M/s. GIRISH CHANDRA GHOSH & G.G.S.

Tank calibration,
tank roundness, tilt, settlement survey,
UST and P & I of pipe lines and tanks
in INDIA & ABROAD.

one drop can make a difference

TANK CALIBRATION




Corp Off : 40/2, B. T. Road, Sonajhuri Apartment, Block-B
Ground Floor, Kolkata - 700 002
Regd Off : 39A, B. T. Road, Katakal, Kolkata - 700 002
West Bengal India
Mob. : 91 9830081365
Tel / Fax : 033-25589089
e-mail : gcg.ggs.kol@gmail.com
gcg_ggs@rediffmail.com

www.girishcalibration.com
www.storagetankcalibration.in

An ISO 9001:2008 certified Company

NSIC-MSME registered Unit
NSIC-ONICRA credit rated Co.

Approved by Office of Zonal Director General of Foreign Trade Certificate of Importer-Exporter Code (IEC) No: 0216925703 and the Registered member of EEPC (Engineering Export Promotion Council) India, Reg. No-3O1/M28655

About us

Our Journey

In 1874, Girish Chandra Ghosh has started his business named M/s. Girish Chandra Ghosh, Manufacturer, Seller & Service provider of Beam Scale (Class - B.C.D.) in British periodWe have introduced ourselves as a Govt. approved Storage Tank Calibrator also & we have been working successfully during past long years throuughout the India.Our product quality and our dedicated service satisfies the various level of our society, such as National & Multinational Companies, Govt. & Non-Govt. Sectors in India as well as common people of our surroundings. We are undertake tank calibration, inspection, ultrasonic testing, tank settlement and tilt survey.

Our Vision

Our vision is to become the recognized industry leader by our customers in the Storage Tank Calibration, tank settlement, roundness, tiltness and ultrasonic businesses in which we compete. We have been speading across globally to extend our quality services to all types organisation.

Our Edge

We are now consortium of efficient. Responsive and experienced engineers with on field technical expertise combined with computer aided mathematical volume analysis. We certainly have the edge with constant technological innovation and upgradation - meeting international standard and solving intricate problems like tilted horizontal tanks and volume of uneven floors.

Technical Competence

Whether it be an inclined horizontal tank whose volume increases exponentially, a tank with ueven bottom, dished ends, blades and heating coils inside, a complicated bottom shell arrangement, a flooting roof tank with liquid displacement to be taken care of, a pressurised horton sphere or a horizontal bullet, we are always a step ahead of a critical assignment our engineering capability speaks on the ground. We have developed unique correlated physical, mathametical and error free volumetric solutions. Calibration or survey data can be provided on CD or sent via email in spreadsheet format, also for SAP and other integration.

Traceability, Standards, Certification

Calibration needs traceability and standardization. In India, we are license holder of the Directorate of Legal Metrology (Weigths and Measures Dept) in many states and follow their rules apart from BIS standards, is also recognised by Customs, Excise and Cetral Government CPWD department. We follow various API and ISO standards for measurements and also as per requirement and rules in every country. We are accredited from QASL with ISO 9001:2008 QMS for our services.

Our Commitment

The leading company in calibration world. We are committed to meet consumers requirement by offering consistent quality service and at competitive price. Company's profit depends on the accuracy of storage tank calibration chart.

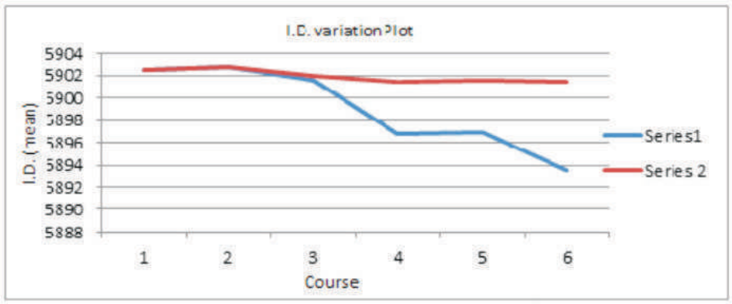
Goal

To enhance our customer satisfaction continueuly by providing quality service without compromise, with the help of integrated equipment, innovative tooling customise software solution through continous involvement at minimile cost.

