهزة قياس الأمبير للتيار المتردد
حتى 1100 ميجا أوم	أجهزة قياس المقاومة
من nF 0.19 حتى mF 110	أجهزة قياس السعة





## مختبر الحجوم

يتم معايرة أجهزة قياس الحجوم وقياسات الحجوم بإستخدام موازين عيارية بمختبر الكتلة وأحدث طرق حسابات الحجوم بإستخدام برامج متخصصة ، مختبر الحجوم يقوم بمعايرة الزجاجيات المخبرية في المدى من 0.1 مللتر حتى 2000 مللتر للأنواع التالية:

السحاحات الأوتوماتيكية الإسطوانات المدرجة

الماصات الأوتوماتيكية جميع أنواع القوالب

الماصات ذات الحجم الواحد أجهزة المخروط الرملي

أوعية تعيين الوزن النوعي الدوارق ذات الحجم الواحد

## مختبر الضغط

مختبر الضغط مزود بأحدث الأجهزة المرجعية المستخدمة دولياً لمعايرة أجهزة قياس الضغط الهيدروليكية والغازية على النحو التالي:

- جهاز التحكم في الضغط الغازي العياري (Fluke PPC4)
- جهاز التحكم في الضغط الهيدر وليكي العياري (Fluke PPCH)

مختبر الضغط يقدم خدمات معايرة عدادات الضغط بالمختبر وبالموقع كالتالي:

- أجهزة قياس ضغط غازي تتراوح من -1 بار الى 140 بار
- أجهزة قياس الضغط الهيدروليكي تتراوح من 0 بار إلى 2000 بار







## مختبر الرطوبة

لدينا القدرة على معايرة جميع أنواع أجهزة قياس الرطوبة الجوية التي تتراوح بين 10 % إلى 90 % بإستخدام غرفة عالية الدقة لضبط الرطوبة والحرارة وأجهزة عيارية لقياس الرطوبة والحرارة، ولدينا الإمكانية لمعايرة الأجهزة التالية:

أجهزة قياس رطوبة التربة أجهزة تسجيل قياس الرطوبة باستخدام الورق غرف الرطوبة في أجهزة تسجيل قياس الرطوبة الرقمية

هيجرومترات رقمية أجهزة قياس المحتوي المائى للمواد و الحبوب

حساسات الرطوبة

## مختبر الكتلة

مختبر الكتلة مجهز بأحدث تكنولوجيا أجهزة قياس الكتل والموازين لمعايرة الأوزان العيارية والصنج في المدي من 1 مللي جرام حتى 20 كيلو جرام ، كما يحتوي المختبر على أوزان عيارية من فئة E1 و E2 و F1 و M1 لمعايرة الموازين في المدى من 1 مللي جرام حتى 2000 كيلوجرام.

مختبر الكتلة لديه القدرة لمعايرة الأجهزة التالية:

الموازين الدقيقة والموازين الصناعية حتى 45000 كيلوجرام

■ الأوزان العيارية المخبرية والصناعية من فئة E2 و F1 و F2 و M1 و M3 و M3









#### مختبر الأبعاد

مختبر الأبعاد مجهز بأحدث الأجهزة العيارية مثل قوالب القياس العيارية وجهاز معايرة مبينات القياس وجهاز الإسقاط الضوئي (بروجيكتر) وأجهزة القياس الرقمية والتناظرية للتطبيقات الهندسية المختلفة مثل قياسات الطول والعمق والسماكة وجهاز قياس الزوايا الرقمي ومسطح جرانيت قياسي وأدوات مساندة أخرى.

يقوم مختبر الأبعاد بمعايرة الأدوات والأجهزة التالية :

مدي القياس	اسم الجهاز
0 - 600 مح	كاليبر (القدمة ذات الورنية)
0 - 300 مح	ميكر ومتر للقياس الخارجي والعمق
0 - 300 مح	كاليبر لقياس العمق
0 - 100 مم	مبينات القياس
5 - 0.06 مم	المناخل
0 - 600 مم	أجهزة قياس الإرتفاعات
5 - 0.05 مم	فيلر
حتى 600 مم	القوالب بجميع أنواعها
حتى 1 مم	أجهزة قياس سماكة الأصباغ
حتى 1000 مم	المساطر الصلبة
حتى 200 مم	أجهزة الإسقاط الضوئي

