



Company: Empresas Suarez S.A. de C.V.

Name:

Date: 10/13/2017

Pump:

Size: 5WL-1C (1 stage)
 Type: LINE W_60 Hz
 Synch speed: 1800 rpm
 Curve: ETWBAEA
 Specific Speeds:
 Dimensions:
 Vertical Turbine:
 Speed: 1770 rpm
 Dia: 3.72 in
 Impeller: 5WL-1C
 Ns: 2299
 Nss: 17815
 Suction: 4 in
 Discharge: 3 in
 Bowl size: 5.2 in
 Max lateral: ---
 Thrust K factor: 1.4 lb/ft

Search Criteria:

Flow: --- Head: ---

Fluid:

Water
 SG: 1
 Viscosity: 0.9946 cP
 NPSHa: ---
 Temperature: 68 °F
 Vapor pressure: 0.3391 psi a
 Atm pressure: 14.7 psi a

Motor:

Standard: NEMA
 Enclosure: TEFC
 Sizing criteria: Max Power on Design Curve
 Size: 0.33 hp
 Speed: 1800
 Frame: 56

Pump Limits:

Temperature: 167 °F
 Pressure: 415 psi g
 Sphere size: 0.125 in
 Power: 12 hp
 Eye area: 3.08 in²

---- Data Point ----

Flow: 60 US gpm
 Head: 12 ft
 Eff: 74.2%
 Power: 0.245 hp
 NPSHr: 0.822 ft

---- Design Curve ----

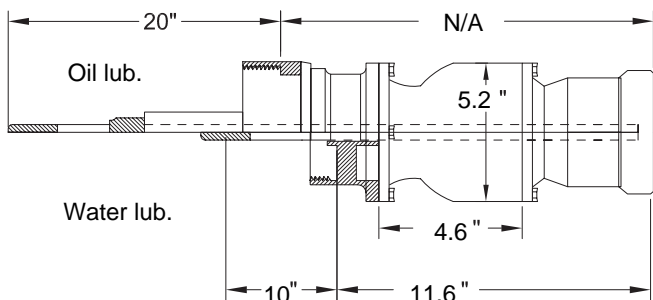
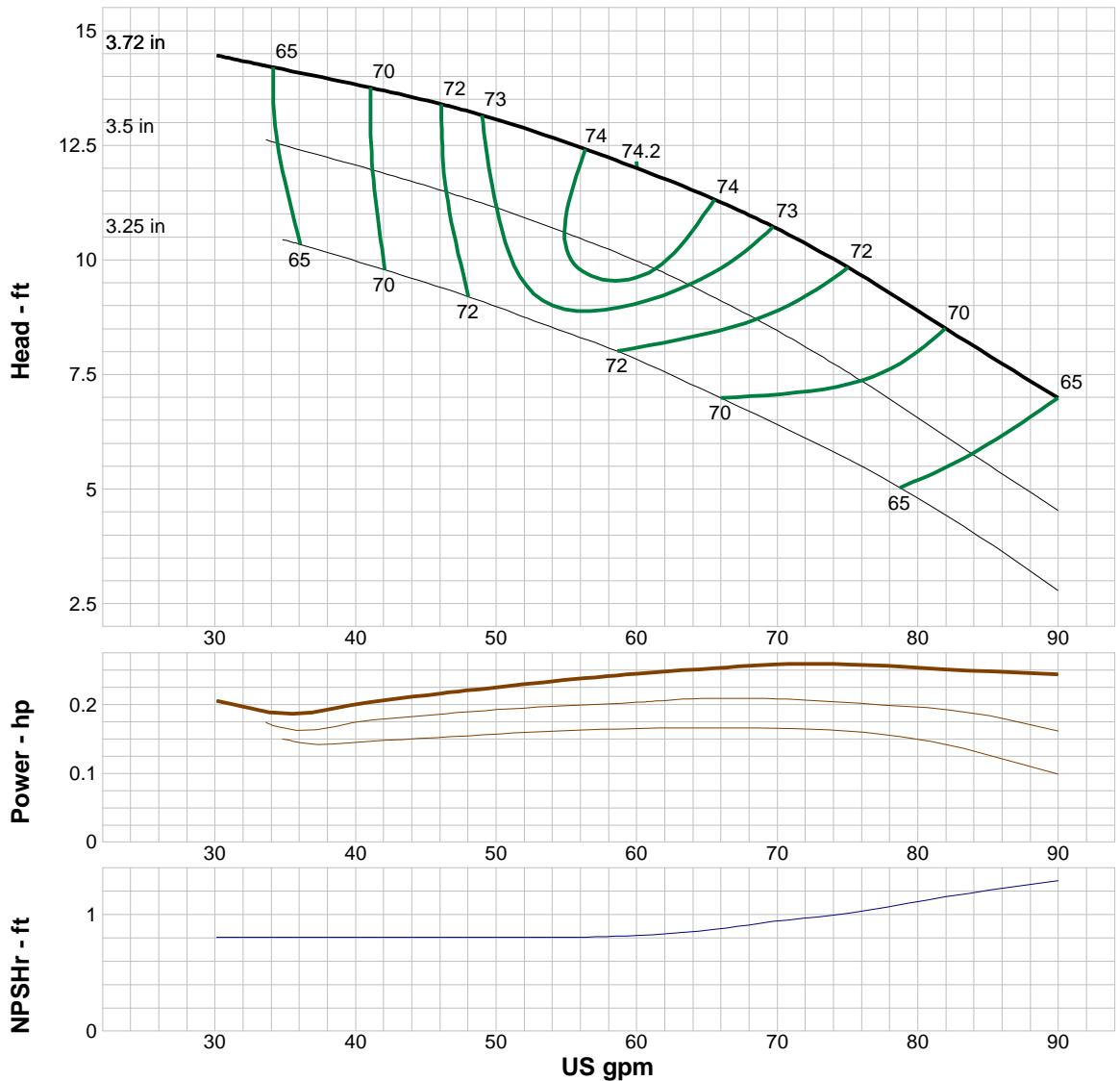
Shutoff head: 16.8 ft
 Shutoff dP: 7.25 psi
 Min flow: 13 US gpm
 BEP: 74.2% @ 60 US gpm
 NOL power:
 0.285 hp @ 13 US gpm

-- Max Curve --

Max power:
 0.285 hp @ 13 US gpm

--Additional Data--

Std. Shaft Diameter : 1"
 Max. Shaft Diameter: C.F.
 Opt. Lateral Setting: 0.13"
 Std. Lateral: 0.46"
 One Stage Subm. WT-LB: 41.2
 One Stage Water Lub. WT-LB: 34.8
 One Stage Oil Lub. WT-LB: N/A
 Add Stage WT-LB: 11.5
 Impeller Weight: 2.7 lb
 Min. Submergence: 10"



Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
86.4	1770	7.66	67.2	0.247	1.23
72	1770	10.3	72.6	0.259	0.971
57.6	1770	12.3	74.1	0.241	0.812
43.2	1770	13.6	70.9	0.209	0.807
28.8	1770	14.5	49.6	0.212	0.807



Company: Empresas Suarez S.A. de C.V.

Name:

Date: 8/31/2017

Pump:

Size: 5WH-1C (1 stage)
 Type: LINE W_60 Hz
 Synch speed: 1800 rpm
 Curve: ETWBBEA
 Specific Speeds:
 Dimensions:
 Vertical Turbine:
 Speed: 1770 rpm
 Dia: 3.72 in
 Impeller: 5WH-1C
 Ns: 2021
 Nss: 6205
 Suction: 4 in
 Discharge: RI 3" RI 4"
 Bowl size: 5.2 in
 Max lateral: ---
 Thrust K factor: 1.4 lb/ft

Search Criteria:

Flow: --- Head: ---
 Fluid:
 Water
 SG: 1
 Viscosity: 0.9946 cP
 NPSHa: ---
 Temperature: 68 °F
 Vapor pressure: 0.3391 psi a
 Atm pressure: 14.7 psi a

Motor:

Standard: NEMA
 Enclosure: TEFC
 Sizing criteria: Max Power on Design Curve
 Size: 0.5 hp
 Speed: 1800
 Frame: 56

Pump Limits:

Temperature: 167 °F
 Pressure: 415 psi g
 Sphere size: 0.125 in
 Power: 20 hp
 Eye area: 3.08 in²

---- Data Point ----

Flow: 75.9 US gpm
 Head: 13.8 ft
 Eff: 75.3%
 Power: 0.352 hp
 NPSHr: 3.39 ft

---- Design Curve ----

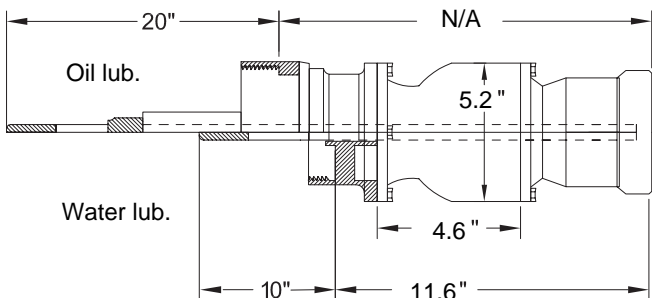
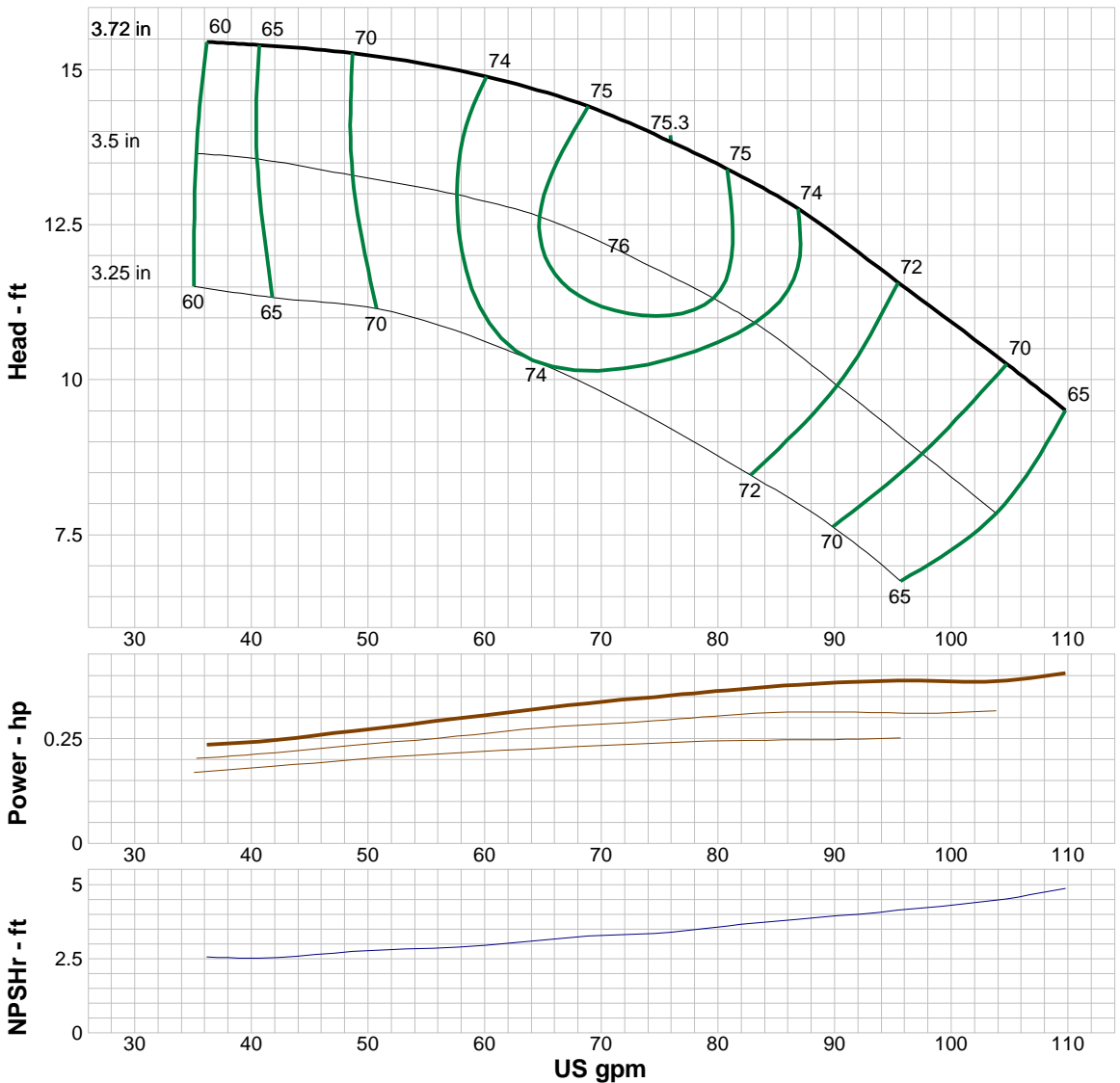
Shutoff head: 15.9 ft
 Shutoff dP: 6.88 psi
 Min flow: 14 US gpm
 BEP: 75.3% @ 75.9 US gpm
 NOL power:
 0.405 hp @ 110 US gpm

-- Max Curve --

Max power:
 0.405 hp @ 110 US gpm

--Additional Data--

Std. Shaft Diameter : 1"
 Max. Shaft Diameter: C.F.
 Opt. Lateral Setting: 0.13"
 Std. Lateral: 0.46"
 One Stage Subm. WT-LB: 41.2
 One Stage Water Lub. WT-LB: 34.8
 One Stage Oil Lub. WT-LB: N/A
 Add Stage WT-LB: 11.5
 Impeller Weight: 2.7 lb
 Min. Submergence: 10"



Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
105	1770	10.2	69.7	0.388	4.54
87.8	1770	12.6	73.8	0.379	3.86
70.2	1770	14.3	75.1	0.337	3.29
52.7	1770	15.1	71.4	0.281	2.82
35.1	1770	15.5	58.8	0.233	2.58



Company: Empresas Suarez S.A. de C.V.