Calibration result comparison between Optical Calibration done by us (in blue) against calibration done by strapping (in maroon) in same company's same tank.

Tank No.		lit/cm comparison			
Course No.	Course height	Open Capacity in our chart	Open Capacity in previous chart lit/cm	Difference (lit/cm)	Net Volume Difference
1	135.9	27352.88422	27363	-0.1	-16
2	150.0	27354.73858	27365	-0.3	-39
3	150.0	27357.32153	27355	2.8	417
4	150.0	27352.68638	27310	42.6	6394
5	100.0	27354.54040	27311	43.6	4355
6	38.5	27353.61338	27280	73.2	2818
					13929

I.D. comparison			
Course No.	I.D. as per new calibration (cm)	I.D. as per old calibration (cm)	I.D. Difference (cm)
1	5902.5	5902.5	0.0
2	5902.7	5902.7	0.0
3	5901.9	5901.6	0.3
4	5901.4	5896.8	4.6
5	5901.6	5896.9	4.7
6	5901.5	5893.6	7.9



Legend: Previous data
Ou New data

Data sheet of Calibration done by EODR (Electro optical distance ranging) API MPMS 2.2 D.

Total Station Data sheet — SURVEYOR / CALIBRATOR: GIRISH GHOSH CALIBRATION & G.G.S.

1. Offset obtained from optical reference data — Horiz. offset to tank shell (M) from total station

Course	Thk (m)	1	2	3	4	5	6	7	8
1 top	NA	30.044	30.032	30.004	29.963	29.932	29.922	29.910	29.935
bottom	NA	30.011	30.020	30.004	29.983	29.932	29.926	29.918	29.934
2 top	NA	30.047	30.027	29.993	29.918	29.918	29.938	29.913	29.917
bottom	NA	30.046	30.034	30.001	29.953	29.925	29.927	29.910	29.942
3 top	NA	30.056	30.026	30.007	29.977	29.915	29.929	29.925	29.970
bottom	NA	30.052	30.028	30.000	29.941	29.932	29.948	29.918	29.957
4 top	NA	30.049	30.034	30.027	29.933	29.933	29.948	29.937	29.992
bottom	NA	30.050	30.026	30.014	29.937	29.945	29.948	29.927	29.981
5 top	NA	30.051	30.030	30.013	29.959	29.900	29.939	29.971	30.014
bottom	NA	30.047	30.038	30.028	29.985	29.973	29.936	29.942	30.003
6 top	NA	30.068	30.037	29.996	29.993	29.995	29.952	29.970	30.018
bottom	NA	30.060	30.041	30.008	29.973	29.991	29.944	29.981	30.023
7 top	NA	30.067	30.031	30.013	30.004	29.995	29.944	29.905	30.004
bottom	NA	30.073	30.034	30.000	30.004	29.990	29.952	29.977	30.015
8 top	NA	30.054	30.011	30.026	30.002	30.014	29.950	30.005	29.998
bottom	NA	30.053	30.025	30.009	29.991	29.939	29.931	29.991	29.992
9 top	NA	30.027	30.018	30.013	30.003	30.049	29.937	29.997	29.993
bottom	NA	30.054	30.031	30.020	30.015	30.005	29.946	29.995	30.004
10 top	NA	30.016	30.015	30.009	30.004	30.043	29.921	29.982	29.971
bottom	NA	30.030	30.020	30.013	29.993	30.015	29.929	29.992	29.970

