



شركة تهامة للفحص الهندسي ذ.م.م

TOHAMA FOR ENGINEERING INSPECTION Co. L.L.C

TOHAMA Co. Profile

2015

Co. Name : TOHAMA For Engineering Inspection Co.

Head office : Basrah – Iraq

E-mail : tohamainspection@gmail.com

Phone : +9647705774009
+9647801391382

Leader ship : representative & chairman
expert Saad Mandil

Core business :

- civil engineering testing.

TABLE OF CONTENT

▪ Civil engineering.....	3
1. Strategy & Vision.....	3
2. PRODUCTS & SERVICES.....	5
2.1 Tests on Steel.....	5
2.2 Concrete Mix Design.....	5
2.3 Tests on Compressive Strength.....	5
2.4 Tests on Coarse & Fine Aggregates.....	5
2.5 Tests on Cement.....	5
2.6 Test Facilities Includes.....	6
2.7 Non – Destructive tests (NDT).....	6
2.8 NDT facilities are available for client needs.....	6
3. DEEP FOUNDATION TEST.....	6
4. Business competitiveness.....	7
5. Quality policy.....	7
6. Portfolio/Cientele.....	8
7. Client Annexed List.....	8
8. FIELD INSPECTIONS.....	15
9. ON SITE PILE TESTING.....	20
10. Cross hole.....	22
11. Integrity.....	26
▪ Chemical Laboratory.....	29

- **Civil engineering :**

1. Strategy & Vision

We take pleasure in introducing our organization viz. TOHAMA FOR ENGINEERING INSPECTION a center for Civil Engineering Services, includes NDT Divn. and a fully equipped Building Material Testing Laboratory (Digital & Computerised) centrally located at BASRA & its allied site laboratories in majnoon Oil Field.

TEIC is fully geared for fast track construction agencies, where reliable, accurate, and quick delivery of test results. The Laboratory has all the facilities to conduct the tests on all types of building materials, as per relevant ASTM, BS EN, BS codes with reasonable testing charges.

TEIC is professionally equipped and capable of undertaking Non Destructive Tests, Structural evaluation, Schemes of Restoration & Rehabilitation and rendering its Consultancy and Advisory services for all types of RCC & PSC structures, Tohama have joint venture for Consultancy and Engineering requirements which is directly dealt by University of Basra, Engineering Consulting Bureau.

TEIC Testing Laboratory & NDT Divn. both is in way for being applying ISO 9001 Accredited and soon Tohama will look into International certifications too.

A-Laboratory test :

Testing of all Building Materials like Cement, Aggregates, Concrete Mix Ingredients etc. Soil Test wrt Classification, Waterberg Limits, Physical & Chemical Analysis of Soil etc. Concrete Design Mix with Normal /Accelerated Curing Non-Destructive Testing of R.C. Structures Structural Evaluation of R.C Structures Consultancy & Advisory Services with JV of ECB, UoB Quality Audit / Assessment of Concrete Structures Dissemination of Technical Knowledge.

B- NDT for deep foundation :

Pile Integrity testing as Per ASTM D 5882 Low Strain Integrity Test with Cross Hole as per ASTM D6760-08 High Strain Dynamic Test as Per ASTM D4945-08, including Static Pile Load Test like Compression, Lateral & Pull out/Tension as per ASTM D1143-07, ASTM D3689-07 & ASTM D3966-07. Schmidt Hammer Test Analysis with Ultra Sonic and Destructive On Site Sampling of Concrete.

2. PRODUCTS & SERVICES

The highly equipped computerized & digital laboratory has got all the facilities to conduct both Physical & Chemical tests on all types of building materials, as per relevant ASTM/BS EN Standard Code of practice.

2.1 Tests on Steel

- Physical tests on Reinforcing steel : Tensile, Bend & Rebend
- Tensile & Bend tests on Structural steel sections
- Tensile Tests on Spliced/Coupler/Welded Joints
- Chemical analysis on all above steel specimens like Carbon, Sulphur, & Phosphorous

2.2 Concrete Mix Design

Concrete Mix Design for various grades, to ensure strength and durability as per the client's requirements

- Design Mix on all grades of concrete (C10 to C70) are undertaken for both Normal and Accelerated Curing Tests (ACT) Method.
- Accelerated Curing Tests (ACT) – for Concrete Mix Design are undertaken to estimate equivalent 28 days strength. ACT-Mix Design Reports will be submitted within 4 days.

