



Brahmputra Cracker and Polymer Limited (BCPL)

(A Government of India Enterprise)
Phone No: 0373-2371056/2371057/2371071
Email: bcplcorporate@gmail.co.in

CLIENT :

PROJECT :

BRAHMAPUTRA PETROCHEMICAL COMPLEX,
LAKWA, ASSAM

PACKAGE :

DM WATER PLANT AND ASSOCIATED FACILITIES

CONSULTANT :



EIL JOB NO :

6907

EPC CONTRACTOR :

AQUA DESIGNS INDIA PRIVATE LIMITED

EPC CONTRACTOR's JOB NO :

P-11001



DOCUMENT NO:	ADIPL/EIL/BCPL/MEC/11001/057	REV. NO.	1
DOCUMENT TITLE:	Mechanical Data Sheet for Degassed Water Pump(SBA Feed)	NO. OF SHEETS:	2

EIL COMMENTS / STAMP

1	2	3
Approval / Review code		
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सुचनाथ Information		
हस्ताक्षर एवं नाम Signature & Name		
दिनांक/Date		
6/11/12		

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REV.No	DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED
1	10.10.2012	Issued for Approval	S.LOKESH	RSK	SN
0	17.08.2012	Issued for Approval	S.LOKESH	MSM	MSM

BCPL	EIL JOB NO: 6907	DOC. NO: ADIPL/EIL/BCPL/MEC/11001/057	REV. NO & DATE : 1 & 10.10.2012
EIL	ADIPL JOB NO: P-11001	Doc. Title: Mechanical Data Sheet Degassed Water Pump(SBA Feed)	ISSUE: A SHEET NO: 1

Cleared for MFG.

S. Lokesh

05/11/2012

1 GENERAL									
2 Project: DM PLANT, BRAHMAPUTRA PETROCHEMICAL COMPLEX PROJECT, LAKWA					Job No: 6907				
3 Owner: BRAHMAPUTRA CRACKER & POLYMER LIMITED					Site:				
4 Purchaser: AQUA DESIGNS INDIA PRIVATE LIMITED					Unit:				
5 Item No: 67-PA-101 A/B					Service: DEGASSED WATER TRANSFER PUMP				
6 No Req'd: 2 Working: 1 Stand by: 1					Parallel Operation Required: ☐ Yes ☒ No				
7 Applicable to ☐ Proposal ☒ Purchase					☐ As Built				
8 ☐ Scope of option information specified by purchaser					☐ Information Req'd. from & Option left to vendor. Vendor to cross ☒ the selected option				
9 Driver: Working 1 Standby: 1					☐ Driver supplied & Mounted By: ☒ Pump Mfr ☐ Other				
10 OPERATING CONDITIONS									
11 Liquid Handled DEGASSED WATER					Capacity(m ³ /hr):Nor/Rated:				
12 Pumping Temp.(EC): Normal: AMB Max.					Discharge pressure(kg/cm ² ,A): 5.0				
13 Specific Gravity at P.T./15EC:					Suction Pressure:Nor./max.(Kg/cm ² ,A) ATM.				
14 Vapour pressure at P.T.(kg/cm ² ,A): 0.075					Diff. Pressure (kg/cm ² , Gauge)@Rated capacity: 4.0				
15 Viscosity at P.T. (cP) 1 Corr./Eros by:					Diff head (m)@Rated Capacity: 40				
16 Solids in suspension ☐ Yes ☒ No Size: N.A					NPSH Available(m): FLOODED SUCTION				
17 MANUFACTURE'S SPECIFICATIONS									
18 Pump Manufacturer: M/s. BEST & CROMPTON ENGG. LTD., PUMPS DIVISION					Model No: CNW 40 / 200				
19 CONSTRUCTION									
20 Casing Mounting: ☐ Centerline ☒ Foot ☐ Inline					Proposal Curve No. PC-CW-E120201				
21 Casing Split: ☐ Axial ☒ Radial					Visc Corr. Factor: Co CQ CH				
22 Type: ☒ Single Volute ☐ Double Volute ☐ Diffuser					NPSH Req'd.(Water)(m): 2.1 F/L speed (rpm): 2900				
23 Casing connection: ☐ Vent ☒ Drain ☐ Gauge					No. of stages: 1 Efficiency(%): 51.00				
24 Nozzles Size: ANSI Rating Facing Position					Rated BKW(0% Tol.): 2.35 KW Max.BKW rtd.Imp: 2.76				
25 Suction 40mm PN20 (150#) R.F. END					BKW @ MCF(Δ=1.0): 1.62 KW Rec.Driver Rating: 3.7				
26 Discharge 32mm PN20 (150#) R.F. TOP					Max head rtd imp.(m): 47.5 Cap @ BEP (m ³ /hr): 15.50				
27 Imp.N(mm) Max: 199 Rated: 172 Min:156 Type: CLOSED					MCF (m ³ /hr):Stable Thermal N.A				
28 Brg: Type/No. Roller: NU 306 Ball: 6306 Lub: OIL					M.A.W.P @ 15EC/P.T./Design Temp.(Kg/cm ² ,G): 4.75				
29 Cplg:Make/Type: Rathl - spacer Non spark Guard ☒ Yes ☐ No					Hydrostatic test pressure (Kg/cm ² ,G): 7.125				
30 Driver Half cplg.mounted by: ☐ Pump Mfr ☒ Others					Rotation facing coupling end: ☒ CW ☐ CCW				
31 Packing Type: N.A Size: N.A No of rings: N.A					Seal flush/Quench plan: 11 Material: S.S				
32 Mech. Seal: Make EAGLE BERGMANN Model: API code: BSPFN					Ext.seal flush fluid: N.A LPM: @Kg/cm2G/EC				
33 Base Plate Rim Type: ☒ Yes ☐ No Fdn bolts: ☒ Yes ☐ No					Seal Barrier fluid: N.A LPM: @Kg/cm2G/EC				
34 Throat Bush: ☐ Yes ☒ No Matl: N.A Bal Device: ☐ Yes ☒ No					Ext.quench fluid: N.A LPM: @Kg/cm2G/EC				
35 Materials: MOC ASTM Grades					C.W.plan: N.A LPM: @Kg/cm2G/EC				
36 I-Cast Iron(Ductile) Casing CF3M ASTM A 743 CF3M					Weight(Kg):Pump+Base frame+Coupling: 121 Driver: 24				
37 B-Bronze Impeller CF3M ASTM A 743 CF3M					AUXILIARY PIPING INTERFACE CONNECTIONS				
38 S-Carbon Steel Inner Case parts					(All interface conn shall be terminated with a flng block valves)				
39 C-11-13% Chr.Stl. Sleeve Packed					Size Rating(ANSI) Facing				
40 H-hardened Sleeve Seal S.S 316 L ASTM A 276 TYP 316 L					Lantern Ring Inlet/Outlet				
41 f-Faced Casing ring JH-BHN					Ext.seal flush fluid inlet/outlet				
42 K-SS304 Impeller ring 50(min)					seal quench fluid inlet				
43 L-SS 316 Shaft S.S 316 L ASTM A 276 TYP 316 L					seal pot vent/drain				
44 X-AISI 410 Throttle Bush					Casing vent/drain 1/2" 150# R.F				
45 Y Throttle Bush					CW inlet/Outlet N.A				
46 Z Balance Drum					Baseplate drain(only flanged) 1" BSP				
47 ☐ Driver suitable for pump starting with open Disc.valve condition.					casing steam jacket N.A				
48 INSPECTION & TESTS (EACH PUMP)									
49					Witness Review				
50 ☐ Shop Test / Inspection					☐ NPSH As Req'd ☐ Per Spec ☐ Mandatory				
51 ☐ Material Certificates					☐ Dismantle Insp. & Re assembly after test				
52 ☐ Hydrostatic					☐ Unitisation / Dimensional Check				
53 ☐ Performance/sound level					☐ Check for direction of rotation of pump & driver				
54 Applicable Specification: EIL Std.Spec.No.6-41-0002, Rev.3 EDB-Rot.Eqpt.Job Specification.									
55 Remarks: 1) Unitisation of pump and driver shall be done in pump manufacturer's shop.									
56 2) Baseplate shall be drip pan type.									
57 3) Drilling of pump suction & discharge flanges shall be as per ANSI B16.5 150#.									

NAWP is written wrong.
NAWP shall be as per cl. no. 6-41-0002 Rev.3.
2.2.1 of EIL std spec. is 199 mm.
Maximum impeller dia is 199 mm.
Consider NAWP based on this.

Aqua Designs India Private Limited
CLEARED FOR MFG.
Date 30.08.12
Job Engineer
Rev & Approved By
05/11/2012

CLIENT :


Brahmaputra Cracker and Polymer Limited (BCPL)

 (A Government of India Undertaking)
 Phone No: 0373-2371056/2371057/2371074
 Email: bcplcorporate@gmail.com

PROJECT :

**BRAHMAPUTRA PETROCHEMICAL COMPLEX,
LAKWA, ASSAM**

PACKAGE :

DM WATER PLANT AND ASSOCIATED FACILITIES

CONSULTANT :


**ENGINEERS
INDIA LIMITED**
 (A Govt. of India Undertaking)

EIL JOB NO :

6907

EPC CONTRACTOR :

AQUA DESIGNS INDIA PRIVATE LIMITEDEPC CONTRACTOR's JOB NO : **P-11001**

DOCUMENT NO:	ADIPL/EIL/BCPL/MEC/11001/059	REV. NO.	1
DOCUMENT TITLE:	Performance Curve for Degassed Water Pump (SBA Feed)	NO. OF SHEETS:	2

EIL COMMENTS / STAMP

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सुचनाय
Information

हस्ताक्षर का नाम
Signature & Name

दिनांक/Date

चि. नं. POKI

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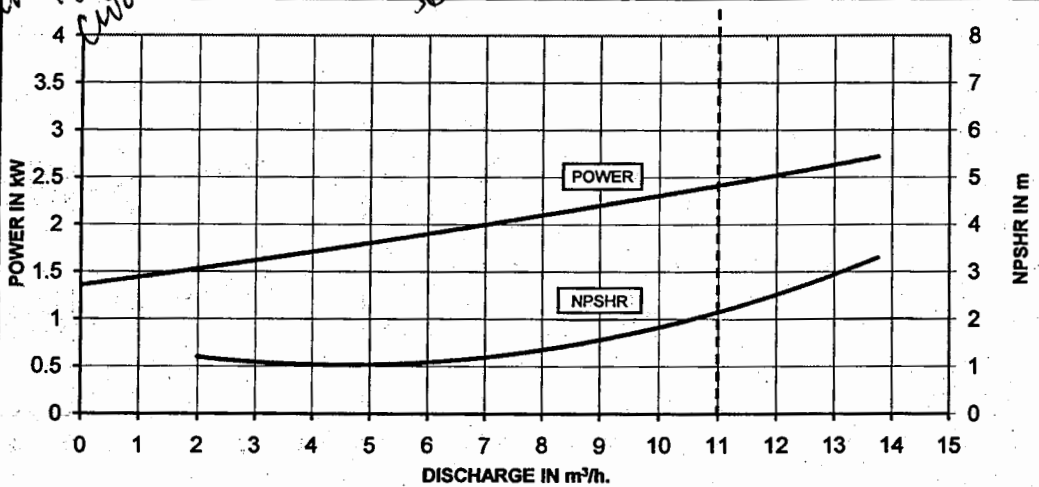
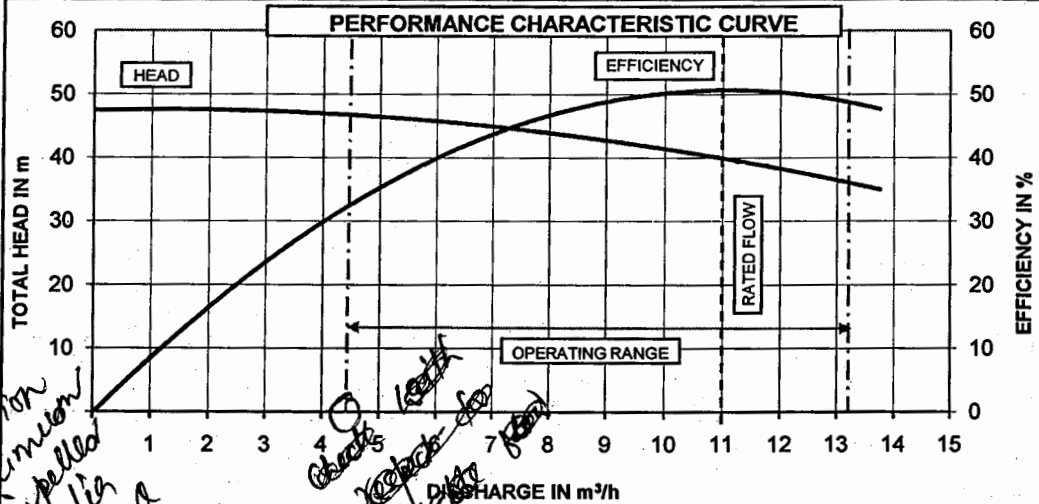
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S. Lokesh

05/11/2012



MANUFACTURER: M/s. BEST & CROMPTON ENGG. LTD., PUMPS DIVISION			
O.A. Ref.: S120071	PUMP MODEL: CNW 40 / 200	DOCUMENT No.: PC-CW-E120201	
SUCTION: 40mm	DELIVERY: 32mm	SPEED: 2900 rpm	DEPT.: E & D
DUTY PARAMETERS			
DISCHARGE (m3/h) = 11	HEAD (m) = 40	EFFICIENCY (%) = 51	NPSHR (m) = 2.1
POWER (BkW) = 2.35	SP. Gr. = 1.0		
FOR EIL'S STAMPING			

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B	10.10.12	REVISED AS PER CUSTOMERS COMMENTS	
A	30.08.12	ISSUED FOR APPROVAL	
NO	DATE	REVISIONS	
		PVK	JAK MKR
		DRN	CHKD APPD

CLIENT : **ब्रह्मपुत्र क्रैकर एवं पोलिमेर लिमिटेड**
BRAHMAPUTRA CRACKER AND POLYMER LIMITED
 (A Joint Venture Company of GAIL (India) Ltd., OIL, NRL & Govt. of Assam)

PROJECT: **ब्रह्मपुत्र पेट्रोकेमिकल कॉम्प्लेक्स असम**
PETROCHEMICAL COMPLEX LAKWA ASSAM

CONSULTANT : **इंजीनियर्स इंडिया लिमिटेड**
ENGINEERS INDIA LIMITED
 (A Govt. of India Undertaking)

PACKAGE : **DM WATER PLANT AND ASSOCIATED FACILITIES**

TITLE : **PERFORMANCE CHARACTERISTIC CURVE FOR DEGASSED WATER TRANSFER PUMP**

EPC CONTRACTOR : **Aqua Designs India Pvt Limited**
 Office: 200 Feet Road, Kolathur, Chennai - 600 088
 Ph : 91-44-37171717; Fax: 91-44-37171737
 Email: sales@aquadesigns.in. Web site: www.aquadesigns.in.

ORDER No: 6907/MR-4920/PO-4292 DWG No: ADIPL/EIL/BCPL/XXX/XXXXX/XXXXX B
 SCALE: N.T.S.

05/11/2012

CLIENT :

Brahmaputra Cracker and Polymer Limited (BCPL)

(A Government of India Enterprise)
Phone No: 0373-2271056/2371057/22710715
Email: bcpl@bcpl.co.uk

PROJECT :

BRAHMAPUTRA PETROCHEMICAL COMPLEX,
LAKWA, ASSAM

PACKAGE :

DM WATER PLANT AND ASSOCIATED FACILITIES

CONSULTANT :


**ENGINEERS
INDIA LIMITED**
(A Govt. of India Undertaking)


EIL JOB NO :

6907

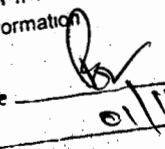
EPC CONTRACTOR :

AQUA DESIGNS INDIA PRIVATE LIMITED

EPC CONTRACTOR's JOB NO : P-11001

DOCUMENT NO:	ADIPL/EIL/BCPL/MEC/11001/60	REV. NO.	1
DOCUMENT TITLE:	General Arrangement & Cross Sectional Drawings for Degassed Water Pump (SBA Feed)	NO. OF SHEETS:	3

EIL COMMENTS / STAMP

अनुमोदन / समीक्षा कोड Approval / Review code	1	2	3
सुचनार्थ Information	☒		
हस्ताक्षर एवं नाम Signature & Name			
दिनांक/Date	01/11/12		
पं. नि. नं. POKI			

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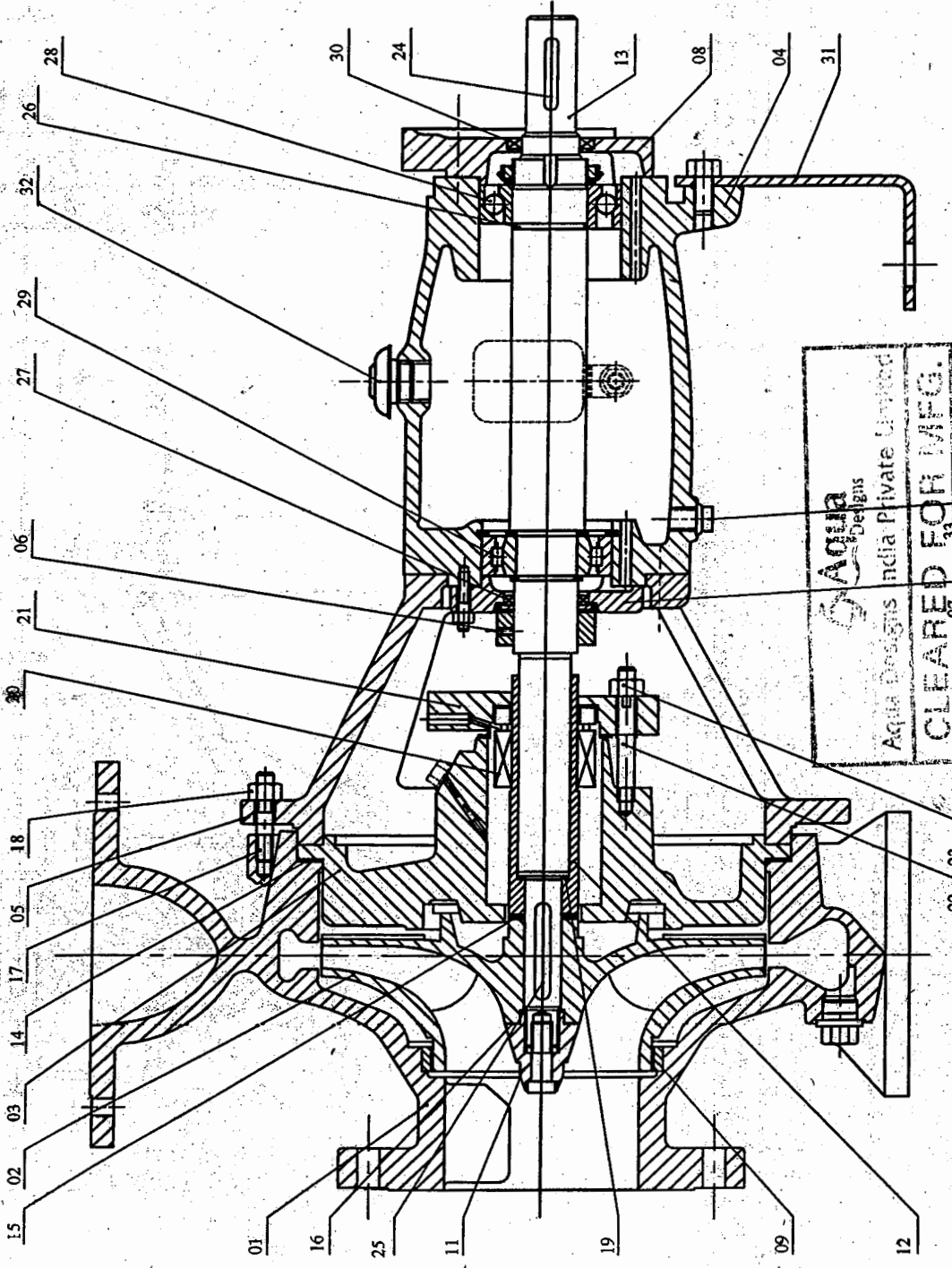
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EIL	ADIPL JOB NO: P-11001	Doc. Title: General Arrangement & Cross Sectional Drawings for Degassed Water Pump Aqua Designs India Private Limited	ISSUE: A SHEET NO: 1

Cleared for MFG.