Course	9	10	11	12	13	14	15	16
1 top	29.961	29.957	29.959	29.992	29.990	30.034	30.058	30.060
bottom	29.939	29.954	29.969	29.982	30.013	30.020	30.054	30.061
2 top	29.970	29.945	29.973	29.995	29.976	30.030	30.057	30.038
bottom	29.970	29.959	29.960	30.000	29.992	30.035	30.071	30.063
3 top	29.954	29.941	29.900	30.001	29.979	30.040	30.045	30.035
bottom	29.967	29.940	29.967	29.998	29.974	30.032	30.043	30.035
4 top	29.947	29.945	30.012	30.003	29.980	30.019	30.011	30.033
bottom	29.949	29.942	30.000	30.006	29.984	30.044	30.044	30.031
5 top	29.959	29.940	30.004	30.007	29.990	30.055	30.025	30.058
bottom	29.953	29.945	30.013	30.005	29.983	30.052	30.035	30.045
6 top	29.954	29.946	29.988	30.018	29.993	30.031	30.028	30.021
bottom	29.960	29.943	29.990	30.013	29.993	30.004	30.029	30.045
7 top	29.960	29.949	29.903	30.021	30.006	30.031	30.011	30.017
bottom	29.949	29.945	29.994	30.022	30.004	30.035	30.025	30.015
8 top	29.949	29.949	29.984	30.017	29.997	30.023	30.000	30.025
bottom	29.960	29.940	29.972	30.018	30.001	30.015	30.005	30.013
9 top	29.949	29.945	29.957	30.023	30.010	29.997	30.009	30.020
bottom	29.945	29.961	29.901	30.027	30.005	30.017	30.013	30.033
10 top	29.972	29.959	29.981	30.020	29.999	30.008	30.000	30.005
bottom	29.963	29.972	29.965	30.022	30.015	29.993	30.008	30.001

Field measurements done by: Signature and date: Checked by:

Owner
Location
Tank no.
Dip ref pt
Dip ref ht cm
FR/CR/DOME
Insulation/DWET
Location of manholes NA
Location of datum wrt manhole NA
Height of Datum plate 0 cm
Reference circumference NA cm Reference course 1 top
No of stations around circumference NA
Distance between each position on circumference cm
Offset taken from: X inside / outside

Visual observation of tank shells — Reference Internal Diameters with Laser distance gauge

No extra remarks

Mean Diameter 60.084 Reference course 1 top

Deadwood Sheet

Description	Dimensions	(+) / (-) lit	Applicable range	
2 nos. Manhole		485	61.0	150.0
1 nos. Manhole		434	49.0	106.0

Tank undergo out of roundness, tilt and bottom settlement for which we undertake survey and reports as seen here.

Tanks undergo out of roundness, tilt and bottom settlement for which we understand survey and reports as seen here.

TANR OUNDNESS Tank No. TK 03
BP LaP tna

Internal Offsets corrected for plate thickness - millimetres *Top 50, Bott = 20
Negative value = Tank Set In *Reference station 1

Station		1	2	3	4	5	6	7	
Course	Thk (m)								
1 - top **	0.006	0	0	0	0	0	0	0	
1 - bot	0.006	10	-7	-8	-5	30	-15	8	29
2 - top	0.006	20	-5	8	-6	-6	-12	-18	12
2 - bot	0.006	10	-3	13	-2	10	-14	90	-3
3 - top	0.006	-3	-13	19	-3	-13	-6	-8	28
3 - bot	0.006	12	-11	20	-3	-12	-8	-16	20
4 - top	0.006	5	-32	40	-2	-19	-4	-18	35
4 - bot	0.006	1	-32	29	-3	-12	-4	-7	31
5 - top	0.006	4	-13	40	2	-43	-15	-23	42
5 - bot	0.006	7	-14	43	-1	-31	-17	-17	40
6 - top	0.006	4	-12	50	-8	-29	3	-22	45
6 - bot	0.006	2	-12	47	-3	-30	-5	-17	50

