



STRUCTURAL ENGINEERING DIVISION
Test Floor Laboratory
Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

To,

Resident Engineer
 NESPAK
 Development of a Controlled Access Corridor Facility from Niazi Interchange to Babu Sabu Interchange, Lahore, Package – I (km 0+000 to km 3+650)

Reference # CED/TFL **4325** (Dr. Ali Ahmed)

Dated: 08-12-2023

Reference of the request letter # 3772/103/NBI(P-I)/MWA/04/88

Dated: 28-11-2023

Tension Test Report (Page -1/1)

Date of Test 13-12-2023

Gauge length 8 inches

Description Deformed Steel Bar Tensile and Bend Test as per ASTM-A615

Sr. No.	Weight (lbs/ft)	Diameter/ Size		Area (in ²)		Yield load (kg)	Breaking Load (kg)	Yield Stress (psi)		Ultimate Stress (psi)		Elongation (inch)	% Elongation	Remarks
		Nominal (#)	Actual (inch)	Nominal	Actual			Nominal	Actual	Nominal	Actual			
1	0.378	3	0.376	0.11	0.111	3600	5300	72200	71400	106200	105200	1.20	15.0	Batala Permium
2	0.377	3	0.376	0.11	0.111	3400	5200	68200	67550	104200	103400	1.30	16.3	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only two samples for tensile and one sample for bend test														
Bend Test														
#3 Bar Bend Test Through 180° is Satisfactory														

I/C Testing Laboratoires
UET Lahore, Pakistan.

Note:

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STRUCTURAL ENGINEERING DIVISION
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Pakistan. Ph: 92-42-99029202

To,
 Sub Divisional Officer
 Buildings Sub Division No. 1
 Multan
 (Construction of Parking Plaza at District Headquarter Multan.)

Reference # CED/TFL **4328** (Dr. Ali Ahmed)
 Reference of the request letter # 949/1st

Dated: 08-12-2023
 Dated: 15-09-2023

Tension Test Report (Page -1/1)

Date of Test 13-12-2023
 Gauge length 8 inches
 Description Deformed Steel Bar Tensile and Bend Test as per ASTM-A615

Sr. No.	Weight (lbs/ft)	Diameter/ Size (inch)		Area (in ²)		Yield load (kg)	Breaking Load (kg)	Yield Stress (psi)		Ultimate Stress (psi)		Elongation (inch)	% Elongation	Remarks
		Nominal	Actual	Nominal	Actual			Nominal	Actual	Nominal	Actual			
1	0.368	3/8	0.371	0.11	0.108	3600	5100	72200	73450	102200	104100	1.30	16.3	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only one sample for tensile and one sample for bend test														
Bend Test														
3/8" Dia Bar Bend Test Through 180° is Satisfactory														

I/C Testing Laboratoires
UET Lahore, Pakistan.

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To,

Resident Engineer
 Asian Consulting Engineers Pvt. Ltd.
 Punjab Rural Sustainable Water Supply & Sanitation Project (PRSWSSP)
 Engineering Design & Construction Supervision of Cluster South-I.

Reference # CED/TFL **4330** (Dr. Ali Ahmed)

Dated: 11-12-2023

Reference of the request letter # AsCE/PRSWSSP/CS1/P-03/1002

Dated: 05-12-2023

Tension Test Report (Page -1/1)

Date of Test 13-12-2023

Gauge length 8 inches

Description Deformed Steel Bar Tensile and Bend Test as per ASTM-A615

Sr. No.	Weight (lbs/ft)	Diameter/ Size		Area (in ²)		Yield load (kg)	Breaking Load (kg)	Yield Stress (psi)		Ultimate Stress (psi)		Elongation (inch)	% Elongation	Remarks
		Nominal (#)	Actual (inch)	Nominal	Actual			Nominal	Actual	Nominal	Actual			
1	0.365	3	0.370	0.11	0.107	3200	5100	64200	65710	102200	104800	1.40	17.5	FF Steel
2	0.371	3	0.373	0.11	0.109	3700	5000	74200	74770	100200	101100	1.40	17.5	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Note: only two samples for tensile and one sample for bend test														
Bend Test														
#3 Bar Bend Test Through 180° is Satisfactory														

I/C Testing Laboratoires
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To,
Dy Dir Infra
Defence Housing Authority, Gujranwala
"Boundary Wall (Section C)"

Reference # CED/TFL **4332** (Dr. Ali Ahmed)

Dated: 11-12-2023

Reference of the request letter # 111/15/DD/RS/Lab/BW/Pkg-2A/157

Dated: 09-12-2023

Tension Test Report (Page -1/1)

Date of Test 13-12-2023

Gauge length 8 inches

Description Deformed Steel Bar Tensile and Bend Test as per ASTM-A615

Sr. No.	Weight (lbs/ft)	Diameter/ Size		Area (in ²)		Yield load (kg)	Breaking Load (kg)	Yield Stress (psi)		Ultimate Stress (psi)		Elongation (inch)	% Elongation	Remarks	
		Nominal (#)	Actual (inch)	Nominal	Actual			Nominal	Actual	Nominal	Actual				
1	0.378	3	0.376	0.11	0.111	3600	5100	72200	71410	102200	101200	1.10	13.8	FF Steel	
2	0.374	3	0.374	0.11	0.110	3400	4900	68200	68140	98200	98200	1.40	17.5		
-	-	-	-	-	-	-	-	-	-	-	-	-	-		
-	-	-	-	-	-	-	-	-	-	-	-	-	-		
-	-	-	-	-	-	-	-	-	-	-	-	-	-		
-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Note: only two samples for tensile and one sample for bend test															
Bend Test															
#3 Bar Bend Test Through 180° is Satisfactory															

I/C Testing Laboratoires
UET Lahore, Pakistan.