S.Lokesh

05/11/2012

ITEM No.	DESCRIPTION OF ITEM	QTY/ PUMP	MATERIAL SPECIFICATION
01	VOLUTE CASING	1	SS, ASTM A 743-CF 3M
02	IMPELLER	1	SS, ASTM A 743-CF 3M
03	CASING COVER	1	SS, ASTM A 743-CF 3M
04	BEARING HOUSING	1	CL, IS-210 GR-FG-220
05	LANTERN	1	CL, IS-210 GR-FG-220
06	DEFLECTOR	1	STEEL C40 IS-1720
07	BEARING COVER-IDE	1	CL, IS-210 GR-FG-220
08	BEARING COVER-DE	1	CL, IS-210 GR-FG-220
09	WEAR RING, CASTING	1	SS, ASTM A 743-CF 3M
10	WEAR RING, STUFFING BOX	1	N/A
11	IMPELLER NUT	1	SS ASTM A 276 GR 316 L
12	SHAFT SLEEVE	1	SS ASTM A 276 GR 316 L
13	SHAFT	1	SS ASTM A 276 GR 316 L
14	GASKET-CASING/STUFFING BOX	1	CAF
15	GASKET-IMPELLER/SLEEVE	1	CAF
16	GASKET-IMPELLER NUT	1	TEFLON
17	STUD-CASING	8	SS-AISI-304
18	HEXAGON NUT-CASING	8	SS-AISI-304
19	GASKET-SHAFT SLEEVE	1	TEFLON
20	MECHANICAL SEAL	1	BURGHAFF / FLOW SERVO / EQUI
21	GLAND PLATE	1	SS-AISI-316
22	STUD-GLAND	4	SS-AISI-304
23	HEX-NUT-GLAND	4	SS-AISI-304
24	KEY COUPLING	1	CS, IS-1570-40 CR (EN8)
25	KEY IMPELLER	1	SS ASTM A 276 GR 316
26	SEAGER	3	MS, IS-1570-20 CR
27	OIL SEAL-P.S	1	SYNTHETIC RUBBER
28	BALL BEARING	2	BEARING STEEL
29	ROLLER BEARING	1	BEARING STEEL
30	OIL SEAL-M.S.	1	SYNTHETIC RUBBER
31	SUPPORT FOOT	1	MS, IS-1570-20 CR
32	AIR VENT	1	MS, IS-1570-20 CR
33	DRAIN PLUG, BEARING HOUSING	1	MS, IS-1570-20 CR



Aqua Designs India Private Limited
 07
 CLEARED FOR MFG.
 Date: 05/11/2012
 Shobh

NOTES:-

1. EGI/FGL - EXISTING GROUND LEVEL / FINISHED GROUND LEVEL +98.55M
2. FFL - FINISHED FLOOR LEVEL+98.65M.

PUMP MODEL: CNW 40 / 200 QTY: 2 Nos. (1W+1S)
 O.A. REF: S120071
 MANUFACTURER: BEST & CROMPTON ENGG. LTD. CS-CW-E120200
 PIMPS DIVISION

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DATE: 05/11/2012

BY: [Signature]

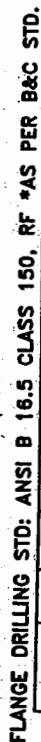
FOR: [Signature]

Aqua Designs India Private Limited
 (A Joint Venture Company of Aqua, India Pvt. Ltd. & Aqua, India Pvt. Ltd.)
 BANGALORE
 080-26101111, Fax: 080-26101112
 Email: aquadesigns@rediffmail.com, Web: www.aquadesigns.com

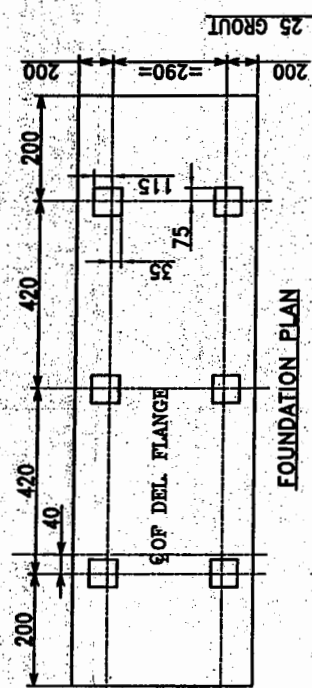
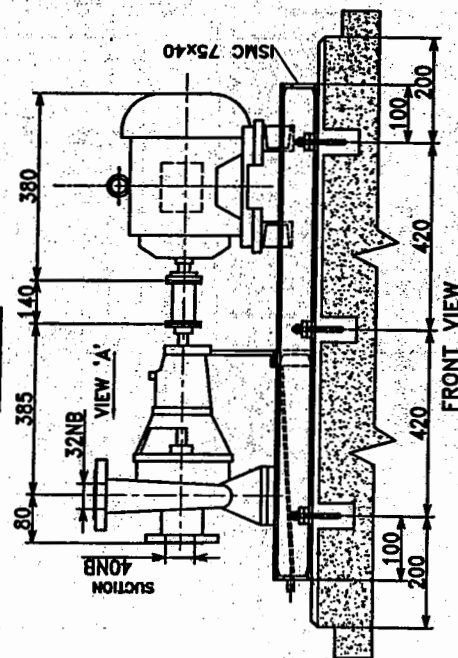
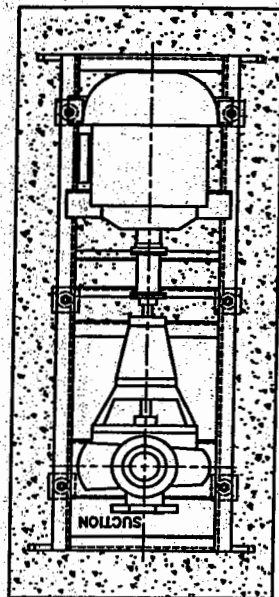
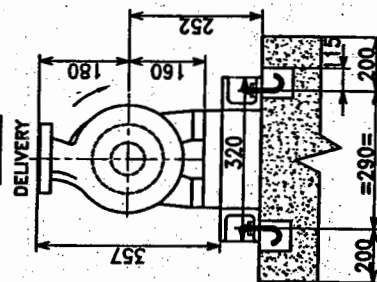
BRAHMAPUTRA PETROCHEMICAL COMPLEX
 LAKHMA, ASSAM
 0361-2511111, Fax: 0361-2511112
 Email: brahmaputra@rediffmail.com, Web: www.brahmaputra.com

Aqua Designs India Pvt Limited
 OFFICE: 200 Feet Road, Gurgaon, Haryana - 122009
 Ph: 0124-3311111, Fax: 0124-3311112
 Email: aquadesigns@rediffmail.com, Web: www.aquadesigns.com

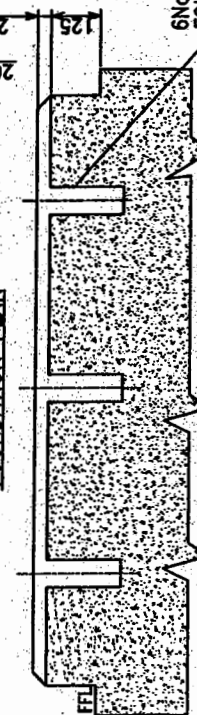
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	FLANGE	NB	D°	g°	k	Ød	z	pe	ttz
DELIVERY	32		118	64	89	16	4	13	1.6
SUCTION	40		127	73	98	16	4	15	1.6



FOUNDATION PLAN



FOUNDATION ELEVATION

6Nos. 150 SQ., 400 mm DEEP
FOUNDATION POCKETS

NOTES:

1. DIRECTION OF ROTATION: CLOCKWISE WHEN VIEWED FROM DRIVE END.

Aqua
F ROTATION: CLOCKWISE WHEN VIEWED FROM
Aqua Designs India Private Limited
C L A B E D F O R M G .

05/11/2012 -

93

NOTES:—

1. EGI/FGL - EXISTING GROUND LEVEL /
FINISHED GROUND LEVEL +98.55M
2. FFL - FINISHED FLOOR LEVEL+98.85M.

PUMP MODEL:

CNW 40 / 200

D.A. REF.:

MANUFACTURER: **BEST & CROMPTON ENGG. LTD.**

ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE SPECIFIED	SIZE: A4	THIS IS A CAD FILE - DO NOT MAKE ANY CORRECTIONS MANUALLY
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PUMP DUTY PARAMETERS		
1	DISCHARGE in m ³ /h	11
2	HEAD in m	40
3	EFFICIENCY in %	51
4	BkW in kW	2.35
5	NPSHR in m	2.1
6	PUMP LUBRICATION	OIL
COUPLING DETAIL		
1	COUPLING TYPE	JAW FLEX SPACER
2	COUP.MAKE	LOVEJOY / EQUI
MOTOR DETAIL		
1	MOTOR RATING(kW)	3
2	MAKE / TYPE	CGL / EFF-2
3	FRAME SIZE / POLE	ND100L / 2
4	FULL LOAD SPEED, rpm	2865
WEIGHT & LOAD DETAILS in kg		
1	PUMP	55
2	MOTOR	32
3	BASEFRAME	41
4	STATIC LOAD	153
5	DYNAMIC LOAD	191
ACCESSORIES MATERIAL		
1	COMPANION FLANGE	SS, Slip on
2	BASEFRAME	MS
3	COUPLING GUARD	ALUMINIUM
4	FOUNDATION BOLTS	MS,M12X300-6 Nos.

[illegible]

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CONSULTANT :

इंजीनियर्स इंडिया लिमिटेड
(भारत सरकार का उद्योग)
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AQUA DESIGNS INDIA PRIVATE LIMITED

EPC CONTRACTOR's JOB NO : P-11001



DOCUMENT NO:	ADIPL/EIL/BCPL/MEC/11001/061	REV. NO.	1
DOCUMENT TITLE:	Experience Record Proforma for Degassed Water Pump(SBA Feed)	NO. OF SHEETS:	5

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सूचना
Information

हस्ताक्षर एवं नाम
Signature & Name

दिनांक/Date

05/11/12

र. र. र. ROKI

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Signature

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DOCUMENT NO:	ADIPL/EIL/BCPL/MEC/11001/062	REV. NO.	1
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Signature & Name

दिनांक/Date

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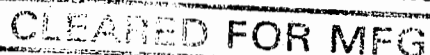
A. J. POKI

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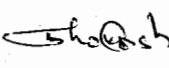
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1	11.10.2012	Issued for Approval	S.LOKESH	RSK	SN
0	17.08.2012	Issued for Approval	S.LOKESH	MSM	MSM
REV.No	DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED

BCPL	EIL JOB NO: 6907	DOC. NO: ADIPL/EIL/BCPL/MEC/11001/062	REV. NO & DATE : 1 & 11.10.2012
EIL	ADIPL JOB NO: P-11001	Doc. Title: Mechanical Data Sheet Degassed Water Pump(Regeneration)	ISSUE: A SHEET NO: 1



CLEARED FOR MFG.



Sign.

05/11/2012

Date.

GENERAL									
1 Project: DM PLANT, BRAHMAPUTRA PETROCHEMICAL COMPLEX PROJECT, LAKWA					Job No: 6907				
2 Owner: BRAHMAPUTRA CRACKER & POLYMER LIMITED					Site:				
3 Purchaser: AQUA DESIGNS INDIA PRIVATE LIMITED					Unit:				
4 Item No: 67 - PA - 102 A/B					Service: DEGASSED REGENERATION WATER TRANSFER PUMP				
5 No Req'd: 2 Working: 1 Stand by: 1					Parallel Operation Required: ☐ Yes ☒ No				
6 Applicable to ☐ Proposal ☒ Purchase					☐ As Built				
7 Scope of option information specified by purchaser					☐ Information Req'd. from & Option left to vendor. Vendor to cross ☒ the selected option				
8 Driver: Working 1 Standby: 1					☐ Driver supplied & Mounted By: ☒ Pump Mfr ☐ Other				
OPERATING CONDITIONS									
11 Liquid Handled: DEGASSED REGENERATION WATER					Capacity(m ³ /hr):Nor/Rated: 5 / 5				
12 Pumping Temp.(EC): Normal: AMB Max.					Discharge pressure(kg/cm ² ,A): 2.5				
13 Specific Gravity at P.T./15EC: 1					Suction Pressure:Nor./max.(kg/cm ² ,A) ATM.				
14 Vapour pressure at P.T.(kg/cm ² ,A): 0.075					Diff. Pressure (kg/cm ² , Gauge)@Rated capacity: 1.5				
15 Viscosity at P.T (cP) 1					Diff head (m)@Rated Capacity: 15				
16 Solids in suspension ☐ Yes ☒ No Size: N.A					NPSH Available(m): FLOODED SUCTION				
MANUFACTURE'S SPECIFICATIONS									
18 Pump Manufacturer: M/s. BEST & CROMPTON ENGG. LTD., PUMPS DIVISION					Model No: CNW 40 / 125				
CONSTRUCTION									
19 Casing Mounting: ☐ Centerline ☒ Foot ☐ Inline					Proposal Curve No. PC-CW-E120211				
20 Casing Split: ☐ Axial ☒ Radial					Visc. Corr. Factor: Co CQ CH				
21 Type: ☒ Single Volute ☐ Double Volute ☐ Diffuser					NPSH Req'd.(Water)(m): 1.3 F/L speed (rpm): 2830				
22 Casing connection: ☐ Vent ☒ Drain ☐ Gauge					No. of stages: 1 Efficiency(%): 35.00				
23 Nozzles Size: ANSI Rating: Facing: Position:					Rated BKW(0% Tol.): 0.58 KW Max.BKW rtd.Imp: 0.65				
24 Suction 40mm PN20 (150#) R.F. END					BKW @ MCF(Δ=1.0): 0.36 KWRec.Driver Rating: 0.75				
25 Discharge 32mm PN20 (150#) R.F. TOP					Max head rtd imp.(m): 17 Cap @ BEP (m ³ /hr): 9.60				
26 Imp.N(mm) Max: 124 Rated: 110 Min:100 Type: CLOSED					MCF (m ³ /hr):Stable 1 Thermal N.A				
27 Brg: Type/No. Roller: NU 306 Ball: 6306 Lub: OIL					M.A.W.P @ 15EC/P.T./Design Temp.(kg/cm ² ,G): 1.7				
28 Cplg:Make/Type: Rathi - spacer Non spark Guard ☒ Yes ☐ No					Hydrostatic test pressure (Kg/cm ² ,G): 2.55				
29 Driver Half cplg.mounted by: ☐ Pump Mfr ☒ Others					Rotation facing coupling end: ☒ CW ☐ CCW				
30 Packing Type: GLAND PACKING Size: 10mmsqx146L No of rings: 5					Seal flush/Quench plan: 11 Material: S.S				
31 Mech. Seal: Make: N.A Model: - API code: -BSPFN					Ext.seal flush fluid: N.A LPM: @kg/cm2G/EC				
32 Base Plate Rim Type: ☐ Yes ☒ No Fdn bolts: ☒ Yes ☐ No					Seal Barrier fluid: N.A LPM: @kg/cm2G/EC				
33 Throat Bush: ☐ Yes ☒ No Matl: N.A Bal Device: ☐ Yes ☒ No					Ext.quench fluid: N.A LPM: @kg/cm2G/EC				
34 Materials: MOC: ASTM Grades					C.W.plan: N.A LPM: @kg/cm2G/EC				
35 I-Cast Iron(Ductile) Casing CF3M ASTM A 743 CF3M					Weight(Kg):Pump+Base frame+Coupling: 102 Driver: 10				
36 B-Bronze Impeller CF3M ASTM A 743 CF3M					AUXILIARY PIPING INTERFACE CONNECTIONS				
37 S-Carbon Steel Inner Case parts N.A					(All interface conn.chall-be-terminated-with-a-flng.block-valves)				
38 C-11-13% Chr.Stl. Sleeve Packed S.S 316 L ASTM A 276 TYP 316 L					Size Rating(ANSI) Facing				
39 H-hardened Sleeve Seal N.A					Lantern Ring Inlet/Outlet N.A				
40 I-Faced Casing ring JH-BHN N.A					Ext.seal flush fluid inlet/outlet				
41 K-SS304 Impeller ring 50(min) N.A					seal quench fluid inlet				
42 L-SS 316 Shaft S.S 316 L ASTM A 276 TYP 316 L					seal pot vent/drain				
43 X-AISI 410 Throttle Bush N.A					Casing vent/drain 1/2" 150# R.F				
44 Y Throttle Bush N.A					CW Inlet/Outlet N.A				
45 Z Balance Drum N.A					Baseplate drain(only flanged) 1" BSP				
46 ☐ Driver suitable for pump starting with open Disc.valve condition.					casing steam jacket				
INSPECTION & TESTS (EACH PUMP)									
47 ☐ Shop Test / Inspection Witness Observe					Witness Observe				
48 ☐ Material Certificates					☐ NPSH As Req'd ☐ Per Spec				
49 ☐ Hydrostatic					☐ Dismantle Insp. & Re assembly after test				
50 ☐ Performance/sound level					☐ Unitisation / Dimensional Check				
51 ☐ Applicable Specification: EIL Std.Spec.No.6-41-0002,Rev.3 EDB-Rot.Eqpt.Job Specification.					☐ Check for direction of rotation of pump & driver				
52 Remarks: 1)Unitisation of pump and driver shall be done in pump manufacturer's shop.					2)Baseplate shall be drip pan type.				
53 3)Drilling of pump suction & discharge flanges shall be as per ANSI B16.5 150#.									

normal Pump capacity is 5 m³/hr. But actually flow is 1.55 m³/hr is required for SAE regeneration. How the test water will go because there is no by pass line or any control valve. MAWP is written as per cl.no. 2.2.1 std spec is 6-41-0002 Maximum impeller is 124 mm. Please ider MAWP based on this.