Station		9	10	11	12	13	14	15	16
Course	Thk (m)								
1 - top **	0.006	0	0	0	0	0	0	0	
1 - bot	0.006	0	0	0	0	0	0	0	
2 - top	0.006	0	0	0	0	0	0	0	
2 - bot	0.006	0	0	0	0	0	0	0	
3 - top	0.006	0	0	0	0	0	0	0	
3 - bot	0.006	0	0	0	0	0	0	0	
4 - top	0.006	0	0	0	0	0	0	0	
4 - bot	0.006	0	0	0	0	0	0	0	
5 - top	0.006	1	1	1	1	1	1	1	
5 - bot	0.006	1	1	1	1	1	1	1	
6 - top	0.006	0	0	0	0	0	0	0	
6 - bot	0.006	0	0	0	0	0	0	0	

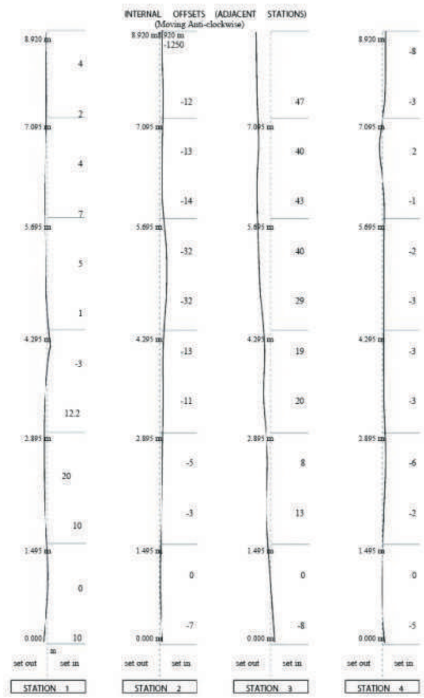
MAXIMUM OFFSET IN = -43 MM
MINIMUM OFFSET OUT = 90 MM
CORRECTED EXTERNAL CIRCUMFERENCE AT REFERENCE COURSE 1 = 89 M
CORRECTED INTERNAL DIAMETER AT REFERENCE COURSE = 986 M
INTERNAL RADIUS = 599 M at reference course (Carried by ISO7507 method

Opposing station internal offsets - Calculated internal diameters - metres

Opposing Station		1 & 5	2 & 6	3 & 7	4 & 8
Course					
1 - top **		11 98	11 98	11 98	11 98
1 - bot		12 02	11 96	11 98	12 01
2 - top		12 00	11 97	11 97	11 99
2 - bot		12 00	11 97	12 09	11 98
3 - top		11 97	11 96	11 99	12 01
3 - bot		11 98	11 96	11 99	12 00
4 - top		11 97	11 95	12 00	12 02
4 - bot		11 97	11 95	12 00	12 01
5 - top		11 94	11 95	12 00	12 03
5 - bot		11 96	11 95	12 01	12 02
6 - top		11 96	11 97	12 01	12 02
6 - bot		11 95	11 97	12 01	12 03

MAXIMUM DIAMETER = 12 09 M — MINIMUM DIAMETER = 11 94 M
MAXIMUM TANK SET OUT = 40 MM — MAXIMUM TANK SET IN = -39MM

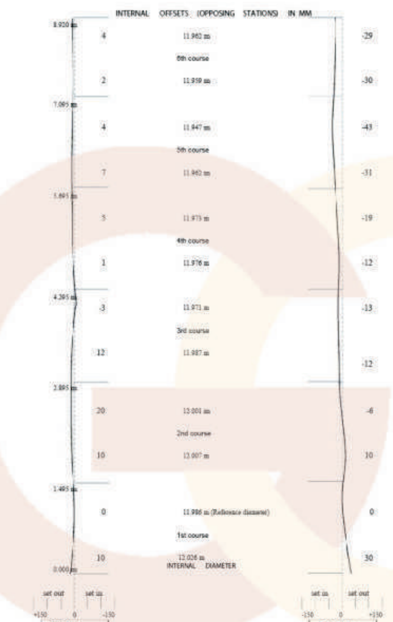
TANK ROUNDNESS SURVEY



All vertical positions on tank shell are at a distance of 4.71 metres apart
Station 1 is aligned with inside tank datum plate / dipping pipe.

