BEFORE THE HONOURABLE NATIONAL GREEN TRIBUNAL

PRINCIPAL BENCH, NEW DELHI

Original Application No. 568/2019

James Jose, Managing Director

CGR Hallmarkers Pvt. Ltd, **Applicant (s)**

Versus

Government of India **Respondents (s)**

REPORT OF THE JOINT COMMITTEE ON FACTUAL AND ACTION TAKEN ON AIR POLLUTION CAUSED BY ACIDIC ACTIVITIES OF THE BUREAU OF INDIAN STANDARDS IN THE PROCESS OF GOLD TESTING AND HALLMARKING SUBMITTED BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL , PRINCIPAL BENCH , NEW DELHI AS PER ORDER DATED 5/8/2019.

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Dated this the 10th October, 2019

REPORT OF THE JOINT COMMITTEE ON FACTUAL AND ACTION TAKEN ON AIR POLLUTION CAUSED BY ACIDIC ACTIVITIES OF THE BUREAU OF INDIAN STANDARDS IN THE PROCESS OF GOLD TESTING AND HALLMARKING SUBMITTED BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL, PRINCIPAL BENCH, NEW DELHI AS PER ORDER DATED 5/8/2019.

1.0 PREAMBLE

The OA 568/2019 incepted when a letter by Sri. James Jose, Managing Director, CGR Hallmarkers Pvt. Ltd., Ernakulam, Kerala; was submitted to the Chairman, NGT highlighting the air pollution caused by acidic activities of Bureau of Indian Standards (BIS) certified gold hallmarking centers in the process of gold assaying and hallmarking without complying the pollution control norms. The letter was treated as an application by the Hon'ble NGT and order was issued on 5/8/2019 with the following direction: ***"Let the Central Pollution Control Board (CPCB) and Kerala State Pollution Control Board (KSPCB) look into the matter and take appropriate action in accordance with law and furnish a factual and action taken report to this Tribunal within one month from the date of receipt of copy of this order by email @ judicial-ngt@gov.in. The KSPCB will be the nodal agency for coordination and compliance".*** The case is listed for consideration on 18th November, 2019. The copy of Hon'ble NGT order dated 05/08/2019 is marked as **Annexure 1**. The copy of the letter sent by Sri. James Jose to the hon'ble Chairman NGT is marked as **Annexure 2**.

Based on the NGT order the Regional Director, Central Pollution Control Board , Regional Directorate (South), Bengaluru; nominated Dr. Deepesh V, Scientist B, Central Pollution Control Board, RD(S), Bengaluru to represent Central Pollution Control Board in the Joint Committee vide letter No. F. Tech / 39/ NGT (Kerala)/ RDS/ 2019-20/ 856 dated 14th August 2019. The letter is marked as **Annexure 3**. Based on the nomination received, vide proceedings no. PCB/ HO/ EE4/ NGT/ OA568/2019 dated 14/08/2019, the Member Secretary, Kerala State Pollution Control Board, constituted a Joint Committee. (**Annexure 4**). As per the proceedings the Joint Committee comprises the following members:

- Dr. Deepesh.V, Scientist B, Central Pollution Control Board RD, Bengaluru.
- Environmental Engineer-1, KSPCB, Head office, Thiruvananthapuram.

2.0 PRELIMINARY MEETING & INSPECTIONS

Upon the formation of the Joint Committee, the committee held a discussion with the complainant Sri. James Jose, Managing Director, CGR Hallmarkers Pvt. Ltd., Ernakulam, Kerala and visited his BIS certified gold assaying/ hallmarking facility in Ernakulam along with two other facilities in Ernakulam on 23rd and 24th August, 2019. During the discussion with Sri. James Jose and subsequent visits to the hallmarking facilities, the following significant and vital information on the issue of certification and hallmarking of gold as well as silver jewellery in the country had come to the notice of the committee:

a. ***Almost all the assay and hallmarking centers are located inside city areas or in busy commercial or business complexes.***
b. ***These units seldom comply with the pollution control norms or have adequate measures to contain toxic fumes or emissions emanating in the process of precious metal assaying by conventional fire assay method.***
c. ***There is no emission monitoring systems in these hallmarking centers.***
d. ***There are no personal protective equipments available or being used by the personals handling test procedures.***
e. ***Regulatory procedures for the disposal of hazardous residues generated during assaying/ testing are not followed in many of the facilities.***
f. ***The approved gold hallmarking method is fire assay test, which requires destructive sampling and many of the manufacturer (customers of hallmarking centers) do not prefer sampling of the finished jewellery articles. Due to this spurious hallmarking practices are on rise without conducting standard fire assay test.***

Sri. James Jose clarified that the intention behind his letter is to ensure pollution control norms in hallmarking facilities and to open up the possibilities to explore pollution free instrumental methods as alternative for fire assay and major points highlighted by him are the following:

i. ***All the units should have valid Consent of the Pollution Control Boards / Committees after ensuring proper facilities to treat lead oxide fumes, acid fumes, facility to dispose off used heavy metal laden cupels, spent nitric acid and proper emission control systems before getting BIS certification for gold assaying & hallmarking.***

ii. *The BIS shall explore for non polluting gold assay methods such as Spark/ Arc OES (Optical Emission Spectroscopy), XRF (X-ray Fluorescence), etc to replace the traditional fire assay method.*

iii. *The existing 851 gold hallmarking centers in the country should be modified to suit the requirements of the pollution control norms within 2 years.*

iv. *Necessary recommendations may be given to BIS to incorporate pollution control measures for the standard fire assay test and to explore the possibility of adopting modern instrumental methods like Spark/ Arc OES.*

3.0 HALLMARKING

The Joint Committee observed that the Bureau of Indian Standards (BIS), the regulatory agency for the recognition of assaying and hallmarking centers in India has published a guideline (HM/A&HC/Guidelines/2, September, 2018) for recognition and operation of hallmarking centers. These guidelines stipulating the procedure for grant, operation, renewal, suspension and cancellation of recognition of Assaying and Hallmarking (A &H) centers. The above guideline is in conjunction with BIS Act 2016, BIS Rules 2018 and BIS (Hallmarking) Regulations 2018. The guideline of BIS is marked as **Annexure 5**. Any situation, in general, not covered in these guidelines is to be dealt as per the provisions of Act, Rules and Regulations by the BIS Regional Offices and Branch Offices. Indian standard IS 15820:2009 is the basis for recognition of assaying and hallmarking centers. A brief description of the hallmarking system in India is as follows.

The BIS (Bureau of Indian Standards) Hallmark is a hallmarking system for gold as well as silver jewellery sold in India certifying the purity of precious metals. Hallmarking certifies that the piece of jewellery conforms to set of standards laid by the BIS. The BIS system of hallmarking of gold jewellery began in April 2000 and the standard specification governing this system are the following:

S.No.	*IS Method*	*Title*
1	IS 1417	Grades of Gold and Gold Alloys, Jewellery/ Artefacts.
2	IS 1418	Assaying of Gold in Gold Bullion, Gold alloys and Gold Jewellery/ Artefacts.
3	IS 2790	Guidelines for Manufacture of 23,22,21,20,19,18,17,16,14 and 9 carat Gold Alloys.
4	IS 3095	Gold solders for use in manufacture of jewellery.

After assaying and verifying the gold content in a jewellery/ article, a mark is engraved on the jewellery/ article as a stamp of purity or fineness. This official mark is called hallmark and the BIS hallmark for gold jewellery consists of following components:

- ***BIS logo***
- ***Purity of gold (91.6, 83.3,75.0 or 58.5%)***
- ***Logo of the assaying/ hallmarking centre.***
- ***Code name representing the jeweller.***

The testing of the jewellery as well as the marking is done in approved, private assaying & hallmarking centers across the country. Approval and monitoring of such private undertakings are done by BIS. Although, hallmarking gold jewellery is mandatory, it is yet to be implemented. However, consumers insist manufacturers/ jewellers for BIS hallmarking in their products as it certifies the purity of gold articles. Due to this wide acceptance of BIS hallmarking among consumers, fake and spurious hallmarking of jewellery is on rise.

As per the data available with BIS, there are 851 recognized gold assaying and hallmarking facilities in India (Table-1) Highest number of such facilities is in Maharashtra (120 Nos), followed by West Bengal (98 Nos) and Tamil Nadu (95 Nos). Southern region has a maximum of 283 hallmarking centers followed by western zone (195 Nos). There are 68 BIS recognized hallmarking centers in Kerala as per list available in BIS website.

Table 1: BIS Recognized Assaying & Hallmarking Facilities in India

S.No.	STATES & UNION TERRITORIES	No. of Facilities
1	TAMIL NADU	95
2	ANDHRA PRADESH	42
3	TELANGANA	28
4	PUDHUCHERRY	2
5	KERALA	68
6	KARNATAKA	48
7	LAKSHADWEEP	0
8	ANDAMAN & NICOBAR	0
	TOTAL (Southern Region)	283
9	DELHI	41
10	HARYANA	9
11	RAJASTHAN	40
12	MADHYA PRADESH	15

13	UTTAR PRADESH (WEST)	22
	TOTAL (Central Region)	127
14	UTTAR PRADESH (EAST)	42
15	PUNJAB	21
16	HARYANA	11
17	CHANDIGARH	4
18	JAMMU KASHMIR	3
19	HIMACHAL PRADESH	1
20	UTTARAKHAND	2
	TOTAL (Northern Region)	84
21	WEST BENGAL	98
22	ODISHA	19
23	JHARKHAND	8
24	BIHAR	25
25	SIKKIM	0
26	CHATTISGARH	6
27	ARUNACHAL PRADESH	0
28	ASSAM	5
29	NAGALAND	0
30	MEGHALAYA	0
31	MANIPUR	0
32	TRIPURA	1
33	MIZORAM	0
	TOTAL (Eastern Region)	162
34	MAHARASHTRA	120
35	GUJARAT	73
36	GOA	2
37	DAMAN & DIU	0
38	DADARA & NAGAR HAWELI	0
	TOTAL (Western Region)	195
	TOTAL BIS RECOGNIZED FACILITIES	851

4.0 FIRE ASSAY TEST

As per the standard IS 15820:2009, assay and hallmarking of gold is done by the fire assay test as per the method IS 1418: 2009 (Assaying of Gold in Gold Bullion, Gold alloys and Gold Jewelry/ Artefacts.) As per the fire assay, magnesia or calcium phosphate cupels, parting acids (Nitric acids of specific gravity 1.2 & 1.3 g/cm^3), lead foil, precious metals (silver) and other metals like copper are used in the process of assaying.