10.10.12	B		
30.08.12	A		
Date	Rev	Job Engineer	Rev & Approved By

CLIENT :

Brahmaputra Cracker and Polymer Limited (BCPL)
(A Government of India Enterprise)
Phone No: 0373-2271056/2271057/2271074
Email: bcplcorporate@bcpl.co.in

PROJECT :

**BRAHMAPUTRA PETROCHEMICAL COMPLEX,
LAKWA, ASSAM**

PACKAGE :

DM WATER PLANT AND ASSOCIATED FACILITIES

CONSULTANT :

इंजीनियर्स इंडिया लिमिटेड
(A Govt. of India Undertaking)



EIL JOB NO :

6907

EPC CONTRACTOR :

AQUA DESIGNS INDIA PRIVATE LIMITED

EPC CONTRACTOR's JOB NO : P-11001

DOCUMENT NO:	ADIPL/EIL/BCPL/MEC/11001/064	REV. NO.	1
DOCUMENT TITLE:	Performance Curve for Degassed Water Pump(Regeneration)	NO. OF SHEETS:	2

EIL COMMENTS / STAMP

अनुमोदन / समीक्षा कोड
Approval / Review code

सुचनार्थ
Information

हस्ताक्षर का नाम
Signature & Name

दिनांक / Date

01/11/12

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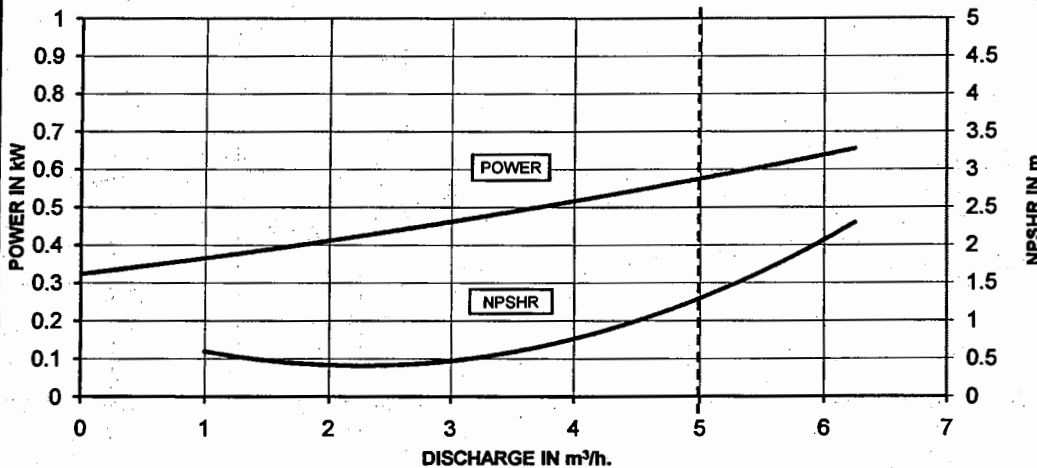
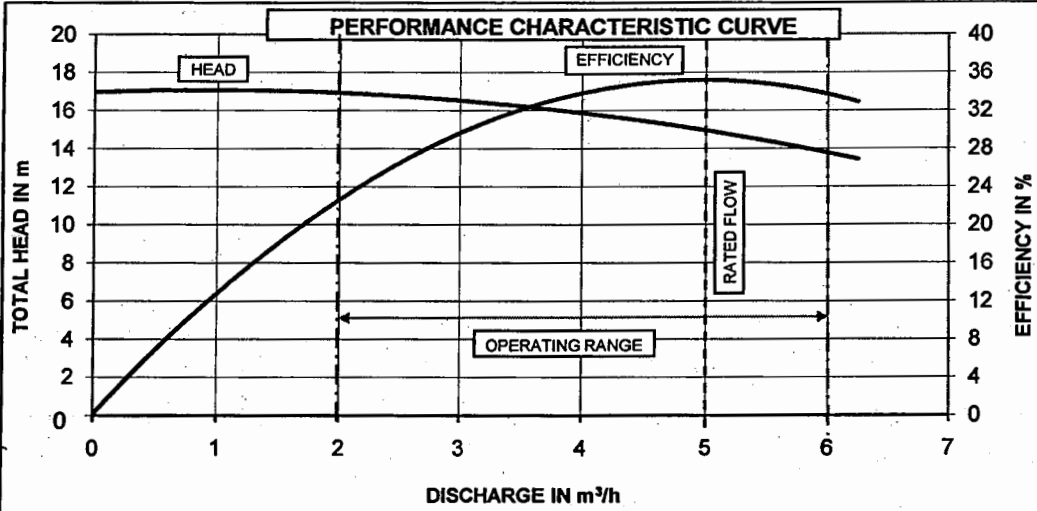
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REV.No	DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED
1	11.10.2012	Issued for Approval	S.LOKESH	RSK	SN
0	17.08.2012	Issued for Approval	S.LOKESH	MSM	MSM

BCPL	EIL JOB NO: 6907	DOC. NO: ADIPL/EIL/BCPL/MEC/11001/064	REV. NO & DATE : 1 & 11.10.2012
EIL	ADIPL JOB NO: P-11001	Doc. Title: Performance Curve Degassed Water Pump(Regeneration)	ISSUE: A
			SHEET NO: 1

Cleared for MFG.

S. Lokesh 05/11/2012



MANUFACTURER: M/s. BEST & CROMPTON ENGG. LTD., PUMPS DIVISION			
O.A. Ref.: S120071	PUMP MODEL: CNW 40 / 125	DOCUMENT No.: PC-CW-E120211	
SUCTION: 40mm	DELIVERY: 32mm	SPEED: 2820 rpm	DEPT: E & D
DUTY PARAMETERS			
DISCHARGE (m³/h) = 5	HEAD (m) = 15	EFFICIENCY (%) = 35	NPSHR (m) = 1.3
POWER (BkW) = 0.58	SP. Gr. = 1.0		

FOR EIL'S STAMPING

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B	10.10.12	REVISED AS PER CUSTOMERS COMMENTS	
A	30.08.12	ISSUED FOR APPROVAL	
NO.	DATE	REVISIONS	DRN CHKD APPD

CLIENT :- **ब्रह्मपुत्र क्रैकर एवं पोलिमेर लिमिटेड**
BRAHMAPUTRA CRACKER AND POLYMER LIMITED
 (A Joint Venture Company of GAIL (India) Ltd., OIL, NRL & Govt. of Assam)

PROJECT: **BRAHMAPUTRA PETROCHEMICAL COMPLEX LAKWA' ASSAM**

CONSULTANT :- **इंजीनियर्स इंडिया लिमिटेड**
ENGINEERS INDIA LIMITED
 (A Govt. of India Undertaking)

PACKAGE :- **DM WATER PLANT AND ASSOCIATED FACILITIES**

TITLE :- **PERFORMANCE CHARACTERISTIC CURVE FOR DEGASSED REGENERATION WATER PUMP**

EPC CONTRACTOR :- **Aqua Designs India Pvt. Limited**
 Office: 200 Feet Road, Kolathur, Chennai
 Ph: 91-44-37171717 Fax: 91-44-37171717
 Email: sales@aquadesigns.in. Web site: www.aquadesigns.in.

ORDER No. 8907/MR-4920/PO-4292 DWG No. ADIR/ZEI/BCPL/XXX/XXXXX/XXX REV. B
 SCALE: N.T.S. SHEET 1 OF 5 ISSUE A

Maximum pumpeller dia

25/11/2012

CLIENT :

Brahmaputra Cracker and Polymer Limited (BCPL)

(A Government of India Enterprise)
Phone No: 0373-2271056/2271057/2271071
Email: bcpl@bcpl.co.in

PROJECT :

BRAHMAPUTRA PETROCHEMICAL COMPLEX,
LAKWA, ASSAM

PACKAGE :

DM WATER PLANT AND ASSOCIATED FACILITIES

CONSULTANT :


**ENGINEERS
INDIA LIMITED**
(A Govt. of India Undertaking)


EIL JOB NO :

6907

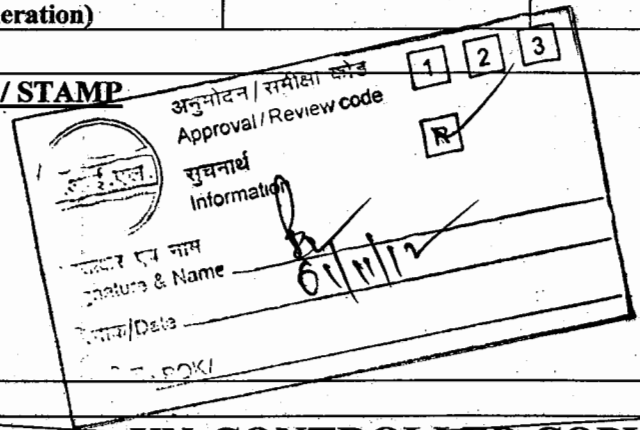
EPC CONTRACTOR :

AQUA DESIGNS INDIA PRIVATE LIMITED

EPC CONTRACTOR's JOB NO :

P-11001

DOCUMENT NO:	ADIPL/EIL/BCPL/MEC/11001/065	REV. NO.	1
DOCUMENT TITLE:	General Arrangement & Cross Sectional Drawing For Degassed Water Pump (Regeneration)	NO. OF SHEETS:	3

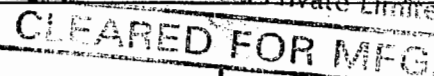
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1	11.10.2012	Issued for Approval	S.LOKESH	RSK	SN
0	17.08.2012	Issued for Approval	S.LOKESH	MSM	MSM

BCPL	EIL JOB NO: 6907	DOC. NO: ADIPL/EIL/BCPL/MEC/11001/065	REV. NO & DATE : 1 & 11.10.2012
EIL	ADIPL JOB NO: P-11001	Doc. Title: General Arrangement & Cross Sectional Drawing For Degassed Water Pump (Regeneration)	ISSUE: A SHEET NO: 1



Cleared for MFG.

S.Lokesh

05/11/12

CLIENT :

Brahmaputra Cracker and Polymer Limited (BCPL)

(A Government of India Enterprise)
Phone No: 0373-2371056/2371057/2371071
Fax: 0373-2371056/2371057

PROJECT :

BRAHMAPUTRA PETROCHEMICAL COMPLEX,
LAKWA, ASSAM

PACKAGE :

DM WATER PLANT AND ASSOCIATED FACILITIES

CONSULTANT :




EIL JOB NO :

6907

EPC CONTRACTOR :

AQUA DESIGNS INDIA PRIVATE LIMITED

EPC CONTRACTOR's JOB NO :

P-11001

DOCUMENT NO:	ADIPL/EIL/BCPL/MEC/11001/066	REV. NO.	1
DOCUMENT TITLE:	Experience Record Proforma For Degassed Water Pump (Regeneration)	NO. OF SHEETS:	5

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हस्ताक्षर एवं नाम
Signature & Name

दिनांक/Date

डी.पी.न. ROKI

01/11/12

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1	11.10.2012	Issued for Approval	S.LOKESH	RSK	SN
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BCPL	EIL JOB NO: 6907	DOC. NO: ADIPL/EIL/BCPL/MEC/11001/066	REV. NO & DATE : 1 & 11.10.2012
EIL	ADIPL JOB NO: P-11001	Doc. Title: Experience Record Proforma For Degassed Water Pump (Regeneration)	ISSUE: A SHEET NO: 1

Cleared for Mfg.

CLIENT :

Brahmaputra Cracker and Polymer Limited (BCPL)
(A Government of India Enterprise)
Phone No: 0373-2371056/2371057/2371071
Email: bcpl@bcpl.co.in

PROJECT :

**BRAHMAPUTRA PETROCHEMICAL COMPLEX,
LAKWA, ASSAM**

PACKAGE :

DM WATER PLANT AND ASSOCIATED FACILITIES

CONSULTANT :

इंजीनियर्स इंडिया लिमिटेड
(भारत सरकार का उद्योग)
ENGINEERS INDIA LIMITED
(A Govt. of India Undertaking)



EIL JOB NO :

6907

EPC CONTRACTOR :

AQUA DESIGNS INDIA PRIVATE LIMITED

EPC CONTRACTOR's JOB NO :

P-11001

DOCUMENT NO:	ADIPL/EIL/BCPL/MEC/11001/067	REV. NO.	1
DOCUMENT TITLE:	Mechanical Data Sheet for DM Water Pump(Regeneration)	NO. OF SHEETS:	2

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Signature & Name

दिनांक/Date

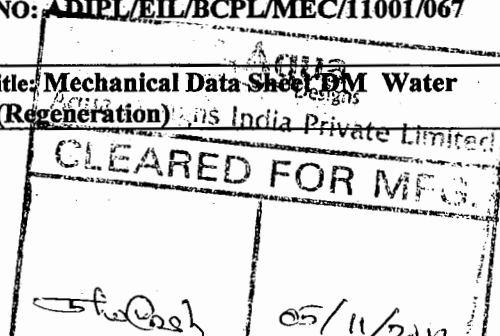
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BCPL	EIL JOB NO: 6907	DOC. NO: ADIPL/EIL/BCPL/MEC/11001/067	REV. NO & DATE : 1 & 11.10.2012		
EIL	ADIPL JOB NO: P-11001	Doc. Title: Mechanical Data Sheet DM Water Pump(Regeneration)	ISSUE: A	SHEET NO: 1	