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To,
M/S Inter Fab
Lahore

Reference # CED/TFL 4334 (Dr. Ali Ahmed)
Reference of the request letter # Nil

Dated: 11-12-2023
Dated: 11-12-2023

Tension Test Report (Page – 1/1)

Date of Test 13-12-2023
Description Steel Wire Rope Tensile Test

Sr. No.	Nominal Diameter	Measured weight	Breaking Load	Remarks / Coil No.
	(mm)	(kg/m)	(kg)	
1	12	0.51	8700	
-	-	-	-	
-	-	-	-	
-	-	-	-	
-	-	-	-	
Only one samples for Test				

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Ref: CED/TFL/12/4343

Dated: 12-12-2023

Dated: 13-12-2023

To

M/S China Gezhouba Group Co., Limited
CGGC Dasu Hydropower Project Management in Pakistan
Dasu Hydropower Project.

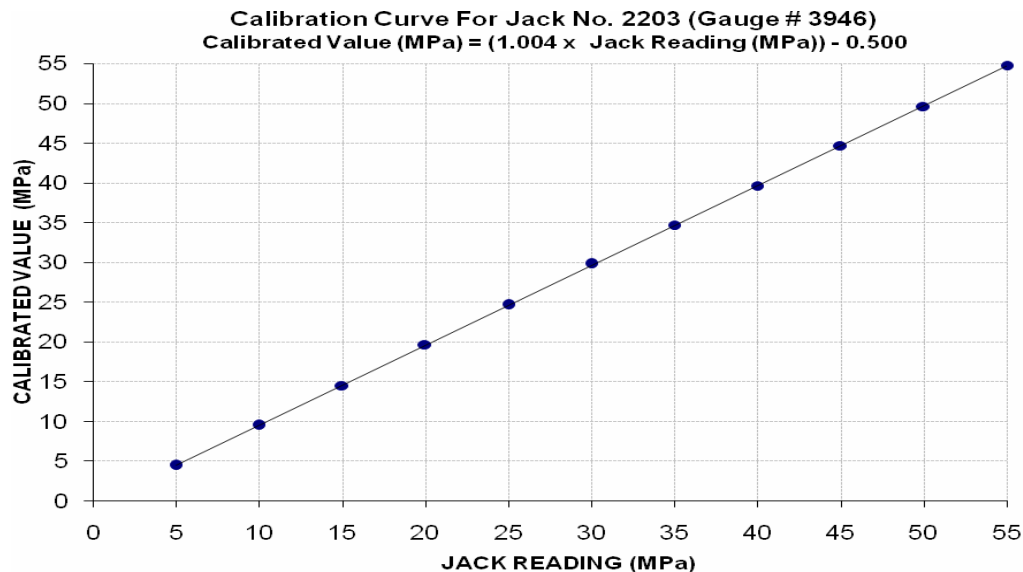
Subject: - CALIBRATION OF HYDRAULIC JACK (MARK: TFL/12/4343) (Page -1/10)

Reference to your Letter No. Nil, dated: 10/12/2023 on the subject cited above. One Hydraulic Jack (Jack No. 2203, Gauge No. 3946) as received by us has been calibrated. The results are tabulated as under:

Total Range : Zero - 60 (MPa)
Calibrated Range : Zero - 55 (MPa)

Hydraulic Jack Reading (MPa)	5	10	15	20	25	30	35	40	45	50	55
Calibrated Load (kg)	13600	28933	44000	59733	74933	90533	105467	120533	135867	150800	166400
Calibrated Pressure (Mpa)	4.48	9.52	14.48	19.66	24.66	29.79	34.71	39.67	44.71	49.63	54.76

The Ram Area of Jack = 298 cm² (Witness by Sohaib Mukhtar (WAPDA), Tariq Javed (DHC) & Amjad Yaqoob (CGGC))



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UET Lahore, Pakistan.

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Ref: CED/TFL/12/4343

Dated: 12-12-2023

Dated: 13-12-2023

To

M/S China Gezhouba Group Co., Limited
CGGC Dasu Hydropower Project Management in Pakistan
Dasu Hydropower Project.