As per the IS method 1418: 2009, the test gold alloy sample collected from gold jewellery or any other gold item is first inquarted with silver, compounded with lead and cupelled in a cupellation furnace until a precious metal button is obtained. Inquartation involves diluting the gold in the refinable material to about 25% (literally 'quartering' the gold) by melting with the appropriate addition of copper or silver, granulating the melt so as to generate a high surface area aiding in faster parting in nitric acid. During cupellation lead is oxidized and absorbed in the magnesia cupels. After flattening and rolling of the metal button obtained after fire assay, the silver is parted (dissolved in acid) in nitric acid and the remaining gold is weighed. Possible systematic errors in the procedure are eliminated by assaying standard proof samples in parallel.

4.1 Hazardous waste generation

During the fire assay, test gold along with known quantities of heavy metal is subjected to cupellation in furnace at 1100-1200^{0}C. Magnesia cupels are used to absorb lead in the sample and after the test the spent cupels have to be disposed off properly. After the cupellation, the metal mixture is made into a cornet and is boiled with parting acid (conc. Nitric acid) to remove the silver. The spent parting acid has to be disposed off after recovering dissolved silver from acid. During the fire assay, lead in the sample is oxidized, lead fumes thus generated during cupellation and acidic nitrous fumes during the parting acid treatment are to be treated by a proper wet scrubber installed in assay and hallmarking facilities. Specific materials used in fire assay which are hazardous in nature are, lead, copper, palladium, nickel, silver, other heavy metals and nitric acid. The fire assay procedure results in metal oxide fumes (lead) and parting acid treatment results in acidic nitrous fumes. Spent parting acid, scrubber water residue containing lead and spent cupels containing heavy metals (lead) are the specific hazardous wastes generated during fire assay test, which should be disposed off scientifically. During cupellation, lead fumes generated must be properly extracted and treated as many of the hallmarking centers are in the busy commercial areas. Moreover, proper personal protection equipments and safely gears must be used by the personals carrying out fire assay test.

As per the clause 5.3.2 of the IS 15820: 2009, the hallmarking center shall monitor, control and record environmental conditions as required by the relevant specifications, methods and procedures or where they influence the quality of the results. As per the sub clause 5.3.2 (b) due attention shall be paid for proper exhaust arrangement for furnaces and parting acid chamber; (c) proper treatment of exhaust fumes before discharge into the atmosphere

5.0 GOLD ASSAY TECHNIQUES.

There are several techniques available for assaying precious metals and all these methods have merits and demerits. However, the conventional fire assay is still the preferred assaying method, due to higher accuracy, repeatability and moderate cost of analysis. However, due to inherent destructive sampling associated with fire assay, many countries like United Kingdom has moved to non destructive instrumental methods for hallmarking finished jewellery items and retained fire assay as a reference method for cross checking instrumental methods A gist of various gold assaying method is given below:

Method	*Destructive sampling*	*Remarks*
	Traditional Methods	
Fire Assay	Yes, representative sample required	Gravimetric determination with high accuracy (0.02%) and moderate cost of analysis. Known limitations with Ni and Pd containing samples. Use of hazardous materials like lead and parting acids during assaying. Not an acceptable choice for finished jewellery items due to destructive nature of sampling.
Touchstone	No, only rubbings of gold alloys taken	Colour comparison method and almost non-destructive. Not suitable for high carat gold.
Density	No	Archimedes method based on density. Suitable only for binary metals (Gold alloy with only two metals).
Parting	Yes, sample taken	Parting acid treatments followed by gravimetric determination. Spent acid needs to be disposed off properly.
	Modern Methods	
Electronic Gold Pen	No, surface only	Method based on capacitance decay – not consistent with poor accuracy.
X-ray Fluorescence Spectrometry (XRF)	No, surface only	Complete analysis based on measurement of emitted X-rays. Analysis restricted to surface layers and requires flattened samples. Accuracy ranges from 0.1 to 0.5% and moderate cost of analysis.

Atomic Absorption Spectroscopy (AAS)	Yes, sample in solution or as solid cathode	Atomic absorption lines measured. High accuracy and higher cost of analysis. Requires sample processing (acid digestion of samples).
Inductively Coupled Plasma Spectroscopy (ICP)	Yes, sample in solution	Highly versatile method for complete analysis based on measurement of atomic emission lines. High accuracy and higher cost of analysis. Requires sample processing (acid digestion of samples). No significant limitations.
Arc Optical Emission Spectroscopy (Arc-OES) or SPARK-OES	Almost non-destructive- Trace amount of sample lost as spark (electric arc) discharge	Highly versatile method for complete analysis of impurities in metal and alloys. An atomic vapour of sample is created by electric arc and this vapour is excited to emit radiation. Based on the spectral components of emitted radiation and intensity, elements in sample are elucidated. Only limitation is high instrument cost.

The conventional fire assay requires sample to be scraped/ cut out of the sample. In the case of unfinished gold samples which were scraped to remove the metal, the scraping marks were easily removed by the manufacturer in subsequent finishing operations. If finished jewellery articles are to be tested, representative samples have to be taken by cutting pieces from the jewellery, which many jewellery manufacturers never prefer as the jewellery article subjected to fire assay test has to be refinished to remove the sampling cut marks.

In United Kingdom, since 2000 the numbers of imported jewellery items has risen dramatically. The importers rarely have any facility into refinish these highly finished imported jewellery items. Therefore, the assay/ hallmarking facilities had to reconsider its assaying process as scraping/ cutting a sample from finished product is obviously an unacceptable process for importers/ customers as it visibly damages the article. Due to this, efforts were made in exploring alternatives to fire assay including X-Ray Fluorescence (XRF) as an alternative assaying method. This became established as an accepted process and moved all assaying to XRF by 2005. The traditional cupellation (fire assay) and titration methods for gold and silver respectively remain as the referee method in case of uncertainty.

6.0 THE HALLMARKING CENTRES IN KERALA

For gathering all the necessary information related to the 68 hallmarking centers in Kerala a questionnaire was prepared and emailed to all the district offices of the Kerala State Pollution Control Board. The questionnaire marked as **Annexure 6** is enclosed. As per the information gathered from the District Offices of the Board, there are only 18 hallmarking centers functioning with the Consent to Operate of the State Pollution Control Board. The list of 18 consented hallmarking centers is enclosed as **Annexure 7.** A copy of the Consent to Operate issued to a hallmarking centre (M/s CGR Cochin Assay, M.G. Road, Ernakulam District, Kerala) is marked as **Annexure 8** is enclosed.

7.0 INSPECTION CONDUCTED IN HALL MARKING CENTRES.

The Joint Committee visited hallmarking facility of the complainant Sri. James Jose on 23rd and 24 th August 2019. It was noticed that his facility is having exhaust hood arrangement, wet scrubber, personal protective equipments and it was informed that the spent cupels are being sent to the common TSDF. The other facilities in Kerala visited by the committee are detailed below.

- Quality Assay and hallmarking Centre (P) ltd, 5th Floor, Malabar Cochin Arcade, M.G. Road, Ernakulam on 24 /8/2019.
- SPS Assay and hallmarking Centre, Convent Road, Opp Ernakulam Public Library, Ernakulam on 24/8/2019
- Lotus Assay and hallmarking Centre, Third Floor, Karimpanal Arcade, East Fort, Thiruvananthapuram on 26/9/2019
- CGR Travancore Hallmark, Karimpanal Arcade, East Fort, Thiruvananthapuram on 26/9/2019
- Bright Assay & Hallmarking, Attakkulangara, Thiruvananthapuram-23 on 26/9/2019.

Findings of inspections in all these units are more or less identical as detailed below.

i. All the units are in congested commercial localities.

ii. The facilities are similar with fire assay system comprising cupellation furnace, annealing furnace, metal rolling equipment, parting acid chamber, portable XRF / carat meter for initial screening of gold samples, fume hood, wet scrubber system, demineralized water kit etc.

iii. The hallmarking process include following stages like sample receipt, initial screening with XRF for the presence of prohibited metals in the sample, sampling, weighing, inquartration, annealing, cupellation, fire assay button processing, parting with nitric acid, gravimetric determination of pure gold in the sample and finally hallmarking the sample with laser etching if sample meets the gold fineness requirement.

iv. The Personal Protective Equipments like helmet, mask, gloves etc are not being used by the staff during the fire assay and characteristic metal fume smell in assay rooms indicates poor designing of test facilities considering the occupational health aspects.

v. The hazardous, heavy metal laden spent cupels are not being disposed through the common TSDF (M/s. KEIL, Ambalamedu, Kochi). There are no records on the mode of disposal and end users of spent cupels.

vi. Similarly, there are no proper disposal records for scrubber residue containing lead and the spent parting acid after recovering silver.