GENERAL									
1	Project: DM PLANT, BRAHMAPUTRA PETROCHEMICAL COMPLEX PROJECT, LAKWA								
2	Job No: 6907				Site:				
3	Owner: BRAHMAPUTRA CRACKER & POLYMER LIMITED				Unit:				
4	Purchaser: AQUA DESIGNS INDIA PRIVATE LIMITED				Unit No:				
5	Item No: 67 - PA - 103 A/B				Service: DM REGENERATION WATER PUMP				
6	No Req'd: 2	Working: 1	Stand by: 1	Parallel Operation Required: ☐ Yes ☒ No					
7	Applicable to ☐ Proposal ☒ Purchase				☐ As Built				
8	☐ Scope of option information specified by purchaser				☐ Information Req'd. from & Option left to vendor.				
9	Driver: Working 1 Standby: 1				☐ Driver supplied & Mounted By: ☒ Pump Mfr ☐ Other				
OPERATING CONDITIONS									
11	Liquid Handled: DEGASSED REGENERATION WATER				Capacity(m ³ /hr):Nor/Rated: 5 / 5				
12	Pumping Temp.(EC): Normal: AMB Max.				Discharge pressure(kg/cm ² ,A): 4.0				
13	Specific Gravity at P.T./15EC: 1				Suction Pressure:Nor./max.(Kg/cm ² ,A) ATM.				
14	Vapour pressure at P.T.(kg/cm ² ,A): 0.075				Diff. Pressure (kg/cm ² , Gauge)@Rated capacity: 3.0				
15	Viscosity at P.T (cP) 1 Corr./Eros by:				Diff head (m)@Rated Capacity: 30				
16	Solids in suspension ☐ Yes ☒ No Size: N.A				NPSH Available(m): FLOODED SUCTION				
MANUFACTURE'S SPECIFICATIONS									
18	Pump Manufacturer: M/s. BEST & CROMPTON ENGG. LTD., PUMPS DIVISION				Model No: CNW 40 / 160				
CONSTRUCTION									
19	Casing Mounting: ☐ Centerline ☒ Foot ☐ Inline				Proposal Curve No. PC-CW-E120221				
21	Casing Split: ☐ Axial ☒ Radial				Visc Corr. Factor: Co CQ CH				
22	Type: ☒ Single Volute ☐ Double Volute ☐ Diffuser				NPSH Req'd.(Water)(m): 1.5 F/L speed (rpm): 2830				
23	Casing connection: ☐ Vent ☒ Drain ☐ Gauge				No. of stages: 1 Efficiency(%): 32.00				
24	Nozzles	Size	ANSI Rating	Facing	Position	Rated BKW(0% Tol.): 1.28 KW Max.BKW rtd. Imp: 1.47			
25	Suction	40mm	PN20 (150#)	R.F	END	BKW @ MCF(Δ=1.0): 0.86 KW Rec.Driver Rating: 2.2			
26	Discharge	32mm	PN20 (150#)	R.F	TOP	Max head rtd imp.(m): 33 Cap @ BEP (m ³ /hr): 14.25			
27	Imp.N(m/min)	Max: 159	Rated: 145	Min: 105	Type: CLOSED	MCF (m ³ /hr):Stable 1.3 Thermal N.A			
28	Brg: Type/No.	Roller: NU 306	Ball: 6306	Lub: OIL	M.A.W.P @ 15EC/P.T/Design Temp.(Kg/cm ² ,G): 3.1 correct				
29	Cplg: Make/Type: Rathi - spacer Non spark Guard ☒ Yes ☐ No				Hydrostatic test pressure (Kg/cm ² ,G): 5				
30	Driver Half cplg. mounted by: ☐ Pump Mfr ☒ Others				Rotation facing coupling end: ☒ CW ☐ CCW				
31	Packing Type:	GLAND PACKING	Size:	10mmsqx146L	No of rings:	5	Seal flush/Quench plan: 11 Material: S.S		
32	Mech. Seal: Make	N.A	Model:	-	API code:	BSPFN	Ext.seal flush fluid: N.A LPM: @Kg/cm2G/EC		
33	Base Plate Rim Type:	☒ Yes ☐ No	Fdn bolts:	☒ Yes ☐ No	Seal Barrier fluid: N.A LPM: @Kg/cm2G/EC				
34	Throat Bush:	☐ Yes ☒ No	Matl: N.A	Ball Device:	☐ Yes ☒ No	Ext.quench fluid: N.A LPM: @Kg/cm2G/EC			
35	Materials:		MOC	ASTM Grades	C.W.plan: N.A LPM: @Kg/cm2G/EC				
36	I-Cast Iron(Ductile)	Casing	CF3	ASTM A 743 CF3	Weight(Kg):Pump+Base frame+Coupling: 112 Driver: 18				
37	B-Bronze	Impeller	CF3	ASTM A 743 CF3	AUXILIARY PIPING INTERFACE CONNECTIONS				
38	S-Carbon Steel	Inner Case parts		N.A	(All interface conn shall be terminated with a flng block valves)				
39	C-11-13% Chr.Stl.	Sleeve Packed	S.S 304 L	ASTM A 276 TYP 304 L		Size	Rating(ANSI)	Facing	
40	H-hardened	Sleeve Seal		N.A	Lantern Ring Inlet/Outlet		N.A		
41	F-Faced	Casing ring	JH-BHN	N.A	Ext.seal flush fluid Inlet/outlet				
42	K-SS304	Impeller ring	50(min)	N.A	seal quench fluid inlet				
43	L-SS 316	Shaft	S.S 304 L	ASTM A 276 TYP 304 L	seal pot vent/drain				
44	X-AISI 410	Throttle Bush		N.A	Casing vent/drain	1/2"	150#	R.F	
45	Y	Throttle Bush		N.A	CW Inlet/Outlet		N.A		
46	Z	Balance Drum		N.A	Baseplate drain(only flanged)	1"	BSP		
47	☐ Driver suitable for pump starting with open Disc.valve condition.				casing steam jacket N.A				
INSPECTION & TESTS (EACH PUMP)									
49		Witness	Observe				Witness	Observe	
50	☐ Shop Test / Inspection	☐	☒	☐ NPSH As Req'd	☐ Per Spec	☐ Mandatory	☐	☐	
51	☐ Material Certificates	☐	☒	☐ Dismantle Insp. & Re assembly after test				☐	
52	☐ Hydrostatic	☐	☒	☐ Unitisation / Dimensional Check				☐	
53	☐ Performance/sound level	☐	☒	☐ Check for direction of rotation of pump & driver				☐	
54 Applicable Specification: EIL Std. Spec. No. 6-41-0002, Rev. 3 EDB-Rot. Eqp't. Job Specification.									
58 Remarks: 1) Unitisation of pump and driver shall be done in pump manufacturer's shop.									
59 2) Baseplate shall be drip pan type.									
60 3) Drilling of pump suction & discharge flanges shall be as per ANSI B16.5 150#.									

*NAWP shall be as per cl. no. 2.2.1 of EEL
SD spec no. 6-41-0002 Rev. 3
Maximum impeller dia is 159 mm.
Please consider it as per based on this.*

10.10.12	Rev. 1	Engineer	Rev & Approved By
30.08.12	Rev. 2	Engineer	Rev & Approved By

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Aqua Designs India Private Limited
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Sh. Q. R. 05/11/2012

CLIENT :


Brahmaputra Cracker and Polymer Limited (BCPL)
 (A Government of India Enterprise)
 Phone No: 0373-2271056/2271057/2271071
 Email: bcpl@bcpl.co.in

PROJECT :

**BRAHMAPUTRA PETROCHEMICAL COMPLEX,
LAKWA, ASSAM**

PACKAGE :

DM WATER PLANT AND ASSOCIATED FACILITIES

CONSULTANT :


**ENGINEERS
INDIA LIMITED**
 (A Govt. of India Undertaking)


EIL JOB NO :

6907

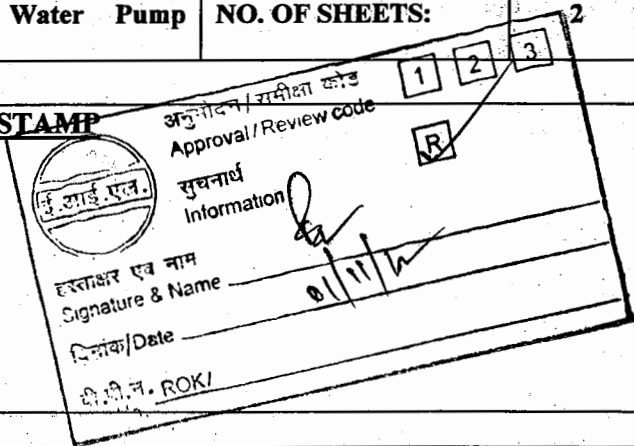
EPC CONTRACTOR :

AQUA DESIGNS INDIA PRIVATE LIMITED

EPC CONTRACTOR's JOB NO :

P-11001

DOCUMENT NO:	ADIPL/EIL/BCPL/MEC/11001/069	REV. NO.	1
DOCUMENT TITLE:	Performance Curve for DM Water Pump (Regeneration)	NO. OF SHEETS:	2

EIL COMMENTS / STAMP


अनुमोदन/समीक्षा कोड
Approval / Review code

सूचनाएं
Information

हस्ताक्षर एवं नाम
Signature & Name

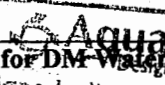
दिनांक/Date

टी.पी.न. ROKI

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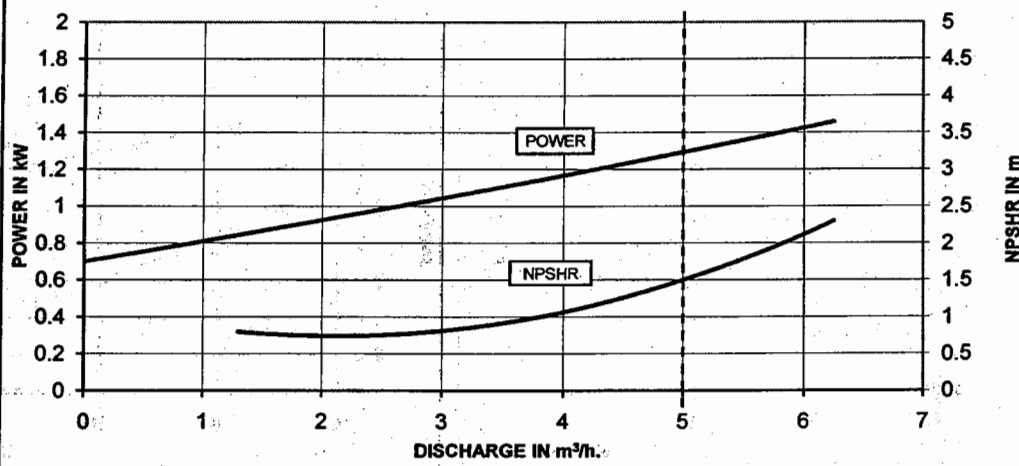
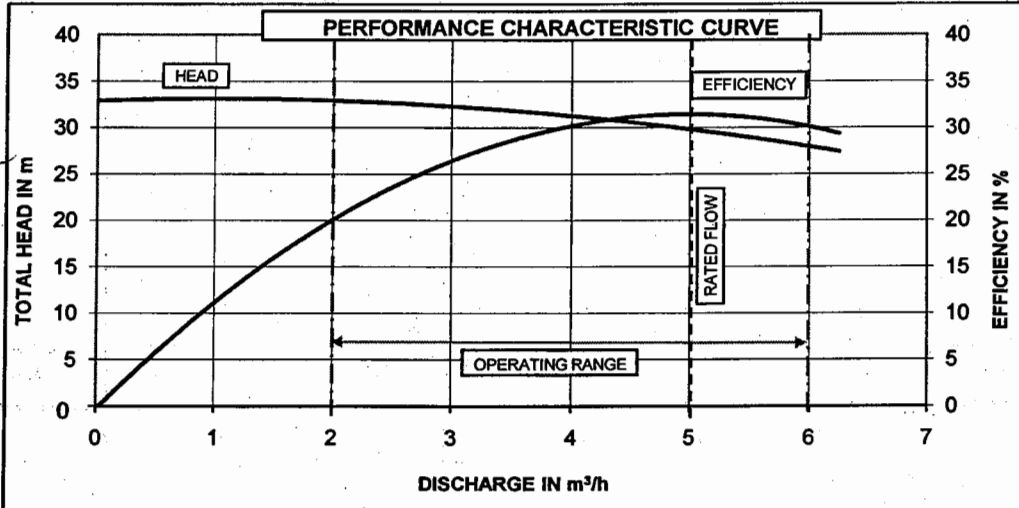
REV.No	DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED
1	11.10.2012	Issued for Approval	S.LOKESH	RSK	SN
0	17.08.2012	Issued for Approval	S.LOKESH	MSM	MSM

BCPL	EIL JOB NO: 6907	DOC. NO: ADIPL/EIL/BCPL/MEC/11001/069	REV. NO & DATE : 1 & 11.10.2012
EIL	ADIPL JOB NO: P-11001	Doc. Title : Performance Curve for DM Water Pump (Regeneration)	ISSUE: A SHEET NO: 1


CLEARED FOR MFG.

05/11/2012

Mention / note
maxi mum dia
impeller dia
across.



MANUFACTURER: M/s. BEST & CROMPTON ENGG. LTD., PUMPS DIVISION			
O.A. Ref.: S120071	PUMP MODEL: CNW 40/160	DOCUMENT No.: PC-CW-E120221	
SUCTION: 40mm	DELIVERY: 32mm	SPEED: 2830 rpm	DEPT.: E & D
DUTY PARAMETERS			
DISCHARGE (m³/h) = 5	HEAD (m) = 30	EFFICIENCY (%) = 32	NPSHR (m) = 1.5
POWER (BkW) = 1.28	SP. Gr. = 1.0		

CONTROLLED COPY		UN-CONTROLLED COPY		
B	10.10.12	REVISED AS PER CUSTOMERS COMMENTS		PVK JAK MKR
A	30.08.12	ISSUED FOR APPROVAL		PVK JAK MKR
REVISION NO	DATE	REVISIONS		DRN CHKD APPD

CLIENT :- **ब्रह्मपुत्र क्रैकर एवं पोलिमर लिमिटेड**
BRAHMAPUTRA CRACKER AND POLYMER LIMITED
 (A Joint Venture Company of GAIL (India) Ltd., OIL, NRL & Govt. of Assam)

PROJECT: **BRAHMAPUTRA PETROCHEMICAL COMPLEX LAKWA, ASSAM**

CONSULTANT :- **इंजीनियर्स इंडिया लिमिटेड**
ENGINEERS INDIA LIMITED
 (A Govt. of India Undertaking)

PACKAGE :- **DM WATER PLANT AND ASSOCIATED FACILITIES**

TITLE :- **PERFORMANCE CHARACTERISTIC CURVE FOR DM REGENERATION WATER PUMP**

EPC CONTRACTOR :- **Aqua Designs India Pvt. Limited**
 Office: 200 Feet Road, Anna Nagar, Chennai - 600 099.
 Ph: 01-44 27171717 Fax: 01-44 271737.
 Email: sales@aquadesigns.in. Web site: www.aquadesigns.in.

ORDER No: 0907/MR-4920/PO-4252
 SCALE: N.T.S.
 SHEET: 4 of 5
 REV B
 ISSUE A

05/11/2012

CLIENT :

Brahmaputra Cracker and Polymer Limited (BCPL)
(A Government of India Enterprise)
Phone No: 0373-2571056/2371057/2371071
Email: bcpl@bcpl.co.in

PROJECT :

**BRAHMAPUTRA PETROCHEMICAL COMPLEX,
LAKWA, ASSAM**

PACKAGE :

DM WATER PLANT AND ASSOCIATED FACILITIES

CONSULTANT :

इंजीनियर्स इंडिया लिमिटेड
(भारत सरकार का उपक्रम)
ENGINEERS INDIA LIMITED
(A Govt. of India Undertaking)



EIL JOB NO :

6907

EPC CONTRACTOR :

AQUA DESIGNS INDIA PRIVATE LIMITED

EPC CONTRACTOR's JOB NO :

P-11001

DOCUMENT NO:	ADIPL/EIL/BCPL/MEC/11001/070	REV. NO.	1
DOCUMENT TITLE:	General Arrangement & Cross Sectional Drawing for DM Water Pump(Regeneration)	NO. OF SHEETS:	3

EIL COMMENTS / STAMP

अनुमोदन / समीक्षा कोड
Approval / Review code

सुचनार्थ
Information

हस्ताक्षर एवं नाम
Signature & Name

दिनांक/Date

वी.पी.न. ROK/
V.P.N.

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REV.No	DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED
1	11.10.2012	Issued for Approval	S.LOKESH	RSK	SN
0	17.08.2012	Issued for Approval	S.LOKESH	MSM	MSM

BCPL	EIL JOB NO: 6907	DOC. NO: ADIPL/EIL/BCPL/MEC/11001/070	REV. NO & DATE: 1 & 11.10.2012		
EIL	ADIPL JOB NO: P-11001	Doc. Title: General Arrangement & Cross Sectional Drawing for DM Water Pump(Regeneration)	ISSUE: A	SHEET NO: 1	

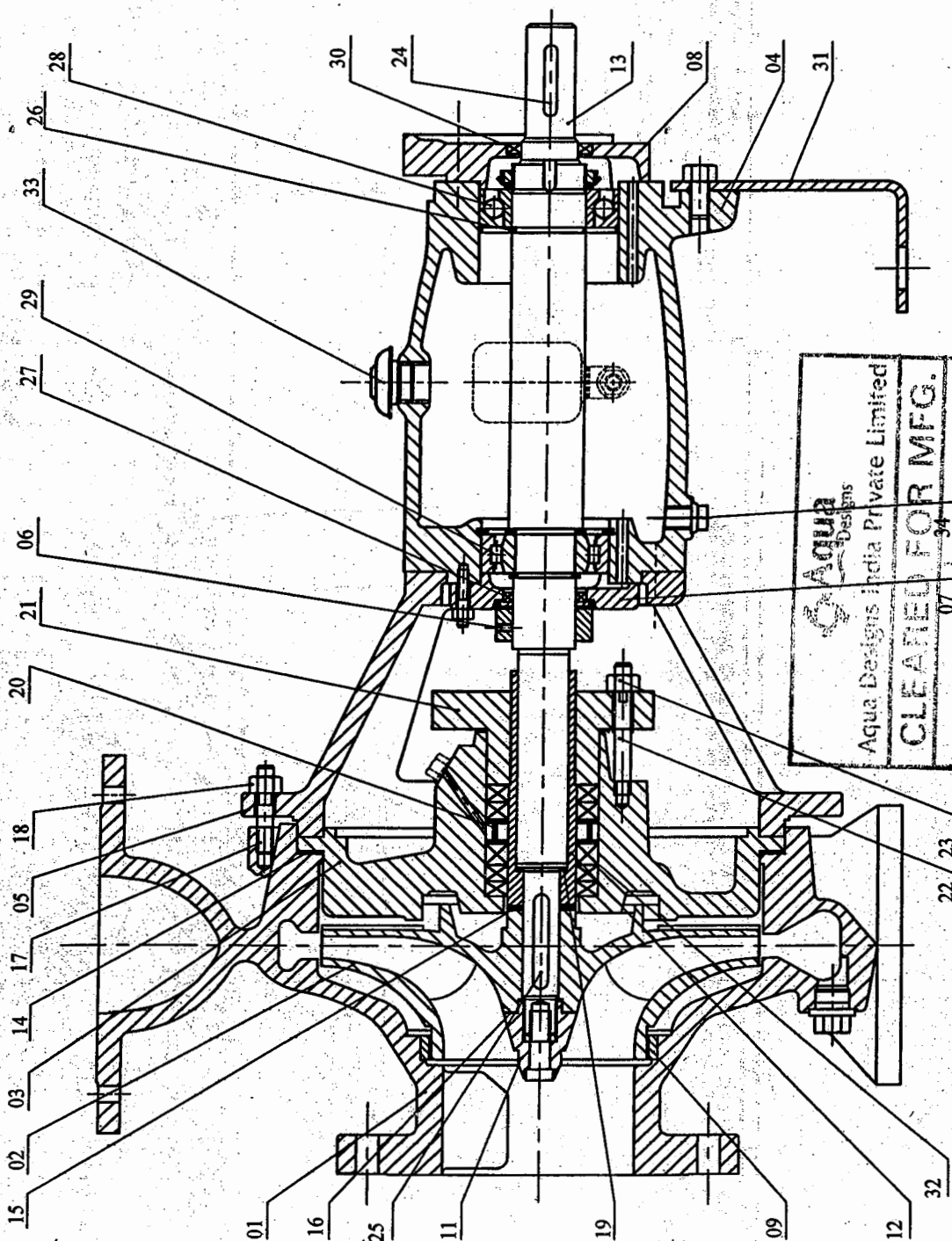
Cleared for MFG.