Name:

Date: 9/7/2017

Pump:

Size: 6WL-1C (1 stage)
 Type: LINE W_60 Hz
 Synch speed: 1800 rpm
 Curve: ETWBAEB
 Specific Speeds:
 Dimensions:
 Vertical Turbine:

Speed: 1760 rpm
 Dia: 4.22 in
 Impeller: 6WL-1C
 Ns: 2141
 Nss: 5997
 Suction: 4 in
 Discharge: RI 3" RI 4"
 Bowl size: 5.9 in
 Max lateral: ---
 Thrust K factor: 2.1 lb/ft

Search Criteria:

Flow: --- Head: ---

Fluid:

Water
 SG: 1
 Viscosity: 0.9946 cP
 NPSHa: ---

Temperature: 68 °F
 Vapor pressure: 0.3391 psi a
 Atm pressure: 14.7 psi a

Motor:

Standard: NEMA
 Enclosure: TEFC
 Sizing criteria: Max Power on Design Curve

Size: 0.5 hp
 Speed: 1800
 Frame: 56

Pump Limits:

Temperature: 167 °F
 Pressure: 420 psi g
 Sphere size: 0.375 in

Power: 19 hp
 Eye area: 4.05 in²

---- Data Point ----

Flow: 86 US gpm
 Head: 15.2 ft
 Eff: 78%
 Power: 0.424 hp
 NPSHr: 3.31 ft

---- Design Curve ----

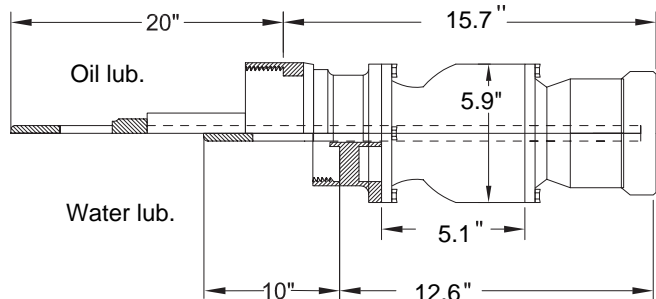
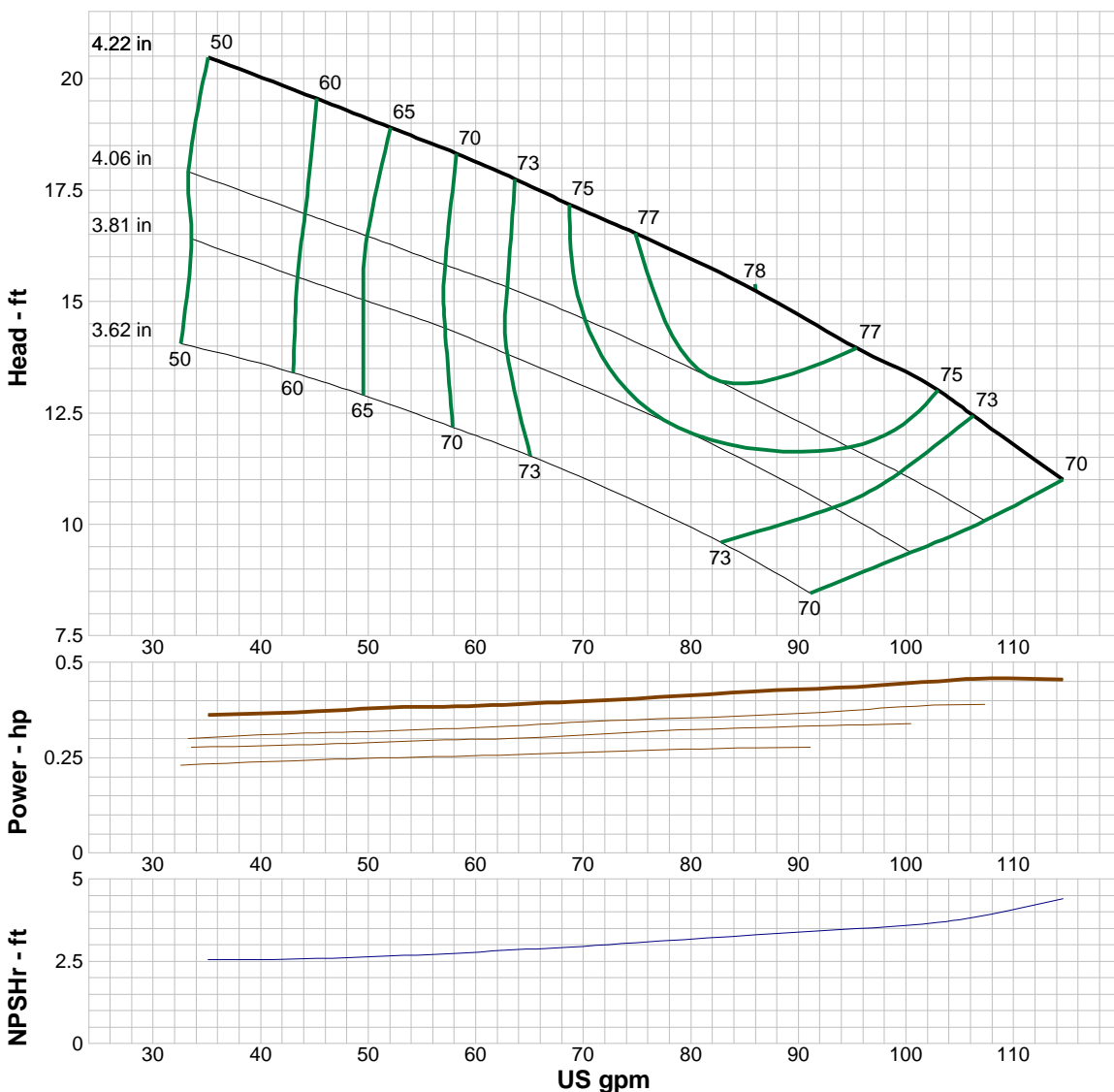
Shutoff head: 23.2 ft
 Shutoff dP: 10 psi
 Min flow: 17 US gpm
 BEP: 78% @ 86 US gpm
 NOL power:
 0.457 hp @ 106 US gpm

-- Max Curve --

Max power:
 0.457 hp @ 106 US gpm

--Additional Data--

Std. Shaft Diameter : 1"
 Max. Shaft Diameter: C.F.
 Opt. Lateral Setting: 0.13"
 Std. Lateral: 0.53"
 One Stage Subm. WT-LB: 56.5
 One Stage Water Lub. WT-LB: 47.9
 One Stage Oil Lub. WT-LB: 60.4
 Add Stage WT-LB: 17.9
 Impeller Weight: 4.7 lb
 Min. Submergence: 10"



Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
110	1760	11.8	71.6	0.456	4.1
91.6	1760	14.5	77.4	0.431	3.42
73.3	1760	16.7	76.5	0.403	3.03
55	1760	18.6	67.4	0.383	2.71
36.6	1760	20.3	51.5	0.364	2.57



Company: Empresas Suarez S.A. de C.V.

Name:

Date: 8/1/2017

Pump:

Size: 6LS-3C (1 stage)
 Type: LINE W_60 Hz
 Synch speed: 1800 rpm
 Curve: ETLBCEB
 Specific Speeds:
 Dimensions:
 Vertical Turbine:
 Speed: 1760 rpm
 Dia: 4.47 in
 Impeller: 6LS-3C
 Ns: 2182
 Nss: 4968
 Suction: 4 in
 Discharge: RI 3" RI 4"
 Bowl size: 5.8 in
 Max lateral: ---
 Thrust K factor: 1.5 lb/ft

Search Criteria:

Flow: --- Head: ---

Fluid:

Water
 SG: 1
 Viscosity: 0.9946 cP
 NPSHa: ---
 Temperature: 68 °F
 Vapor pressure: 0.3391 psi a
 Atm pressure: 14.7 psi a

Motor:

Standard: NEMA
 Enclosure: TEFC
 Sizing criteria: Max Power on Design Curve
 Size: 0.75 hp
 Speed: 1800
 Frame: 56

Pump Limits:

Temperature: 167 °F
 Pressure: 360 psi g
 Sphere size: 0.125 in
 Power: 24 hp
 Eye area: 3.38 in²