7.0. OBSERVATIONS OF THE JOINT COMMITTEE

i. The testing of the jewellery as well as the marking is done in approved, private assaying & hallmarking centers across the country. Approval and monitoring of such private undertaking are done by BIS. Although, hallmarking gold jewellery is mandatory, it is yet to be implemented. Due to wide acceptance of BIS hallmarking among consumers, fake hallmarking of jewellery is on rise.

ii. Most of the hallmarking centers are in the busy commercial areas.

iii. Even though there are many techniques available for assaying precious metal with merits and demerits, the conventional fire assay is still the preferred assaying method for higher accuracy, repeatability, moderate and comparatively lesser cost of analysis.

iv. The fire assay test does create toxic emissions by way of toxic metal and acidic fumes.

v. The AAS or ICP methods, requires expensive equipments, sample processing by acid digestion and trace amount of sample is lost during analysis.

vi. XRF is a non destructive analysis with moderate cost of analysis and requires flattened sample for accurate analysis.

vii. Spark/ Arc OES is a potential method, almost non destructive in nature and only limitation is the high equipment cost.

8.0 SUGGESTIONS OF THE JOINT COMMITTEE

A. All the gold assaying and hallmarking centers in the country shall obtain the Consent to Establish / Consent to Operate under Water (Prevention and Control of Pollution) Act, 1974 & Air (Prevention and Control of Pollution) Act, 1981 of the State Pollution Control Boards / Pollution Control Committees. These units shall also obtain authorization under Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016. The above regulatory requirements shall be made mandatory to all gold assaying/ hallmarking facilities and the same may be incorporated in the BIS guideline for gold assaying and hallmarking. The committee suggested the KSPCB to issue notice to all defaulting units.

B. The lead fumes generated during cupellation and the acidic nitrous fumes generated during the parting acid treatment are to be treated by a proper fumes extraction / treatment system. Technical guidelines shall be formulated for selection, installation and operation of proper exhaust arrangement for fire assay furnace, parting acid chamber and for the fire assay room for proper extraction and treatment of fumes before discharging into atmosphere.

C. Spent cupels containing heavy metals, scrubber water residue containing lead and spent parting acid are the specific hazardous wastes generated during fire assay which need to be disposed properly through authorized waste disposal facilities as per the norms.

D. The conventional fire assay method requires, sample to be scraped/ cut out of the sample and thus it is not an acceptable choice for the finished jewellery articles. Moreover, the use of hazardous materials like lead and parting acids during assaying, also make this method less preferable though it is a robust method for assaying. Due to the above constraints, alternate instrumental methods with low pollution foot print shall be explored.

E. AAS and ICP methods require expensive equipments and elaborate sample processing in the form of acid digestion during analysis. As in many other countries XRF can be adopted for assaying and hallmarking, but the only limitation is the requirement of flat/ flattened sample.

F. Spark or Arc OES is a potential method for precious metal assaying which is almost non-destructive method with minimum or no sample processing. This method is already used in many metal industries to test the purity of alloys and metals.

Dr. Deepesh V
Scientist B, CPCB
Bengaluru

Thrideep Kumar M P
Environmental Engineer
KSPCB, Trivandrum

Annexure -1

Item No. 70 Court No. 1

BEFORE THE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI

Original Application No. 568/2019

James Jose, Managing Director,
CGR Hallmarkers Pvt. Ltd. Applicant(s)

Versus

Govt. of India Respondent(s)

Date of hearing: 05.08.2019

CORAM: **HON'BLE MR. JUSTICE ADARSH KUMAR GOEL, CHAIRPERSON**
HON'BLE MR. JUSTICE S.P. WANGDI, JUDICIAL MEMBER
HON'BLE MR. JUSTICE K. RAMAKRISHNAN, JUDICIAL MEMBER
HON'BLE DR. NAGIN NANDA, EXPERT MEMBER

Application is registered based on a complaint received by post

ORDER

Allegation in this letter, which has been treated as an application, is against the air pollution caused by acidic activities of the Bureau of Indian Standard (BIS) in the process of gold testing and hall marking without compliance of the pollution control norms.

Let the Central Pollution Control Board (CPCB) and Kerala State Pollution Control Board (KSPCB) look into the matter and take appropriate action in accordance with law and furnish a factual and action taken report to this Tribunal within one month from the date of receipt of copy of this order by e-mail at [redacted]. The KSPCB will be the nodal agency for coordination and compliance.

A copy of this order, along with complaint, be sent to the KSPCB and CPCB by e-mail for compliance.

Needless to say that order of National Green Tribunal is binding as a decree of Court and non-compliance is actionable by way of punitive action including prosecution, in terms of the National Green Tribunal Act, 2010.

List for further consideration on 18.11.2019.

Adarsh Kumar Goel, CP

S.P. Wangdi, JM

K. Ramakrishnan, JM

Dr. Nagin Nanda, EM

August 05, 2019
Original Application No. 568/2019
A

Annexure - 2

CGR Hallmarkers Pvt. Ltd.

CGR Chambers, 62/1906 A, Sadanam Road Extn., Ernakulam south, Cochin – 682016
Tel: 0484 – 2356746, 2356749 Email – mail@cgrhallmarkers.com
BIS Recognised Gold assay and Hallmarking Centres

LR Regn. No. 2563/19
07/5/19 24.4.19
679/PPS to HCP/PAK
02/05/19

To
The Chairman
National Green tribunal
Faridkot House, Copernicus Marg,
New Delhi - 110 001

Sub: Request to control the acidic Pollution from the fire assay labs of Bureau of Indian standards (BIS) recognized gold hallmarking centres

Ref: Recent guidelines of the National Green Tribunal (NGT) and central Pollution control board (CPCB)

Respected sir,

We would like to convey our thanks and appreciation to the National Green Tribunal for your earnest efforts in controlling air pollution inside the city areas, especially the recent closure notice to 500 units in Karol bagh New Delhi causing nitric acid pollution.

We would like to bring to your kind attention that majority of the gold testing and hallmarking centres licensed by Bureau of Indian standards, located in various part of the country are operating inside city areas , without any compliance of the pollution control norms stipulated by CPCB .These fire assay labs of HM centres, by virtue of their usage of lead and Nitric acid in their testing process, falls in the red category license of the central pollution control board, and this calls for strict norms on their location away from commercial buildings, emission monitoring systems and facility for disposal of spent nitric acid and magnesium cupels having lead etc .

Our prayer to the NGT

NGT shall issue an order to the Bureau of Indian standards for ensuring compliance of pollution control norms at the BIS licensed hallmarking centres in the following manner .

1) Before granting new BIS license for a hallmarking centre , BIS shall ensure that the hallmarking centre is having valid **red category license to operate,** from the state pollution control board, emission monitoring systems, facility for treating lead oxide fumes and ecofriendly facility to dispose off used cupels and spent nitric acid

2)BIS shall take steps to substitute the existing polluting fire assay method of gold analysis by developing / formulating new standards for non polluting gold assay methods such as Spark Oes, HDD XRF etc, .

3) The NGT may grand 2 years time to the BIS to ensure that the existing 800 gold hallmarking centres presently operating in non confirming areas may be modified to suit the requirements of the pollution control norms .

Looking forward to your positive response

Yours faithfully

James Jose
Managing Director

Dy. No. 1882/LR/19
02/05/19.

Annexure -3.

केन्द्रीय प्रदूषण नियंत्रण बोर्ड
CENTRAL POLLUTION CONTROL BOARD
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, भारत सरकार
MINISTRY OF ENVIRONMENT, FOREST & CLIMATE CHANGE, GOVT. OF INDIA

Legal matter/ Time bound

No. F.Tech/39/NGT(Kerala)/RDS/2019-20/856

14th August, 2019

To

The Member Secretary
Kerala State Pollution Control Board
Pattom P.O., Thiruvananthapuram.

Sub: ***Honourable NGT order dated 05-08-2019 in the matter of OA 568 of 2019: Constitution of joint committee and submission of action taken report.***

Ref: ***Email dated 14-08-2019 from kspcbholegal@gmail.com and honourable NGT order dated 05-08-2019 on OA 568/2019***

Madam,

With reference to above, honourable NGT Principal Bench has directed to submit an action taken report by the representatives of CPCB and KSPCB on the pollution caused by Bureau of Indian Standards (BIS) licenced gold testing & hallmarking centres. Actual status of pollution control compliance and appropriate actions in accordance with the laws in case of defaulters has to be reported to NGT by the joint committee in the matter of *James Jose, MD, CGR Hallmarkers Pvt. Ltd. Vs Govt of India.*

In this respect, Dr. Deepesh V, Scientist 'B' (9611128895/ deepesh.valsan@gmail.com), CPCB, Regional Directorate, Bengaluru, is nominated to represent CPCB in the joint committee. NGT has directed the joint committee to submit report within one-month time (before 5th September, 2019). Since, the nominated official is visiting Kerala next week for discussions on other NGT matters, it is requested to expedite matter by arrange meetings/ inspections next week itself.

Yours faithfully

S. Suresh 16/8/19

(S.Suresh)
Regional Director

Copy to:

1. *Divisional Head, IPC-V, CPCB, Delhi.*
2. *Dr. Deepesh V, Scientist B, CPCB, RDS, Bengaluru.*
3. *Law Section, CPCB, Delhi.*

क्षेत्रीय निदेशालय (दक्षिण) : निसर्ग भवन, ए-ब्लाक, प्रथम एवं द्वितीय तल, तिम्मय्या रोड, 7-डी मैन, शिवनगर, बेंगलूरु - ५६० ०७९.
Regional Directorate (South) : " Nisarga Bhawan ", A-Block, 1st & 2nd Floors, Thimmaiah Road, 7th D - Main, Shivanagar, Bengaluru - 560 079.
दूरभाष / Telephone : 080-23233739. 23233827, 23233996, 23233600, 23232559, 23226002, 23222539, Fax : 080-23234059
ई-मेल / E-mail : cpcbszo@yahoo.com, zobangalore.cpcb@nic.in
प्रधान कार्यालय : परिवेश भवन, पूर्वी अर्जुन नगर, दिल्ली- ११० ०३२.