Slokesh

05/11/2012

PART LIST

ITEM No.	DESCRIPTION OF ITEM	QTY/ PUMP	MATERIAL SPECIFICATION
01	YOLUTE CASING	1	SS, ASTM A 743-CF 3
02	IMPELLER	1	SS, ASTM A 743-CF 3
03	CASING COVER	1	SS, ASTM A 743-CF 3
04	BEARING HOUSING	1	CS, IS:210 G.F.FG-220
05	LAMINER	1	CS, IS:210 G.F.FG-220
06	DEFLECTOR	1	STEEL C40 IS:1730
07	BEARING COVERHIDE	1	CS, IS:210 G.F.FG-220
08	BEARING COVER DE	1	CS, IS:210 G.F.FG-220
09	WEAR RING, CASING	1	SS, ASTM A 743-CF 3
10	WEAR RING, STUFFING BOX	1	N/A
11	IMPELLER NUT	1	SS, ASTM A 276 GR. 304 L
12	IMPELLER NUT	1	SS, ASTM A 276 GR. 304 L
13	SHAFT	1	SS, ASTM A 276 GR. 304 L
14	GASKET-CASING/STUFFING BOX	1	CAF
15	GASKET-IMPELLER/SLEEVE	1	CAF
16	GASKET-IMPELLER NUT	1	TEFLON
17	STUD-CASING	8	SS AISI-304
18	HEXAGON NUT-CASING	8	SS AISI-304
19	GASKET-SHAFT SLEEVE	1	TEFLON
20	LAMINER RING	1	GLASS FILLED TEFLON
21	GLAND	1	SS, ASTM A 743-CF 3
22	STUD-GLAND	2	SS AISI-304
23	HEX NUT-GLAND	2	SS AISI-304
24	KEY COUPLING	1	CS, IS:1570-40 Q3 (EN8)
25	KEY IMPELLER	1	SS, ASTM A 276 GR. 304
26	SEAGER	3	MS, IS:1570-20 C8
27	OIL SEAL-P/S	1	SYNTHETIC RUBBER
28	BALL BEARING	1	BEARING STEEL
29	ROLLER BEARING	1	BEARING STEEL
30	OIL SEAL-M/S	1	SYNTHETIC RUBBER
31	SUPPORT FOOT	1	MS, IS:1570-20 C8
32	GLAND PACKING	5 Turns	TJWA
33	AIR VENT	1	MS, IS:1570-20 C8
34	DRAIN PLUG, BEARING HOUSING	1	MS, IS:1570-20 C8

[illegible]

NOTES:-

1. EGL/FGL - EXISTING GROUND LEVEL /
FINISHED GROUND LEVEL +98.55M
2. FFL - FINISHED FLOOR LEVEL+98.85M.

PUMP MODEL:	CNW 40 / 160	QTY.: 2 Nos. (1W+1S)
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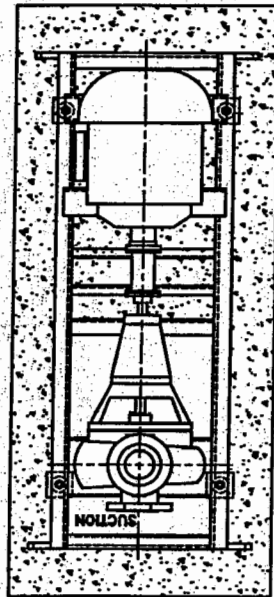
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MANUFACTURER:  **BEST & CROMPTON ENGG. LTD.**

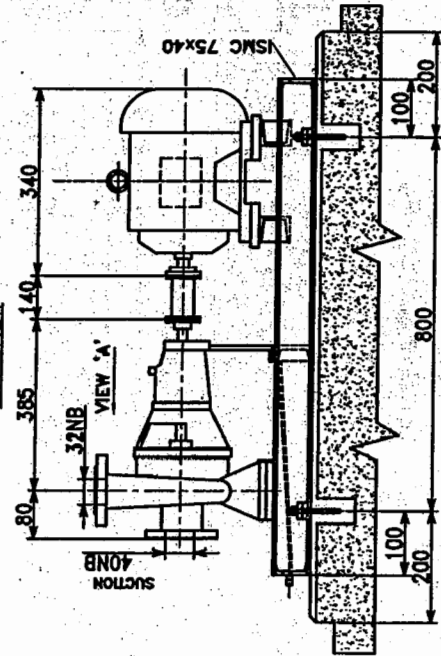
	Aqua Designs India Private Limited	07	94	CLEARED FOR MFG.	Date:
	05/11/2011				Sign.

ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE SPECIFIED	SIZE: A4	THIS IS A CAD FILE - DO NOT MAKE ANY CORRECTIONS MANUALLY
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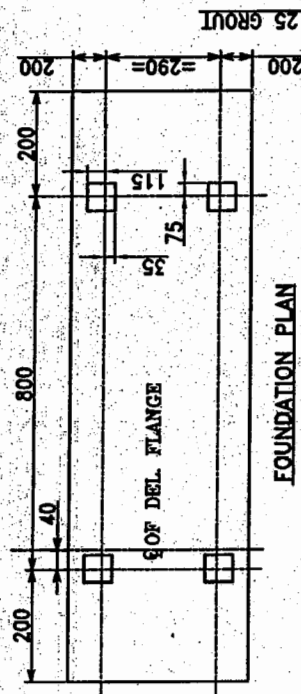
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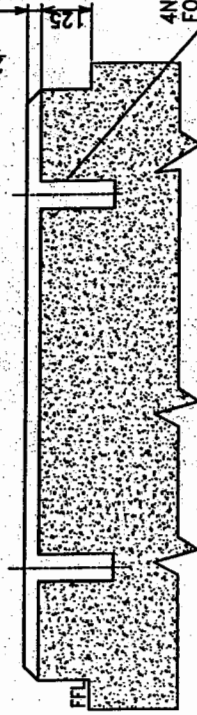
TOP VIEW



FRONT VIEW

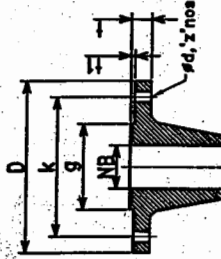


FOUNDATION PLAN



FOUNDATION ELEVATION

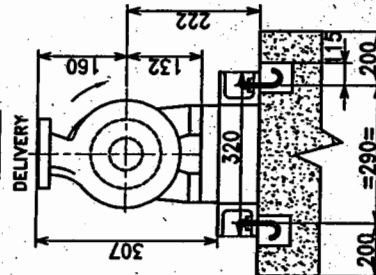
4Nos. 150 SQ., 400 mm DEEP FOUNDATION POCKETS



FLANGE DRILLING STD: ANSI B 16.5 CLASS 150, RF *AS PER B&C STD.

FLANGE	NB	D*	g*	k	1/2	11*
DELIVERY	32	118	64	89	16	4
SUCTION	40	127	73	98	16	4

VIEW 'A'



VIEW 'A'

1. DIRECTION OF ROTATION: CLOCKWISE WHEN VIEWED FROM DRIVE END.

1. DIRECTION OF ROTATION: CLOCKWISE WHEN VIEWED FROM DRIVE END.

QUA Designs
Aqua Designs India Private Limited
CLEARED FOR MFG.

05/11/2012
Sign: Date:

NOTES:-

- EGL/FGL - EXISTING GROUND LEVEL / FINISHED GROUND LEVEL +98.55M
- F.L. - FINISHED FLOOR LEVEL+98.85M.

PUMP MODEL: CNW 40 / 160 QTY: 2 Nos. (1W+1S)
O.A. REF: S120071
MANUFACTURER: BEST & CROMPTON ENGG. LTD.
DI MADE INDIA/INDIA

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PUMP DUTY PARAMETERS					
1	DISCHARGE	In m ³ /h	5		
2	HEAD	In m	30		
3	EFFICIENCY	In %	32		
4	BkW	In kW	1.28		
5	NPSHR	In m	1.5		
6	PUMP LUBRICATION		OIL		
COUPLING DETAIL					
1	COUPLING TYPE		JAW FLEX SPACER		
2	COUP.MAKE		LOVEJOY / EQUI		
3	MOTOR DETAIL				
4	MOTOR RATING(kW)		2.2		
5	MAKE / TYPE		CGL / EFF-2		
6	FRAME SIZE / POLE		ND90L / 2		
7	FULL LOAD SPEED, rpm		2830		
WEIGHT & LOAD DETAILS IN kg					
1	PUMP		48		
2	MOTOR		25		
3	BASEFRAME		39		
4	STATIC LOAD		137		
5	DYNAMIC LOAD		171		
ACCESSORIES MATERIAL					
1	COMPANION FLANGE		SS, Slip on		
2	BASEFRAME		MS		
3	COUPLING GUARD		ALUMINIUM		
4	FOUNDATION BOLTS		MS,M12X300-4 Nos.		

FOR B&C SIGNATURE

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BRACHMAPUTRA CRACKER AND POLYMER LIMITED
PCCPL (A Joint Venture Company of B&C, (Pvt) Ltd., OIL, P&C & B&C of Assam)

BRACHMAPUTRA PETROCHEMICAL COMPLEX
LAKHMA, ASSAM

DM WATER PLANT AND ASSOCIATED FACILITIES
GENERAL ARRANGEMENT DRAWING FOR DM
REGENERATION WATER PUMP

Aqua Designs India Pvt Limited
10/11/2012, New Delhi (INDIA)

01
SHEET

CLIENT :


Brahmaputra Cracker and Polymer Limited (BCPL)
 (A Government of India Enterprise)
 Address: No. 23/105/23/105/23/1074
 Email: bcplcorporate@gmail.com

PROJECT :

**BRAHMAPUTRA PETROCHEMICAL COMPLEX,
LAKWA, ASSAM**

PACKAGE :

DM WATER PLANT AND ASSOCIATED FACILITIES

CONSULTANT :

 **ENGINEERS
INDIA LIMITED**
 (A Govt. of India Undertaking)


EIL JOB NO :

6907

EPC CONTRACTOR :

AQUA DESIGNS INDIA PRIVATE LIMITED

EPC CONTRACTOR's JOB NO :

P-11001

DOCUMENT NO:	ADIPL/EIL/BCPL/MEC/11001/071	REV. NO.	1
DOCUMENT TITLE:	Experience Record Proforma for DM Water Pump(Regeneration)	NO. OF SHEETS:	5

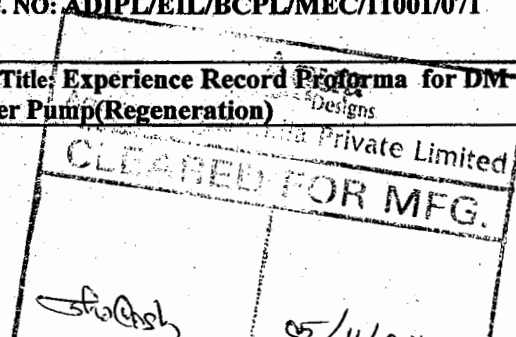
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सूचनाएं Information		
हस्ताक्षर एवं नाम Signature & Name		
तिथि/Date		
P.E. POKI		

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1	11.10.2012	Issued for Approval	S.LOKESH	RSK	SN
0	17.08.2012	Issued for Approval	S.LOKESH	MSM	MSM

BCPL	EIL JOB NO: 6907	DOC. NO: ADIPL/EIL/BCPL/MEC/11001/071	REV. NO & DATE : 1 & 11.10.2012		
EIL	ADIPL JOB NO: P-11001	Doc. Title: Experience Record Proforma for DM Water Pump(Regeneration)	ISSUE: A	SHEET NO: 1	



CLIENT :

Brahmaputra Cracker and Polymer Limited (BCPL)

(A Government of India Enterprise)
Phone No: 0373-2371056/2371057/2371071
Email: bcplcorporate@bcpl.co.in

PROJECT :

BRAHMAPUTRA PETROCHEMICAL COMPLEX,
LAKWA, ASSAM

PACKAGE :

DM WATER PLANT AND ASSOCIATED FACILITIES

CONSULTANT :


**ENGINEERS
INDIA LIMITED**
(A Govt. of India Undertaking)


EIL JOB NO :

6907

EPC CONTRACTOR :

AQUA DESIGNS INDIA PRIVATE LIMITED

EPC CONTRACTOR's JOB NO :

P-11001

DOCUMENT NO:	ADIPL/EIL/BCPL/MEC/11001/072	REV. NO.	1
DOCUMENT TITLE:	Mechanical Data Sheet for Neutralized water transfer pump	NO. OF SHEETS:	2

EIL COMMENTS / STAMP

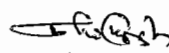
1	2	3
अनुमोदन / समीक्षा कोड Approval / Review code		
सूचना Information		
हस्ताक्षर एवं नाम Signature & Name		
दिनांक/Date		
सी.पी.नं. RSK/		

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1	11.10.2012	Issued for Approval	S.LOKESH	RSK	SN
0	17.08.2012	Issued for Approval	S.LOKESH	MSM	MSM

BCPL	EIL JOB NO: 6907	DOC. NO: ADIPL/EIL/BCPL/MEC/11001/072	REV. NO & DATE : 1 & 11.10.2012
EIL	ADIPL JOB NO: P-11001	Doc. Title: Mechanical Data Sheet for Neutralized water transfer pump	ISSUE: A
			SHEET NO: 1

Cleared for MFG.



Sign.

05/11/2012

Date.

GENERAL										
1	Project: DM PLANT, BRAHMAPUTRA PETROCHEMICAL COMPLEX PROJECT, LAKWA									
2	Owner: BRAHMAPUTRA CRACKER & POLYMER LIMITED				Job No: 6907					
3	Purchaser: AQUA DESIGNS INDIA PRIVATE LIMITED				Site:					
4	Item No: 67 - PA - 104 A/B				Unit: NEUTRALIZED WATER TRANSFER PUMP					
5	No Req: 2 Working: 1 Stand by: 1				Service: NEUTRALIZED WATER TRANSFER PUMP					
6	Applicable to ☐ Proposal ☒ Purchase				Parallel Operation Required: ☐ Yes ☒ No					
7	Scope of option information specified by purchaser				Information Req. from & Option left to vendor. Vendor to cross ☒ the selected option					
8	Driver: Working 1 Standby: 1				Driver supplied & Mounted By: ☒ Pump Mfr ☐ Other					
OPERATING CONDITIONS										
11	Liquid Handled: NEUTRALIZED WATER				Capacity(m ³ /hr):Nor/Rated: 12 / 12					
12	Pumping Temp.(EC): Normal: AMB Max.				Discharge pressure(kg/cm ² ,A): 7.0					
13	Specific Gravity at P.T./15EC: 1				Suction Pressure:Nor./max.(kg/cm ² ,A) 0.65 <i>check</i>					
14	Vapour pressure at P.T.(kg/cm ² ,A): 0.075				Diff. Pressure (kg/cm ² , Gauge)@Rated capacity: 6.35					
15	Viscosity at P.T (cP) 1				Diff head (m)@Rated Capacity: 63.5					
16	Solids in suspension ☒ Yes ☐ No Size: N.A				NPSH Available(m): NEGATIVE SUCTION					
MANUFACTURE'S SPECIFICATIONS										
18	Pump Manufacturer: M/s. BEST & CROMPTON ENGG. LTD., PUMPS DIVISION				Model No: CNW 40 / 250					
CONSTRUCTION										
20	Casing Mounting: ☐ Centerline ☒ Foot ☐ Inline				Proposal Curve No. PC-CW-E120232					
21	Casing Split: ☐ Axial ☒ Radial				Visc Corr. Factor: Co CQ CH					
22	Type: ☒ Single Volute ☐ Double Volute ☐ Diffuser				NPSH Req.(Water)(m): 2.6 F/L speed (rpm): 2920					
23	Casing connection: ☐ Vent ☒ Drain ☐ Gauge				No. of stages: 1 Efficiency(%): 32.00					
24	Nozzles Size: ANSI Rating		Facing		Position		Rated BKW(0% Tol.): 6.48 KW Max.BKW rtd Imp: 7.2			
25	Suction 40mm PN20 (150#)		R.F		END		BKW @ MCF(Δ=1.0): 3.81 KW Rec.Driver Rating: 7.5			
26	Discharge 32mm PN20 (150#)		R.F		TOP		Max head rtd imp.(m): 72 Cap @ BEP (m ³ /hr): 13.50			
27	Imp.N(mm) Max: 159		Rated: 149 Min:105		Type: CLOSED		MCF (m ³ /hr):Stable 1.4 Thermal N.A			
28	Brg: Type/No. Roller: NU 306		Ball: 6306		Lub: OIL		M.A.W.P @ 15EC/P.T/Design Temp.(kg/cm ² ,G): 7.2			
29	Cplg/Make/Type: Rathi - spacer Non spark Guard ☒ Yes ☐ No				Hydrostatic test pressure (Kg/cm ² ,G): 10.8					
30	Driver Half cplg.mounted by: ☐ Pump Mfr ☒ Others				Rotation facing coupling end: ☒ CW ☐ CCW					
31	Packing Type: GLAND PACKING		Size: 10mmsqx182L		No of rings: 6		Seal flush/Quench plan: 11 <i>check</i> Material: S.S			
32	Mech. Seal: Make N.A		Model: -		API code: BSPFN		Ext.seal flush fluid: N.A LPM: @Kg/cm2G/ EC			
33	Base Plate Rim Type: ☒ Yes ☐ No		Fdn bolts: ☒ Yes ☐ No		Seal Barrier fluid: N.A		LPM: @Kg/cm2G/ EC			
34	Throat Bush: ☐ Yes ☒ No		Matl: N.A Bal Device: ☐ Yes ☒ No		Ext.quench fluid: N.A		LPM: @Kg/cm2G/ EC			
35	Materials:		MOC		ASTM Grades		C.W.plan: N.A LPM: @Kg/cm2G/ EC			
36	I-Cast Iron(Ductile)		Casing		CF3M		ASTM A 743 CF3M			
37	B-Bronze		Impeller		CF3M		ASTM A 743 CF3M			
38	S-Carbon Steel		Inner Case parts		N.A		AUXILIARY PIPING INTERFACE CONNECTIONS			
39	C-11-13% Chr.Stl.		Sleeve Packed		S.S 316 L		(All interface conn. shall be terminated with a flng. block valves)			
40	H-hardened		Sleeve Seal		N.A		Lantern Ring Inlet/Outlet			
41	f-Faced		Casing ring		JH-BHN		Ext.seal flush fluid inlet/outlet			
42	K-SS304		Impeller ring		50(min)		N.A			
43	L-SS 316		Shaft		S.S 316 L		ASTM A 276 TYP 316 L			
44	X-AISI 410		Throttle Bush		N.A		Casing vent/drain 1/2" 150# R.F			
45	Y		Throttle Bush		N.A		CW inlet/Outlet			
46	Z		Balance Drum		N.A		Baseplate drain(only flanged) 1" BSP			
47	☐ Driver suitable for pump starting with open Disc.valve condition.									
48	INSPECTION & TESTS (EACH PUMP)									
49	Witness				Review				Witness	
50	☐ Shop Test / Inspection				☐ NPSH As Req ☐ Per Spec ☐ Mandatory				☐ Witness ☐ Review	
51	☐ Material Certificates				☐ Dismantle Insp. & Re assembly after test				☐ Witness ☐ Review	
52	☐ Hydrostatic				☐ Unitisation / Dimensional Check				☐ Witness ☐ Review	
53	☐ Performance/sound level				☐ Check for direction of rotation of pump & driver				☐ Witness ☐ Review	
54	Applicable Specification: EIL Std.Spec.No.6-41-0002 Rev 03, EDB-Rot.Eqpt.Job Specification.									
55	Remarks: 1)Unitisation of pump and driver shall be done in pump manufacturer's shop.									
56	2)Baseplate shall be drip pan type.									
57	3)Drilling of pump suction & discharge flanges shall be as per ANSI B16.5 150#.									