2.3 Tests on Compressive Strength

- Concrete Cubes, Bricks, All Types of Hollow & Solid blocks, Pavers, Cover Blocks, Concrete Cores & Mortar cubes.
- Accelerated curing test (ACT) are also undertaken on concrete cubes supplied by the client and test reports for 28 days equivalent cube strength will be furnished on the same day.

2.4 Tests on Coarse & Fine Aggregates

Physical & Chemical Properties on all sizes of Aggts.

2.5 Tests on Cement

- Physical & Chemical Properties of all types of cement
- Physical properties of Fly Ash
- Estimation of Cement : Sand ratio in Cement mortar samples

2.6 Test Facilities Includes

- Test on Flexural strength on concrete beams
- Lab. tests on Soil sample
- Water for construction purpose
- Admixture — Physical tests
- Aluminium — Coating Thickness & Section weight & Dimension tests
- All types of Tiles, Marbles & Granites

2.7 Non – Destructive tests (NDT) are essentially required for all types of ongoing projects and old/existing structures to assess the following.

- Quality and Integrity Assessment of concrete members for all types of structures.
- Investigation, Assessment and Rehabilitation of Distressed, Corrosion-affected and Fire- affected structures
- Assessment of corrosion activity in embedded reinforcement and evaluation of electrochemical parameters of concrete.
- Determination of in-situ strength of concrete.

2.8 The following NDT facilities are available for client needs

- Ultrasonic Pulse Velocity Test
- Rebound Hammer Test
- Core extraction Test

3. DEEP FOUNDATION TEST

TOHAMA is BASRA Pioneering Company committed to provide quality testing services to the pile foundation and construction industry using latest Pile Driving Analyzers, Pile Integrity Testers & NDT equipments.

We take credit for introducing Cross Hole Sonic Logging equipment in Piling Works with Shell in Majnoon Oil Field, CAPWAP analysis and for popularizing high strain dynamic pile testing (HSDPT), low strain integrity testing (also called LSIT, PIT, PET) in the southern regions of Iraq. Today this technology has been

used by us on a variety of projects of Shell, Basra Gas, Samsung, Port Trusts, Highway projects and real estate sector.

TOHAMA owns an array of Pile Driving Analyzers (PDA) and Pile Integrity Testers (PIT) located IN our offices or nearby testing job locations. Cross Hole Analyzer (Cross Hole Sonic Logging) Tests and other exclusive testing services like CAPWAP, GRLWEAP, Independent analysis for other testing or client companies are offered through our Head Office at Basra.

- **DEEP FOUNDATION TESTING**
- **SUPER STRUCTURE TESTING FOR CONCRETE**
- **TRAINING FOR FOUNDATION AND CONCRETE TESTING**
- **INDEPENDENT DATA EVALUATION AND REPORTS**

4. Business competitiveness

Quality, Safety, Experience, Credentials & Reliability makes Tohama as a lone Iraqi Company in its own geography which is able to provide efficient & cost effective solutions to clients.

The success of Tohoma's performance is based on an efficient organization and a dynamic and entrepreneurial management, implemented through successive processes of up gradations, takeovers of technologies and strategic plans committed to client's satisfaction. We broad today that our family contains of expert personnel. We aim to be renowned for excellence through our operating brand and the empowerment of our people.

5. Quality policy

- We are committed to execute high quality testing for construction projects within the planned schedule.
- We are strictly committed to contractual specification and any regulatory & statutory requirements.
- As a management in Tohama, we have a commitment to maintain the quality management of our works to be communicated and understood by each and every staff member of the company.
- We are always striving for continual improvement through regular review of our quality policy and its objectives to get our customer satisfaction.

6. Portfolio/Clientele

- **Our qualitative targets are expressed in**
- **Zero environmental incidents**
- **Zero work-site accidents**
- **No ethical breaches**
- **No defects**
- **No loss-making projects**

With a culture based on respect, openness and honesty and a team of cooperative and high- performing people, you will never be on your own.