---- Data Point ----

Flow: 103 US gpm
 Head: 16.6 ft
 Eff: 77.6%
 Power: 0.556 hp
 NPSHr: 5.3 ft

---- Design Curve ----

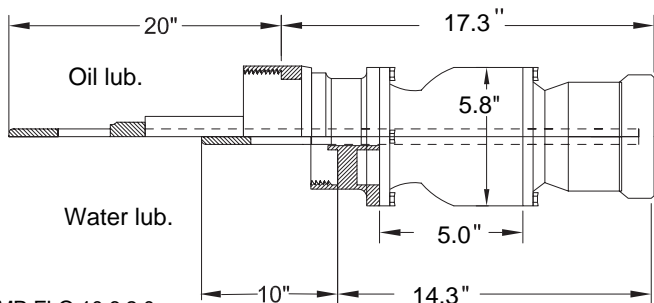
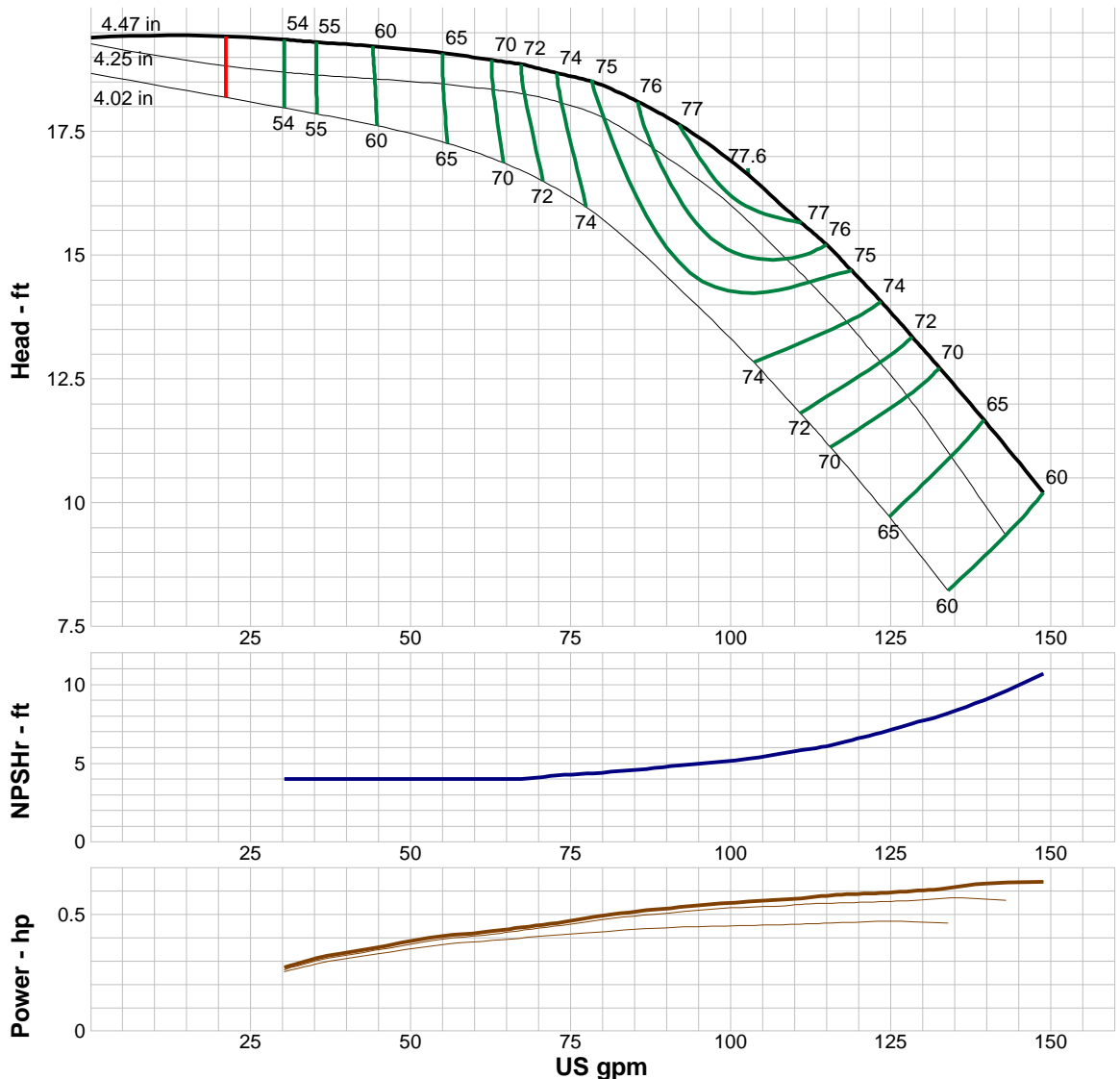
Shutoff head: 19.4 ft
 Shutoff dP: 8.4 psi
 Min flow: 21 US gpm
 BEP: 77.6% @ 103 US gpm
 NOL power:
 0.639 hp @ 149 US gpm

-- Max Curve --

Max power:
 0.639 hp @ 149 US gpm

--Additional Data--

Std. Shaft Diameter : 1"
 Max. Shaft Diameter: C.F.
 Opt. Lateral Setting: 0.13"
 Std. Lateral: 0.49"
 One Stage Subm. WT-LB: 56.8
 One Stage Water Lub. WT-LB: 51.3
 One Stage Oil Lub. WT-LB: 65.9
 Add Stage WT-LB: 20.3
 Impeller Weight: 4.4 lb
 Min. Submergence: 9"



Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
143	1760	11.1	63.1	0.635	9.65
119	1760	14.7	75	0.588	6.5
95.2	1760	17.3	77.2	0.539	5
71.4	1760	18.7	73.5	0.459	4.17
47.6	1760	19.2	61.7	0.373	4

Company: Empresas Suarez S.A. de C.V.

Name:

Date: 8/1/2017



Pump:

Size: 6LS-2C (1 stage)
 Type: LINE W_60 Hz
 Synch speed: 1800 rpm
 Curve: ETLBBEB
 Specific Speeds:
 Dimensions:
 Vertical Turbine:
 Speed: 1750 rpm
 Dia: 4.47 in
 Impeller: 6LS-2C
 Ns: 2100
 Nss: 5248
 Suction: 4 in
 Discharge: RI 3" RI 4"
 Bowl size: 5.8 in
 Max lateral: ---
 Thrust K factor: 1.5 lb/ft

Search Criteria:

Flow: --- Head: ---

Fluid:

Water
 SG: 1
 Viscosity: 0.9946 cP
 NPSHa: ---
 Temperature: 68 °F
 Vapor pressure: 0.3391 psi a
 Atm pressure: 14.7 psi a

Motor:

Standard: NEMA
 Enclosure: TEFC
 Sizing criteria: Max Power on Design Curve
 Size: 0.5 hp
 Speed: 1800
 Frame: 56

Pump Limits:

Temperature: 167 °F
 Pressure: 360 psi g
 Sphere size: 0.125 in
 Power: 16 hp
 Eye area: 3.38 in²

---- Data Point ----

Flow: 80.3 US gpm
 Head: 14.2 ft
 Eff: 78.5%
 Power: 0.367 hp
 NPSHr: 4.32 ft

---- Design Curve ----

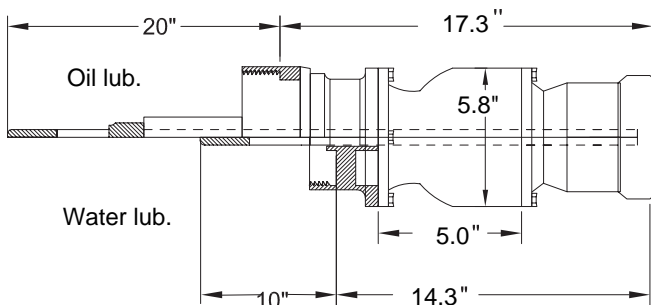
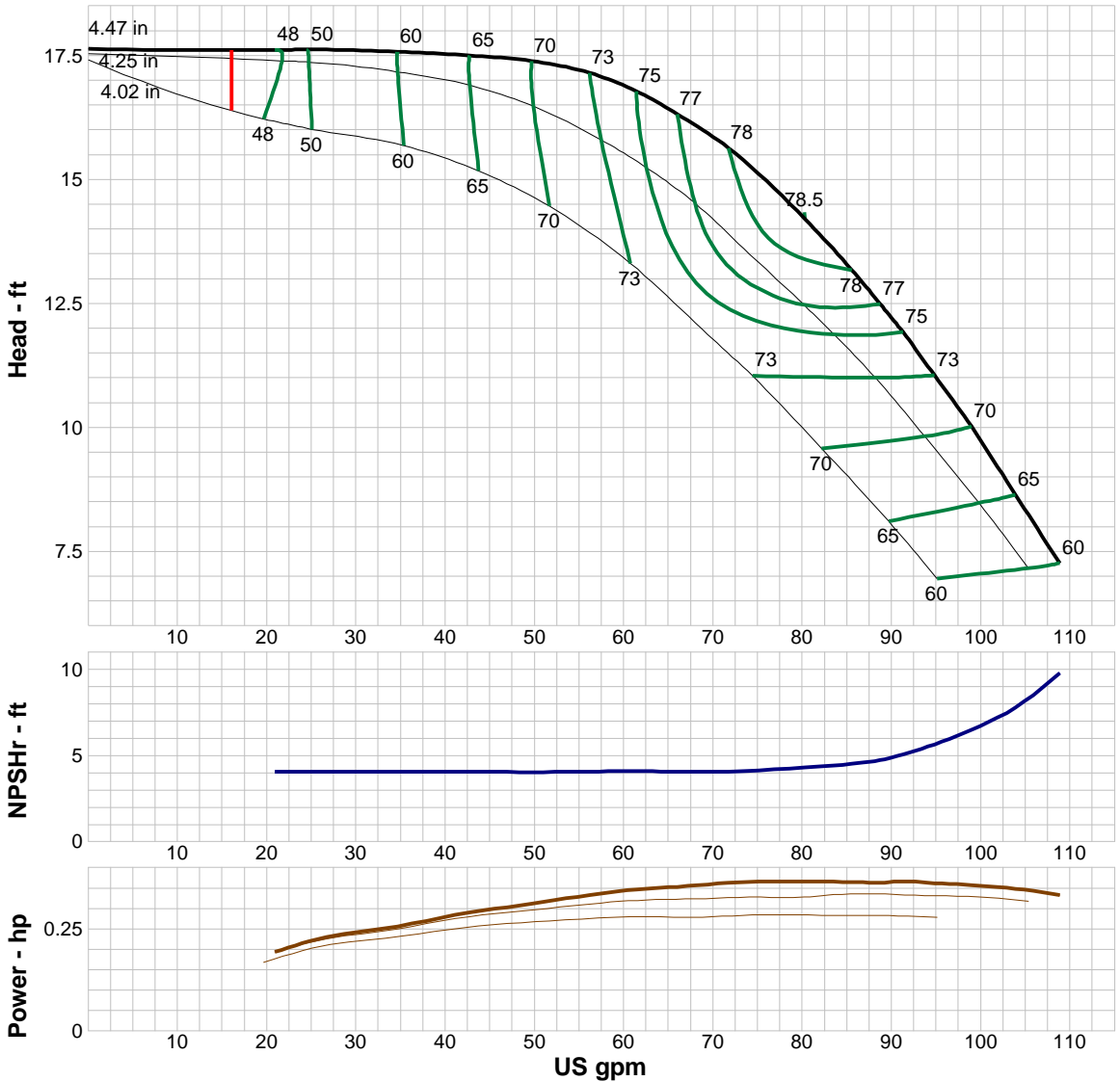
Shutoff head: 17.6 ft
 Shutoff dP: 7.63 psi
 Min flow: 16 US gpm
 BEP: 78.5% @ 80.3 US gpm
 NOL power:
 0.367 hp @ 80.3 US gpm

-- Max Curve --

Max power:
 0.367 hp @ 80.3 US gpm

--Additional Data--

Std. Shaft Diameter : 1"
 Max. Shaft Diameter: C.F.
 Opt. Lateral Setting: 0.13"
 Std. Lateral: 0.49"
 One Stage Subm. WT-LB: 56.8
 One Stage Water Lub. WT-LB: 51.3
 One Stage Oil Lub. WT-LB: 65.9
 Add Stage WT-LB: 20.3
 Impeller Weight: 4.4 lb
 Min. Submergence: 9"



Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
104	1750	8.6	64.8	0.348	7.86
87	1750	12.9	77.5	0.364	4.63
69.6	1750	15.9	77.6	0.359	4.07
52.2	1750	17.3	71.2	0.32	4.05
34.8	1750	17.6	60.1	0.257	4.07



Company: Empresas Suarez S.A. de C.V.

Name:

Date: 8/1/2017

Pump:

Size: 6LS-1C (1 stage)
 Type: LINE W_60 Hz
 Synch speed: 1800 rpm
 Curve: ETLBAEB
 Specific Speeds:
 Dimensions:
 Vertical Turbine:
 Speed: 1750 rpm
 Dia: 4.47 in
 Impeller: 6LS-1C
 Ns: 1779
 Nss: 7211
 Suction: 4 in
 Discharge: RI 3"RI 4"
 Bowl size: 5.8 in
 Max lateral: ---
 Thrust K factor: 1.5 lb/ft

Search Criteria:

Flow: --- Head: ---

Fluid:

Water
 SG: 1
 Viscosity: 0.9946 cP
 NPSHa: ---
 Temperature: 68 °F
 Vapor pressure: 0.3391 psi a
 Atm pressure: 14.7 psi a

Motor:

Standard: NEMA
 Enclosure: TEFC
 Sizing criteria: Max Power on Design Curve
 Size: 0.33 hp
 Speed: 1800
 Frame: 56

Pump Limits:

Temperature: 167 °F
 Pressure: 360 psi g
 Sphere size: 0.125 in
 Power: 12 hp
 Eye area: 3.38 in²