17.10.12	C		
10.10.12	B		
30.08.12	A		
Date	Rev	Job Engineer	Rev & Approved By

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India Private Limited
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05/11/2012

N.A.W.P shall be as per el no. 2.1 of spec no. 6-41-0002 Maximum impeller dia is 159 mm. Please check on this.



Brahmaputra Cracker and Polymer Limited (BCPL)
(A Government of India Enterprise)
Phone No: 0373-2371056/2371057/2371071
Email: bcpl@bcpl.co.in

CLIENT :

PROJECT : BRAHMAPUTRA PETROCHEMICAL COMPLEX,
LAKWA, ASSAM

PACKAGE : DM WATER PLANT AND ASSOCIATED FACILITIES

CONSULTANT :



EIL JOB NO :

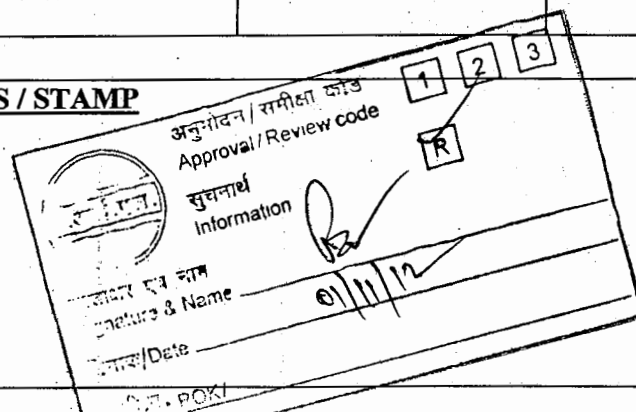
6907

EPC CONTRACTOR : AQUA DESIGNS INDIA PRIVATE LIMITED

EPC CONTRACTOR's JOB NO : P-11001



DOCUMENT NO:	ADIPL/EIL/BCPL/MEC/11001/074	REV. NO.	1
DOCUMENT TITLE:	Performance Curve for Neutralized Water Transfer Pump	NO. OF SHEETS:	2

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REV.No	DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED
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0	17.08.2012	Issued for Approval	S.LOKESH	MSM	MSM

BCPL	EIL JOB NO: 6907	DOC. NO: ADIPL/EIL/BCPL/MEC/11001/074	REV. NO & DATE : 1 & 11.10.2012		
EIL	ADIPL JOB NO: P-11001	Doc. Title: Performance Curve for Neutralized Water Transfer Pump	ISSUE: A	SHEET NO: 1	

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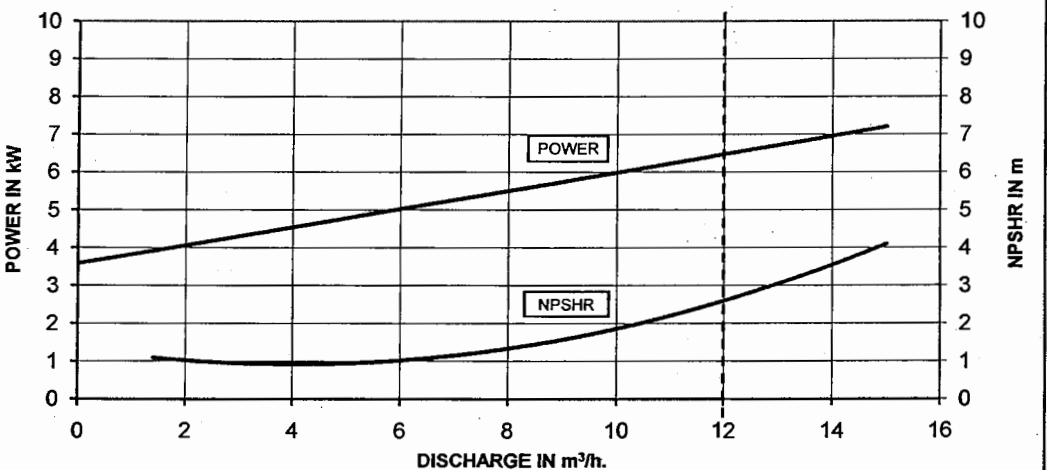
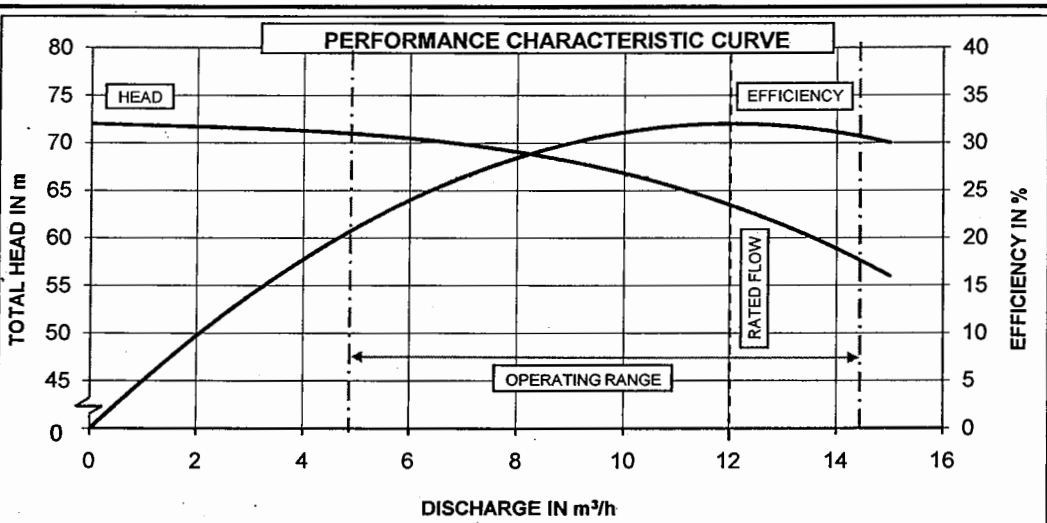


05/11/2012

Sign

Date

Indicate
max impeller
die curve



MANUFACTURER: M/s. BEST & CROMPTON ENGG. LTD., PUMPS DIVISION			
O.A. Ref.: S120071	PUMP MODEL: CNW 40 / 250	DOCUMENT No.: PC-CW-E120232	
SUCTION: 40mm	DELIVERY: 32mm	SPEED: 2920 rpm	DEPT: E & D
DUTY PARAMETERS			
DISCHARGE (m³/h) = 12	* HEAD(m) = 63.5	EFFICIENCY (%) = 32	NPSHR (m) = 2.6
* POWER (BkW) = 6.48	SP. Gr. = 1.0		

FOR EIL'S STAMPING

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C	17.10.12	*Head 63.5m & BkW 6.48kW was 60m & 6.13kW respectively	PVK JAK MKR
B	10.10.12	REVISED AS PER CUSTOMERS COMMENTS	PVK JAK MKR
A	30.08.12	ISSUED FOR APPROVAL	PVK JAK MKR
REV. NO.	DATE	REVISIONS	DRN CHKD APPD

CLIENT : — **ब्रह्मपुत्र क्रैकर एवं पोलिमर लिमिटेड**
BRAHMAPUTRA CRACKER AND POLYMER LIMITED
 (A Joint Venture Company of GAIL (India) Ltd., OIL, NRL & Govt. of Assam)

BCPL

PROJECT: **BRAHMAPUTRA PETROCHEMICAL COMPLEX LAKWA, ASSAM**

CONSULTANT : — **इंजीनियर्स इंडिया लिमिटेड**
ENGINEERS INDIA LIMITED
 (A Govt. of India Undertaking)

PACKAGE : — **DM WATER PLANT AND ASSOCIATED FACILITIES**

TITLE : — **PERFORMANCE CHARACTERISTIC CURVE FOR NEUTRALIZED WATER TRANSFER PUMP**

EPC CONTRACTOR : — **Aquada Designs India Pvt Limited**
 Office: 200 Feet Road, Kolathur, Chennai - 600 099
 Ph: 9144-371717, Fax: 9144-371717
 Email: sales@aquadesigns.in, www.aquadesigns.in

ORDER No. 5907/MR-4920/PO-4292	CWG No. ADIPL/EIL/BCPL/XXX/XXXXX/XXX	REV. C
SCALE: N.T.S.	ISSUE A	

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05/11/2012

CLIENT :

Brahmaputra Cracker and Polymer Limited (BCPL)

(A Government of India Enterprise)
Phone No: 0379-2371096/2371057/2371071
Email: bcplcorporate@gmail.co.in

PROJECT :

BRAHMAPUTRA PETROCHEMICAL COMPLEX,
LAKWA, ASSAM

PACKAGE :

DM WATER PLANT AND ASSOCIATED FACILITIES

CONSULTANT :


**ENGINEERS
INDIA LIMITED**
(A Govt. of India Undertaking)


EIL JOB NO :

6907

EPC CONTRACTOR :

AQUA DESIGNS INDIA PRIVATE LIMITED

EPC CONTRACTOR's JOB NO :

P-11001

DOCUMENT NO:	ADIPL/EIL/BCPL/MEC/11001/075	REV. NO.	1
DOCUMENT TITLE:	General Arrangement & Cross Sectional Drawings for Neutralized Water Transfer Pump	NO. OF SHEETS:	3

EIL COMMENTS / STAMP

1	2	3
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सूचनाएं Information		
हस्ताक्षर एवं नाम Signature & Name		
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BCPL	EIL JOB NO: 6907	DOC. NO: ADIPL/EIL/BCPL/MEC/11001/075	REV. NO & DATE : 1 & 11.10.2012
EIL	ADIPL JOB NO: P-11001	Doc. Title: General Arrangement & Cross Sectional Drawings for Neutralized Water Transfer Pump	ISSUE: A SHEET NO: 1

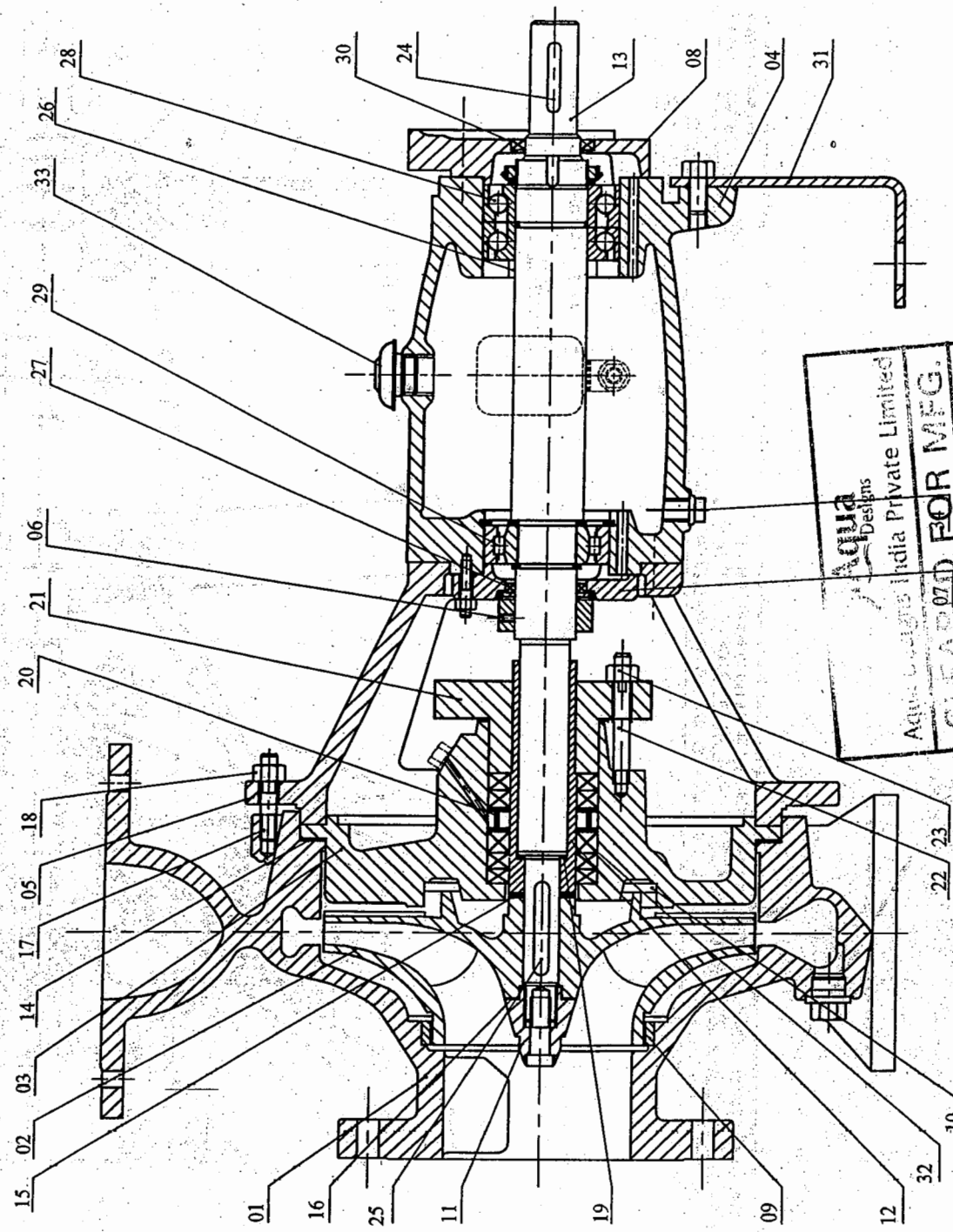
Cleared for MFG.

S. Lokesh

05/11/2012

PART LIST

ITEM No.	DESCRIPTION OF ITEM	QTY / PUMP	MATERIAL SPECIFICATION
01	VOLUTE CASING	1	SS, ASTM A 743-CF 3M
02	IMPELLER	1	SS, ASTM A 743-CF 3M
03	CASING COVER	1	SS, ASTM A 743-CF 3M
04	BEARING HOUSING	1	CI, IS-210 G-FG-220
05	LANTERN	1	CI, IS-210 G-FG-220
06	DEFLECTOR	1	STEEL C40 IS-1720
07	BEARING COVER-HIDE	1	CI, IS-210 G-FG-220
08	BEARING COVER-DE	1	CI, IS-210 G-FG-220
09	WEAR RING, CASTING	1	SS, ASTM A 743-CF 3M
10	WEAR RING, STUFFING BOX	1	N/A
11	IMPELLER NUT	1	SS, ASTM A 276 GR 316 L
12	SHAFT SLEEVE	1	SS, ASTM A 276 GR 316 L
13	SHAFT	1	SS, ASTM A 276 GR 316 L
14	GASKET-CASING/STUFFING BOX	1	CAF
15	GASKET-IMPELLER/SLEEVE	1	CAF
16	GASKET-IMPELLER NUT	1	TEFLON
17	STUD-CASING	12	SS AISI-304
18	HEXAGON NUT-CASING	12	SS AISI-304
19	GASKET-SHAFT SLEEVE	1	TEFLON
20	LANTERN RING	1	GLASS FILLED TEFLON
21	GLAND	1	SS, ASTM A 743-CF 3M
22	STUD-GLAND	2	SS AISI-304
23	HEX NUT-GLAND	2	SS AISI-304
24	KEY COUPLING	1	CS, IS-1570-40 CB (E18)
25	KEY IMPELLER	1	SS, ASTM A 276 GR 316
26	SEAGER	3	MS, IS-1570-20 CB
27	OIL SEAL-2 S	1	SYNTHETIC RUBBER
28	ANGULAR CONTACT BALL BEARING	2	BEARING STEEL
29	ROLLER BEARING	1	BEARING STEEL
30	OIL SEAL-M.S.	1	SYNTHETIC RUBBER
31	SUPPORT FOOT	1	MS, IS-1570-20 CB
32	GLAND PACKING	6 Turns	TIWA
33	AIR VENT	1	MS, IS-1570-20 CB
34	DRAIN PLUG, BEARING HOUSING	1	MS, IS-1570-20 CB



Aqua Designs India Private Limited
DESIGNS
CLEARED FOR MFG.

05/11/2020
S120071

NOTES:-

1. EGI/FGL - EXISTING GROUND LEVEL / FINISHED GROUND LEVEL +98.55M
2. FFL - FINISHED FLOOR LEVEL+98.85M.

PUMP MODEL:	CNW 40 / 250	QTY: 2 Nos. (1W+1S)
O.A. REF:	S120071	
MANUFACTURER:	BEST & CROMPTON ENGG. LTD.	

ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE SPECIFIED

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BY: [Signature]

FOR: [Signature]

BRAMHAPUTRA CRACKER AND POLYMER LIMITED

(A Joint Venture Company of GCL, (India) Ltd. Co., (MPL & Govt. of Assam)

BRAMHAPUTRA CRACKER AND POLYMER LIMITED

PETROBRAS COMPLEX

LAKSHMI, ASSAM

CONSULTANT: 1

BRAMHAPUTRA CRACKER AND POLYMER LIMITED

CONSULTANT: 2

BRAMHAPUTRA CRACKER AND POLYMER LIMITED

SCALE: 1:10

DATE: 05/11/2020

BY: [Signature]

FOR: [Signature]

DM WATER PLANT AND ASSOCIATED FACILITIES

CROSS SECTIONAL DRAWING FOR NEUTRALIZED WATER TRANSFER PUMP

Aqua Designs India Pvt Limited

Office: 200 Feet Road, Lakhimpur, Assam - 781005

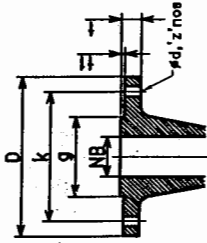
Phone: 98300 12345, 98300 12346, 98300 12347

Email: aquadesigns@gmail.com, aquadesigns@yahoo.co.in

DRIVING NO: CS-CW-E120230

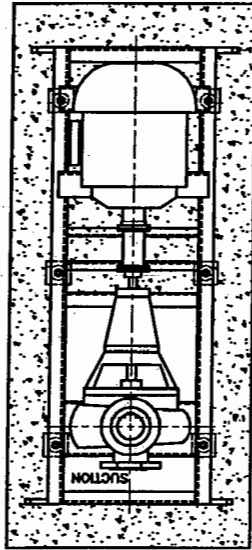
DRAWING NO: S120071

MANUFACTURER: BEST & CROMPTON ENGG. LTD.

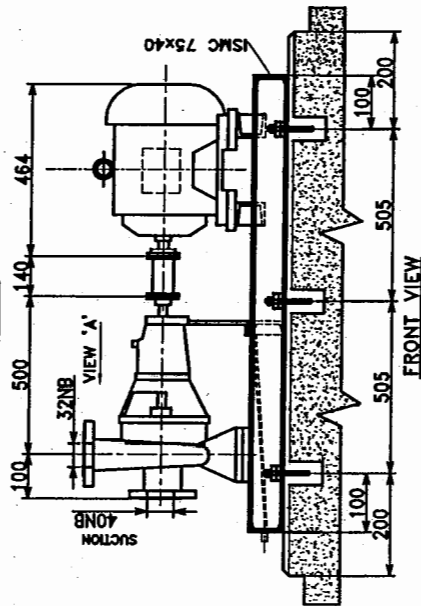


FLANGE DRILLING STD: ANSI B 16.5 CLASS 150, RF *AS PER B&C STD.

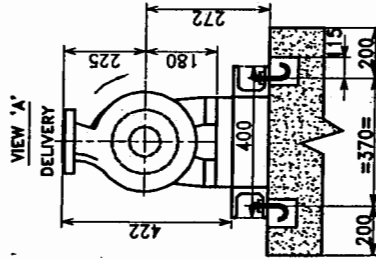
FLANGE	NB	D*	g*	k	4d	z	11*
DELIVERY	32	118	64	89	16	4	13
SUCTION	40	127	73	98	16	4	15



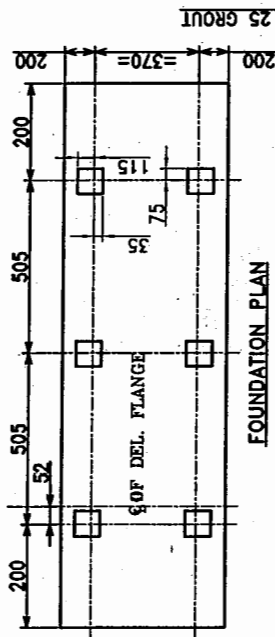
TOP VIEW



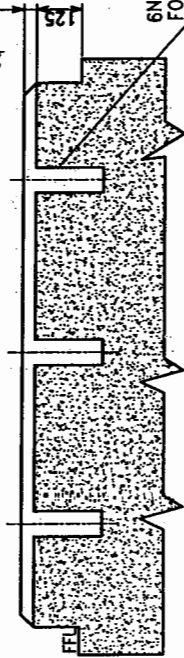
FRONT VIEW



VIEW 'A'



FOUNDATION PLAN



FOUNDATION ELEVATION

NOTES:
1. DIRECTION OF ROTATION: CLOCKWISE WHEN VIEWED FROM DRIVE END.

India Private Limited
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NOTES:-

1. ECL/FGL - EXISTING GROUND LEVEL / FINISHED GROUND LEVEL +98.55M
2. FFL - FINISHED FLOOR LEVEL+98.85M.

6Nos. 150 SQ., 400 mm DEEP FOUNDATION POCKETS

ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED
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SIZE: A4

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DRAWING No.: GA-CH-EI20230
REVISION No.: 01
MANUFACTURER: BEST & CROMPTON ENGG. LTD. PUMPS DIVISION
PUMP MODEL: CNW40 / 250
QTY: 2 Nos. (1W+1S)

Aqua Designs India Pvt Limited

Office: 201 Red Road, Sector-14, Gurgaon, Haryana - 122 002, India
Email: aquadesigns@gmail.com, aquadesigns@yahoo.co.in

GENERAL ARRANGEMENT DRAWING FOR NEUTRALIZED WATER TRANSFER PUMP

DM WATER PLANT AND ASSOCIATED FACILITIES

PROJECT: BRAHMAPUTRA PETROCHEMICAL COMPLEX LAKHNA, ASSAM

CONSULTANT: AQUA DESIGNS INDIA PVT. LTD.

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CONSULTANT: AQUA DESIGNS INDIA PVT. LTD.

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DATE: 15/01/2023

BY: [Signature]

FOR: [Signature]

PROJECT: BRAHMAPUTRA PETROCHEMICAL COMPLEX LAKHNA, ASSAM

CLIENT :

Brahmaputra Cracker and Polymer Limited (BCPL)
(A Government of India Enterprise)
Phone No: 0373-2371056/2371057/2371071
Email: bcplcrack@bcpl.co.in

PROJECT :

**BRAHMAPUTRA PETROCHEMICAL COMPLEX,
LAKWA, ASSAM**

PACKAGE :

DM WATER PLANT AND ASSOCIATED FACILITIES

CONSULTANT :

इंजीनियर्स इंडिया लिमिटेड
(भारत सरकार का उपक्रम)
ENGINEERS INDIA LIMITED
(A Govt. of India Undertaking)



EIL JOB NO :

6907

EPC CONTRACTOR :

AQUA DESIGNS INDIA PRIVATE LIMITED

EPC CONTRACTOR's JOB NO :

P-11001

DOCUMENT NO:	ADIPL/EIL/BCPL/MEC/11001/076	REV. NO.	1
DOCUMENT TITLE:	Experience Record Proforma for Neutralized Water Transfer Pump	NO. OF SHEETS:	5

EIL COMMENTS / STAMP

अनुमोदन / समीक्षा कोड
Approval / Review code

सूचना
Information

हस्ताक्षर एवं नाम
Signature & Name

दिनांक/Date

श्री सी.न. रोक/

01/11/12

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1	11.10.2012	Issued for Approval	S.LOKESH	RSK	SN
0	17.08.2012	Issued for Approval	S.LOKESH	MSM	MSM

BCPL	EIL JOB NO: 6907	DOC. NO: ADIPL/EIL/BCPL/MEC/11001/076	REV. NO & DATE : 1 & 11.10.2012
EIL	ADIPL JOB NO: P-11001	Doc. Title: Experience Record Proforma for Neutralized Water Transfer Pump	ISSUE: A SHEET NO: 1

Aqua
DESIGNS INDIA PRIVATE LIMITED
CLEARED FOR

05/11/2012

CLIENT :

Brahmaputra Cracker and Polymer Limited (BCPL)

(A Government of India Enterprise)
Phone No: 0372-2271056/2271071
Email: bcplonline@gmail.co.in

PROJECT :

BRAHMAPUTRA PETROCHEMICAL COMPLEX,
LAKWA, ASSAM

PACKAGE :

DM WATER PLANT AND ASSOCIATED FACILITIES

CONSULTANT :


ENGINEERS INDIA LIMITED
(A Govt. of India Undertaking)

EIL JOB NO :

6907

EPC CONTRACTOR :

AQUA DESIGNS INDIA PRIVATE LIMITED

EPC CONTRACTOR's JOB NO :

P-11001



DOCUMENT NO:	ADIPL/EIL/BCPL/MEC/11001/087	REV. NO.	1
DOCUMENT TITLE:	Mechanical Data Sheet for DM Water Transfer Pump	NO. OF SHEETS	2

EIL COMMENTS / STAMP

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Approval / Review code

सूचना
Information

हस्ताक्षर एवं नाम
Signature & Name

दिनांक / Date

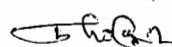
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REV.No	DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED
1	11.10.2012	Issued for Approval	S.LOKESH	RSK	SN
0	17.08.2012	Issued for Approval	S.LOKESH	MSM	MSM

BCPL	EIL JOB NO: 6907	DOC. NO: ADIPL/EIL/BCPL/MEC/11001/087	REV. NO & DATE : 1 & 11.10.2012	
EIL	ADIPL JOB NO: P-11001	Doc. Title: Mechanical Data Sheet for DM Water Transfer Pump	ISSUE: A	SHEET NO: 1


CLEARED FOR MFG.


06/11/2012

GENERAL									
1 Project: DM PLANT, BRAHMAPUTRA PETROCHEMICAL COMPLEX PROJECT, LAKWA					Job No: 6907				
2 Owner: BRAHMAPUTRA CRACKER & POLYMER LIMITED					Site:				
3 Purchaser: AQUA DESIGNS INDIA PRIVATE LIMITED					Unit:				
4 Item No: 67 - PA- 108 A/B					Service: DM TRANSFER WATER PUMP				
5 No Req'd: 2 Working: 1 Stand by: 1					Parallel Operation Required: ☐ Yes ☒ No				
6 Applicable to ☐ Proposal ☒ Purchase					☐ As Built				
7 Scope of option information specified by purchaser					☐ Information Req'd. from & Option left to vendor. Vendor to cross ☒ the selected option				
8 Driver: Working 1 Standby: 1					☐ Driver supplied & Mounted By: ☒ Pump Mfr ☐ Other				
OPERATING CONDITIONS									
9 Liquid Handled: DM WATER					Capacity(m ³ /hr):Nor/Rated: 12/12				
10 Pumping Temp.(EC): Normal: AMB Max.					Discharge pressure(kg/cm ² ,A):				
11 Specific Gravity at P.T./15EC: 1					Suction Pressure:Nor./max.(kg/cm ² ,A) ATM.				
12 Vapour pressure at P.T.(kg/cm ² ,A): 0.075					Diff. Pressure (kg/cm ² , Gauge)@Rated capacity:				
13 Viscosity at P.T (cP) 1 Corr./Eros by:					Diff head (m)@Rated Capacity: 100				
14 Solids in suspension ☐ Yes ☒ No Size: N.A					NPSH Available(m): FLOODED SUCTION				
MANUFACTURE'S SPECIFICATIONS									
15 Pump Manufacturer: M/s. BEST & CROMPTON ENGG. LTD., PUMPS DIVISION					Model No: CNW 65 / 315				
CONSTRUCTION									
16 Casing Mounting: ☐ Centerline ☒ Foot ☐ Inline					Proposal Curve No. PC-CW-E120241				
17 Casing Split: ☐ Axial ☒ Radial					Visc Corr. Factor: Co CQ CH				
18 Type: ☒ Single Volute ☐ Double Volute ☐ Diffuser					NPSH Req'd.(Water)(m): 2.5 F/L speed (rpm): 2920				
19 Casing connection: ☐ Vent ☒ Drain ☐ Gauge					No. of stages: 1 Efficiency(%): 28.00				
20 Nozzles Size ANSI Rating Facing Position					Rated BKW(0% Tol.): 11.67 KW Max.BKW rtd. Imp: 12.78				
21 Suction 65mm PN20 (150#) R.F. END					BKW @ MCF(Δ=1.0): 7.36 KW Rec.Driver Rating: 15				
22 Discharge 40mm PN20 (150#) R.F. TOP					Max head rtd Imp.(m): 102 Cap @ BEP (m ³ /hr): 13.50				
23 Imp.N(m/min) Max: 159 Rated: 145 Min:105 Type: CLOSED					MCF (m ³ /hr):Stable 4.2 Thermal N.A				
24 Brg: Type/No. Roller: NU 308 Ball: BG 7308 Lub: OIL					M.A.W.P @ 15EC/P.T/Design Temp.(Kg/cm ² ,G): 10.2				
25 Cplg: Make/Type: Rathl - spacer Non spark Guard ☒ Yes ☐ No					Hydrostatic test pressure (Kg/cm ² ,G): 15.3				
26 Driver Half cplg. mounted by: ☐ Pump Mfr ☒ Others					Rotation facing coupling end: ☒ CW ☐ CCW				
27 Packing Type: GLAND PACKING Size: 10mmsqx182L No of rings: 6					Seal flush/Quench plan: 11 Material: S.S				
28 Mech. Seal: Make N.A Model: - API code: BSPFN					Ext.seal flush fluid: N.A LPM: @Kg/cm2G/ EC				
29 Base Plate Rim Type: ☐ Yes ☒ No Fdn bolts: ☒ Yes ☐ No					Seal Barrier fluid: N.A LPM: @Kg/cm2G/ EC				
30 Throat Bush: ☐ Yes ☒ No Matl: N.A Bal Device: ☐ Yes ☒ No					Ext.quench fluid: N.A LPM: @Kg/cm2G/ EC				
31 Materials: MOC ASTM Grades					C.W.plan: N.A LPM: @Kg/cm2G/ EC				
32 I-Cast Iron(Ductile) Casing CF3 ASTM A 743 CF3					Weight(Kg):Pump+Base frame+Coupling: 215 Driver: 112				
33 B-Bronze Impeller CF3 ASTM A 743 CF3					AUXILIARY PIPING INTERFACE CONNECTIONS				
34 S-Carbon Steel Inner Case parts N.A					(All interface conn. shall be terminated with a flg. block valve)				
35 C-11-13% Chr.Stl. Sleeve Packed S.S 304 L ASTM A 276 TYP 304 L					Size Rating(ANSI) Facing				
36 H-hardened Sleeve Seal N.A					Lantern Ring Inlet/Outlet N.A				
37 F-Faced Casing ring JH-BHN N.A					Ext.seal flush fluid inlet/outlet				
38 K-SS304 Impeller ring 50(min) N.A					seal quench fluid inlet				
39 L-SS 316 Shaft S.S 304 L ASTM A 276 TYP 304 L					seal pot vent/drain				
40 X-AISI 410 Throttle Bush N.A					Casing vent/drain 1/2" 150# R.F				
41 Y Throttle Bush N.A					CW inlet/Outlet N.A				
42 Z Balance Drum N.A					Baseplate drain(only flanged) 1" BSP				
43 ☐ Driver suitable for pump starting with open Disc.valve condition.					casing steam jacket N.A				
INSPECTION & TESTS (EACH PUMP)									
44 ☐ Shop Test / Inspection					Witness Review				
45 ☐ Material Certificates					☐ NPSH As Req'd ☐ Per Spec ☐ Mandatory				
46 ☐ Hydrostatic					☐ Dismantle Insp. & Re assembly after test				
47 ☐ Performance/sound level					☐ Unitisation / Dimensional Check				
48 ☐ Applicable Specification L/EIL Std.Spec.No.6-41-0002 Rev 03, EDB-Rot.Eqpt.Job Specification.					☐ Check for direction of rotation of pump & driver				
49 Remark 1) Unitisation of pump and driver shall be done in pump manufacturer's shop.									
50 Remark 2) Baseplate shall be drip pan type.									
51 Remark 3) Drilling of pump suction & discharge flanges shall be as per ANSI B16.5 150#.									

MANP is written wrong. MANP shall be as per cl.no. 2.2.1 of EIL Std Spec no. 6-41-0002 Rev.3.
Maximum impeller dia is 159 mm. Please consider MANP based on this

10.10.12	B		
30.08.12	A		
Date	Rev	Job Engineer	Rev & Approved By

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MCF line to be provided for pump which is not available in min flow for this imp at limit

Signature of Job Engineer
Aqua Designs India Private Limited
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CLIENT :

Brahmaputra Cracker and Polymer Limited (BCPL)

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Phone No: 0373-2371056/2371057/2371071
Email: bcpl@bcpl.co.in

PROJECT :

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LAKWA, ASSAM

PACKAGE :

DM WATER PLANT AND ASSOCIATED FACILITIES

CONSULTANT :


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(A Govt. of India Undertaking)


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EPC CONTRACTOR :

AQUA DESIGNS INDIA PRIVATE LIMITED

EPC CONTRACTOR's JOB NO :

P-11001

DOCUMENT NO:	ADIPL/EIL/BCPL/MEC/11001/089	REV. NO.	0
DOCUMENT TITLE:	Performance Curve for DM Water Transfer Pump	NO. OF SHEETS:	2