Annexure - 4.

PROCEEDINGS

Sub:- O.A.NO. 568/2019 Before the Hon'ble National Green Tribunal regarding air pollution caused by Bureau of Indian Standards (BIS) in the process of gold testing and hallmarking- Constitution of Committee - Sanctioned orders issued.

KERALA STATE POLLUTION CONTROL BOARD

PCB/HO/EE4/NGT/O.A.568/2019 Dated: 14/08/2019

Read: 1. Order dated 30/07/2019 in O. A. No. 568/2019 of the Hon'ble National Green Tribunal (Copy enclosed)
2. E-mail dated 14/08/2019 from CPCB

ORDER

The Hon'ble National Green Tribunal has registered Original Application No. 568/2019 air pollution caused by Bureau of Indian Standards (BIS) in the process of gold testing and hallmarking without compliance of pollution control norms.

The Hon'ble National Green Tribunal vide reference (1) ordered the Central Pollution Control Board and Kerala State Pollution Control Board to look into the matter and take appropriate action in accordance with law and furnish of actual and action taken report within one month by e-mail at judicial-ngt@gov.in. Vide reference (2) CPCB has informed that Dr. Deepesh has been nominated to the above committee. In compliance with the order issued by the Hon'ble NGT, a committee is hereby constituted with the following members.

1. Dr. Deepesh V.,
   Scientist B, CPCB RD,
   Bengaluru
2. The Environmental Engineer-1, Head Office,
   Thiruvananthapuram

The Kerala State Pollution Control Board will be the Nodal agency for co-ordination and compliance. The committee shall file a Report as per the order of the Hon'ble National Green Tribunal **within one month** by email in compliance of the order read above.

Sd/-
MEMBER SECRETARY

To

All Committee Members

FORWARDED/ BY ORDER

Sonda V. Gopal

ENVIRONMENTAL ENGINEER-4

HM/A&HC/Guidelines /2
September 2018

GUIDELINES FOR RECOGNITION & OPERATION OF ASSAYING & HALLMARKING CENTRES

ISSUED BY

BUREAU OF INDIAN STANDARDS,
9, BAHADUR SHAH ZAFAR MARG,
MANAK BHAWAN,
NEW DELHI

GUIDELINES FOR RECOGNTION & OPERATION OF ASSAYING AND HALLMARKING CENTRES

1 GENERAL

These guidelines stipulate the procedure for Grant, Operation, Renewal, Suspension and Cancellation of Recognition of Assaying and Hallmarking (A&H) Centres. These are to be read in conjunction with BIS Act 2016, BIS Rules 2018 and BIS (Hallmarking) Regulations 2018. In particular, the Grant, Operation, Renewal, and Cancellation of Certificate of Recognition are addressed in Chapter II of BIS (Hallmarking) Regulations, 2018. Any situation, in general, not covered in these guidelines is to be dealt as per the provisions of Act, Rules and Regulations by the Regional Offices and Branch Offices.

2 GRANT OF RECOGNITION

2.1 Any assaying centre set up in accordance with requirements specified in IS 15820 :2009 for assaying and hallmarking of gold and /or silver jewellery / artefacts, shall apply with self-certified copies of documents listed below from (a) to (f) to the Regional office of BIS having jurisdiction of the area where the A&H centre, with the application.

a) Proof of establishment of the firm or company (Any one of the document given below)

i) Certificate of Registration issued by Registrar of companies along with memorandum of articles

ii) Registered Partnership Deed in case applicant is a Partnership Firm.

iii) Certificate from a Chartered Accountant if applicant is a Proprietorship Firm.

b) Proof of address of firm's premises (Any one of the document given below)

i) Registration with State Government Authority/ Trade Licences

ii) GST registration certificate.

iii) Income Tax Assessment Order

iv) Property tax receipt

v) Rent agreement with last rent receipt

vi) Sale/ Lease Deed agreement.

c) Proof of Identity of the signatory

i) Aadhar based verification/ e- signature

ii) Self-certified copy of any one of following documents as identity proof of signatory on the Application:

- Aadhar Card

- Driving Licence

- PAN card

- Voter Identity card

- Passport

- Identity Certificate with photo issued by Gazetted Officer on official letterhead.

d) Map indicating location of premises from nearest land mark

Location map of premises from some nearest prominent landmark for each outlet, as applicable (illustrative only).

e) Quality manual of the A&H Centre prepared based on the Generic Quality Manual provided by BIS

f) Affidavit cum undertaking as specified in regulations

2.1.1 Non Acceptance of Application due to Antecedents

Under the following situations, the application made by the Applicant for obtaining recognition may be rejected:

i) Prosecution case is pending or in the process of initiating prosecution case in the trial court against the applicant or person under section 29 of the BIS Act,2016.

ii) Applicant has made the application immediately after the case of misuse of Hallmark or any violation under Section 14 or Section 15 of BIS Act,2016 detected on the part of applicant.

iii) Misuse of Hall Mark or any violation under Section 14 or Section 15 of BIS Act , 2016 detected on the part of applicant after the application was made to BIS.

Note-The applicant or firm who are falling under any one of the category mentioned at i),ii) and iii) above are **NOT** eligible to apply for certificate of recognition until they are free from these Charges. In case of conviction under Section 29 of the BIS Act, such applicant or firm shall not be eligible to apply for grant of recognition for a period of one year from the date of such conviction.

2.1.2 Applicant whose earlier recognition was cancelled or not renewed and submitting application before completion of cooling period specified.

2.1.3 Where a person(s) or firm who has been convicted under Section 29 of the BIS Act, 2016 makes an application for certificate of recognition, such person(s) or firm shall not be eligible to apply for grant of recognition for a period of one year from the date of such conviction.

2.2 After recording the application, a Recognition Assessment of the A&H Centre (of 4 man-days duration i.e. by a team of two officers for two days either for gold or gold & silver) preferably within 15 days of recording the application to determine whether the A&H Centre has created the necessary infrastructure for assaying and hallmarking according to IS 15820:2009 shall be carried out.

2.3 If the assessment report is found in order, HMO shall prepare the proposal for grant of recognition and put up to the DDGR as per Hallmarking Regulations 2018. Recognition will be granted by the DDGR in respect of gold and/or silver hallmarking.
2.3.1. In case the discrepancies are observed during the assessment a followup assessment may be made to verify the corrective actions made. In case the discrepancies can be ensured through documents only than the same may be made on desktop basis.

2.4 Recognition shall be granted as per IS 15820:2009 with scope defined as:

2.4.1 For Gold Jewellery / artefacts (as per IS 1417)

a) for yellow gold jewellery / artefacts only;

b)for white gold jewellery / artefacts only(Nickel based);

c) for white gold jewellery / artefacts only (Palladium based); and

d) for combination of all above (a to c)

2.4.2 For Silver Jewellery / artefacts (as per IS 2112)

2.5 Scope of recognition of an A&H centre may be considered for extension on request from the centre with relevant details of equipment and manpower. Scope may be extended through assessment by two man-days (one auditor for two days). If requested by an A&H centre, such assessment may be combined with renewal assessment. An endorsement for extension of scope shall be given in the Certificate of Recognition.

2.6 The following types of changes or in combinations thereof may occur during the operation of the Certificate of recognition:

a) Change in address of the premises;

b) Change in the name of the Centre;

c) Change in the Management of the Centre, with or without change in the name; and

d) Change in the Logo of the Centre

For the above situations, the following type of actions shall be taken:

2.6.1 In the case of (a) , the Centre shall inform the complete address of the new premises to which they intend to shift their centre and also intimate suspension of Hallmarking at the old premises to the Bureau. If they have not done so, suspension of Hallmarking at the old premises shall be imposed in accordance Hallmarking Regulations, 2018. Revocation of suspension shall be carried out in accordance Hallmarking Regulations, 2018. An endorsement for change in address shall be given in the Certificate of Recognition.

2.6.2 In the case of (b), the relevant document(s) as indicated at 2.1 of this guidelines according to the type of change shall be obtained. An endorsement for change in name of the Centre shall be given in the Certificate of Recognition.

2.6.3 In the case of (c), suitable documents establishing the name/ownership of the Centre premises by the new management are to be obtained and other required documents as indicated in at 2.1 of this guidelines according to the type of change shall be submitted by the new management. An endorsement for change in name of the Centre shall be given in the Certificate of Recognition.

2.6.4 In the case of (d), an undertaking signed by the Proprietor/Partner/Director in their letter head along with the copy of revised quality manual incorporating the new logo shall be obtained. After the approval from DDGR for the change of logo, a communication shall be sent to the centre to this effect.

3 HALLMARKING FEE

Hallmarking fee to the BIS as specified Hallmarking Regulations, 2018 shall be payable by the centre by 10th of the following month, failing which necessary action shall be initiated as per Hallmarking Regulations, 2018.

4 RENEWAL OF RECOGNITION

4.1 On receipt of renewal application from the A&H centre with fees and all enclosures, a renewal assessment in line with Hallmarking Regulations, 2018 shall be arranged of the A&H Centre of 2 man-days duration (i.e. one officer for two days) **.**

4.2 If the renewal assessment report is found in order, HMO shall prepare the proposal for renewal of recognition subject to fulfillment of respective requirements and put up to the DDGR. Renewal will be done by the DDGR in respect of gold and/or silver hallmarking.

4.3 In case discrepancies are observed in the renewal assessment, the A&H centre shall be advised to take necessary actions within stipulated time and submit the same to BIS verification. A follow up assessment may be planned by BIS for verification of the corrective actions if required.