---- Data Point ----

Flow: 55 US gpm
 Head: 14.2 ft
 Eff: 73.3%
 Power: 0.269 hp
 NPSHr: 2.21 ft

---- Design Curve ----

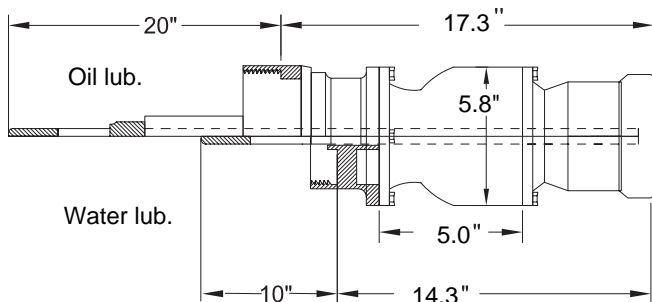
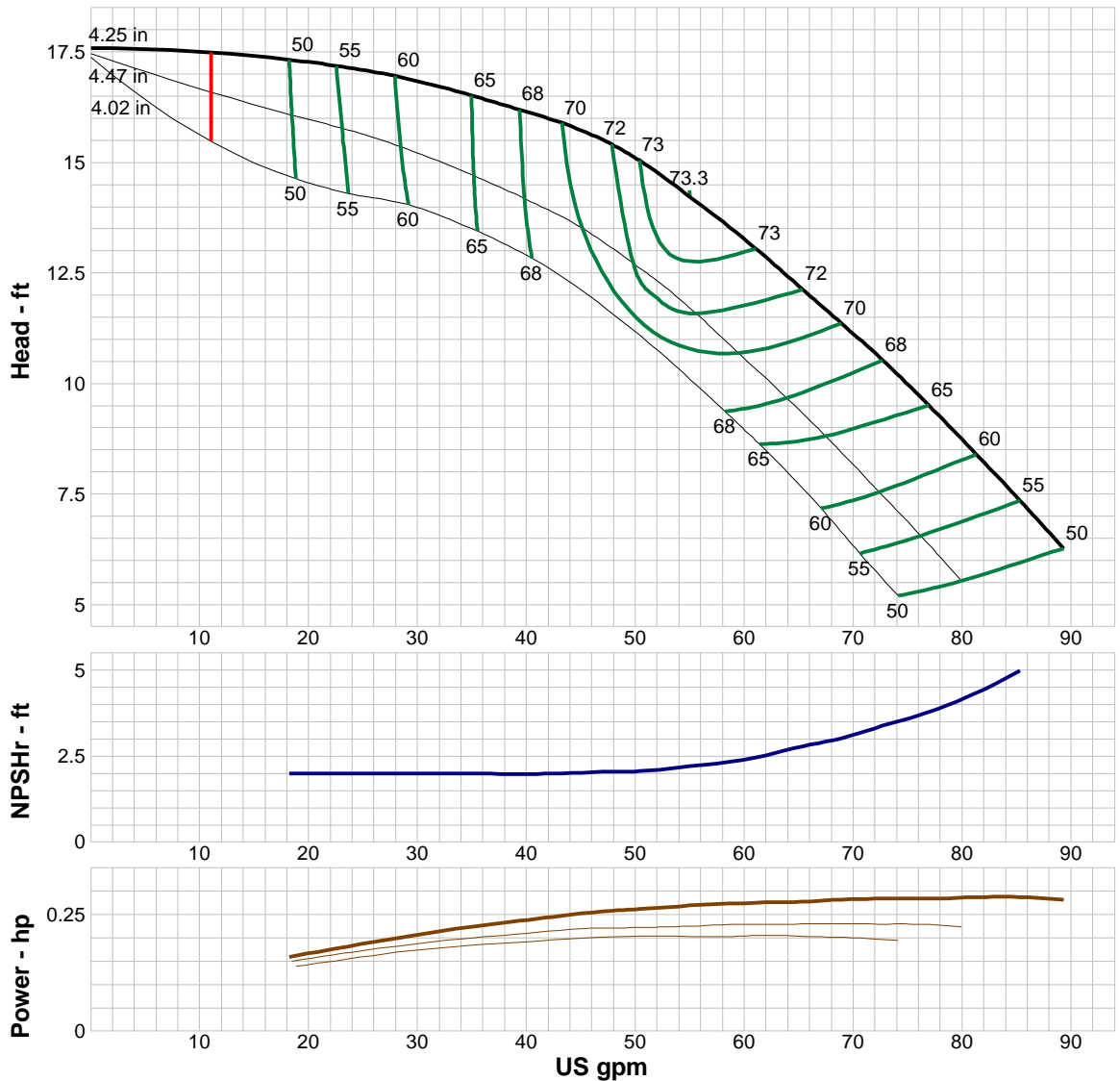
Shutoff head: 17.6 ft
 Shutoff dP: 7.61 psi
 Min flow: 11 US gpm
 BEP: 73.3% @ 55 US gpm
 NOL power:
 0.288 hp @ 85.3 US gpm

-- Max Curve --

Max power:
 0.288 hp @ 85.3 US gpm

--Additional Data--

Std. Shaft Diameter : 1"
 Max. Shaft Diameter: C.F.
 Opt. Lateral Setting: 0.13"
 Std. Lateral: 0.49"
 One Stage Subm. WT-LB: 56.8
 One Stage Water Lub. WT-LB: 51.3
 One Stage Oil Lub. WT-LB: 65.9
 Add Stage WT-LB: 20.3
 Impeller Weight: 4.4 lb
 Min. Submergence: 9"



Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
85.7	1750	7.24	54.5	0.287	5.05
71.4	1750	10.8	68.7	0.284	3.27
57.1	1750	13.8	73.2	0.272	2.29
42.8	1750	15.9	69.8	0.247	2
28.6	1750	16.9	60.5	0.202	2



Company: Empresas Suarez S.A. de C.V.

Name:

Date: 9/6/2017

Pump:

Size: 6HH-2C (1 stage)
 Type: LINE W_60 Hz
 Synch speed: 1800 rpm
 Curve: ETHBBEB
 Specific Speeds:
 Dimensions:
 Vertical Turbine:
 Speed: 1760 rpm
 Dia: 4.69 in
 Impeller: 6HH-2C
 Ns: 4391
 Nss: 5887
 Suction: 4 in
 Discharge: RI 4"
 Bowl size: 5.6 in
 Max lateral: ---
 Thrust K factor: 4.1 lb/ft

Search Criteria:

Flow: --- Head: ---

Fluid:

Water
 SG: 1
 Viscosity: 0.9946 cP
 NPSHa: ---
 Temperature: 68 °F
 Vapor pressure: 0.3391 psi a
 Atm pressure: 14.7 psi a

Motor:

Standard: NEMA
 Enclosure: TEFC
 Sizing criteria: Max Power on Design Curve
 Size: 1.5 hp
 Speed: 1800
 Frame: 145T

Pump Limits:

Temperature: 167 °F
 Pressure: 360 psi g
 Sphere size: 0.5 in
 Power: 40 hp
 Eye area: 7.51 in²

---- Data Point ----

Flow: 234 US gpm
 Head: 11 ft
 Eff: 73.3%
 Power: 0.885 hp
 NPSHr: 7.31 ft

---- Design Curve ----

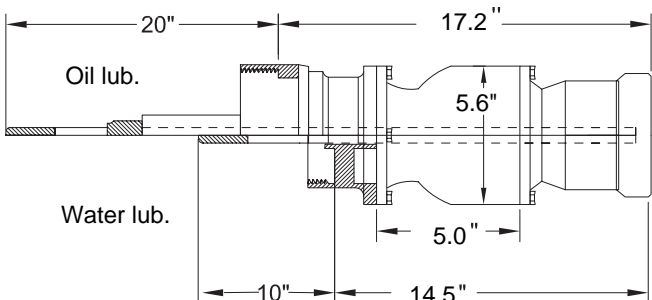
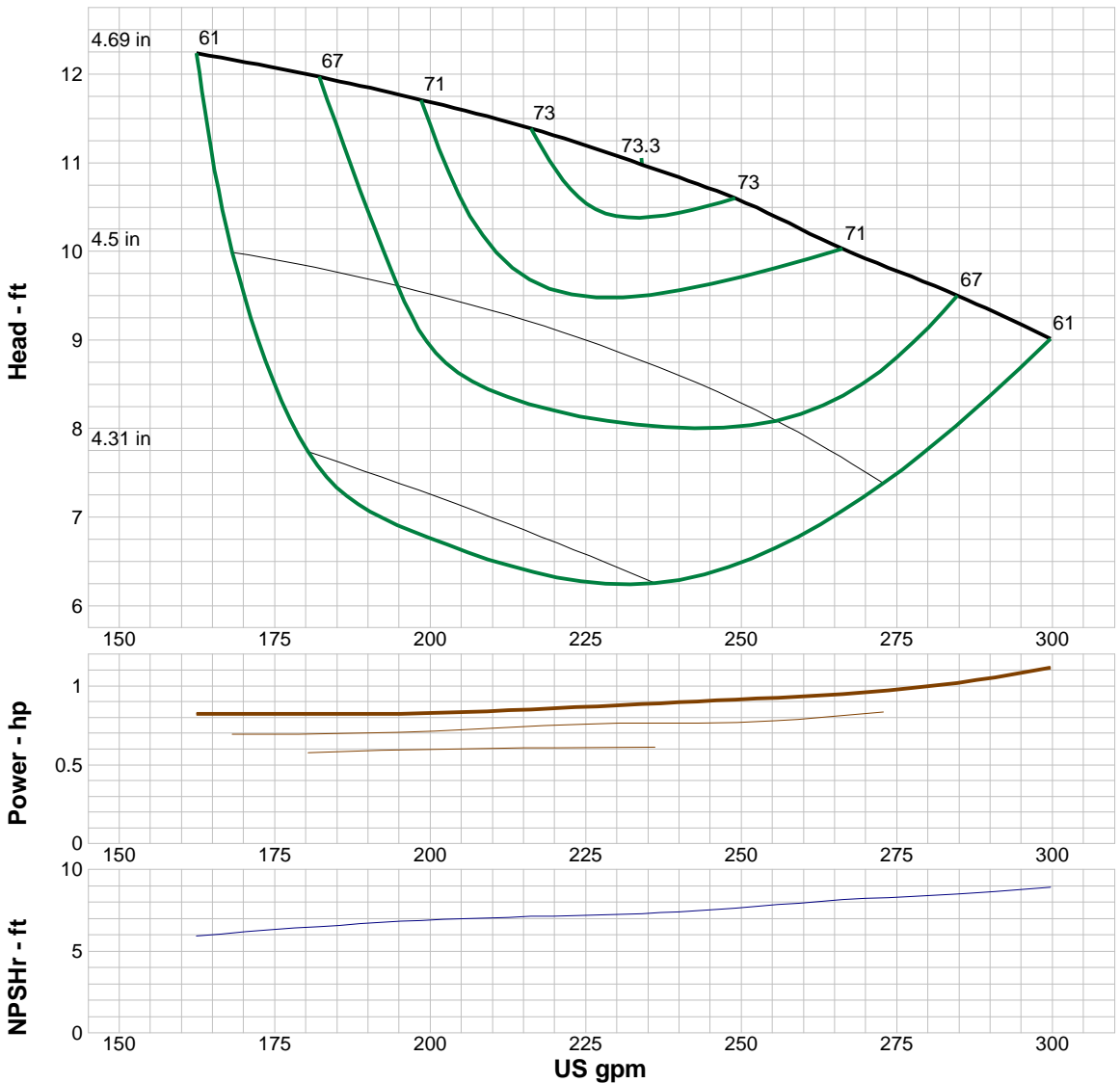
Shutoff head: 19 ft
 Shutoff dP: 8.21 psi
 Min flow: 46 US gpm
 BEP: 73.3% @ 234 US gpm
 NOL power:
 1.12 hp @ 300 US gpm

-- Max Curve --

Max power:
 1.12 hp @ 300 US gpm

--Additional Data--

Std. Shaft Diameter : 1"
 Max. Shaft Diameter: C.F.
 Opt. Lateral Setting: 0.13"
 Std. Lateral: 0.49"
 One Stage Subm. WT-LB: 50.1
 One Stage Water Lub. WT-LB: 49.3
 One Stage Oil Lub. WT-LB: 63.8
 Add Stage WT-LB: 18
 Impeller Weight: 5.7 lb
 Min. Submergence: 15"



Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
288	1760	9.39	65.7	1.04	8.59
240	1760	10.8	73.2	0.896	7.44
192	1760	11.8	69.4	0.825	6.75
144	1760	12.5	55.4	0.824	5.4
96	1760	13.1	40.8	0.827	3.98



Company: Empresas Suarez S.A. de C.V.