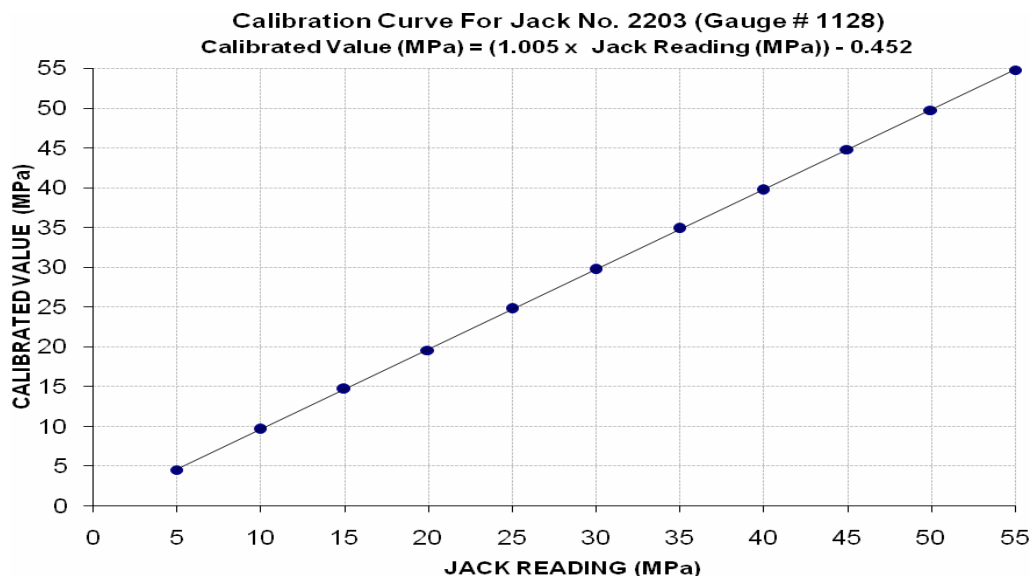
Subject: - **CALIBRATION OF HYDRAULIC JACK (MARK: TFL/12/4343)** (Page -2/10)

Reference to your Letter No. Nil, dated: 10/12/2023 on the subject cited above. One Hydraulic Jack (Jack No. 2203, Gauge No. 1128) as received by us has been calibrated. The results are tabulated as under:

Total Range : Zero - 60 (MPa)
Calibrated Range : Zero - 55 (MPa)

Hydraulic Jack Reading (MPa)	5	10	15	20	25	30	35	40	45	50	55
Calibrated Load (kg)	13733	29200	44533	59467	75200	90267	105867	120667	136133	151200	166533
Calibrated Pressure (Mpa)	4.52	9.61	14.66	19.57	24.75	29.71	34.84	39.71	44.80	49.76	54.81

The Ram Area of Jack = 298 cm² (Witness by Sohaib Mukhtar (WAPDA), Tariq Javed (DHC) & Amjad Yaqoob (CGGC))



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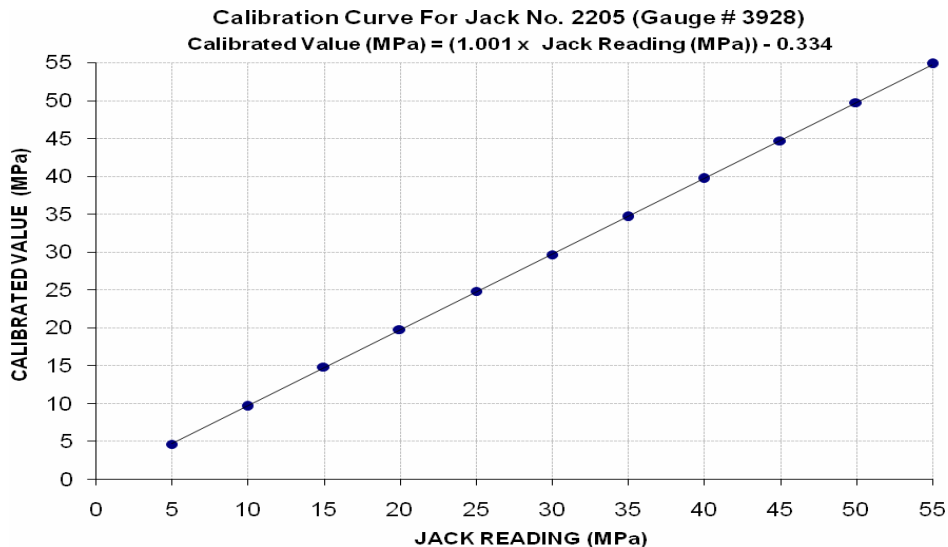
Subject: - **CALIBRATION OF HYDRAULIC JACK (MARK: TFL/12/4343)** (Page -3/10)

Reference to your Letter No. Nil, dated: 10/12/2023 on the subject cited above. One Hydraulic Jack (Jack No. 2205, Gauge No. 3928) as received by us has been calibrated. The results are tabulated as under:

Total Range : Zero - 60 (MPa)
Calibrated Range : Zero - 55 (MPa)

Hydraulic Jack Reading (MPa)	5	10	15	20	25	30	35	40	45	50	55
Calibrated Load (kg)	14133	29200	45067	60000	75333	90000	105333	120667	135867	151200	166667
Calibrated Pressure (Mpa)	4.65	9.61	14.83	19.75	24.79	29.62	34.66	39.71	44.71	49.76	54.85

The Ram Area of Jack = 298 cm² (Witness by Sohaib Mukhtar (WAPDA), Tariq Javed (DHC) & Amjad Yaqoob (CGGC))



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Ref: CED/TFL/12/4343

Dated: 12-12-2023

Dated: 13-12-2023

To

M/S China Gezhouba Group Co., Limited
CGGC Dasu Hydropower Project Management in Pakistan
Dasu Hydropower Project.