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01.07.2012 ROKI

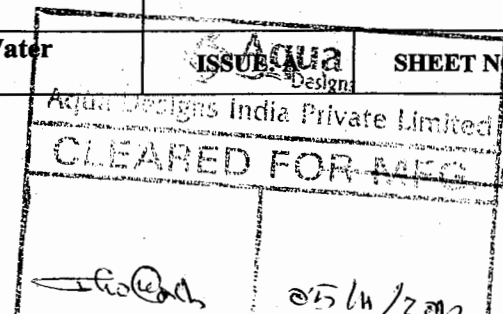
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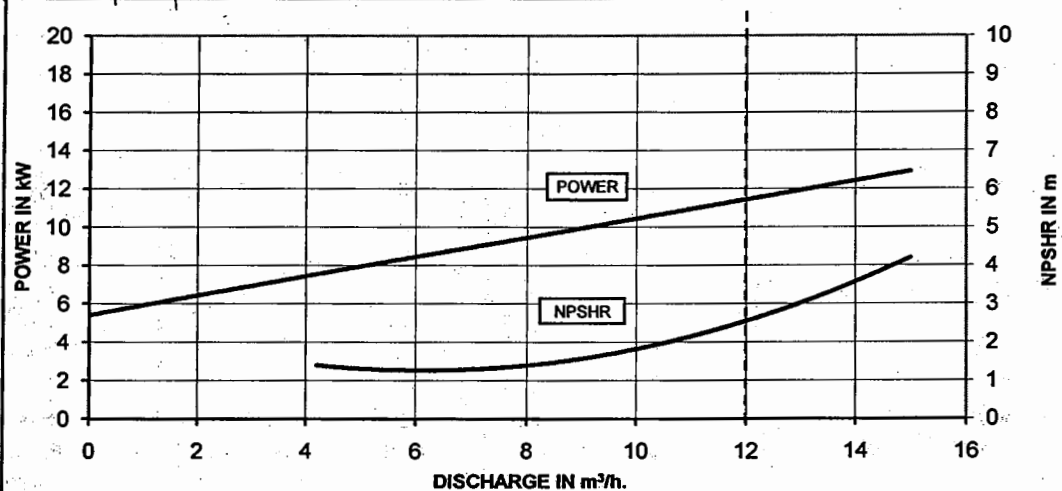
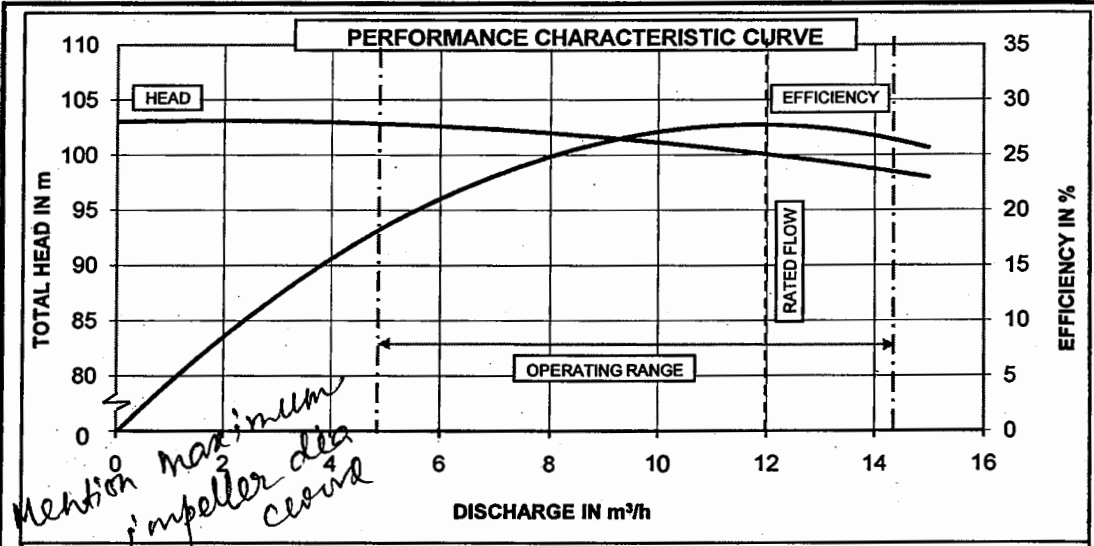
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BCPL	EIL JOB NO: 6907	DOC. NO: ADIPL/EIL/BCPL/MEC/11001/089	REV. NO & DATE : 0 & 17.08.2012
EIL	ADIPL JOB NO: P-11001	Doc. Title: Performance Curve for DM Water Transfer Pump	ISSUED Aqua Designs SHEET NO: 1





MANUFACTURER: M/s. BEST & CROMPTON ENGG. LTD., PUMPS DIVISION			
O.A. Ref.: S120071	PUMP MODEL: CNW-65 / 315	DOCUMENT No.: PC-CW-E120241	
SUCTION: 65mm	DELIVERY: 40mm	SPEED: 2920 rpm	DEPT: E&D
DUTY PARAMETERS			
DISCHARGE (m³/h) = 12	HEAD (m) = 100	EFFICIENCY (%) = 28	NPSHR (m) = 2.5
POWER (BkW) = 11.67	SP.Gr. = 1.0		

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A	30.08.12	ISSUED FOR APPROVAL		PVK JAK MKR
NO	DATE	REVISIONS		DRN CHKD APPD

CLIENT :- **ब्रह्मपुत्र क्रैकर एवं पोलिमर लिमिटेड**
BRAHMAPUTRA CRACKER AND POLYMER LIMITED
 (A Joint Venture Company of GAIL (India) Ltd., OIL, NRL & Govt. of Assam)

ब्रह्मपुत्र पेट्रोकेमिकल कॉम्प्लैक्स असम PROJECT: **BRAHMAPUTRA PETROCHEMICAL COMPLEX LAKWA, ASSAM**

CONSULTANT :- **इंजीनियर्स इंडिया लिमिटेड** **ENGINEERS INDIA LIMITED**
 (भारत सरकार का उपक्रम) (A Govt. of India Undertaking)

PACKAGE :- **DM WATER PLANT AND ASSOCIATED FACILITIES**

TITLE :- **PERFORMANCE CHARACTERISTIC CURVE FOR DM TRANSFER WATER PUMP**

EPC CONTRACTOR :- **Aqua Designs Pvt Limited**
 Office: 200 Feet Road, Kolathur, Chennai - 600 099
 Ph: 91-44-321717, Fax: 91-44-32171737
 Email: sales@aquadesigns.in Web site: www.aquadesigns.in

ORDER NO. 6907/MR-4920/PO-4292	DWG NO. CDDP/INTD/PC/XXX/XXXXX/XXX	REV. B
SCALE: N.T.S.	SHEET 4 of 5	
		ISSUE A

05/11/2012



Brahmaputra Cracker and Polymer Limited (BCPL)
(A Government of India Enterprise)
Phone No: 0371-237105/237105/237107/1
Email: bcplcorporate@gmail.co.in

CLIENT :

PROJECT :

**BRAHMAPUTRA PETROCHEMICAL COMPLEX,
LAKWA, ASSAM**

PACKAGE :

DM WATER PLANT AND ASSOCIATED FACILITIES

CONSULTANT :

इंजीनियर्स इंडिया लिमिटेड
(भारत सरकार का उपक्रम)
ENGINEERS INDIA LIMITED
(A Govt. of India Undertaking)

EIL JOB NO :

6907

EPC CONTRACTOR :

AQUA DESIGNS INDIA PRIVATE LIMITED

EPC CONTRACTOR's JOB NO : P-11001



DOCUMENT NO:	ADIPL/EIL/BCPL/MEC/11001/090	REV. NO.	1
DOCUMENT TITLE:	General Arrangement & Cross Sectional Drawing for DM Water Transfer Pump	NO. OF SHEETS:	3

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Information

हस्ताक्षर एवं नाम
Signature & Name

दिनांक/Date

वी.पी.नं. ROK/
V.P.No.

01/11/12

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0	17.08.2012	Issued for Approval	S.LOKESH	MSM	MSM
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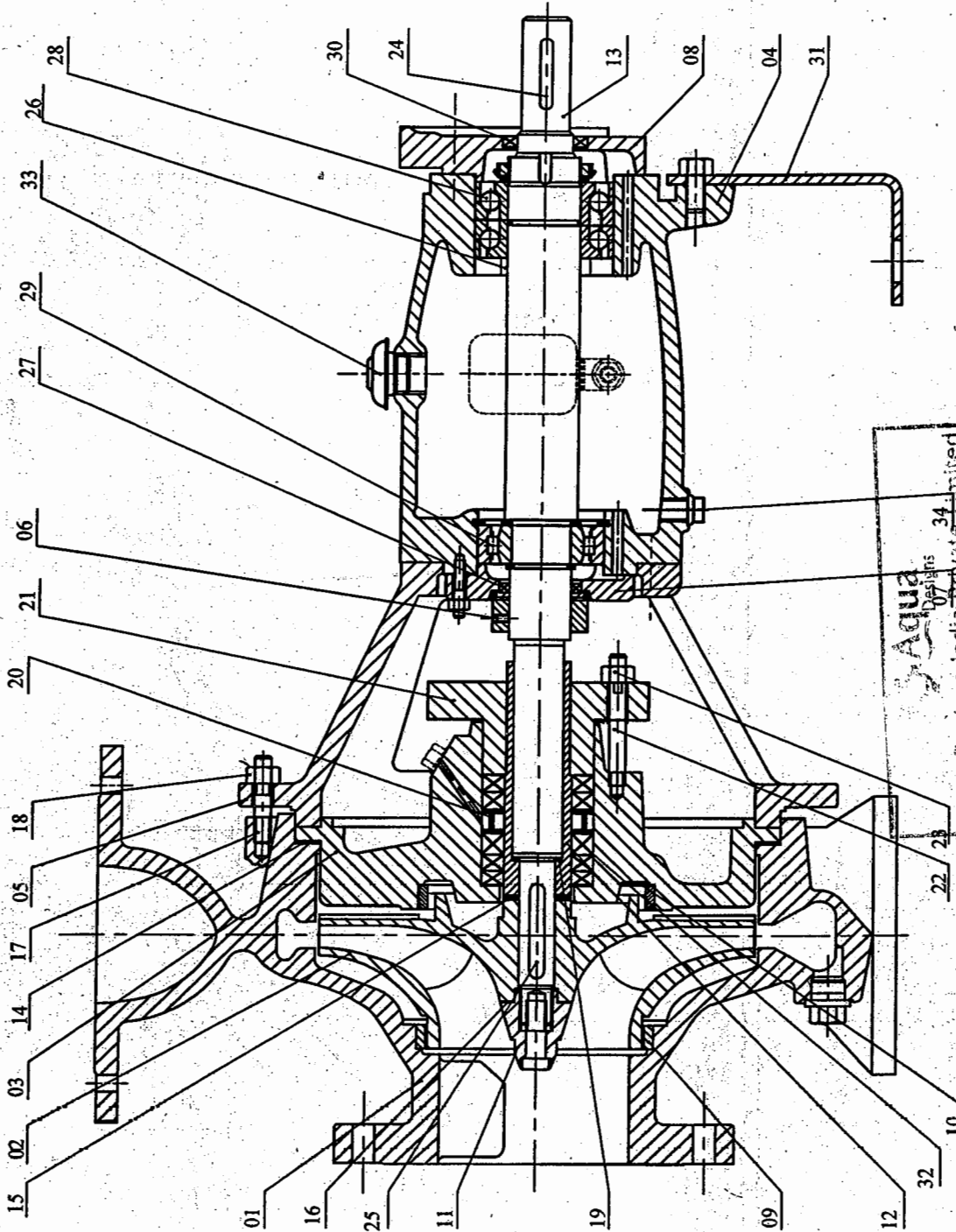
BCPL	EIL JOB NO: 6907	DOC. NO: ADIPL/EIL/BCPL/MEC/11001/090	REV. NO & DATE: 1 & 11.10.2012
EIL	ADIPL JOB NO: P-11001	Doc. Title: General Arrangement & Cross Sectional Drawing for DM Water Transfer Pump	ISSUE: A SHEET NO: 1

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05/11/2012

PART LIST

ITEM No.	DESCRIPTION OF ITEM	QTY / PUMP	MATERIAL SPECIFICATION
01	VOLUTE CASING	1	SS ASTM A 790-CP 3
02	IMPELLER	1	SS ASTM A 790-CP 3
03	CASING COVER	1	SS ASTM A 790-CP 3
04	BEARING HOUSING	1	CL IS 210 GR 15-220
05	LANTERN	1	CL IS 210 GR 15-220
06	REFLECTOR	1	STEEL C40 IS 1720
07	BEARING COVER-ROD	1	CL IS 210 GR 15-220
08	BEARING COVER-DE	1	CL IS 210 GR 15-220
09	WEAR RING, CASING	1	SS ASTM A 790-CP 3
10	WEAR RING, STUFFING BOX	1	SS ASTM A 790-CP 3
11	IMPELLER NUT	1	SS ASTM A 790 GR 304 L
12	SHAFT SLEEVE	1	SS ASTM A 276 GR 304 L
13	SHAFT	1	SS ASTM A 276 GR 304 L
14	GASKET-CASING/STUFFING BOX	1	CAF
15	GASKET-IMPELLER/SLEEVE	1	CAF
16	GASKET-IMPELLER NUT	1	TERLON
17	STUD-CASING	12	SS AISI 304
18	HEADGON NUT-CASING	12	SS AISI 304
19	GASKET-SHAFT SLEEVE	1	TERLON
20	LANTERN RING	1	GLASS FILLED TERLON
21	GLAND	1	SS ASTM A 790-CP 3
22	STUD-GLAND	2	SS AISI 304
23	HEAD NUT-GLAND	2	SS AISI 304
24	KEY COUPLER	1	CS IS 1570-40 C8 (EN8)
25	KEY IMPELLER	1	SS ASTM A 276 GR 304
26	SEALER	3	MS IS 1570-20 C8
27	OIL SEAL-P.S	1	SYNTHETIC RUBBER
28	ANGULAR CONTACT BALL BEARING	2	BEARING STEEL
29	ROLLER BEARING	1	BEARING STEEL
30	OIL SEAL-H.S.	1	SYNTHETIC RUBBER
31	SUPPORT FOOT	1	MS IS 1570-20 C8
32	GLAND PACKING	6 Turns	TIVA
33	AIR VENT	1	MS IS 1570-20 C8
34	DRAIN PLUG, BEARING HOUSING	1	MS IS 1570-20 C8



Aqua Designs
Aqua Designs India Private Limited
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05/04/2012
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NOTES:-
1. EGL/FGL - EXISTING GROUND LEVEL / FINISHED GROUND LEVEL +98.55M
2. FFL - FINISHED FLOOR LEVEL+98.85M.
PUMP MODEL: CNW 65 / 315
QTY: 2 Nos. (1W+1S)
DRAWING No.: S120071
MANUFACTURER: BEST & CROMPTON ENGG. LTD. CS-CWE-120240

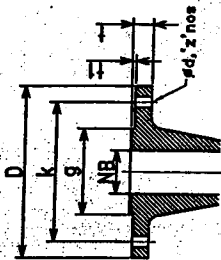
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CLIENT: **ब्रह्मापुत्रा क्रैकर एंड पॉल्यमर लिमिटेड**
BRAHMAPUTRA CRACKER AND POLYMER LIMITED
BCL (A Joint Venture Company of OCL (India) Ltd., OCL (Pvt. Ltd. & Govt. of Assam)
ब्रह्मापुत्रा क्रैकर एंड पॉल्यमर लिमिटेड
पेट्रोकेमिकल कॉम्प्लेक्स
लखीमपुर, असम

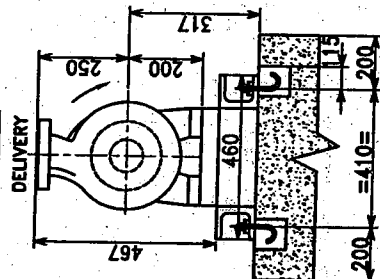
CONSULTANT: **अक्वा डिजाइन्स प्राइवेट लिमिटेड**
AQUA DESIGNS INDIA PRIVATE LIMITED
(A Unit of Aqua Designs India Pvt. Ltd.)
DM WATER PLANT AND ASSOCIATED FACILITIES
CROSS SECTIONAL DRAWING FOR DM TRANSFER WATER PUMP
Aqua Designs India Pvt Limited
Office: 202 Park Road, Guwahati - 781005
Email: info@aquadesigns.in, With aqua www.aquadesigns.in

SCALE: 1:1
DATE: 05/04/2012
BY: _____
CHKD: _____
APPD: _____
REV: 01



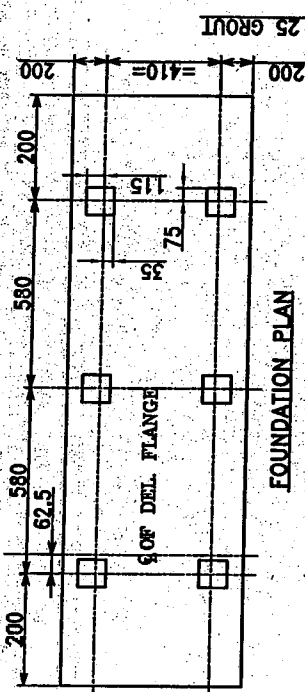
FLANGE DRILLING STD: ANSI B 16.5 CLASS 150, RF *AS PER B&C STD.

FLANGE	NB	D*	g*	k	φd	z	z	1*	11*
DELIVERY	40	152	73	98	16	4	15	1.6	
SUCTION	65	178	105	140	19	4	18	1.6	

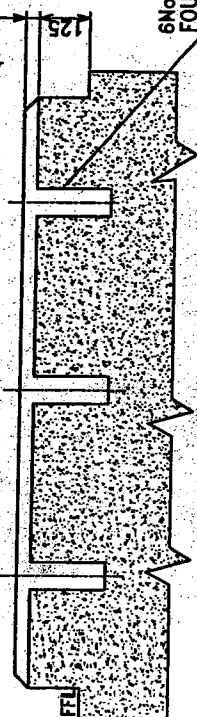


NOTES:

1. DIRECTION OF ROTATION: CLOCKWISE WHEN VIEWED FROM DRIVE END.



FOUNDATION PLAN



FOUNDATION ELEVATION

**6Nos. 150 SQ., 400 mm DEEP
FOUNDATION POCKETS**

NOTES:—

1. EGI/FGL - EXISTING GROUND LEVEL /
FINISHED GROUND LEVEL +98.55M
2. FFL - FINISHED FLOOR LEVEL+98.85M.

PUMP MODEL:	CNW65/315	QTY.: 2 Nos. (1W+1S)
-------------	-----------	----------------------

D.A. REF.:

MANUFACTURER:  **BEST & CROMPTON ENGG. LTD.**

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PUMP DUTY PARAMETERS		
1	DISCHARGE in m ³ /h	12
2	HEAD in m	100
3	EFFICIENCY in %	28
4	BkW in kW	11.67
5	NPSHR in m	2.5
6	PUMP LUBRICATION	OIL
COUPLING DETAIL		
1	COUPLING TYPE	JAW FLEX SPACER
2	COUP.MAKE	LOVEJOY / EQUI
MOTOR DETAIL		
1	MOTOR RATING(kW)	15
2	MAKE / TYPE	GGL / EFF-2
3	FRAME SIZE / POLE	ND160M / 2
4	FULL LOAD SPEED, rpm	2920
WEIGHT & LOAD DETAILS in kg		
1	PUMP	115
2	MOTOR	120
3	BASEFRAME	75
4	STATIC LOAD	335
5	DYNAMIC LOAD	419
ACCESSORIES MATERIAL		
1	COMPANION FLANGE	SS, Slip on
2	BASEFRAME	MS
3	COUPLING GUARD	ALUMINIUM
4	FOUNDATION BOLTS	MS,M12X300--6 Nos.

[illegible]

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DOCUMENT NO:	ADIPL/EIL/BCPL/MEC/11001/091	REV. NO.	1
DOCUMENT TITLE:	Experience Record Proforma for DM Water Transfer Pump	NO. OF SHEETS:	1 2 3

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Cleared for MFG.