Inspected Supervised by

TANK ROUNDNESS SURVEY Tank No TK 03

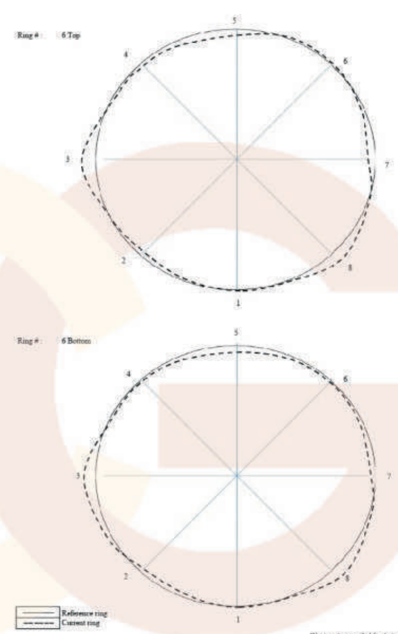


(South East - station externally aligned to inside datum plate / dipping pipe line)

*Not to scale, magnified for clarity

Inspected Supervised by

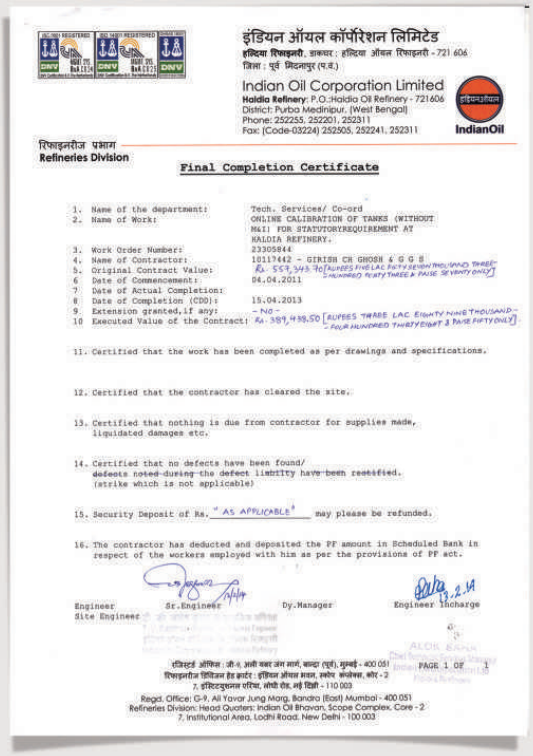
TANK ROUNDNESS SURVEY



*Not to scale, magnified for clarity

Inspected Supervised by

Job completion & satisfaction Certificate



इंडियन ऑयल कॉर्पोरेशन लिमिटेड
हल्दिया रिफाइनरी, डाकघर : हल्दिया ऑयल रिफाइनरी - 721 606
जिला : पूर्व मिदनापुर (प.ब.)

Indian Oil Corporation Limited
Haldia Refinery: P.O.:Haldia Oil Refinery - 721606
District: Purba Medinipur. (West Bengal)
Phone: 252255, 252201, 252311
Fax: (Code-03224) 252505, 252241, 252311

IndianOil

रिफाइनरीज प्रभाग
Refineries Division

Final Completion Certificate

1. Name of the department: Tech. Services/ Co-ord
2. Name of Work: ONLINE CALIBRATION OF TANKS (WITHOUT M&I) FOR STATUTORYREQUIREMENT AT HALDIA REFINERY.
3. Work Order Number: 23305844
4. Name of Contractor: 10117442 - GIRISH CH GHOSH & G G S
5. Original Contract Value: Rs. 5[illegible]/- [RUPEES FIVE LAC FIFTY SEVEN THOUSAND THREE HUNDRED FORTY THREE & PAISE SEVENTY ONLY]
6. Date of Commencement: 04.04.2011
7. Date of Actual Completion:
8. Date of Completion (CDD): 15.04.2013
9. Extension granted,if any: - NO -
10. Executed Value of the Contract: Rs. 3[illegible]9,4[illegible]9,50 [RUPEES THREE LAC EIGHTY NINE THOUSAND - FOUR HUNDRED THIRTYEIGHT & PAISE FIFTY ONLY]