Name:

Date: 9/6/2017

Pump:

Size: 6HH-1C (1 stage)
 Type: LINE W_60 Hz
 Synch speed: 1800 rpm
 Curve: ETHBAEB
 Specific Speeds:
 Dimensions:
 Vertical Turbine:
 Speed: 1760 rpm
 Dia: 4.69 in
 Impeller: 6HH-1C
 Ns: 4301
 Nss: 5296
 Suction: 4 in
 Discharge: RI 4"
 Bowl size: 5.6 in
 Max lateral: ---
 Thrust K factor: 4.1 lb/ft

Search Criteria:

Flow: --- Head: ---

Fluid:

Water
 SG: 1
 Viscosity: 0.9946 cP
 NPSHa: ---
 Temperature: 68 °F
 Vapor pressure: 0.3391 psi a
 Atm pressure: 14.7 psi a

Motor:

Standard: NEMA
 Enclosure: TEFC
 Sizing criteria: Max Power on Design Curve
 Size: 1 hp
 Speed: 1800
 Frame: 143T

Pump Limits:

Temperature: 167 °F
 Pressure: 360 psi g
 Sphere size: 0.5 in
 Power: 29 hp
 Eye area: 6.88 in²

---- Data Point ----

Flow: 202 US gpm
 Head: 11 ft
 Eff: 74.3%
 Power: 0.754 hp
 NPSHr: 7.27 ft

---- Design Curve ----

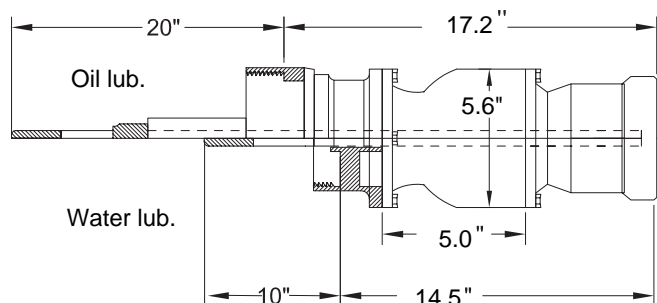
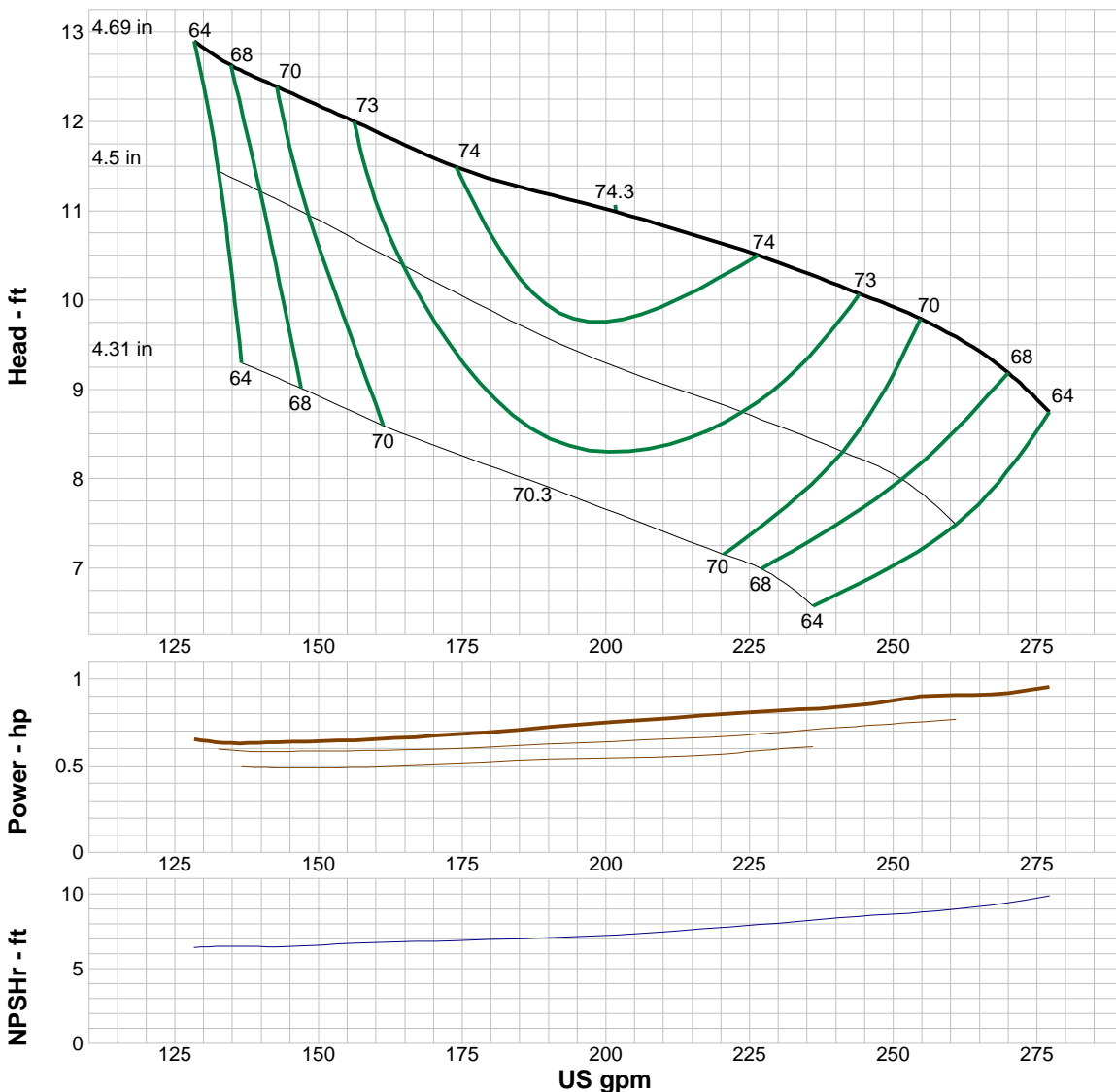
Shutoff head: 18 ft
 Shutoff dP: 7.81 psi
 Min flow: 37 US gpm
 BEP: 74.3% @ 202 US gpm
 NOL power:
 0.956 hp @ 277 US gpm

-- Max Curve --

Max power:
 0.956 hp @ 277 US gpm

--Additional Data--

Std. Shaft Diameter : 1"
 Max. Shaft Diameter: C.F.
 Opt. Lateral Setting: 0.13"
 Std. Lateral: 0.49"
 One Stage Subm. WT-LB: 50.1
 One Stage Water Lub. WT-LB: 49.3
 One Stage Oil Lub. WT-LB: 63.8
 Add Stage WT-LB: 18
 Impeller Weight: 5.7 lb
 Min. Submergence: 15"



Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
266	1760	9.34	68.5	0.915	9.23
222	1760	10.6	74.1	0.801	7.81
178	1760	11.4	74	0.692	6.94
133	1760	12.7	67	0.637	6.49
88.8	1760	14.6	39.4	0.783	5.97



Company: Empresas Suarez S.A. de C.V.

Name:

Date: 10/13/2017

Pump:

Size: 7WL-1C (1 stage)
 Type: LINE W_60 Hz
 Synch speed: 1800 rpm
 Curve: ETWBAEC
 Specific Speeds:
 Dimensions:
 Vertical Turbine:
 Speed: 1760 rpm
 Dia: 5.25 in
 Impeller: 7WL-1C
 Ns: 2147
 Nss: 7866
 Suction: 6 in
 Discharge: 4 in
 Bowl size: 7.5 in
 Max lateral: ---
 Thrust K factor: 3.8 lb/ft

Search Criteria:

Flow: --- Head: ---

Fluid:

Water
 SG: 1
 Viscosity: 0.9946 cP
 NPSHa: ---
 Temperature: 68 °F
 Vapor pressure: 0.3391 psi a
 Atm pressure: 14.7 psi a

Motor:

Standard: NEMA
 Enclosure: TEFC
 Sizing criteria: Max Power on Design Curve
 Size: 1.5 hp
 Speed: 1800
 Frame: 145T

Pump Limits:

Temperature: 167 °F
 Pressure: 415 psi g
 Sphere size: 0.375 in
 Power: 42 hp
 Eye area: 7.54 in²

---- Data Point ----

Flow: 180 US gpm
 Head: 23.6 ft
 Eff: 79.3%
 Power: 1.35 hp
 NPSHr: 3.67 ft

---- Design Curve ----

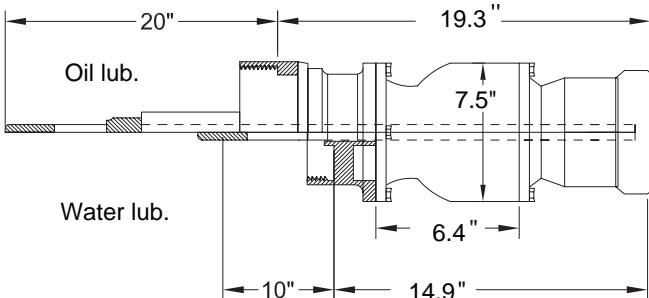
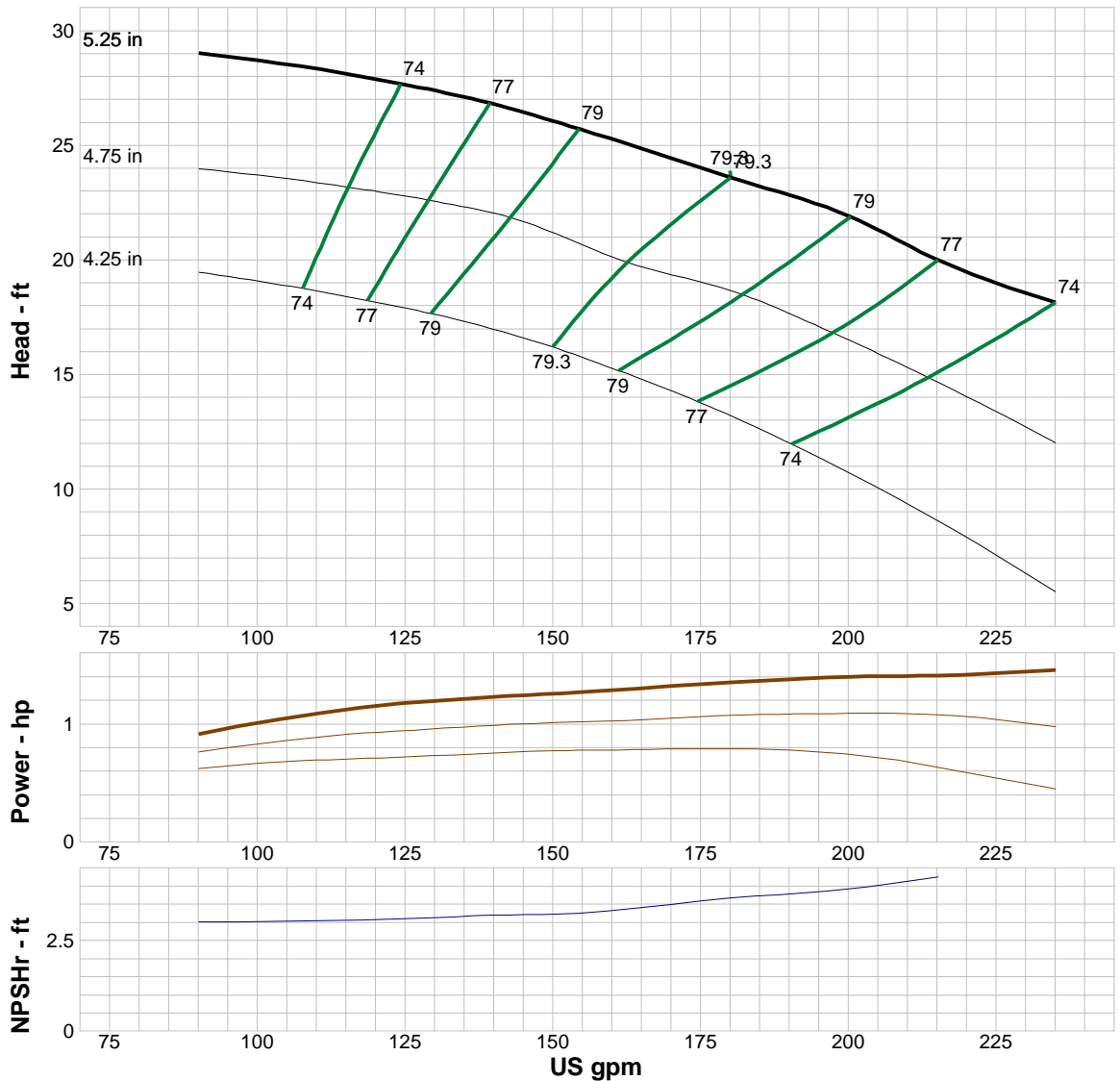
Shutoff head: 33.2 ft
 Shutoff dP: 14.4 psi
 Min flow: 35 US gpm
 BEP: 79.3% @ 180 US gpm
 NOL power:
 1.46 hp @ 235 US gpm

-- Max Curve --

Max power:
 1.46 hp @ 235 US gpm

--Additional Data--

Std. Shaft Diameter : 1.19"
 Max. Shaft Diameter: C.F.
 Opt. Lateral Setting: 0.13"
 Std. Lateral: 0.45"
 One Stage Subm. WT-LB: 82.9
 One Stage Water Lub. WT-LB: 66.9
 One Stage Oil Lub. WT-LB: 77.2
 Add Stage WT-LB: 30
 Impeller Weight: 6.8 lb
 Min. Submergence: 15"



Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
226	1760	19	75.4	1.44	4.49
188	1760	22.9	79.2	1.37	3.77
150	1760	26	78.4	1.26	3.24
113	1760	28.1	73.3	1.09	3.07
75.2	1760	29.6	71.1	0.804	2.96

Company: Empresas Suarez S.A. de C.V.