4.3.1 In case the compliance to the discrepancies observed during the renewal assessment could not be completed before the validity of the recognition either through follow-up visit or on desktop basis due to the delay from A&H Centre, action for deferment of renewal shall be taken immediately upto a period of six months from the date of validity as per Hallmarking Regulations, 2018. The renewal shall subsequently be considered after ensuring the compliance to the discrepancies observed.

4.3.2 If renewal of recognition is pending with BIS due to any reasons which can not be assigned to the A&H centre, though renewal application along with requisite fee and documents have been received before the expiry of validity of recognition, the A&H centre will be allowed to function as recognized centre till a decision on the renewal is taken by BIS.

4.4 The renewal of recognition may also be considered **without assessment** subject to the fulfillment of the following conditions in the operative period of three years:

a) All surveillance inspections have been assessed as satisfactory (at least two surveillance inspections shall have been carried out) ; and

b) No suspension of hallmarking have been imposed for the reasons stated at clause **5.3 & 5.5** of this guidelines.

5 ACTION ON FAILURE OF MARKET SURVEILLANCE SAMPLES

5.1 Suspension of Recognition granted by the BIS shall be done in accordance with provisions of Hallmarking Regulations, 2018 in situations given below:

“non-conformity of hallmarked precious metal articles established after in-house or independent testing”

5.2 Cancellation or non-renewal of recognition of an assaying and hallmarking centre may be done in accordance with Hallmarking Regulations, 2018 in situations given below :

“articles marked with hallmark do not comply with the relevant Indian Standard;”

5.3 To implement the provision of Hallmarking Regulations, 2018 specified at 5.1 and 5.2 above , guidelines given below shall be followed:

5.3.1 Shortage in fineness above 40 ppt

If the failure of hallmarked article is observed with shortage in fineness of more than 40 ppt, the recognition shall be processed for cancellation with applicable cooling period as per Hallmarking Regulations, 2018.

5.3.2 Shortage in fineness above 5 ppt upto and including 40 ppt of the marked fineness

If the failure of hallmarked article is observed with shortage in fineness above 5 ppt upto & including 40 ppt of the marked fineness irrespective of presence of prohibited elements or not, the recognition shall be put under suspension as per provision of the Hallmarking Regulations, 2018 on the first instance itself.

5.3.3 Shortage in fineness above 2 ppt & upto and including 5 ppt and/or presence of prohibited elements (in case of silver, shortage in fineness is upto and including 5 ppt of the marked fineness and/or presence of prohibited elements)

5.3.3.1 If it is the first failure, failure to be communicated to A&H Centre advising them to take corrective actions under intimation to BIS. In case more than one failure received and the samples are drawn on the same date, then these failures shall be considered as first failure.

5.3.3.2 If it is the second failure, check number of pass samples & total samples drawn during last one year (one year previous to last sample drawl date) and calculate the pass percentage.

(a) If pass percentage is 60 % or above, failure to be communicated to A&H Centre advising them to take corrective actions under intimation to BIS.

(b) If pass percentage is less than 60 %, recognition shall be put under suspension as per provision of the Hallmarking) Regulations, 2018.

5.3.3.3 If it is the third failure, check number of pass samples & total samples drawn during last one year (one year previous to last sample drawl date) and calculate the pass percentage.

(a) If pass percentage is 60 % or above, failure to be communicated to A&H Centre advising them to take corrective actions under intimation to BIS.

(b) If pass percentage is less than 60 %, recognition shall be put under suspension as per provision of the Hallmarking Regulations, 2018.

5.3.3.4 If it is the fourth failure in shortage in fineness above 2 ppt & upto and including 5 ppt from the marked purity and/or presence of prohibited elements during last one year (one year previous to last sample drawl date) recognition shall be put under suspension as per provision of Hallmarking Regulations irrespective of number of pass samples.

5.4 In case of situation where the Centre has been issued suspension for three times due to failure of hallmarked articles in an operative period of three years of recognition, the recognition shall be processed for cancellation as per provision of Hallmarking Regulations, 2018

5.5 Issues arising out of Surveillance Assessments

5.5.1 The recognition shall be put under suspension for the situations stipulated in Hallmarking Regulations, 2018.

5.5.2 Hallmarking Regulation, 2018 stipulates non implementation of the provision of relevant standard which may lead to suspension of hallmarking. The non implementation of the provision of relevant standard is not limited to, but may include one or more of the following:

a) Non-functioning of test equipment, namely XRF machine, weighing balances, furnaces (cupellation, annealing);

b) Prima-facie evidence suggests that test results reported by A&H Centre are not genuine / valid; and

c) Non-availability of proper record for a particular lot(s) of hallmarked articles;

5.6 OTHER OBLIGATION TO A & H CENTRE

5.6.1 The A&H Centre shall also accept hallmarked jewellery from a consumer for verification of purity and issue report of assaying giving proper identification as marked on the article.

5.6.2 The Assaying and Hallmarking Centre shall not accept such jewellery/artefact which bears any marking including “KDM’ or fineness/caratage. No other mark shall be applied on Hallmarked jewellery / artefact. The A&H Centre shall not use hallmark on such medallions/coins which resemble with currency of any country.

5.6.3 Jewellery / artefacts, which on analysis by XRF machine found to have a negative variance of more than 5 ppt from the declared value of fineness, shall not be accepted for further assaying. Such item(s) shall be returned to the jeweller without assaying and hallmarking.

5.7 Since one single recognition is operated for gold and silver hallmarking, case warranting suspension of hallmarking only due to gold or silver, the same will be treated separately, for instance, in case of failures in silver only, suspension of marking shall be imposed only on silver hallmarking. Similarly, in case of failure of only gold, suspension of marking shall be imposed only on gold hallmarking. In case, the action is initiated as per clause 5.3.1 of this guidelines then the deletion of the particular variety from the scope of recognition may be considered based on the merit of the case.

6 RETENTION OF CORNETS / CLOSED CIRCUIT TV (CCTV) BACKUP

The check assay gold cornets shall be retained with proper identification and traceability for last 30 Assaying. The cornet left after assaying along with hallmarked/rejected jewellery/artefacts shall be returned to the jeweller. The Centre shall ensure that the CCTV with back up facility is available for minimum 30 days storage.

7 TESTING OF COUNTER SAMPLE

On communication to the A&H centre regarding the failure of sample in independent laboratory and if the A&H centre does not agree with the results obtained, the centre may contact the concerned registered jeweller from where the sample was drawn who in turn will make formal request to BO with proper justification for testing the counter sample at BIS referral lab. BO shall seek DDGR’s approval for testing the counter sample for which double the testing charges shall be paid in advance by the registered jeweller.

8 FORMATS OF VARIOUS ASSESSMENT REPORTS, TEST REPORTS AND DISCREPANCY REPORTS

8.1 The following formats are enclosed which may be used the during the operation of the A&H centre:

a) Report on Recognition / Renewal Assessment of A & H Centre, Doc. HM/AHC/F 2.1 September 2018- **ANNEX A;**

b) Report on Surveillance Assessment, Doc.HM/AHC/F 2.2 September 2018-**ANNEX B**;

c) Report on Special Assessment, Doc. HM/AHC/F 2.3 September 2018-**ANNEX C**;

d) Discrepancy/Variation Report Issued During Assessment of A&H Centre, Doc. HM/AHC/F 2.4 September 2028 – **ANNEX D** ; and

e) Test Report as per IS 1418:2009 / IS 2113:2014, Doc. HM/AHC/F 2.5 September 2018 – **ANNEX E**.

9 PROVISION OF APPEAL

9.1 Any person aggrieved by an order made under section 13 of the Hallmarking regulations, 2018 may prefer an appeal to the Director General within ninety days from the date of the order:

Provided that if the appellant satisfies the Director General that he had sufficient cause for not preferring the appeal within the period so specified, the appeal may be admitted after the expiration of the said period of ninety days.

9.2 Every appeal shall be filed in duplicate and shall be accompanied by a self attested copy of the order appealed against.

9.3 Every appeal shall be accompanied by a fee of two thousand rupees in the form of a demand draft or pay order or E transfer, drawn in favour of the Bureau.

9.4 The Director General may call for relevant documents from the appellant and may after such inquiry in the matter as he considers necessary and after giving an opportunity to the parties to be heard, pass such orders as he thinks fit:
Provided that the appeal shall be disposed of within a period of ninety days from the date of its filing.

9.5 The Director General may, suo-moto, or on an application made in the form as specified by the Bureau from time to time, review and reconsider any order passed by an officer to whom the powers have been delegated by him and may confirm, modify or set aside the orders passed by such officer after the review.

9.6 Any person aggrieved by an order passed by the Director General may prefer an appeal to the Central Government in the Ministry having administrative control of the Bureau within a period of sixty days from the date of such order.