11. Certified that the work has been completed as per drawings and specifications.

12. Certified that the contractor has cleared the site.

13. Certified that nothing is due from contractor for supplies made, liquidated damages etc.

14. Certified that no defects have been found/ ~~defects noted during the defect liability have been rectified.~~ (strike which is not applicable)

15. Security Deposit of Rs. "AS APPLICABLE" may please be refunded.

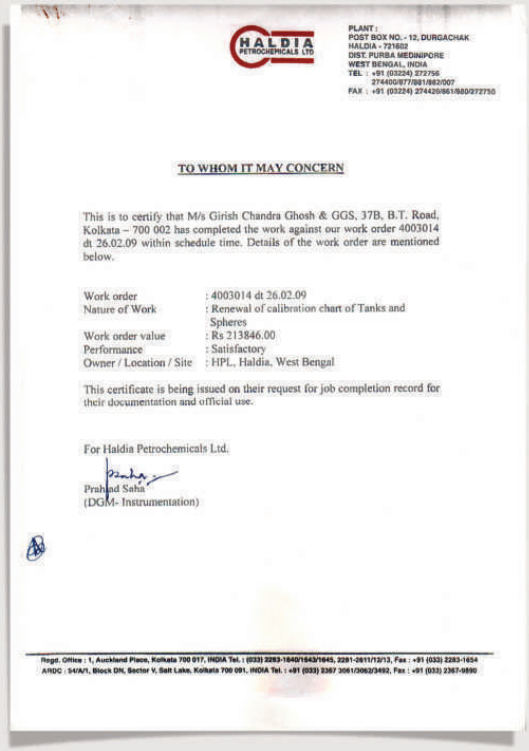
16. The contractor has deducted and deposited the PF amount in Scheduled Bank in respect of the workers employed with him as per the provisions of PF act.

Engineer / Site Engineer — Sr.Engineer — Dy.Manager — Engineer Incharge

PAGE 1 OF 1

रजिस्टर्ड ऑफिस : जी-9, अली यवर जंग मार्ग, बान्द्रा (पूर्व), मुम्बई - 400 051
रिफाइनरीज डिवीज़न हेड क्वार्टर : इंडियन ऑयल भवन, स्कोप कॉम्प्लेक्स, कोर - 2
7, इंस्टिटयूशनल एरिया, लोधी रोड, नई दिल्ली - 110 003

Regd. Office: G-9, Ali Yavar Jung Marg, Bandra (East) Mumbai - 400 051
Refineries Division: Head Quoters: Indian Oil Bhavan, Scope Complex, Core - 2
7, Institutional Area, Lodhi Road, New Delhi - 110 003



HALDIA PETROCHEMICALS LTD

PLANT :
POST BOX NO. - 12, DURGACHAK
HALDIA - 721602
DIST. PURBA MEDINIPORE
WEST BENGAL, INDIA
TEL : +91 (03224) 272756
274400/877/881/882/007
FAX : +91 (03224) 274420/8618800/272750

TO WHOM IT MAY CONCERN

This is to certify that M/s Girish Chandra Ghosh & GGS, 37B, B.T. Road, Kolkata – 700 002 has completed the work against our work order 4003014 dt 26.02.09 within schedule time. Details of the work order are mentioned below.

Work order	: 4003014 dt 26.02.09
Nature of Work	: Renewal of calibration chart of Tanks and Spheres
Work order value	: Rs 213846.00
Performance	: Satisfactory
Owner / Location / Site	: HPL, Haldia, West Bengal

This certificate is being issued on their request for job completion record for their documentation and official use.

For Haldia Petrochemicals Ltd.