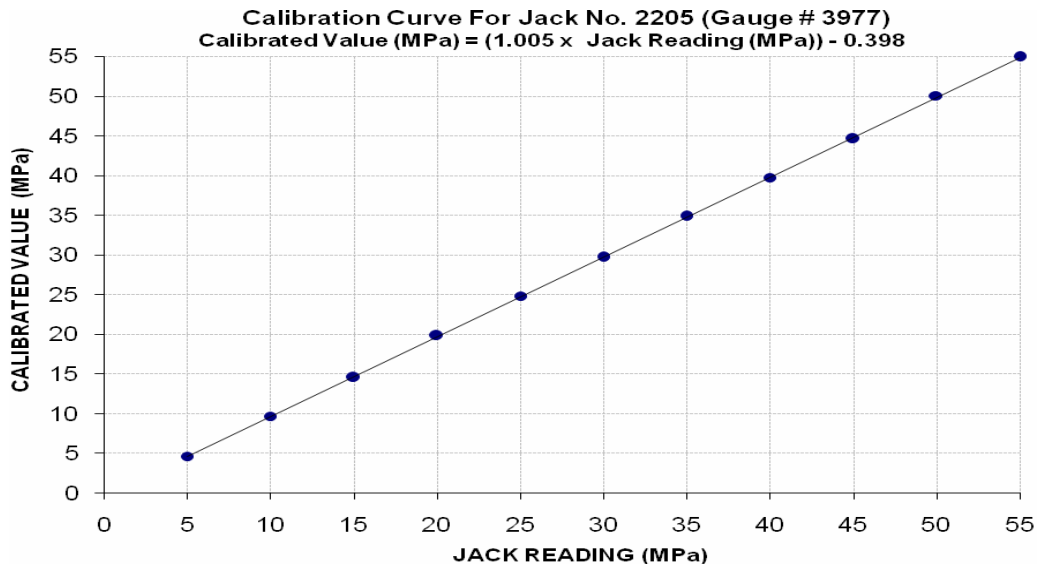
Subject: - **CALIBRATION OF HYDRAULIC JACK (MARK: TFL/12/4343)** (Page -4/10)

Reference to your Letter No. Nil, dated: 10/12/2023 on the subject cited above. One Hydraulic Jack (Jack No. 2205, Gauge No. 3977) as received by us has been calibrated. The results are tabulated as under:

Total Range : Zero - 60 (MPa)
Calibrated Range : Zero - 55 (MPa)

Hydraulic Jack Reading (MPa)	5	10	15	20	25	30	35	40	45	50	55
Calibrated Load (kg)	14133	29333	44267	60267	75467	90267	105867	120800	135600	152133	166933
Calibrated Pressure (Mpa)	4.65	9.65	14.57	19.83	24.84	29.71	34.84	39.75	44.63	50.07	54.94

The Ram Area of Jack = 298 cm² (Witness by Sohaib Mukhtar (WAPDA), Tariq Javed (DHC) & Amjad Yaqoob (CGGC))



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Ref: CED/TFL/12/4343

Dated: 12-12-2023

Dated: 13-12-2023

To

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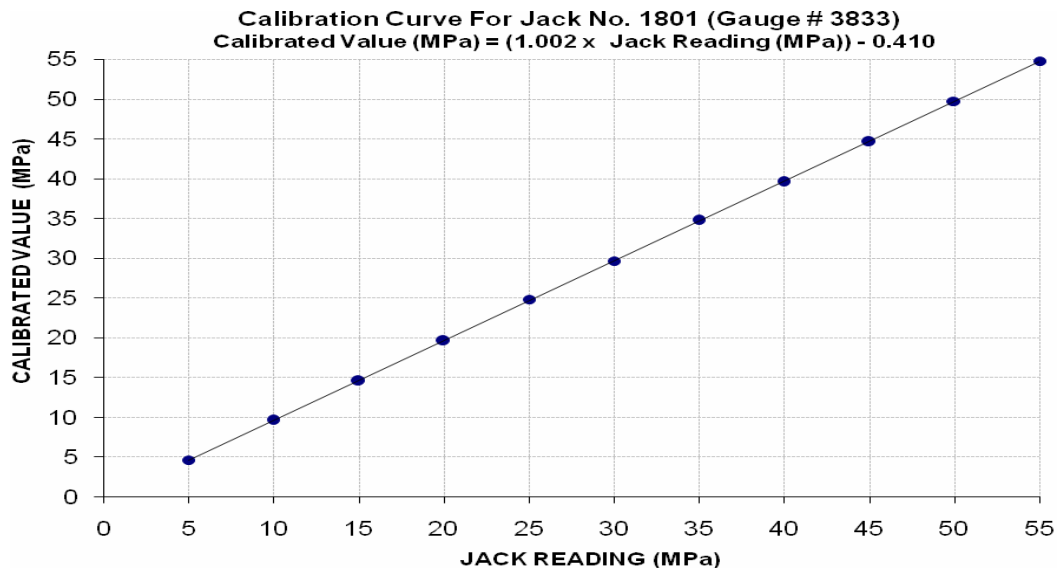
Subject: - **CALIBRATION OF HYDRAULIC JACK (MARK: TFL/12/4343)** (Page -5/10)

Reference to your Letter No. Nil, dated: 10/12/2023 on the subject cited above. One Hydraulic Jack (Jack No. 1801, Gauge No. 3833) as received by us has been calibrated. The results are tabulated as under:

Total Range : Zero - 60 (MPa)
Calibrated Range : Zero - 55 (MPa)

Hydraulic Jack Reading (MPa)	5	10	15	20	25	30	35	40	45	50	55
Calibrated Load (kg)	14000	29200	44267	59600	75333	90000	105600	120267	135600	151067	166400
Calibrated Pressure (Mpa)	4.61	9.61	14.57	19.61	24.79	29.62	34.75	39.58	44.63	49.72	54.76