ANNEX A

DOC:HM/AHC/F 2.1
Sep 2018

BUREAU OF INDIAN STANDARDS

Report on Recognition / Renewal Assessment of Assaying and Hallmarking Centre

<table>
<tr><td>1.</td><td colspan="2">General Information</td></tr>
<tr><td></td><td>Particulars</td><td>Observations during assessment</td></tr>
<tr><td>i)</td><td>Name & address of the Assaying and Hallmarking Centre with PIN code & complete address including phone and e-mail</td><td></td></tr>
<tr><td>ii)</td><td>Application No.</td><td></td></tr>
<tr><td>iii)</td><td>Date(s)of Assessment</td><td></td></tr>
<tr><td>iv)</td><td>Persons present during assessment</td><td></td></tr>
<tr><td>2.</td><td colspan="2">Implementation of IS 15820:2009 (refer clauses of the Standard as mentioned below for auditing)</td></tr>
<tr><td>i)</td><td>Verification of Centre's Layout: (5.3 of IS 15820) (to be verified with documents submitted by the applicant along with the application)</td><td></td></tr>
<tr><td>ii)</td><td>Details of Management Review meeting/Internal Quality Audit (for Renewal)</td><td></td></tr>
<tr><td>ii)</td><td colspan="2">Verification of availability of trained & competent manpower resources: (4.1.7, 4.1.8, 4.1.9, 4.1.10, 4.1.11, 4.1.12, 4.1.13, 5.2.2, 5.2.3, 5.2.4 & 5.2.5) (competency shall be assessed through observations of practical work, namely sample collection, weighing, XRF machine operation, fire assay)

<u>Append details as Annexure A in format as below:</u>

<table>
<tr><td>Sl. No.</td><td>Name & Designation</td><td>Qualification, Academic & Professional</td><td>Experience & Training</td><td>Competent Yes /No</td><td>Remarks</td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td></tr>
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</table>
Signature of Auditor(s)</td></tr>
<tr><td>iii)</td><td>Availability of latest versions* of IS 15820, 1417, 1418, 2112, 2113 (*strike off which are not applicable)</td><td></td></tr>
</table>

iv) Equipment/ Instrument & Infrastructure (for sampling; assaying; Hallmarking; power, safety & security):(4.1.6, 5.3.2, 5.4.2, 5.4.3, 5.4.4, 5.6)

Append detailsas Annexure B in format as below:

Sl. No.	IS 1418/2113 Cl. Ref	Details of equipment/ Instrument with Nos	Make & Sl. No	Range & accuracy (least count)	Calibration status	Remarks

Signature of Auditor (s)

v)	Capability of XRF tester capable to detect Cd, Ir& Ru in Gold or Cd & Pb in Silver articles (5.4.2 & 5.4.3): Verify manufacturer/supplier certificate & report on availability of SRMs/software for Cd, Ir, Pb& Ru *Append copy as Annexure C.*	
vi)	Availability of water & other chemicals (Annexure A-2/Annexure B-2)	
vii)	Availability of certified reference material (CRM) (5.6) (certificate from Govt of India Mint or NABL accredited Lab): *Append copy as Annexure D*	
viii)	Has a Test Report proforma developed & it covers all requirements of IS 1418/2113 (5.10.1)	

ix) Whether the applicant has participated in Inter Laboratory Proficiency Testing Programme (5.9.1) :

Append d*etails as Annexure E in the following format:*

Sl. No.	Name of Centre & Place	Date of Test	Result

x)	Arrangements for receiving of articles, their handling, storage, coding for testing (5.8)	

xi)	Arrangements for sampling (5.7)	
xii)	Arrangements for sampling, assaying, storage of articles during assaying (5.4)	
xiii)	Arrangements for rejection and return of rejects (5.4.5)	
xiv)	Hallmarking (5.4.6) Whether access to Laser Marking machine is controlled Whether laser marking on articles marked legible	
xv)	Arrangement for ensuring impartiality, integrity, confidentiality, independence of judgement in relation to XRF testing, assaying and Hallmarking activities	
3.	**Testing and assaying during assessment**	
i)	Draw samples randomly from stock of articles available with the applicant and get them tested. a) XRF testing (assess capability of XRF machine for purity, detection of Cd, Ir, Ru and Pb). Check Min. 5 samples each, from two different lots; b) Fire asay : minimum 2 samples(one each from two different lots) in duplicate)	
4.	**Past Performance (applicable only in case of Renewal assessment)**	
i)	Performance observed at last surveillance audit was satisfactory?	
ii)	Any discrepancy was reported? If yes, report corrective action taken. Whether the action taken has corrected the discrepancy?	
iii)	Has overall performance in the entire operative period been satisfactory?	
iv)	Is any complaint pending? Report action taken on complaint.	
5.	Scope of Recognition (to be countersigned by Auditor(s): *Append as Annexure G*	

6.	Discrepancies, if any, shall be communicated through Discrepancy/Variation Report (format DOC.: HM/AHC/F 15.2 MARCH 2014)*Append as Annexure H*				
7.	CONCLUSION & RECOMMENDATIONS				
8. ANNEXURES *(Tick/Indicate page nos.)*					
A	Details of Managerial & Technical Personnel		E	Details of Inter Laboratory Proficiency Testing	
B	List of Equipment/instrument/ infrastructure		F	Test Report	
C	Manufacturer's certificate on XRF machine		G	Scope of Recognition	
D	*Certificate on CRMs*		H	Discrepancy/Variation Report	

Signature of Auditor(s)
Name:
Designation:
Date:

(**Instruction**: *Please do not attach any document/record/sheet other than Annexure A - H*)

Remarks of the reviewing Officer:

ANNEX B

DOC:HM/AHC/F 2.2
Sep 2018

BUREAU OFINDIANSTANDARDS

Report on Surveillance Assessment of Assaying and Hallmarking Centre

1.	**General**	
i)	Name & address of the Assaying and Hallmarking Centre	
ii)	BIS Recognition No. & Validity Date	
iii)	Date of Assessment	
iv)	Persons contacted	
v)	Last Assessment Whether corrective action has been taken on all observed discrepancies. Verification of corrective actions taken on recorded discrepancies at last audit. Discrepancy(s) is/are persisting.	Date: Yes/No Satisfactory/not satisfactory If yes, give details in the Discrepancy/Variation Report (format is DOC.: HM/AHC/F 2.4,Aug. 2018)
vi)	Scope of Recognition - Is working within approved scope?	Yes/No. If no, give details on Discrepancy/Variation Report.
2.	**INFRASTRUCTURE, MANPOWER & SYSTEMS AS PER IS 15820**	
i)	Whether all test and marking equipment are in working condition., specially with respect to: a) Availability of valid power supply; b) Maintenance and calibration of test equipment, namely XRF machine, weighing balances, furnaces (cupellation, annealing).	
ii)	If calibration has been done by non-NABL accredited laboratory, whether the calibration certificate is traceable to national standards.	
iii)	Whether security system, like CCTV are in operation. Check records of CCTV and verify receiving and delivery activities.	

iv)	Whether distilled water and other consumables available. Check halides in distilled water.	
v)	Whether the Professional Indemnity Insurance of high value items are under valid status and these insurances have been done for the minimum amount specified in IS 15820.	
vi)	Whether the centre has participated in inter laboratory/proficiency testing programme.	
vii)	Whether the centre has carried out the Internal Quality Audit/ Management Review meeting	
viii)	Whether the articles accepted for assaying and hallmarking are only from BIS registered jewellers.	
ix)	Whether similar articles, segregated lot wise with declared fineness are received from registered jewellers.	
x)	Whether undertakings were obtained from jewellers regarding their identification mark.	
xi)	Whether Jewellery with prohibited markings is accepted for hallmarking.	
xii)	Whether acknowledgement / receipt with time has been issued and jewellers signature obtained.	
xiii)	Whether lot wise records of articles received from jewellers are available. Do they tally with records of assaying, hallmarking done and delivery	
xiv)	Whether there has been any change in technical manpower or Centre's Management since previous assessment. Verify competency of manpower by actual work performance and report. Report shall include name, qualification, experience and competency.	
xv)	Whether XRF testing, fire assay and laser marking are being done by competent personnel regularly. Check records.	
xvi)	Whether any of the terms and conditions violated.	

3.	**RECORDS**	
i)	Whether following records are maintained on regular basis? ➢ Receipt/Collection Voucher ➢ Record of Jewellers, Respective Registration & Identification Marks ➢ Record of Jeweller& Lot Nos. ➢ Sample Envelope ➢ XRF Card ➢ Stock Register of CRMs • Check Gold • Silver • Copper • Lead ➢ Assaying Report ➢ Assaying Sheet ➢ Test Certificate ➢ Marking Record Sheet ➢ Invoice cum Delivery Challan ➢ Jeweller's Feedback	
ii)	Whether records indicate traceability of individual lot with times of its receipt and delivery with Hallmark.	
iii)	Whether records are maintained on Hallmarking done for each registered jeweller.	
iv)	Whether record of XRF testing is up to date.	
v)	Whether testing had been for precious metal which was beyond scope of recognition, without seeking formal inclusion of the precious metal in their scope of recognition.	
vi)	Whether an article of lower purity had been Hallmarked with higher purity	
vii)	Whether Hallmarking done for non-registered jeweller	
4.	**XRF TESTING**	
i)	Whether XRF testing for purity and detection of prohibitive elements are being done.	
ii)	Whether XRF machine is checked with certified reference standards of gold/silver.	
5.	**SAMPLING FOR FIRE ASSAY**	
i)	Whether sampling plan given in IS 15820 is followed and relevant records are available.	

ii)	Whether collection of representative gold/silver portions from each of the sampled article is being done for fire assay.	
6.	**ASSAYING**	
i)	Whether certified reference materials (CRMs) with purity certificate from Indian Govt. Mint or NABL accredited lab available.	
ii)	Whether CRMs are used in assaying and corresponding receipt, consumption records of CRMs are available.	
iii)	Whether specified test methods are being followed.	
iv)	Is assay record is maintained as documented in Quality Manual. Check for rough records of fire assay.	
v)	Whether proof assay cornets are available. Do they tally with lotwise assay record.	
vi)	Is assay record available for hallmarked jewellery ready for delivery.	
7.	**HALLMARKING**	
i)	Whether the markings are Legible.	
ii)	Is marking done on all removable / detachable parts.	
iii)	Whether the sequence of marking is followed.	
iv)	Whether time of laser marking is recorded.	
8.	**DELIVERY**	
i)	Whether articles ready for delivery are all Hallmarked including all removable/ detachable parts.	
ii)	Whether cornets of samples of each assayed lot are available and kept ready for delivery.	
iii)	Whether proof of delivery indicating details of Hallmarked jewellery and time available.	
9.	**IDENTIFICATION & TRACEABILTY**	
i)	Whether identification and traceability of jewellery maintained at all stages from receipt to delivery.	
ii)	Whether each activity completed and records available before proceeding to next activity.	