7. Client Annexed List :

<i>Shell B.V.</i>	<i>Shell Gas</i>	<i>Weather Ford</i>	<i>Halliburton</i>
<i>CPP</i>	<i>HCG</i>	<i>TAAZ</i>	<i>AL Yamama</i>

CONCRETE TESTING

TOHAMA Construction Lab. Gives a complete solution for Non Destructive Testing for Concrete, Concrete is tested to ensure that the material that was specified and bought is the same material delivered to the job site. There are a dozen different test methods for freshly mixed concrete and at least another dozen tests for hardened concrete. TOHAMA Construction Lab carries out the list of Test as under:

1. Slump Test
2. Temperature Controlled Concrete
3. Compression Test with Cubes & Cylinder Specimens
4. Density & Yield Test
5. Mix Design for Blinding & Structural Concrete
6. Controlling with Routine Gradation of Gravels & Fine Aggregates
7. NDT – Rebound Hardness Test



ELECTRO MECHANICAL CUBE TESTING MACHINE



ELECTRICAL/ELECTRONIC CUBE TESTING MACHINE



CUBE MOULDS



CUBE SOAKING TANK



TESTING HAMMER



MANUAL CUBE TEST



INFRA RED SENSORS



SLUMP TEST



ACCELERATED CUBE CURING BATH
TANK



CONCRETE SIEVE SERIES

SOIL TESTING

The products listed below are representative System Setups for different types of testing that can be provided by TOHAMA Construction Test. They are complete systems and include all the required components and software to control, monitor, execute and output reports for the various types of test. Currently we have example setups for;

- Gradation/Sieve Analysis
- Checks for LL, PL & PI
- Consolidation & Compaction Testing,
- Unsaturated Testing,
- CBR Testing,

Complicated Tests are being organized with University of Basrah, that consists for the following tests.

- Permeability Testing,
- Marshall Testing,
- Bender Element Testing
- Triaxial Testing,
- Dynamic (Cyclic) Testing,
- Shear Testing,

Each System can be tailored to your specific requirements and configuration possibilities are listed in the features section of each product.



SAND REPLACEMENT



SIEVE ANALYSIS



PROCTOR TEST & SIEVE SETS



LIQUID LIMIT DEVICE CASAGRANDE



OVEN



HYDRAULIC CBR & ACCESSORIES



ELECTRONIC BALANCE/SCALE



CBR MOULD EXTRACTOR



RIFLER/SPLITTER



CBR & PERFORATED MOULD



HIGH CAPACITY SIEVE SHAKERS



LOS ANGES ABRASION TESTING
MACHINE



STANDARD & MODIFIED PROCTOR
MOULD WITH RAMMERS



SAND DENSITY CONE APPRATUS

 <p>DIGITAL CBR TESTING MACHINE 50 KN</p>	 <p>SAND EQUIVALENT TEST SET</p>
 <p>CBR SOAKING TANK</p>	 <p>SHRINKAGE LIMIT TEST SET</p>
 <p>RAPID MOISTURE METER-CALCIUM CARBIDE MEATHOD</p>	 <p>LABORATORY OVEN-500 LTRS. CAPACITY</p>
<p>GENERAL LABORATORY EQUIPMENTS</p>	
 <p>DIGITAL CALLIPERS</p>	 <p>DIGITAL THERMOMETERS</p>



ELECTRONIC WEIGH BALANCE UPTO 50
KG CAPACITY



PYCNUMETERS GLASS 100 CC



BEAKER GLASSES



GLASS CYLINDERS OF MULTIPLE
CAPACITIES



CUBE TESTING MACHINES ON SITE
3000 KN CAPACITY



PLATE LOAD BEARING TEST
200 KN CAPACITY

8. FIELD INSPECTIONS :

Testing Engineers provides a full range of field inspections, from code requirements, special Inspections and quality assurance inspections, to Soil, Concrete and Asphalt services. Our QC inspectors have industry certifications and years of experiences to ensure the services provided by your contractors meet industry and jurisdictional requirements.

Tohama's registered professionals engineers and researchers are in charge of all testing, inspection and quality control assignment entrusted to us.

Other responsibilities of the department includes monitoring the calibration of testing and measuring equipment (laboratory apparatus and equipment, concrete batching plants and weigh bridge – conducted by the independent calibration agency), qualification and selection of raw material sources as well as technical training and education as required.