The Ram Area of Jack = 298 cm² (Witness by Sohaib Mukhtar (WAPDA), Tariq Javed (DHC) & Amjad Yaqoob (CGGC))



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Dated: 12-12-2023

Dated: 13-12-2023

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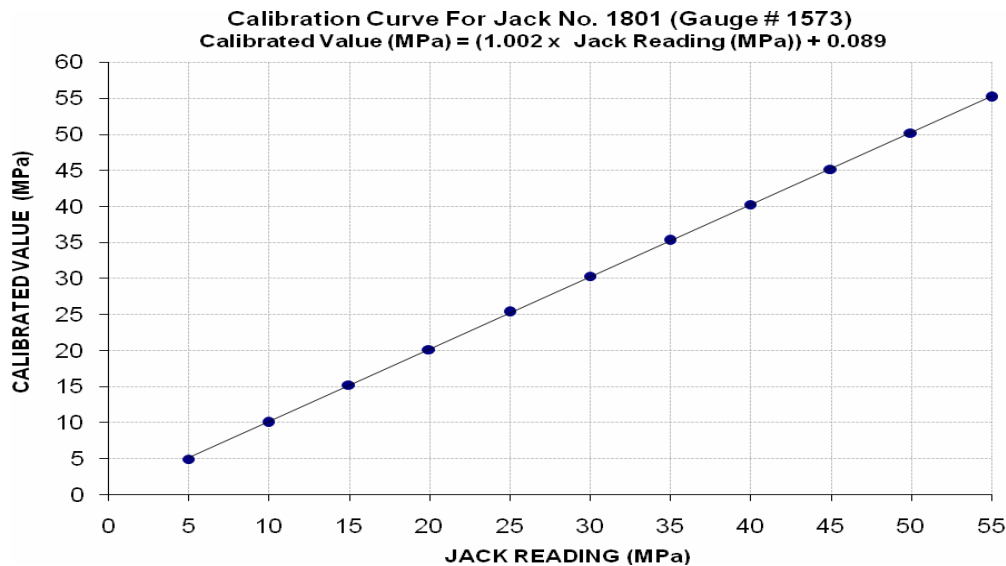
Subject: - **CALIBRATION OF HYDRAULIC JACK (MARK: TFL/12/4343)** (Page -6/10)

Reference to your Letter No. Nil, dated: 10/12/2023 on the subject cited above. One Hydraulic Jack (Jack No. 1801, Gauge No. 1573) as received by us has been calibrated. The results are tabulated as under:

Total Range : Zero - 60 (MPa)
Calibrated Range : Zero - 55 (MPa)

Hydraulic Jack Reading (MPa)	5	10	15	20	25	30	35	40	45	50	55
Calibrated Load (kg)	15067	30400	46267	61200	76933	92000	107200	122400	137200	152400	167600
Calibrated Pressure (Mpa)	4.96	10.00	15.23	20.14	25.32	30.28	35.28	40.28	45.15	50.15	55.16

The Ram Area of Jack = 298 cm² (Witness by Sohaib Mukhtar (WAPDA), Tariq Javed (DHC) & Amjad Yaqoob (CGGC))



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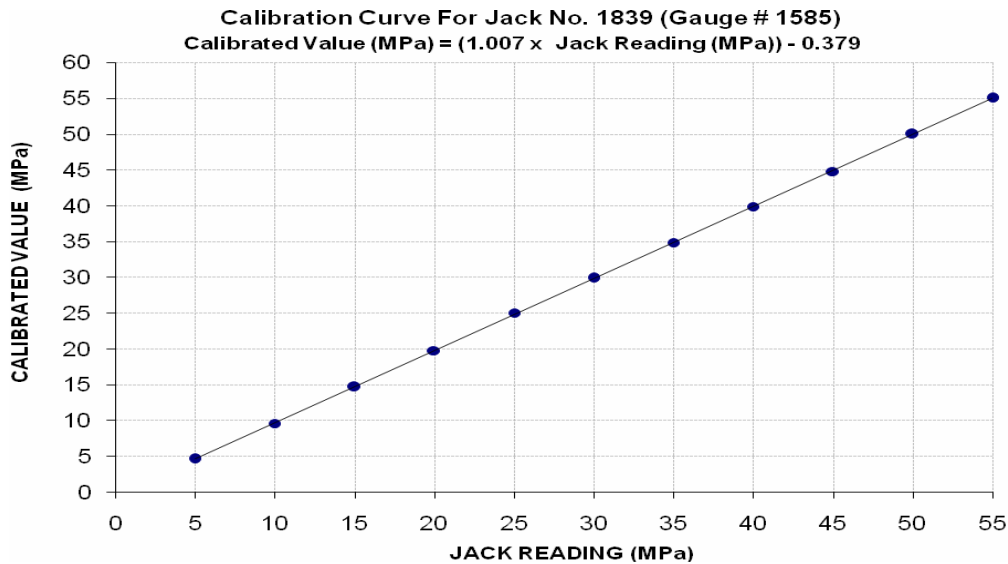
Subject: - **CALIBRATION OF HYDRAULIC JACK (MARK: TFL/12/4343)** (Page -7/10)

Reference to your Letter No. Nil, dated: 10/12/2023 on the subject cited above. One Hydraulic Jack (Jack No. 1839, Gauge No. 1585) as received by us has been calibrated. The results are tabulated as under:

Total Range : Zero - 60 (MPa)
Calibrated Range : Zero - 55 (MPa)

Hydraulic Jack Reading (MPa)	5	10	15	20	25	30	35	40	45	50	55
Calibrated Load (kg)	14133	29200	44667	60000	76000	90800	106000	121200	136133	152000	167200
Calibrated Pressure (Mpa)	4.65	9.61	14.70	19.75	25.01	29.88	34.88	39.89	44.80	50.02	55.02

The Ram Area of Jack = 298 cm² (Witness by Sohaib Mukhtar (WAPDA), Tariq Javed (DHC) & Amjad Yaqoob (CGGC))



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Ref: CED/TFL/12/4343

Dated: 12-12-2023

Dated: 13-12-2023

To

M/S China Gezhouba Group Co., Limited
CGGC Dasu Hydropower Project Management in Pakistan
Dasu Hydropower Project.