10.	**TESTING DURING ASSESSMENT**	
I)	Whether random samples drawn from the stock of articles available with Hallmark during the visit and testing done. Give details of samples. (The test report shall be in the format given at DOC.: HM/AHC/F 2.5 Aug. 2018). Test Result: Pass/Fail	
ii)	Check corresponding test records of XRF and Fire assay and report vis-à-vis tested results	Record Tested Result **XRF** i. Fineness ii. Detection of Cd, Ir& RU **Fire Assay** (ppt)
iii)	Whether significant variation is observed between obtained result and available record.	
11.	**COMPLAINT(S)**	
i)	Whether the complaints received , if any, have been resolved .	
12	**Deficiencies, if any, shall be communicated through Discrepancy/Variation Report**	
13.	**CONCLUSION & RECOMMENDATIONS**	

Signature	
Name	
Designation	
Date	

Remarks of the reviewing Officer:

ANNEX C

DOC:HM/AHC/F 2.3
Sep 2018

BUREAU OFINDIANSTANDARDS

Report on Special Assessment of Assaying & Hallmarking Centre

1	**General**	
i)	Name & address of the Assaying and Hallmarking Centre	
ii)	BIS Application/Recognition No.	
iii)	Validity of Recognition	
iv)	Scope of Recognition	
v)	Date of Assessment	
2.	**Previous Assessment**	
i)	Date(s) of Visit	
ii)	Conclusion & Recommendation	
3.	**Purpose of Assessment Visit**	
4.	**Findings of Assessment**	
i)		
ii)		
iii)		
iv)		
4.	**TESTING DURING ASSESSMENT**	
i)	Give details of samples drawn during the visit and testing done. Test Result: Pass/Fail	
10	**Discrepancies, if any, shall be communicated through Discrepancy/Variation report**	
11.	**CONCLUSION & RECOMMENDATIONS**	

Encl:	**Signature** **Name:** **Designation:** **Date:**

ANNEX D

DOC:HM/AHC/F 2.4
Sep 2018

BUREAU OFINDIANSTANDARDS
DISCREPANCY/VARIATION REPORT ISSUED DURING ASSESSMENT OF ASSAYING & HALLMARKING CENTRE (DVR)

1.	Name and Address of Assaying & Hallmarking Centre	
2.	Application/Recognition No.	
3.	Date(s) of Assessment:	

4.	Clause. of IS 15820/ Terms & Conditions Violated	Details of Discrepancy/variation observed (Applicable objective evidence shall be enclosed. Additional sheet(s) of this format, numbering each page shall be used. Each page shall be signed by Auditor(s) & Centre's representative). Plain paper shall not be used.
(i)		
(ii)		
(iii)		
5.	Remarks/Comments by Assaying & Hallmarking Centre:	

Signature of Centre's Representative:	Signature of Auditor
Name & Designation	Name & Designation
Date	Date:

ANNEX E

DOC:HM/AHC/F 2.5
Sep 2018

BUREAU OFINDIANSTANDARDS

TEST REPORT AS PER IS 1418:2009/IS 2113:2014 (IS shall be read with latest amendment)

<table>
<tr><td>1</td><td colspan="5">Date(s)of test</td><td colspan="5"></td></tr>
<tr><td>2</td><td colspan="5">Name of A&H Centre & Recognition No / Application No.</td><td colspan="5"></td></tr>
<tr><td>3</td><td colspan="5">Source of sample(Give details of lot from which sample has been drawn)</td><td colspan="5"></td></tr>
<tr><td>4</td><td colspan="5">Description of sample with quantity and weight</td><td colspan="5"></td></tr>
<tr><td>5</td><td colspan="5">Tested/declared fineness</td><td colspan="5"></td></tr>
<tr><td rowspan="4">6</td><td colspan="10">XRF Tests done(2 lots of different articles with each lot having 05 articles minimum)</td></tr>
<tr><td rowspan="2">Sl.No.</td><td colspan="2" rowspan="2">Particulars of the sample</td><td colspan="7">Result</td></tr>
<tr><td>Finenes s</td><td>Cd</td><td>Ir</td><td>Ru</td><td>Pb</td></tr>
<tr><td colspan="10">Results enclosed in a separate sheet</td></tr>
<tr><td rowspan="4">7</td><td colspan="10">Assay(1 sample each from two different lots specified at Sl. No 6 above, in duplicate)</td></tr>
<tr><td rowspan="2">Sl.No.</td><td colspan="2" rowspan="2">Particulars of the sample</td><td colspan="7">Fineness(ppt)</td></tr>
<tr><td>No.1</td><td colspan="3">No.2</td><td colspan="3">Average</td></tr>
<tr><td>1</td><td colspan="2"></td><td colspan="2"></td><td colspan="3"></td><td colspan="3"></td></tr>
<tr><td>2</td><td colspan="2"></td><td colspan="2"></td><td colspan="3"></td><td colspan="3"></td></tr>
<tr><td>8</td><td colspan="3">Remarks</td><td colspan="7"></td></tr>
<tr><td>9</td><td colspan="3">Tested by</td><td colspan="7">Witnessed by BIS Auditor</td></tr>
<tr><td></td><td colspan="3"></td><td colspan="7"></td></tr>
<tr><td></td><td colspan="3">Signature</td><td colspan="7">Signature</td></tr>
<tr><td></td><td colspan="3">Name & Designation</td><td colspan="7">Name & Designation</td></tr>
</table>

Note:
1. During the initial/renewal assessment, two lots as above shall have to be assessed being the informed visit. However during renewal , hallmarked jewellery of two lots as above (hallmarked by that centre) shall be assayed being the informed visit.
2. During the surveillance assessment, the available hallmarked lot may be subjected for assaying.

XRF RESULTS

LOT 1

Sl.No.	Particulars of the sample	Result				
		Fineness in ppt	Cd	Ir	Pb	Ru
1)						
2)						
3)						
4)						
5)						

LOT 2

Sl.No.	Particulars of the sample	Result				
		Fineness in ppt	Cd	Ir	Pb	Ru
1)						
2)						
3)						
4)						
5)						

Tested by	Witnessed by
Signature	Signature
Name & Designation	Name & Designation

Annexure – 6

KCM3

GOLD HALLMARKING FACILITY: QUESTIONNAIRE

JOINT COMMITTEE CONSTITUTED AS PER THE HONORABLE NATIONAL GREEN TRIBUNAL (PB), DELHI ORDER DATED 5/8/2019 IN THE MATTER OF OA 568 /2019

S.No	PARTICULARS	DETAILS
1	Name and address of the facility and location	CGR Kollam Hallmark company
2	Contact numbers	0484-2356746
3	Phone/ fax numbers	0484-2356250.
4	Email/ website address	mail@cgrhallmarkers.com.
5	Contact person and designation	Akhil Raj S Pillai. Manager.
6	BIS Recognition details and validity	SRO/RHMS/R-0444.1 14/04/2014.
7	Details of trade license from local bodies.	
8	Details of consent for establishment issued by Kerala Pollution Control Board.	Orange.
9	Details of consent for operation issued by Kerala Pollution Control Board.	PCB/KO/ICO/G/388/2017. 30/6/2020.
10	Category of unit as per the consent	Orange
11	Details of authorization under hazardous waste management rule.	
12	Capital investment (Rs)	
13	Number of staffs	5.
14	*Details of equipment*	*(Indicate number of items)*
	Fire assay system	Melting, Annealing, cupelation.
	Portable XRF/ Carrot meter	1
	Fume hoods	
	DM water kit	1
	HDD XRF	
	ICP-OES	
	SPARK-OES	
	AAS	
15	*Chemicals used*	*Indicate quantity used per sample*
	Nitric acid	1.2 ml.
	Lead foil	400mg.
	Copper	13mg.
	Silver	340mg.
	Magnesium cupels	-
	Others	
	Waste disposal	*Indicate quantity & mode of disposal*

	Spent acid	
	Lead foils	
	Used cupels	
	Scrubber liquid	
	Others	
17	Pollution control devices	
	Fume extraction system	X
	Alkali/ wet scrubber	X
	Spent acid treatment system	X
	Others	
18	Details of ETP if any	X
19	Details of personal protective equipment (PPE) used by staff	
20	Details of scrubber stack	
21	Details of agreement with KEIL for waste disposal.	
22	Details of agreement/ arrangement with scrap dealers/ recyclers.	
23	Monthly electricity charges (Attach the copy of electricity bills for last three months).	21,000

Annexure - 7

GOLD HALLMARKING FACILITY (CONSENTED)

Sl. No.	Name of the consented unit
1	Calicut Assay and Hallmarking Centre Pvt. Ltd., Thiruvananthapuram
2	South Kerala Asseying and hallmarking centre,Kollam
3	CGR Hallmarking company, Kollam.
4	Eranad Hallmarking Pvt. Ltd., Malappuram
5	Excell assay and hallmarking centre, Trissur
6	Quality assay and hallmarking Centre Pvt. Ltd., Thrissur
7	Unique hallmarking centre no. 10/725, Thrissur
8	Gold star assay and hallmarking Centre Pvt. Ltd., Thrissur
9	Amritha assay and hallmarking centre IV/3232A,Thrissur
10	Lotus assay and hallmarking Centre Pvt. Ltd., no. 1138/G, Thrissur
11	CGR Cochin assey,Thrissur
12	Poovathingal assay and hallmarking Centre Pvt. Ltd., Thrissur
13	Aurum assay and hallmarking Centre Pvt. Ltd., Thrissur
14	Top assay and hallmarking Centre Pvt. Ltd., Thrissur
15	Moonlight assay and hallmarking Centre Pvt. Ltd., Thrissur
16	Venus hallmarking centre, Ernakulam
17	SMS hallmarking, Ernakulam
18	Veracity assaying and hallmarking Centre, Ernakulam

Annexure - 8

FILE NO : PCB/EKM/DO-1/OA-808/16
Date of issue : 29/04/2017

KERALA STATE POLLUTION CONTROL BOARD

CONSENT TO

OPERATE/AUTHORISATION/REGISTRATION

ISSUED UNDER

The Water (Prevention & Control of Pollution) Act, 1974
The Air (Prevention & Control of Pollution) Act, 1981

and

The Environment (Protection) Act, 1986

As per Application No. :4282686
Dated:27-04-2017

TO

M/s CGR COCHIN ASSAY (A UNIT OF CGR HALLMARKERS P LTD)
40/1014, 4th Floor
Pailli Pillai Towers pp.Ground Bus Stop, Above Keertilal Jewels
MG Road,
Ernakulam

Consent No. :O15ERRCTO1738272
Valid Upto :15/11/2019

Kerala State Pollution Control Board
Cochin-20

1. GENERAL

1.1. This integrated consent is granted subject to the power of the Board to withdraw consent, review and make variation in or revoke all or any of the conditions as the Board deems fit.