#### مختبر الحرارة

يحتوي مختبر الحرارة على أجهزة قياس متطورة مثل الأفران وحمامات سائلة لمعايرة جميع أنواع الترمومترات في المدي من -60 °س إلى 1100 °س، ويشمل مختبر الحرارة على إزدواجات عيارية وترمومترات بلاتينية لمعايرة الأوساط الحرارية من -200 °س إلى 1100 °س مثل:

ن ترمومترات المقاومة	حضانات أفر

الأوتوكلافات (أجهزة تعقيم) الحمامات السائلة ثرمستور

أجهزة تسجيل وقياس الحرارة أجهزة قراءة الحرارة ترمومترات زجاجية

غرف الحرارة الفريزرات ترمومترات رقمية ومعدنية

الازدواجات الحرارية الثلاجات أجهزة ضبط قياس درجة الحرارة

كاليبريتور

كما يتميز مختبر الحرارة بإمكانية القيام بالمعايرة الموقعية لدى العميل وذلك بإستخدام أجهزة المعايرة المتنقلة.







## المهمة

شكلت إدارة الشركة مهمة محددة لقسم المعايرة وذلك بتوفير الدقة وخدمات المعايرة الدقيقة وعالية الجودة لعملاء الشركة في إطار المجالات الصناعية والخدمية مثل النفط والغاز والبناء والطيران و الصحة والغذاء وغيرها من المجالات.

مختبرات إنكو الصناعية تلتزم بتقديم خدمات المعايرة لعملائها من خلال سرعة الأداء ، وتوفير قياسات بجودة عالية بإستخدام أحدث الأجهزة ذات معايير مرجعية ، وكذلك المهندسين والفنيين المؤهلين تأهيلاً عالياً على مدى سنوات من الخبرة في مجال المعايرة.

## الرؤيسة

مختبر ات إنكو الصناعية لها الرؤية للإرتقاء بمستوي المعايرة في دولة الكويت ودول الخليج العربي والشرق الأوسط، فإننا ملتزمون بتحقيق أهداف العملاء من خلال خدمات عالية الجودة معترف بها دولياً ومهندسين متميزيين ذو خبرة كبيرة.

### الإعتماد

مختبرات المعايرة لدى مختبرات إنكو الصناعية معتمد من قبل وزارة الأشغال العامة ووزارة الكهرباء والماء بدولة الكويت ، وذلك بجانب الإعتماد الدولي طبقاً للأيزو 17025:2005 لمختبرات المعايرة من قبل المنظمة الأمريكية لإعتماد المختبرات (A2LA) منذ شهر مارس لعام 2012 شهادة رقم 2487.03.

يرجى الرجوع إلى الموقع الإلكتروني لجهة الإعتماد www.A2LA.org لمعرفة وضع ومجال الاعتماد.

## تأكيد الجودة

جودة خدمات المعايرة المقدمة لعملاء الشركة يتم التأكد منها من خلال المشاركة ببرامج إختبارات الكفاءة الفنية بالمقارنة مع مختبرات المعاهد القومية والوطنية للقياس والمعايرة المعتمدة دولياً .

جميع الأجهزة المستخدمة في المعايرة يتم معايرتها دورياً من قبل معاهد وطنية وقومية معتمدة من قبل المعهد القومي للقياس والتكنولوجيا (NIST) الكائن بالولايات المتحدة الأمريكية ومن قبل مختبرات رفيعة المستوى معتمدة دولياً بموجب متطلبات الأيزو 17025:2005 ، وتخضع أجهزة المعايرة لإختبارات دورية للتأكد من كفاءتها الفنية ، وبالإضافة إلى التدقيق الداخلي الدوري لمختبرات المعايرة من قبل إستشاريين متخصص andين من خارج وداخل الشركة للتأكد من تفعيل نظام الجودة وفقاً للأيزو 17025:2005 .



### مقدمــة

شركة مختبرات إنكو الصناعية رائدة في تقديم الخدمات الهندسية والصناعية في مجال أبحاث التربة و فحوصات البيئية والتقييم الإنشائي وفحوصات الأوتاد الخرسانية منذ عام 1996.