Subject: - **CALIBRATION OF HYDRAULIC JACK (MARK: TFL/12/4343)** (Page -8/10)

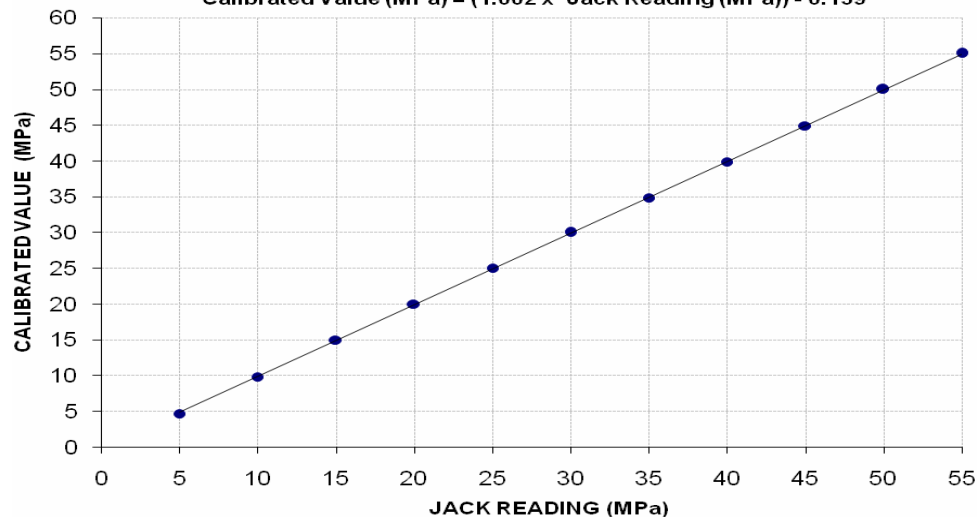
Reference to your Letter No. Nil, dated: 10/12/2023 on the subject cited above. One Hydraulic Jack (Jack No. 1839, Gauge No. 1578) as received by us has been calibrated. The results are tabulated as under:

Total Range : Zero - 60 (MPa)
Calibrated Range : Zero - 55 (MPa)

Hydraulic Jack Reading (MPa)	5	10	15	20	25	30	35	40	45	50	55
Calibrated Load (kg)	14267	30000	45600	60800	76000	91200	106000	121200	136400	151867	167200
Calibrated Pressure (Mpa)	4.70	9.87	15.01	20.01	25.01	30.01	34.88	39.89	44.89	49.98	55.02

The Ram Area of Jack = 298 cm² (Witness by Sohaib Mukhtar (WAPDA), Tariq Javed (DHC) & Amjad Yaqoob (CGGC))

Calibration Curve For Jack No. 1839 (Gauge # 1578)
Calibrated Value (MPa) = (1.002 x Jack Reading (MPa)) - 0.139



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Dated: 13-12-2023

To

M/S China Gezhouba Group Co., Limited
CGGC Dasu Hydropower Project Management in Pakistan
Dasu Hydropower Project.

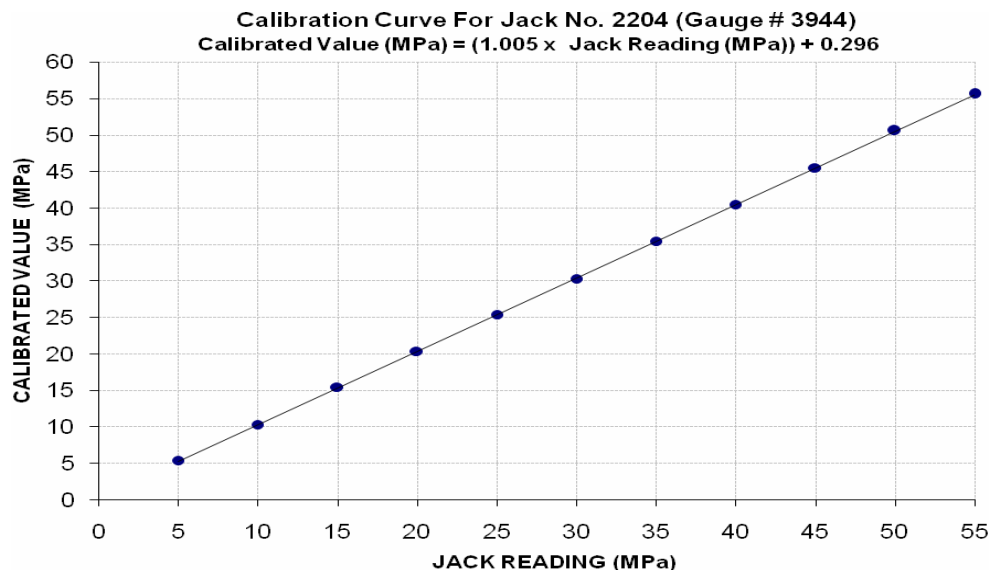
Subject: - CALIBRATION OF HYDRAULIC JACK (MARK: TFL/12/4343) (Page -9/10)