Name:

Date: 9/7/2017



Pump:

Size: 7WH-1C (1 stage)
 Type: LINE W_60 Hz
 Synch speed: 1800 rpm
 Curve: ETWBEC
 Specific Speeds:
 Dimensions:
 Vertical Turbine:
 Speed: 1760 rpm
 Dia: 5.25 in
 Impeller: 7WH-1C
 Ns: 2247
 Nss: 9035
 Suction: 6 in
 Discharge: RI4" RI 6"
 Bowl size: 7.1 in
 Max lateral: ---
 Thrust K factor: 3.8 lb/ft

Search Criteria:

Flow: --- Head: ---

Fluid:

Water
 SG: 1
 Viscosity: 0.9946 cP
 NPSHa: ---
 Temperature: 68 °F
 Vapor pressure: 0.3391 psi a
 Atm pressure: 14.7 psi a

Motor:

Standard: NEMA
 Enclosure: TEFC
 Sizing criteria: Max Power on Design Curve
 Size: 3 hp
 Speed: 1800
 Frame: 182T

Pump Limits:

Temperature: 167 °F
 Pressure: 415 psi g
 Sphere size: 0.375 in
 Power: 67 hp
 Eye area: 7.54 in²

---- Data Point ----

Flow: 239 US gpm
 Head: 28.2 ft
 Eff: 81%
 Power: 2.1 hp
 NPSHr: 4.66 ft

---- Design Curve ----

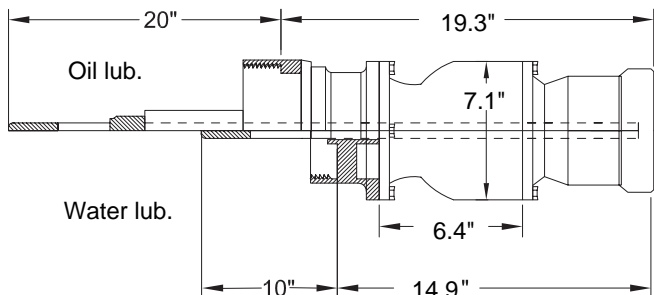
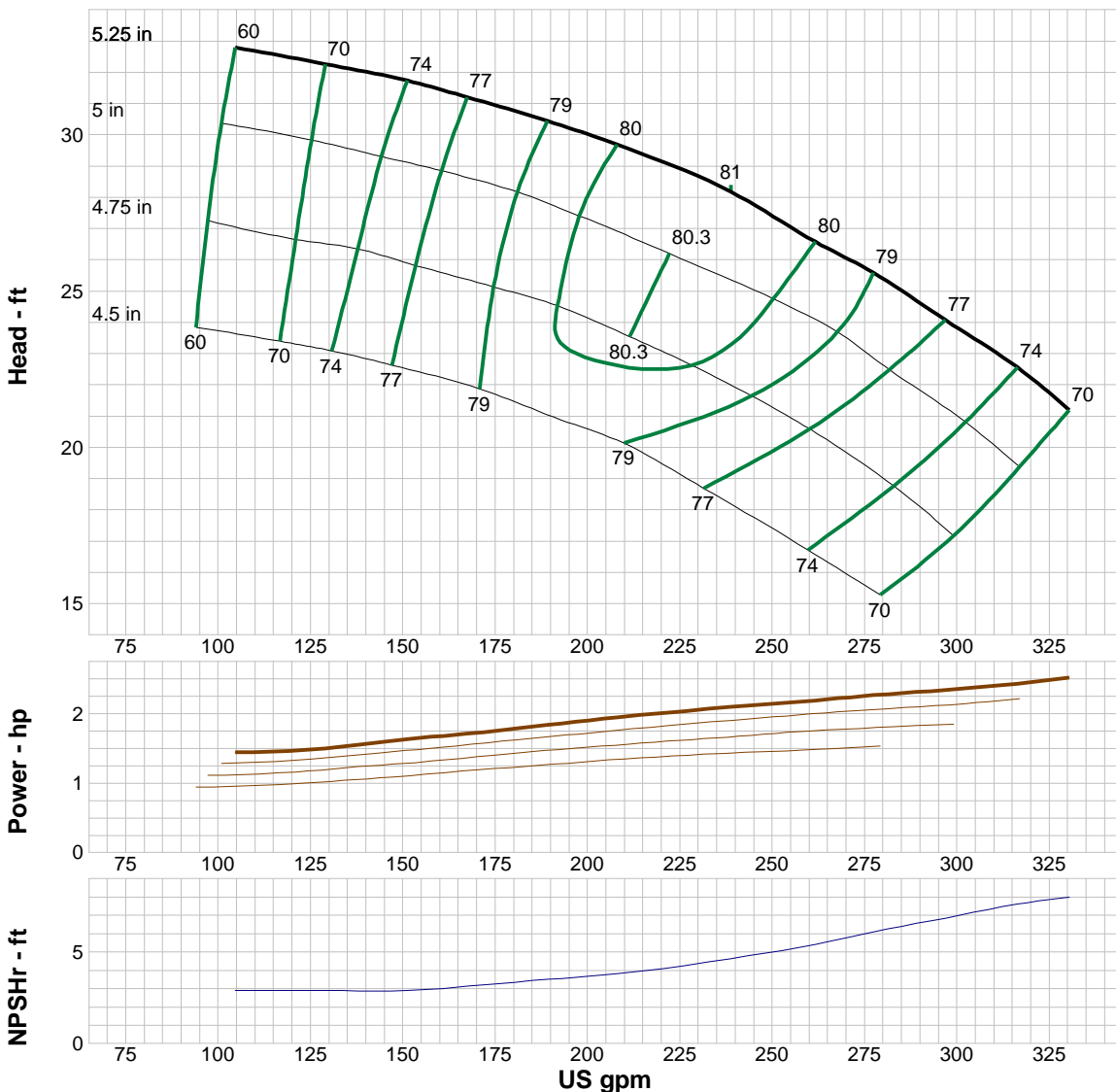
Shutoff head: 34.5 ft
 Shutoff dP: 14.9 psi
 Min flow: 47 US gpm
 BEP: 81% @ 239 US gpm
 NOL power:
 2.53 hp @ 330 US gpm

-- Max Curve --

Max power:
 2.53 hp @ 330 US gpm

--Additional Data--

Std. Shaft Diameter : 1.19"
 Max. Shaft Diameter: C.F.
 Opt. Lateral Setting: 0.13"
 Std. Lateral: 0.45"
 One Stage Subm. WT-LB: 82.9
 One Stage Water Lub. WT-LB: 66.9
 One Stage Oil Lub. WT-LB: 77.2
 Add Stage WT-LB: 30
 Impeller Weight: 6.8 lb
 Min. Submergence: 15"



Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
317	1760	22.5	73.8	2.44	7.64
264	1760	26.4	79.8	2.21	5.52
211	1760	29.5	80.1	1.96	3.89
158	1760	31.5	75.3	1.67	2.99
106	1760	32.8	60.6	1.45	2.9



Company: Empresas Suarez S.A. de C.V.

Name:

Date: 9/5/2017

Pump:

Size: 8WL-1C (1 stage)
 Type: LINE W_60 Hz
 Synch speed: 1800 rpm
 Curve: ETWBAED
 Specific Speeds:
 Dimensions:
 Vertical Turbine:
 Speed: 1770 rpm
 Dia: 5.25 in
 Impeller: 8WL-1C
 Ns: 2589
 Nss: 6278
 Suction: 6"
 Discharge: RI 4",RI 6"
 Bowl size: 7.5 in
 Max lateral: ---
 Thrust K factor: 5.3 lb/ft

Search Criteria:

Flow: --- Head: ---

Fluid:

Water
 SG: 1
 Viscosity: 0.9946 cP
 NPSHa: ---
 Temperature: 68 °F
 Vapor pressure: 0.3391 psi a
 Atm pressure: 14.7 psi a

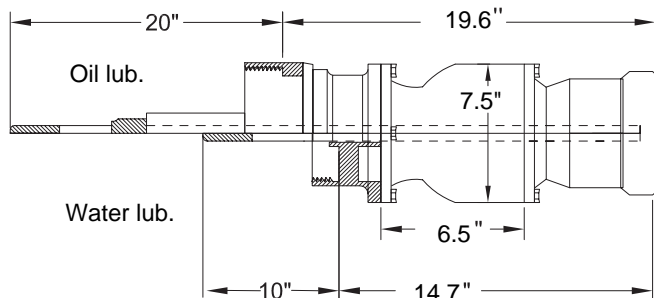
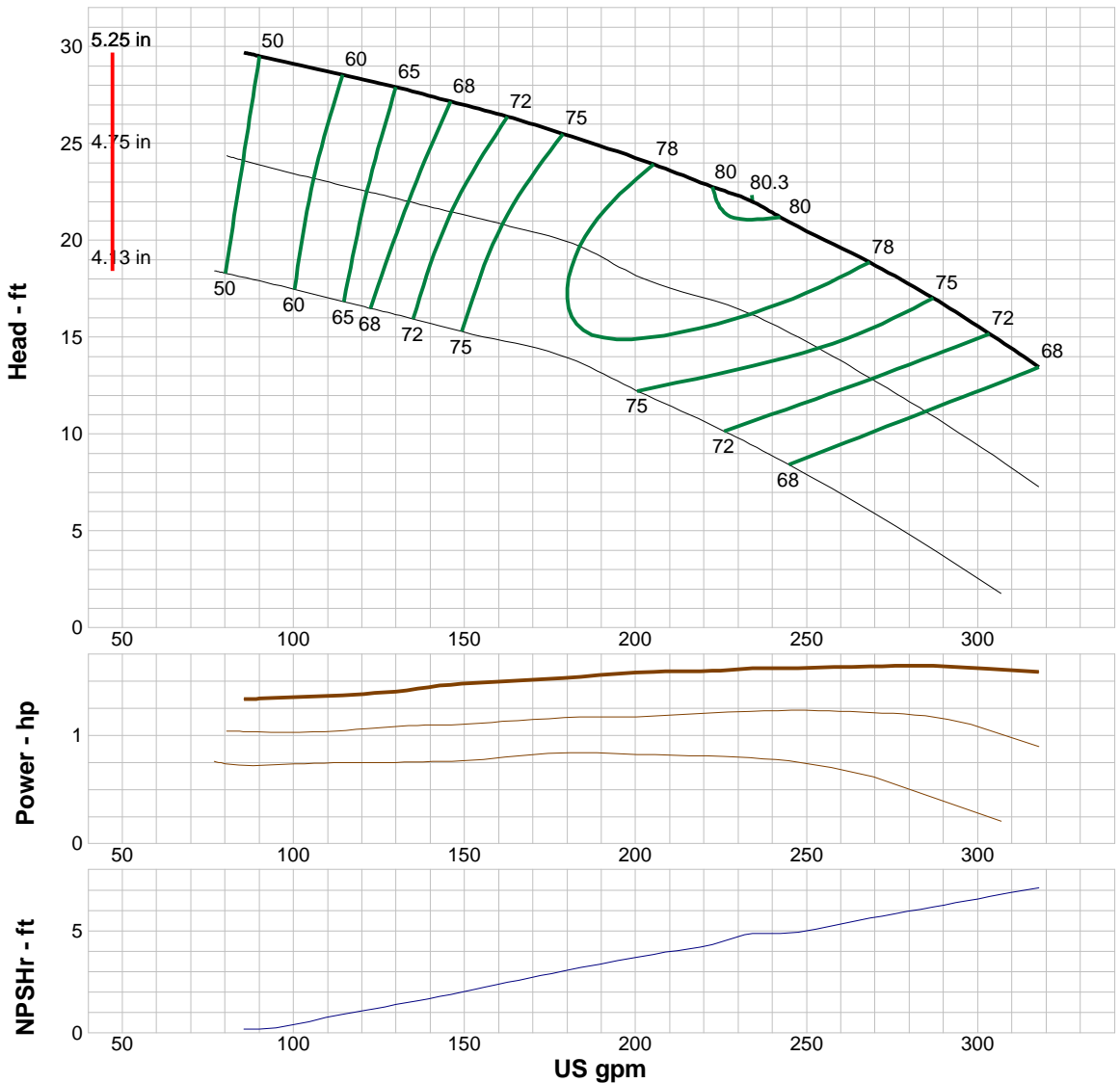
Motor:

Standard: NEMA
 Enclosure: TEFC
 Sizing criteria: Max Power on Design Curve
 Size: 2 hp
 Speed: 1800
 Frame: 145T

Pump Limits:

Temperature: 167 °F
 Pressure: 425 psi g
 Sphere size: 0.375 in
 Power: 47 hp
 Eye area: 8.51 in²

---- Data Point ----	
Flow:	234 US gpm
Head:	22 ft
Eff:	80.3%
Power:	1.62 hp
NPSHr:	4.87 ft
---- Design Curve ----	
Shutoff head:	33.4 ft
Shutoff dP:	14.5 psi
Min flow:	47 US gpm
BEP:	80.3% @ 234 US gpm
NOL power:	1.64 hp @ 287 US gpm
-- Max Curve --	
Max power:	1.64 hp @ 287 US gpm
--Additional Data--	
Std. Shaft Diameter :	1.19"
Max. Shaft Diameter:	C.F.
Opt. Lateral Setting:	0.13"
Std. Lateral:	0.35"
One Stage Subm. WT-LB:	93.1
One Stage Water Lub. WT-LB:	72.6
One Stage Oil Lub. WT-LB:	81.6
Add Stage WT-LB:	32.2
Impeller Weight:	8 lb
Min. Submergence:	16"



Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
305	1770	15	71.5	1.61	6.73
254	1770	20.1	79.1	1.63	5.21
203	1770	24.1	77.8	1.58	3.79
152	1770	26.9	69.5	1.48	2.11
102	1770	29	55	1.36	0.557



Company: Empresas Suarez S.A. de C.V.

Name:

Date: 8/2/2017

Pump:

Size: 8WH-1C (1 stage)
 Type: LINE W_60 Hz
 Synch speed: 1800 rpm
 Curve: ETWBED
 Specific Speeds:
 Dimensions:
 Vertical Turbine:
 Speed: 1770 rpm
 Dia: 5.25 in
 Impeller: 8WH-1C
 Ns: 2858
 Nss: 9399
 Suction: 6 in
 Discharge: R14" R16"
 Bowl size: 7.5 in
 Max lateral: ---
 Thrust K factor: 5.3 lb/ft

Search Criteria:

Flow: --- Head: ---

Fluid:

Water
 SG: 1
 Viscosity: 0.9946 cP
 NPSHa: ---
 Temperature: 68 °F
 Vapor pressure: 0.3391 psi a
 Atm pressure: 14.7 psi a

Motor:

Standard: NEMA
 Enclosure: TEFC
 Sizing criteria: Max Power on Design Curve
 Size: 3 hp
 Speed: 1800
 Frame: 182T

Pump Limits:

Temperature: 167 °F
 Pressure: 425 psi g
 Sphere size: 0.375 in
 Power: 75 hp
 Eye area: 8.51 in²

---- Data Point ----

Flow: 321 US gpm
 Head: 24.3 ft
 Eff: 78.5%
 Power: 2.51 hp
 NPSHr: 11.5 ft

---- Design Curve ----

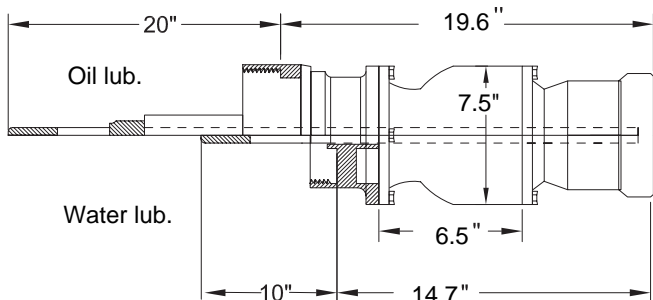
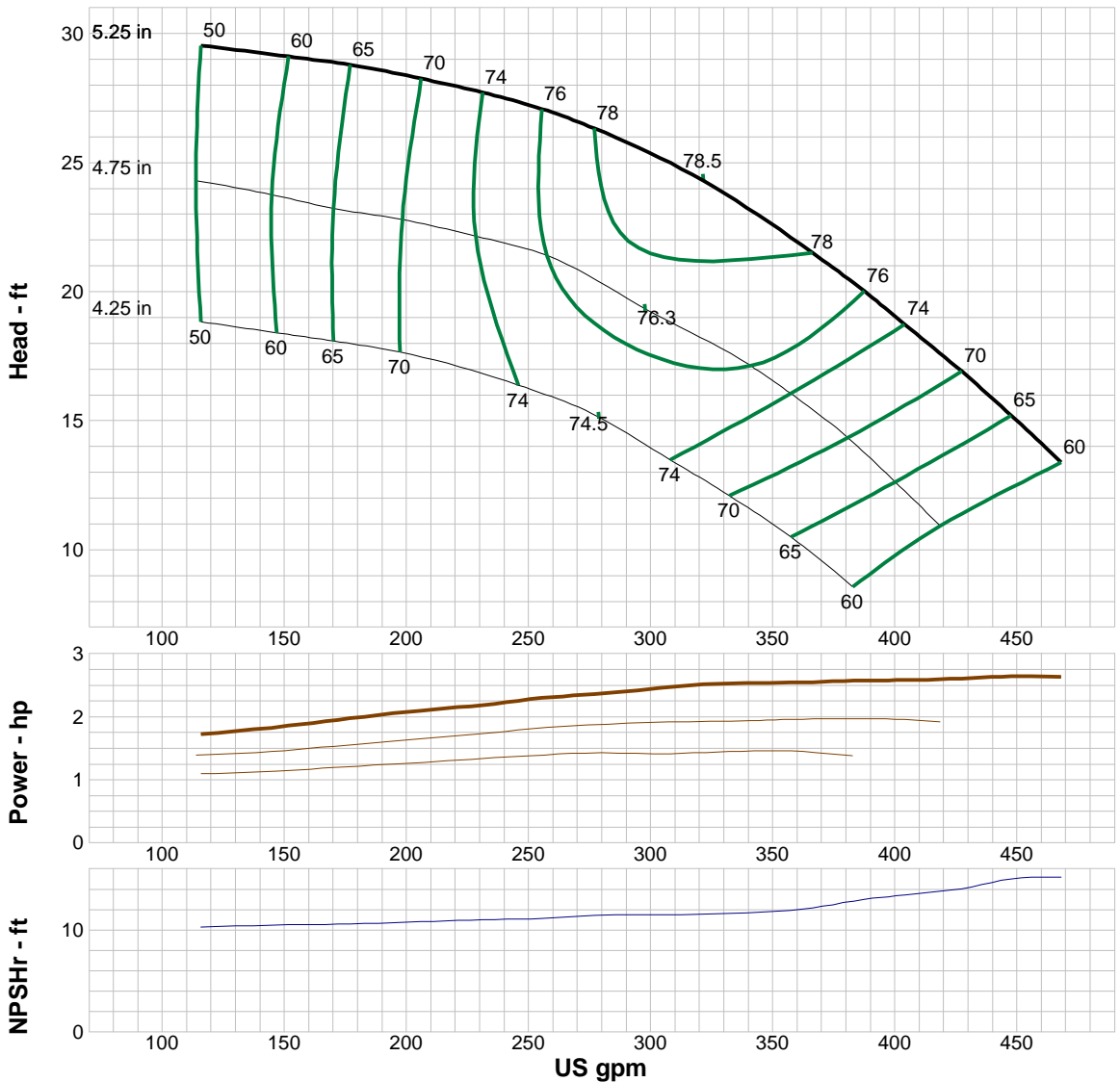
Shutoff head: 31.5 ft
 Shutoff dP: 13.6 psi
 Min flow: 64 US gpm
 BEP: 78.5% @ 321 US gpm
 NOL power:
 2.64 hp @ 448 US gpm

-- Max Curve --

Max power:
 2.64 hp @ 448 US gpm

--Additional Data--

Std. Shaft Diameter : 1.19"
 Max. Shaft Diameter: C.F.
 Opt. Lateral Setting: 0.13"
 Std. Lateral: 0.35"
 One Stage Subm. WT-LB: 93.1
 One Stage Water Lub. WT-LB: 72.6
 One Stage Oil Lub. WT-LB: 81.6
 Add Stage WT-LB: 32.2
 Impeller Weight: 8 lb
 Min. Submergence: 16"



Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
449	1770	15.1	64.6	2.64	15
374	1770	21	77.3	2.56	12.5
299	1770	25.3	78.2	2.44	11.5
224	1770	27.9	72.9	2.16	11
150	1770	29.1	59.6	1.85	10.5



Company: Empresas Suarez S.A. de C.V.

Name:

Date: 9/8/2017

Pump:

Size: 8LS-2C (1 stage)
 Type: LINE W_60 Hz
 Synch speed: 1800 rpm
 Curve: ETLBBED
 Specific Speeds:
 Dimensions:
 Vertical Turbine:
 Speed: 1770 rpm
 Dia: 5.94 in
 Impeller: 8LS-2C
 Ns: 1973
 Nss: 6460
 Suction: 6 in
 Discharge: RI 4"RI 6"
 Bowl size: 7.5 in
 Max lateral: ---
 Thrust K factor: 2.6 lb/ft

Search Criteria:

Flow: --- Head: ---

Fluid:

Water
 SG: 1
 Viscosity: 0.9946 cP
 NPSHa: ---
 Temperature: 68 °F
 Vapor pressure: 0.3391 psi a
 Atm pressure: 14.7 psi a

Motor:

Standard: NEMA
 Enclosure: TEFC
 Sizing criteria: Max Power on Design Curve
 Size: 3 hp
 Speed: 1800
 Frame: 182T

Pump Limits:

Temperature: 167 °F
 Pressure: 390 psi g
 Sphere size: 0.188 in
 Power: 88 hp
 Eye area: 6.92 in²