Prahlad Saha
(DGM- Instrumentation)

Regd. Office : 1, Auckland Place, Kolkata 700 017, INDIA Tel. : (033) 2283-1640/1643/1645, 2281-2611/13/13, Fax : +91 (033) 2283-1654
A/ADC : 51/A/1, Block DN, Sector V, Salt Lake, Kolkata 700 091, INDIA Tel. : +91 (033) 2357 3061/3062/3492, Fax : +91 (033) 2357-9890

IMC

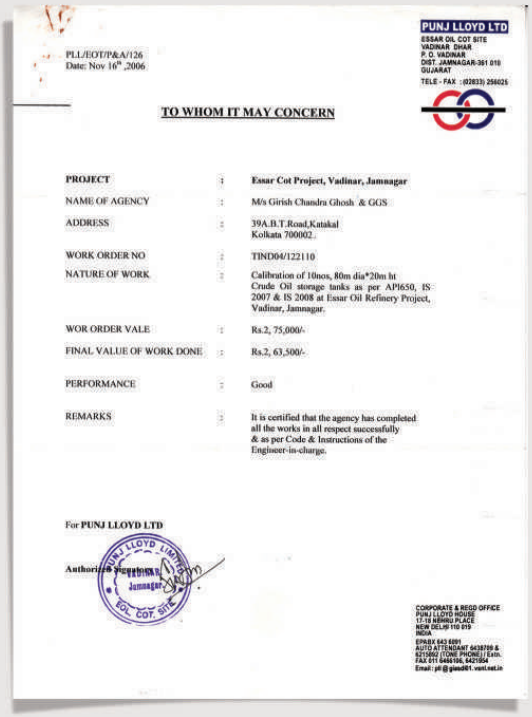
18th February 2011

To whom it may concern

Owner / Location / Site	:	*IMCL, Haldia, West Bengal*
Name of Agency	:	*M/s. Girish Chandra Ghosh & GGS*
Address	:	*39A, B. T. Road, Kolkata – 700 002*
Work Order no.	:	*IMC/ GCG/ 1011/ 442*
Nature of work	:	*Calibration of Storage Tanks as per BIS Specification*
Work Order Value	:	*Rs 1,20,000/-*
Performance	:	*Good*
Remarks	:	*We hereby confirm and certify that calibrator has completed the work within schedule time, as per specification.*

for IMC LIMITED

VARGHESE MATHAI
Manager – Opns.



PUNJ LLOYD LTD
ESSAR OIL COT SITE
VADINAR DHAR
P. O. VADINAR
DIST. JAMNAGAR-361 010
GUJARAT
TELE - FAX : (02833) 256025

PLL/EOT/P&A/126
Date: Nov 16th ,2006

TO WHOM IT MAY CONCERN

PROJECT	:	**Essar Cot Project, Vadinar, Jamnagar**
NAME OF AGENCY	:	M/s Girish Chandra Ghosh & GGS
ADDRESS	:	39A.B.T.Road,Katakal Kolkata 700002.
WORK ORDER NO	:	TIND04/122110
NATURE OF WORK	:	Calibration of 10nos, 80m dia*20m ht Crude Oil storage tanks as per API650, IS 2007 & IS 2008 at Essar Oil Refinery Project, Vadinar, Jamnagar.
WOR ORDER VALE	:	Rs.2, 75,000/-
FINAL VALUE OF WORK DONE	:	Rs.2, 63,500/-
PERFORMANCE	:	Good
REMARKS	:	It is certified that the agency has completed all the works in all respect successfully & as per Code & Instructions of the Engineer-in-charge.

For **PUNJ LLOYD LTD**

Authorised Signatory

PUNJ LLOYD LIMITED Jamnagar ESL COT SITE

CORPORATE & REGD OFFICE
PUNJ LLOYD HOUSE
17-18 NEHRU PLACE
NEW DELHI 110 019
INDIA
EPABX 643 6091
AUTO ATTENDANT 5638709 &
5210952 (TONE PHONE) / Extn.
FAX 011 6466106, 6421054
Email : pll@giasdl01.vsnl.net.in

Job completion & satisfaction Certificate

Bhatia Wine Merchants (P) Ltd.