Reference to your Letter No. Nil, dated: 10/12/2023 on the subject cited above. One Hydraulic Jack (Jack No. 2204, Gauge No. 3944) as received by us has been calibrated. The results are tabulated as under:

Total Range : Zero - 60 (MPa)
Calibrated Range : Zero - 55 (MPa)

Hydraulic Jack Reading (MPa)	5	10	15	20	25	30	35	40	45	50	55
Calibrated Load (kg)	16400	31333	46933	62000	77200	92000	107733	122933	138400	153733	169067
Calibrated Pressure (Mpa)	5.40	10.31	15.45	20.40	25.41	30.28	35.45	40.46	45.55	50.59	55.64

The Ram Area of Jack = 298 cm² (Witness by Sohaib Mukhtar (WAPDA), Tariq Javed (DHC) & Amjad Yaqoob (CGGC))



I/C Testing Laboratories
UET Lahore, Pakistan.

Note:

- 1- You can See your reports On Internet in the following web site
http://www.uet.edu.pk/faculties/facultiesinfo/civil/index.html?RID=testing_reports
- 2- The above results pertain to sample /samples supplied to this laboratory.
- 3- Sealed sample / Unsealed sample / Marked sample/Signed Samples



STRUCTURAL ENGINEERING DIVISION
Test Floor Laboratory
Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

Ref: CED/TFL/12/4343
2023

Dated: 12-12-

Dated: 13-12-2023

To

M/S China Gezhouba Group Co., Limited
CGGC Dasu Hydropower Project Management in Pakistan
Dasu Hydropower Project.

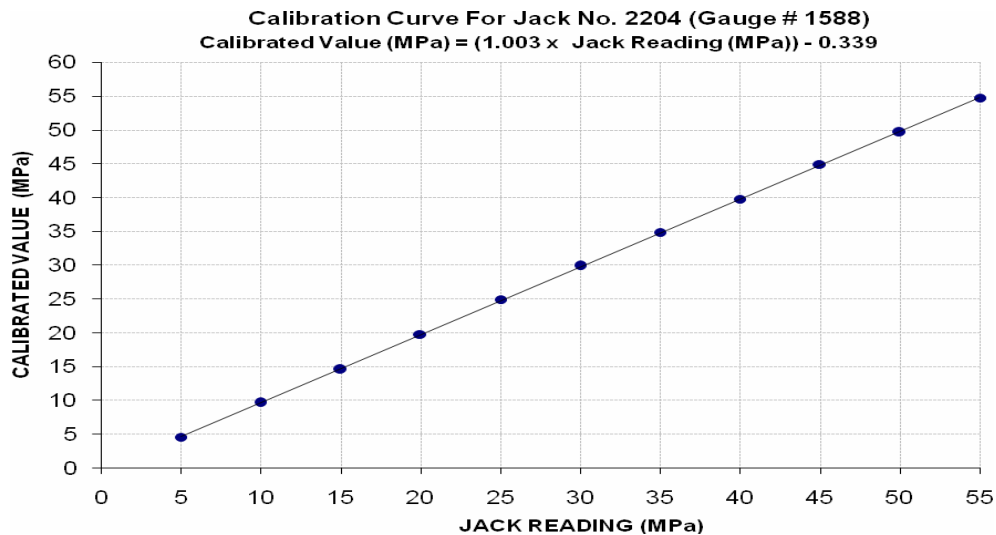
Subject: - **CALIBRATION OF HYDRAULIC JACK (MARK: TFL/12/4343)** (Page -10/10)

Reference to your Letter No. Nil, dated: 10/12/2023 on the subject cited above. One Hydraulic Jack (Jack No. 2204, Gauge No. 1588) as received by us has been calibrated. The results are tabulated as under:

Total Range : Zero - 60 (MPa)
Calibrated Range : Zero - 55 (MPa)

Hydraulic Jack Reading (MPa)	5	10	15	20	25	30	35	40	45	50	55
Calibrated Load (kg)	14000	29333	44267	60000	75733	90800	105867	120933	136533	150800	166400
Calibrated Pressure (Mpa)	4.61	9.65	14.57	19.75	24.92	29.88	34.84	39.80	44.93	49.63	54.76

The Ram Area of Jack = 298 cm² (Witness by Sohaib Mukhtar (WAPDA), Tariq Javed (DHC) & Amjad Yaqoob (CGGC))



I/C Testing Laboratoires
UET Lahore, Pakistan.