Applicable tests for the raw materials (fine and coarse aggregates, water, cement/cementitious materials and chemical admixtures) and finished products (freshly mixed concrete and hardened concretes) are carried-out at TOHAMA Construction Laboratory & Department of Civil Engineering, Basrah Engineering Collage- University of Basra Laboratory in accordance with the international standards, either BS or ASTM.

All the test results are recorded in the prescribed forms and kept in the department for reference and any traceability purposes. Our qualified technical team and QA/QC staff ensure that all the raw materials used in the production is sourced from the right or approved supplier to meet the required quality desired.



Sets of Sieves
Aggregates Sample in Tray
Weighing Scale or Balance



Sieve Analysis (Grading) for Aggregates



Moisture Content Determination with the
use of Thermostatic Drying Oven



Moisture Content Determination with the
use of Thermostatic Drying Oven



Moisture Content Determination with the
use of Speedy Moisture Tester



Elongation Gauge
Flakiness Gauge



Gas Jar with Rubber Bung
Pycnometer
Sand Absorption Cone
Tamper
Wash Bottle
Weighing Scale or Balance



Air Entrainment Meter
Weighing Scale or Balance
(Test Conducted at Basra University)



Slump Cone, Scoop
Tamping Rod, Trowel
Meter or Ruler
Slump Cone Base (Sampling Tray)



Sampling of Freshly Mixed Concrete
from the Transit Mixer

For Al Yamama Batching Plant Mix
QA/QC assurance



Checking the Temperature of Freshly Mixed Concrete



Performing the Slump Test for the Freshly Mixed Concrete



Checking the Plastic Density (Unit Weight & Yield) of the Freshly Mixed Concrete



Checking the Air Content for the Freshly Mixed Concrete using Air Entrainment Meter



Casting of Concrete Cubes Specimens 150mm x 150mm x 150mm (Molding of Strength Specimens)



Casting of Concrete Cylinders Specimens 150mm x 300mm (Molding of Strength Specimens)



Markings or Identification for the newly casted (molded) Concrete Cube Specimens



Curing Tank for the casted Concrete Specimens in the laboratory



Curing Tank for the casted Concrete Specimens in the field



Curing Tank for the casted Concrete Specimens in the laboratory



Removal any surface fins from the Concrete Cube Specimen using the grinding stone



Checking the dimensions of the Concrete Cube Specimens prior of weighing & crushing