- Premier Distillers & Bottlers -

Dated: 08.09.2010

WORK COMPLETION CERTIFICATE

Party Name :-M/s GIRISH CHANDRA GHOSH & G.G.S

Address :- 39-A, B.T. Road Kolkata -2

Job details :- Calibration of storage Tank

Job Order Value:- Rs. 4,06,546=00

Performance :- Good

S.R.Patel
(Works Manager)

Off : Near Bank of India, Dayal Band, Bilaspur 495 001 (C.G.)
Works : Village- Dhuma, Post- Sargaon, Distt. - Bilaspur, (C.G.)
Ph: 07752-652851, Fax: 07752-217612, email : bhatiawines@yahoo.co.in

Oriental Bottling Pvt. Ltd.

REF NO 08/3/7/10 DATE 3/7/10

To whom it may concern

Owner / Location / Site	:	Oriental Bottling Pvt. Ltd. 55/56 Bhagawanpur Industrial Estate, Patrapada, Bhubaneswar – 19, Orissa
Name of the calibrator	:	M/s. Girish Ch. Ghosh & G.G.S. H.O. 39A, B. T. Road, Kolkata – 700 002
Type of work	:	Mathematical & Physical calibration of storage tank and preparation of computerised chart and co-ordination work with Govt. Deptt.
Order value	:	Rs. 340000/- (L.S.) (Three lakhs forty thousand only)
Performance	:	Good
Remarks	:	We hereby confirm and certify that calibrator has completed the work within schedule time, as per specification. And payment done as per work order.

For Oriental Bottling (P) Ltd.

JWALA CONSTRUCTION

CIVIL, MECHANICAL CONTRACTORS & GENERAL ORDER SUPPLIER

PHONE No. 3240-8283
Office : 144/15, DHARMATALA ROAD, SALKIA, HOWRAH - 711 106.

Ref. No.________ Date 14-2-2009

To Whom It May Concern:

Owner / Location / Site	:	BPCL, Patna, Bihar BPCL, Keonjhar, Orissa BPCL, Angul, Orissa BPCL, Budge Budge, West Bengal HPCL, Jatni, Orissa
Name of Agency	:	M/s. Girish Ch. Ghosh & G.G.S.
Address	:	39A, B. T. Road, Kolkata – 700 002
Work Order No.	:	JC/12/2005
Nature of work	:	Calibration of Storage Tanks as per BIS specification
Work Order value	:	Rs. 2,94,000.00
Performance	:	Good
Remarks	:	We hereby confirm and certify that calibrator has completed the work within schedule time as per specification.
Final work done value	:	Rs. 2,94,000.00

For JWALA CONSTRUCTION
Partner

For JWALA CONSTRUCTION
Partner

इंडियन ऑयल कॉर्पोरेशन लिमिटेड

Indian Oil Corporation Limited

Haldia Refinery, P.O. : Haldia Oil Refinery-721606
District : Purba Medinipur (West Bengal)
Phone : Haldia 252147, 252265, 252201, 252311
Telegram : OILREFIN
Fax : (Code-03224) 252147, 252505, 252241, 252311

रिफाइनरीज प्रभाग
Refineries Division

IndianOil

FINAL COMPLETION CERTIFICATE

1. Name of the Department	:	Technical Services (Process)
2. Name of the work	:	Online Calibration of Tanks without M&I At Haldia Refinery (W.O. No.: 17901655 dated 16/03/2009)
3. Name of the contractor	:	M/s. Girish Chandra Ghosh & G.G.S.
4. Date of completion	:	31/03/2011

It is certified that the work has been completed as per drawing and specifications.
It is certified that the Contractor has cleared the site.
It is certified that nothing is due from the Contractor.
It is certified that no defects have been noticed during the defect liability period.

Alok Saha 05.07.11
Chief Technical Services Manager
Engineer-In-Charge

ALOK SAHA
Chief Technical Services Manager
Indian Oil Corporation Ltd
Haldia Refinery

Regd. Office : G-9, Ali Yavar Jung Marg, Bandra (East) Mumbai-400 051
Refineries Division : Head Quarters : Indian Oil Bhavan, Scope Complex, Core-2
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