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STRUCTURAL ENGINEERING DIVISION
Test Floor Laboratory
Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

To,

Resident Engineer
Zeeruk – LOYA –MIHA Jv
Development of Islamabad Expressway Korang to PWD Underpass Including Railway
Bridge. (WMI Lahore)

Reference # CED/TFL **4345** (Dr. M Kashif)

Dated: 12-12-2023

Reference of the request letter # ZI/RE/FWO/P-N-5/23/169

Dated: 29-11-2023

Tension Test Report (Page -1/2)

Date of Test 13-12-2023

Gauge length 640 mm

Description Steel Strand Tensile Test as per ASTM A-416-94a

Sr. No.	Nominal Diameter	Nominal Weight	Measured weight	Yield strength clause (6.3)		Breaking strength clause (6.2)		Young's Modulus of Elasticity "E"	% Elongation	Remarks / Coil No.
	(mm)	(kg/km)	(kg/km)	(kg)	(kN)	(kg)	(kN)	GPa		
1	12.70 (1/2")	780.0	786.0	17800	174.62	19600	192.28	199	>3.50	25015
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
Only one sample for Test										

Note:

1. Modulus of Elasticity is based on nominal steel area of the steel strand vide clause 13.3 of ASTM – A416a
2. Load versus percentage strain graphs are attached

I/C Testing Laboratories
UET Lahore, Pakistan.

Note:

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STRUCTURAL ENGINEERING DIVISION
Test Floor Laboratory
Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

To,

Resident Engineer
Zeeruk – LOYA –MIHA Jv
Development of Islamabad Expressway Korang to PWD Underpass Including Railway
Bridge. (WMI Lahore)

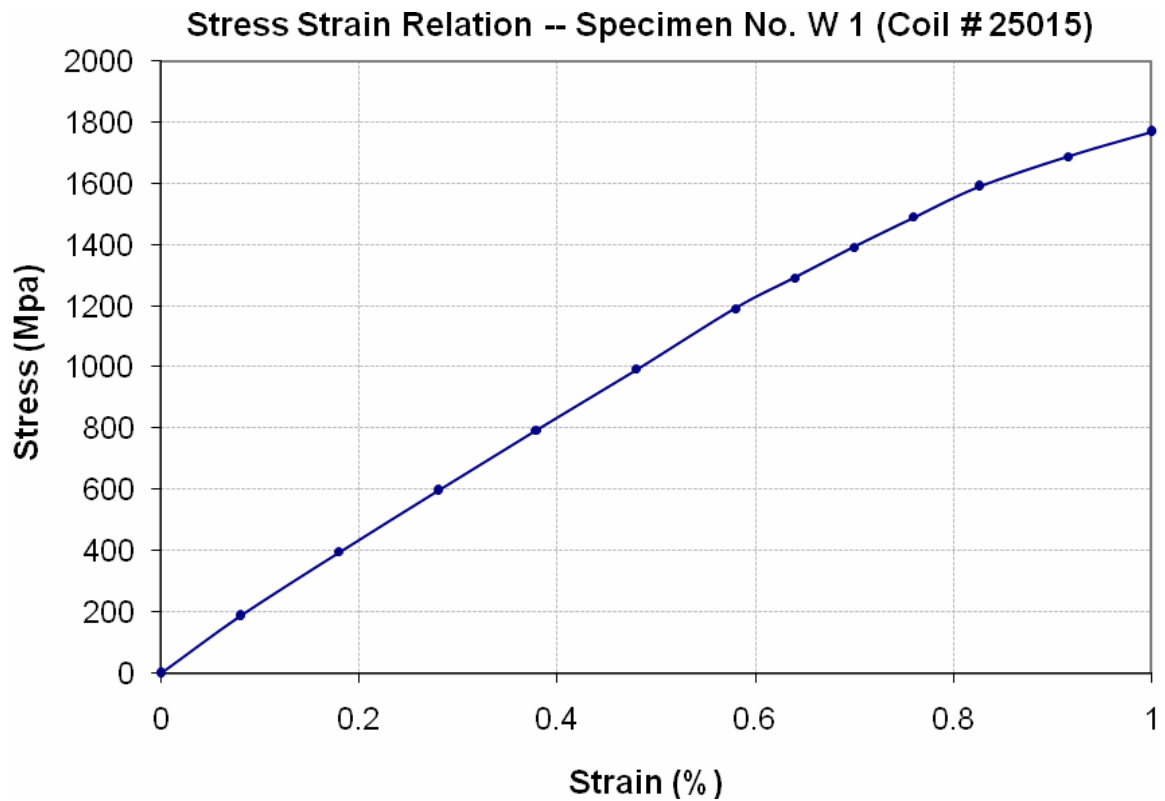
Reference # CED/TFL **4345** (Dr. M Kashif)

Dated: 12-12-2023

Reference of the request letter # ZI/RE/FWO/P-N-5/23/169

Dated: 29-11-2023

Graph (Page – 2/2)



I/C Testing Laboratories
UET Lahore, Pakistan.

Note:

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STRUCTURAL ENGINEERING DIVISION
Test Floor Laboratory
Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

To,
M/S ZHN Contracting Corporation (SMC-Private) Limited
Okara

Reference # CED/TFL 4349 (Dr. Kashif)
Reference of the request letter # ZHN/MT-009/2023

Dated: 13-12-2023
Dated: 04-12-2023

Tension Test Report (Page – 1/1)

Date of Test 13-12-2023
Gauge length 640 mm
Description Steel Strand Tensile Test as per ASTM A-416-94a

Sr. No.	Nominal Diameter	Nominal Weight	Measured weight	Yield strength clause (6.3)		Breaking strength clause (6.2)		% Elongation	Remarks / Coil No.
	(mm)	(kg/km)	(kg/km)	(kg)	(kN)	(kg)	(kN)		
1	9.53 (3/8")	430.0	432.0	9600	94.18	10700	103.01	>3.50	xx
-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	
Only one samples for Test									

I/C Testing Laboratoires
UET Lahore, Pakistan.

Note:

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