و في سعيها الجاري لتوفير الخدمات لعملائها بقياسات عالية الدقة والجودة ، قامت مختبرات إنكو الصناعية بإنشاء مختبرات للمعايرة في مجال القوة والضغط والكهرباء والكتلة والأبعاد والحرارة والرطوبة والحجوم والتدفق والزمن طبقاً لمتطلبات المواصفات القياسية العالمية الأيزو 17025:2005 لكفاءة مختبرات الفحص والمعايرة ، وذلك لتلبية احتياجات العملاء للتأكد من صحة قياسات الأجهزة لديها وبما يتلائم مع المواصفات الدولية للإرتقاء بمستوى جودة المنتجات أو الخدمات التي تقدمها .

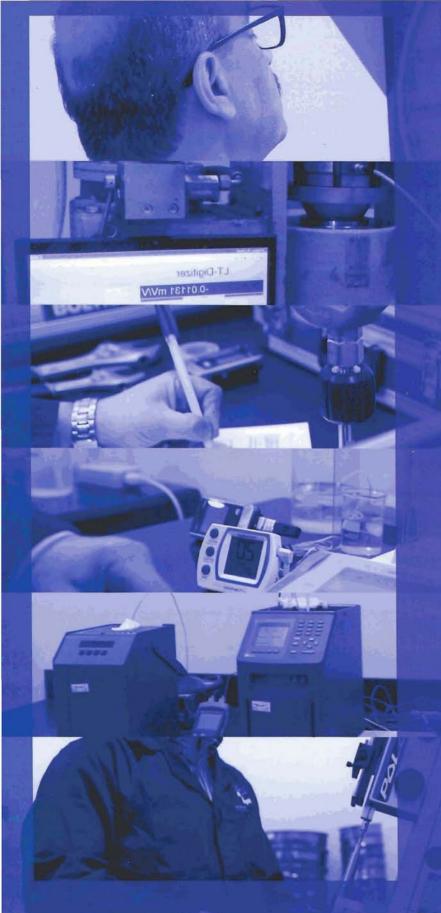
عند إنشاء قسم المعايرة استعانت مختبرات إنكو الصناعية بإستشارات و خبراء من المعهد القومي للقياس والمعايرة بجمهورية مصر العربية وهو عضو مشارك في المكتب الدولي للمقاييس والمعايير الدولية بباريس في فرنسا ، وذلك لتأهيل قسم المعايرة للإعتماد الدولي من المنظمة الأمريكية لإعتماد المختبرات (A2LA) ، هذا وقد تم الحصول على الإعتماد الدولي للآيزو 17025:2005 من قبل المنظمة الأمريكية لإعتماد المختبرات (A2LA) بموجب شهادة رقم 2487.03

يعمل في قسم المعايرة مجموعة من المهندسين ذوي الخبرة في مجال المقاييس والمعايرة و يعملون كفريق واحد لضمان رضاء العملاء وجودة القياسات واستشارات المعايرة.

ومنذ تشغيل مختبرات المعايرة ، أصبح لشركة مختبرات إنكو الصناعية قاعدة كبيرة من أهم العملاء المتمثلة في الجهات الحكومية والقطاع الخاص في مجال الصناعة والإنشاءات والمختبرات.

## القدرات

الأجهزة المستخدمة في جميع المعايرات لها مرجعية للمعايير الدولية ، كما أننا نحافظ علي الظروف البيئية المناسبة لها طبقاً للمواصفة الدولية الايزو 17025:2005 سواء في المختبر أو الموقع ويتعامل معها مهندسين وفنيين ذو كفاءة عالية . مختبرات إنكو الصناعية قادرة على توفير خدمات معايرة أجهزة القياس بالدقة التي تناسب كل جهاز على حدة ، كما أننا بصفة دائمة نقوم بتطوير إجراءات المعايرة وتقديم الخدمات الفنية.





رأس المال المدفوع 1,350,000 دك حاصل على الآيزو 17025:2005

> الأنعاد الكهرباء الحجوم التدفق الزمن

الحرارة الرطوبة الكتلة القوة الضغط

مختبرات المعايرة



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ISO/IEC 17025:2005