Rebound hammer test

9. ON SITE PILE TESTING :



225 Ton Load Test-1



500 Ton Load Test -1



500 Ton Load Test -2

10. Cross hole :

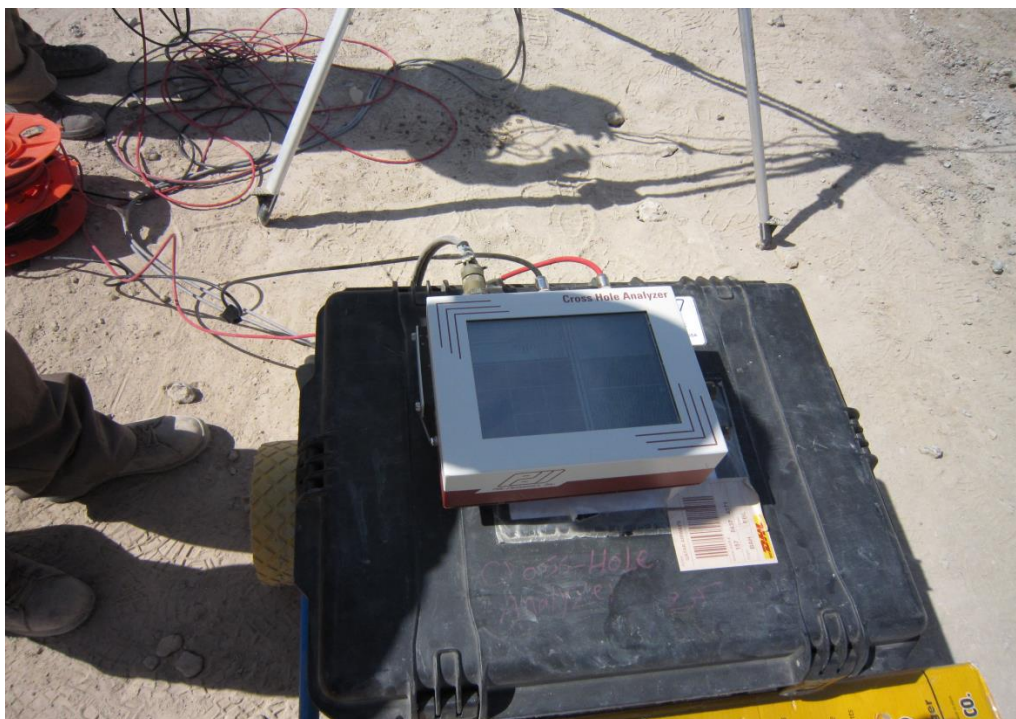








Cross hole analyzer

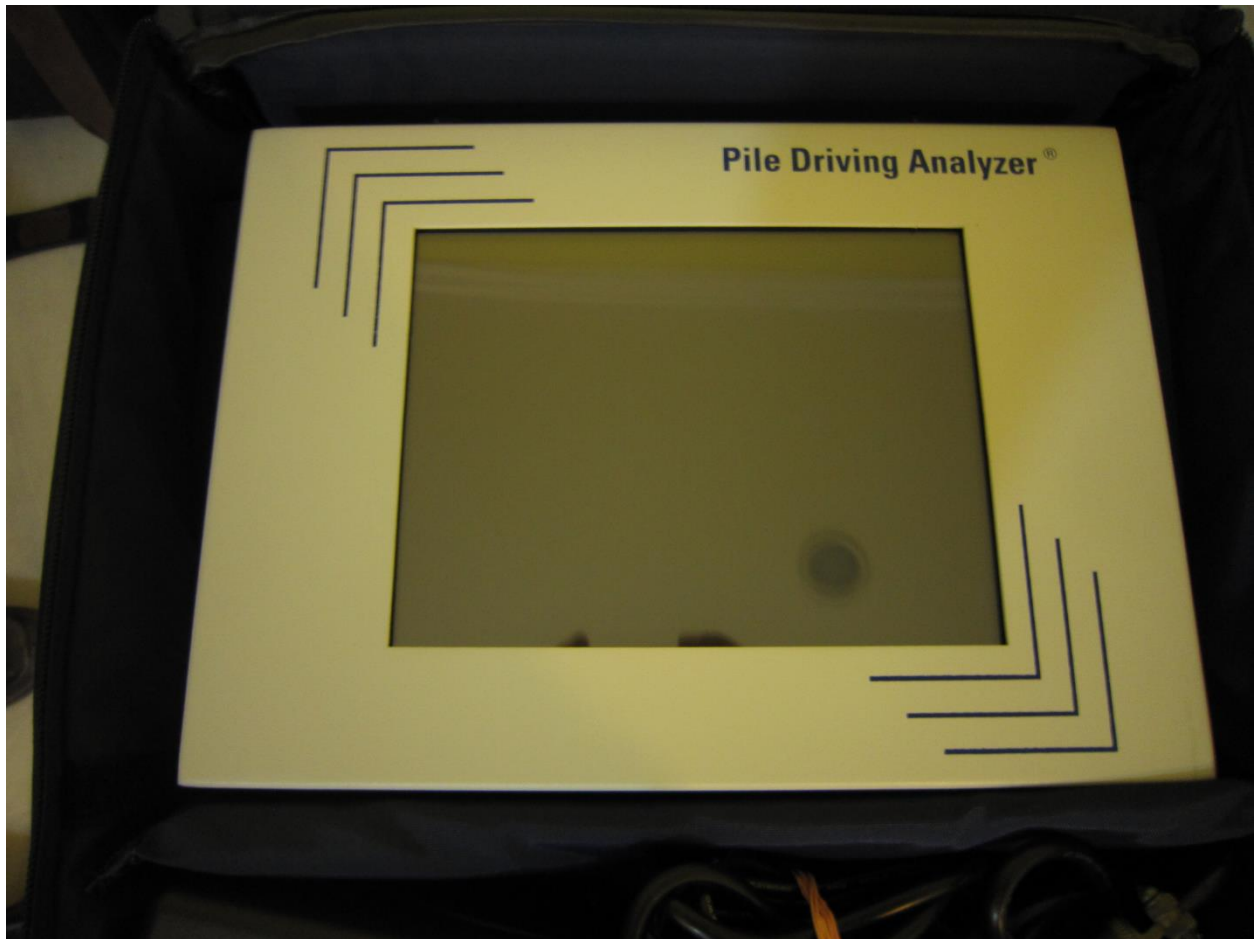


11. Integrity:



Pile Integrity tester





Pile driving analyzer

■ Chemical Laboratory of TOHAMA company



Chemical testing of construction materials in the laboratory of TOHAMA

	material	Kind of test
1	Sand	So ₃ +Cl
2	Grit	So ₃ +Cl
3	Cement	Loss on ignition + Mgo + insoluble+L.S.F+Fe ₂ O ₃ +So ₃ +C ₃ A
4	Burke	So ₃ +CaO+Magnesium salts+ United Water +Loss when burning +The proportion of impurities
5	Plaster	So ₃ +CaO+Magnesium salts United Water +Loss when burning The proportion of impurities
6	Solid concrete	So ₃ +Cl
7	Kerbstone	So ₃
8	Stone (salts)	So ₃ +Gypsum
9	Stone (chemical corrosion)	MgSo ₄ +Na ₂ So ₄
10	Water	So ₃ +E.C.+Co ₃ +Cl+PH+TDS+Mg+Ca+Turbidity+TSS+TS
11	Sub base	So ₃ + organic matter + Gypsum +TSS
12	Soil	So ₃ +organic matter+ Gypsum + TSS
13	Grit and Sand filters	Dissolving in H ₂ So ₄ +So ₃ +organic impurities +The proportion of Silica
14	Ceramic	Spotting + Resistance to acids
15	Concrete core	Chemical + compression







بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

Republic of Iraq
Ministry of Oil
South Oil Company
[State Co.]



جمهورية العراق
وزارة النفط
شركة نفط الجنوب
[شركة عامة]

Reference:
Date:

العدد: ٢٥٥٧
التاريخ: ٢٠١٥/٥/١٩
رقم التسجيل (١٦٠)

الى: شركة تهامة للفحص الهندسي
E-MAIL: tohamainspection@gmail.com

م/ تسجيل شركة

المسادة الاعزاء:

نهديكم اطيب تحياتنا
اشارة الى رسالتكم المؤرخة في ٢٠١٥/٥/١٩ نود اعلامكم انه تم تسجيل شركتكم لدينا