1	VALIDITY	15/11/2019
2	Name and Address of the establishment	CGR COCHIN ASSAY (A UNIT OF CGR HALLMARKERS P LTD) 40/1014, 4TH FLOOR PAILLI PILLAI TOWERS OPP.GROUND BUS STOP, ABOVE KEERTILAL JEWELS MG ROAD, ERNAKULAM 682011
3	Communication	Telephone :0484-2352654 Fax :0484-2356250 E-mail:mail@cochinhallmark.com
4	Occupier Details	JAMES JOSE MANAGING DIRECTOR COCHIN HALLMARK CO P LTD CGR HOUSE, 39/6067A ALAPPAT ROAD EXTN RAVIPURAM ERNAKULAM
5	Local Body	KOCHI CORPORATION
6	Survey Number	2572/1,2
7	Village	ERNAKULAM
8	Taluk	KANAYANNUR
9	District	ERNAKULAM I
10	Capital Investment(Rs in Lakhs)	60.41
11	Scale	Small
12	Category	RED
13	Annual fee(Rs) Total Fee remitted(Rs)	Rs.12,000/- Rs.78,000/-
14	RAW MATERIAL	PRODUCTS
	NITRIC ACID @.004 Kilo Liters Cuppel @6 Numbers DISTILLED WATER @.004 Kilo Liters GOLD JEWELERS/ARTICLES @500 Numbers	Hallmarked gold jewellery/artefacts - job work @1000 Numbers
15	Total Power Required (HP)	7.5HP

2. CONDITIONS AS PER

The Water(Prevention and Control of Pollution)Act, 1974

Kerala State Pollution Control Board ★ Cochin-20

2.1 **In case of generation of trade effluent from the industry, effluent treatment system consisting of treatment units having adequate capacity established as per the Integrated Consent to Establish issu shall be operational at all times during which the industry is functional. Additional facilities requir any, to achieve the standards laid down by the Board u/s 17(1) (g) of the Water Act shall also be m along with.**

2.2 **Water consumption:** 1000 l/day

2.3 **Effluent generation:** NA

2.4 **The characteristics of effluent after treatment shall confirm to the following tolerance limits:**

SI.NO.	Characteristics	Unit	Tolerance Limit	
			Sewage	Trade Effluent

2.5 Mode of disposal of treated effluent: Scrubbed liquid disposed to refining unit at Edayar

3. CONDITIONS AS PER The Air(Prevention and Control of Pollution)Act, 1981

3.1 Adequate air pollution control measures shall be operational at all times during the functioning of t industry. Additional facilities required, if any, to achieve the standards laid down by the Board shal also be made along with.

Stack No.	Sources of Emission	Emission Rate(Nm3/Hr)	Stack Height above		Control Equipment
			Ground Level	Roof Level	
1	82.5KVA DG Set	-	-	2m	Acoustic enclosure

3.2 Emission characteristics shall not exceed the following:

SI.No.	Parameter	Limiting Standards (mg/Nm3)

4. CONDITIONS AS PER The Environment (Protection) Act, 1986.

4.1 The operation of the industry shall be strictly in compliance with the provisions of the Noise Polluti (Regulation and Control) Rules 2000.

4.2 Used lead acid batteries shall be disposed of as per the Batteries (Management and Handling) Rules 2001

4.3 Hazardous waste generated, if any, shall be handled as per the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016.

4.3.1 Activities for which Authorisation is granted

Collection		**transport**	
Reception		**Storage**	
Treatment		**Reprocessing/Disposal**	

State Pollution Cont... Cochin-20...

4.3.2 Type, quantity and mode of storage/collection/disposal of hazardous wastes shall be as follows:

Sl.No.	Hazardous Waste	Schedule Category	Quantity Tonne/year	Mode of	
				Storage	Disposal

4.4 E-waste shall be disposed off safely as per the E-Waste (Management)Rules, 2016.

5. SPECIFIC CONDITIONS

5.1 . For renewal of the consent in case of continuance of discharge/operation of the industry, application in the prescribed form shall be submitted through the web portal of the Board for Online Consent Management & Monitoring System 3 months prior to the date of expiry. Late application will be accepted only with fine.

5.2.This consent is granted subject to the power of the Board to review and make variation in or revoke any of the conditions as the Board deems fit as per the relevant Acts/Rules.

5.3. The applicant shall comply with the instructions that the Board may issue from time to time regarding prevention and control of air, water, land and sound pollution

5.4. No change or alteration of the industrial plant is to be made without the prior written permission of the Board. Any change in the particulars furnished and/or in the identity of the occupier/authorised agent is to be intimated to the Board forthwith.

5.5.Exhaust with scrubbing facilities provided for the furnace area shall be maintained properly

5.6.Scrubbed liquid shall be disposed to the refining unit at Edayar

DATE :29/04/2017

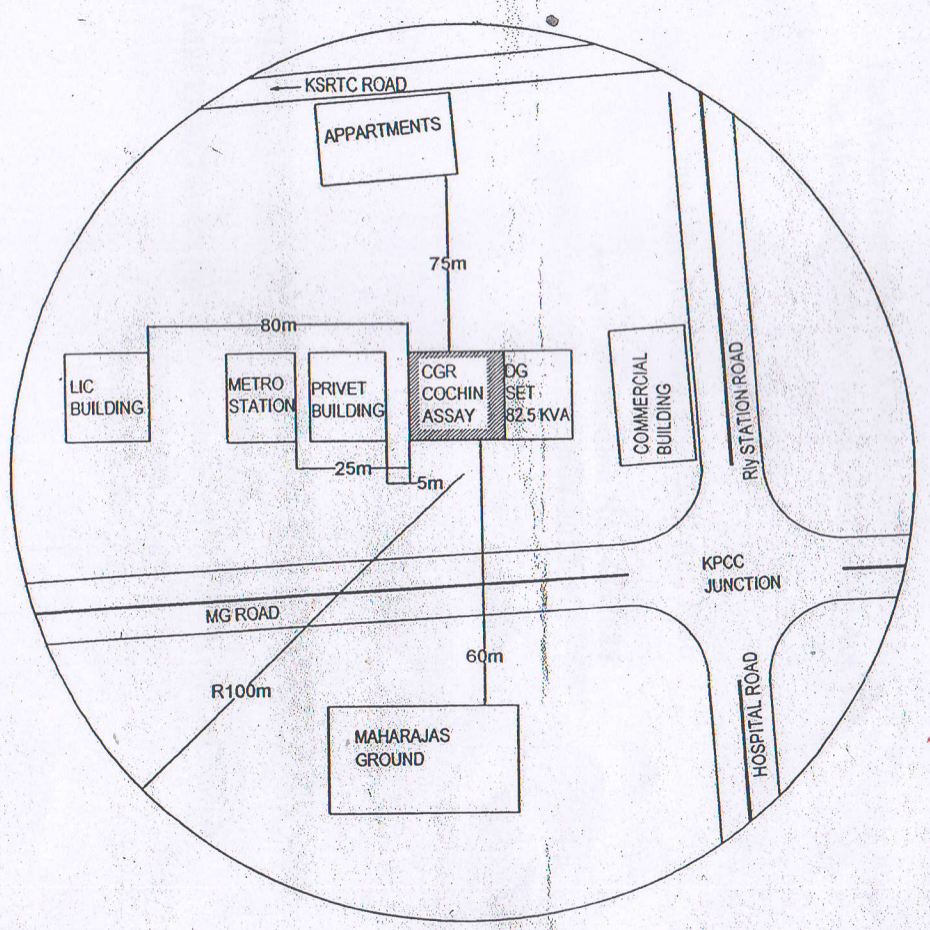
State Pollution Control Board * Kerala Cochin-20

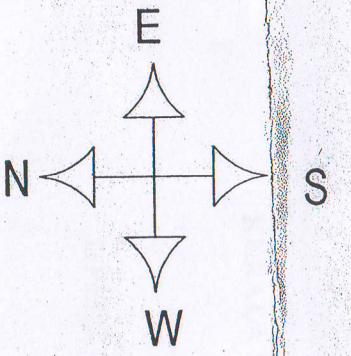
SIGNATURE & SEAL OF ISSUING AUTHORITY

OFFICE SEAL

To

CGR COCHIN ASSAY
(A unit of CGR HALLMARKERS P LTD)
40/1014, 4th Floor
Pailli Pillai Towers
Opp.Ground Bus Stop,
Above Keertilal Jewels
MG Road, Ernakulam





DISTRICT : ERNAKULAM
THALUK : KANAYANNUR
VILLAGE : ERNAKULAM
SURVEY NO. : 2572/1,2

Kerala State Pollution Control Board ★ Cochin-20

APPROVED SITE LOCATION DRAWING

ENVIRONMENTAL ENGINEER