وعلى الدعوات المباشرة برقم تسجيل (١٦٠) بعد زيادة راس المال على ان لا يقل عن
(٢ مليار دينار عراقي).

شاكرين تعاونكم معنا..... مع التقدير

ع.المدير العام

صبيح جبار كريم
مدير الهيئة التجارية

P.O.Box 240,Bab Alzubair ,Basra,Iraq
Tel:00964(40)319310(10)
Fax:00964(40)317381
E-mail:fpd_southoilco@soc.gov.iq
Website:www.soc.gov.iq
www.soc-basrah.com

العراق - البصرة - باب الزبير
ص.ب: ٢٤٠ - هاتف: 00964(40)319310(10)
فاكس: 00964(40)317381
البريد الالكتروني: fpd_southoilco@soc.gov.iq
الموقع الالكتروني: www.soc.gov.iq
www.soc-basrah.com



Inter-company transmittal
Iraq Southern Gas utilisation Project

Project: ISG Iraq Southern Gas utilisation Project
Transmittal: 3000-D-EXT-ALYAM-00213
Issue date: 08-12-2014

Transmittal to

Al Yamama Engineering

Please distribute to :

Recipient	Issue code	Comments
-----------	------------	----------

Originator:

Remarks:

Reference:

Condition: -

Documents

Document	Rev.	Title	Doc. status	No. of copies	Media size	Issue code	Appr. code	Due before
3000-ALYAM-N001-PR01-U10000-MS-1580-00004	01A	The profile of TOHAMA Company for Civil Construction tests	IFA	1	A4	A		28-12-2014

Legend

Issue code(s) :

A Approved

Status code(s) :

IFA Issued for Approval

Approval code(s) :

If applicable, please resubmit documents before due date

Please sign a copy of this transmittal and return by mail as acknowledgement of receipt

Raised by: <u>Naresh Sadhwani</u>	Date signed: _____
Project document control	Signed for receipt: _____

**Thank you for taking the time to read our company profile.
If there are any questions or comments, please feel free to contact us**

E-Mail : Tohamainspection@gmail.com