---- Data Point ----

Flow: 236 US gpm
 Head: 32.6 ft
 Eff: 80.3%
 Power: 2.42 hp
 NPSHr: 6.9 ft

---- Design Curve ----

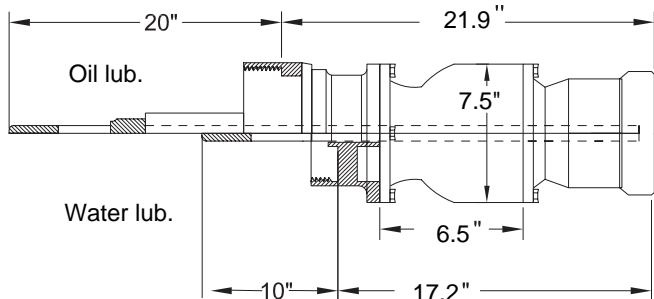
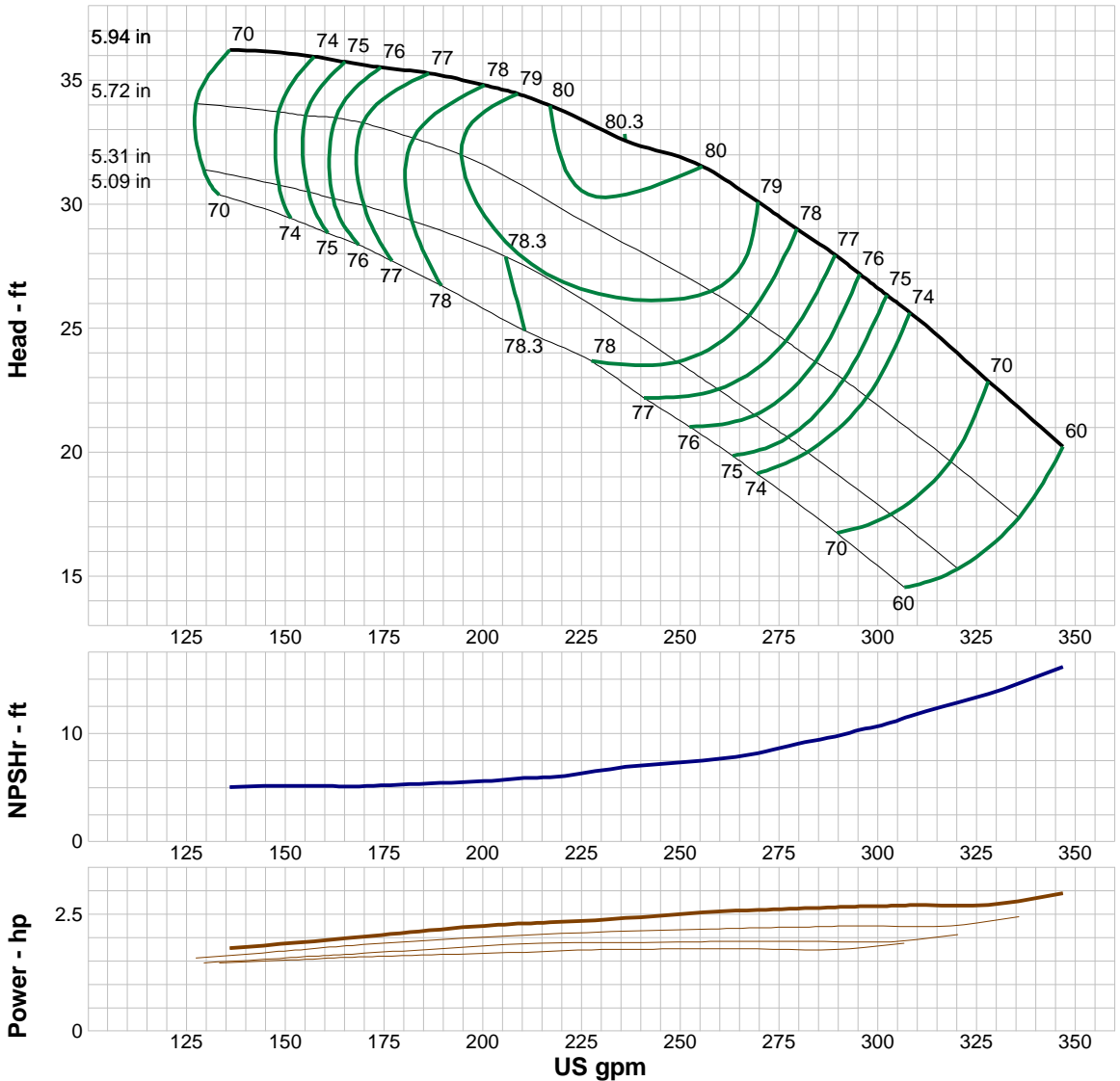
Shutoff head: 36.6 ft
 Shutoff dP: 15.8 psi
 Min flow: 47 US gpm
 BEP: 80.3% @ 236 US gpm
 NOL power:
 2.95 hp @ 347 US gpm

-- Max Curve --

Max power:
 2.95 hp @ 347 US gpm

--Additional Data--

Std. Shaft Diameter : 1.19"
 Max. Shaft Diameter: C.F.
 Opt. Lateral Setting: 0.13"
 Std. Lateral: 0.63"
 One Stage Subm. WT-LB: 89
 One Stage Water Lub. WT-LB: 82.7
 One Stage Oil Lub. WT-LB: 91.7
 Add Stage WT-LB: 33.7
 Impeller Weight: 6 lb
 Min. Submergence: 11"



Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
332	1770	22.3	67.8	2.76	14.2
277	1770	29.3	78.2	2.62	8.82
222	1770	33.6	80.1	2.35	6.21
166	1770	35.7	75.1	1.99	5.12
111	1770	36.5	65.3	1.6	4.88



Company: Empresas Suarez S.A. de C.V.

Name:

Date: 7/31/2017

Pump:

Size: 9WL-1C (1 stage)
 Type: LINE W_60 Hz
 Synch speed: 1800 rpm
 Curve: ETWBAAE
 Specific Speeds:
 Dimensions:
 Vertical Turbine:
 Speed: 1770 rpm
 Dia: 6.88 in
 Impeller: 9WL-1C
 Ns: 2307
 Nss: 10996
 Suction: 8 in
 Discharge: RI 6" RI 8"
 Bowl size: 9.3 in
 Max lateral: ---
 Thrust K factor: 6 lb/ft

Search Criteria:

Flow: --- Head: ---

Fluid:

Water
 SG: 1
 Viscosity: 0.9946 cP
 NPSHa: ---
 Temperature: 68 °F
 Vapor pressure: 0.3391 psi a
 Atm pressure: 14.7 psi a

Motor:

Standard: NEMA
 Enclosure: TEFC
 Sizing criteria: Max Power on Design Curve
 Size: 7.5 hp
 Speed: 1800
 Frame: 213T

Pump Limits:

Temperature: 167 °F
 Pressure: 400 psi g
 Sphere size: 0.5 in
 Power: 88 hp
 Eye area: 12.6 in²

---- Data Point ----

Flow: 434 US gpm
 Head: 40.6 ft
 Eff: 86%
 Power: 5.18 hp
 NPSHr: 6.29 ft

---- Design Curve ----

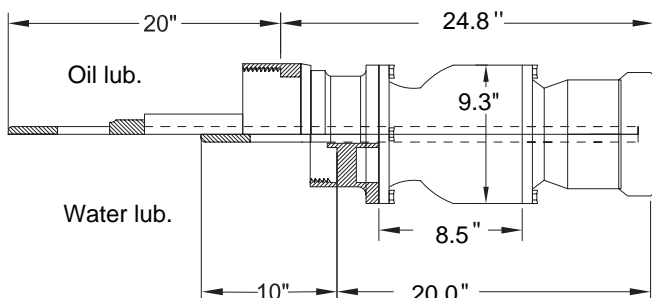
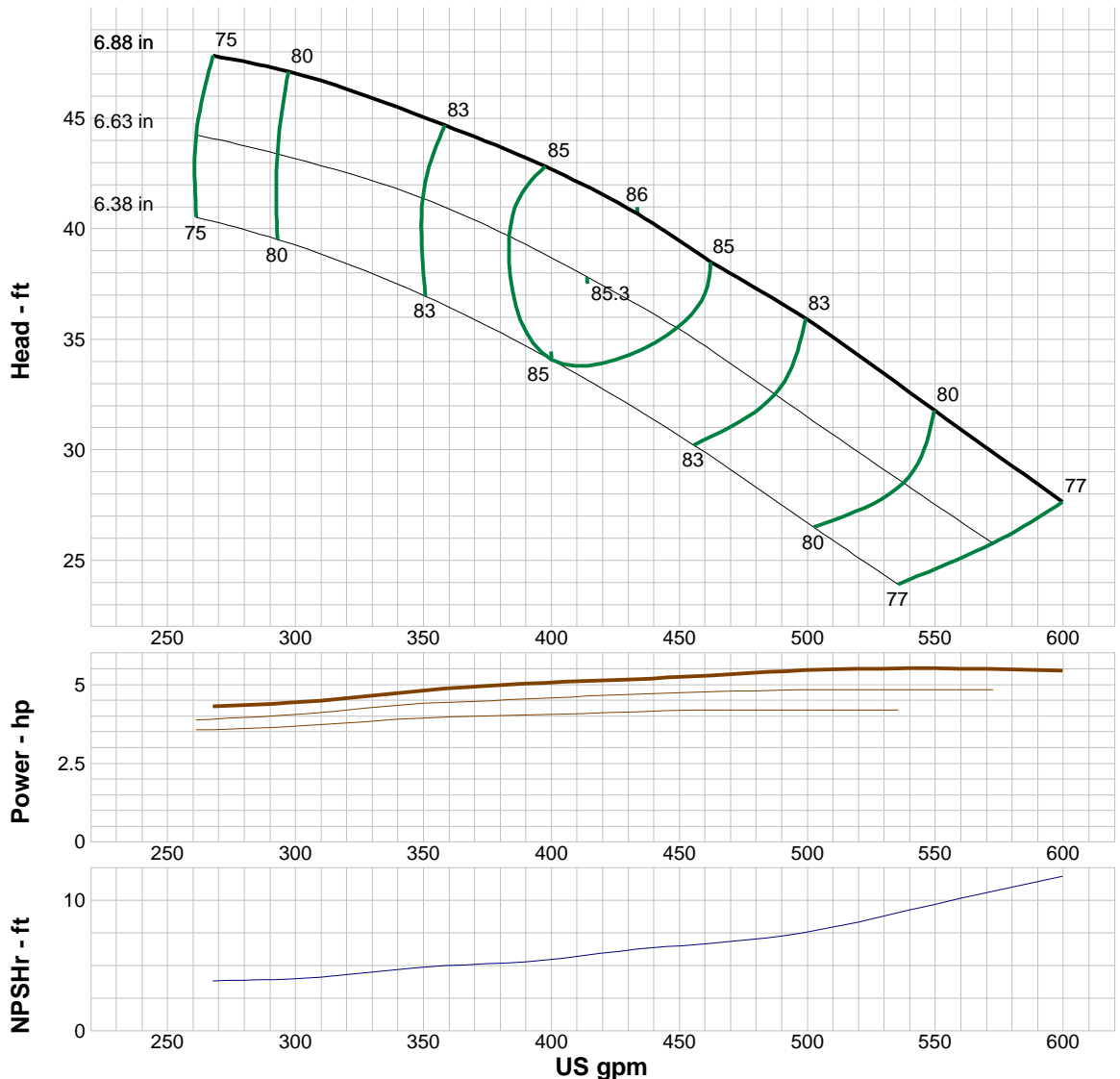
Shutoff head: 56.1 ft
 Shutoff dP: 24.3 psi
 Min flow: 88 US gpm
 BEP: 86% @ 434 US gpm
 NOL power:
 5.51 hp @ 549 US gpm

-- Max Curve --

Max power:
 5.51 hp @ 549 US gpm

--Additional Data--

Std. Shaft Diameter : 1.5"
 Max. Shaft Diameter: C.F.
 Opt. Lateral Setting: 0.13"
 Std. Lateral: 0.53"
 One Stage Subm. WT-LB: 159.5
 One Stage Water Lub. WT-LB: 143.1
 One Stage Oil Lub. WT-LB: 165.1
 Add Stage WT-LB: 62
 Impeller Weight: 14.6 lb
 Min. Submergence: 19"



Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
576	1770	29.6	78.4	5.47	10.9
480	1770	37.3	84	5.37	7.13
384	1770	43.5	84.3	4.99	5.28
288	1770	47.3	78.5	4.38	3.96
192	1770	49.7	62.2	4.03	3.49

Company: Empresas Suarez S.A. de C.V.

Name:

Date: 7/27/2017



Pump:

Size: 9WH-1C (1 stage)
 Type: LINE W_60 Hz
 Synch speed: 1800 rpm
 Curve: ETWBBEE
 Specific Speeds:
 Dimensions:
 Vertical Turbine:
 Speed: 1770 rpm
 Dia: 6.88 in
 Impeller: 9WH-1C
 Ns: 2331
 Nss: 7732
 Suction: 8 in
 Discharge: RI 6", RI8"
 Bowl size: 9.3 in
 Max lateral: ---
 Thrust K factor: 6 lb/ft

Search Criteria:

Flow: --- Head: ---

Fluid:

Water
 SG: 1
 Viscosity: 0.9946 cP
 NPSHa: ---
 Temperature: 68 °F
 Vapor pressure: 0.3391 psi a
 Atm pressure: 14.7 psi a

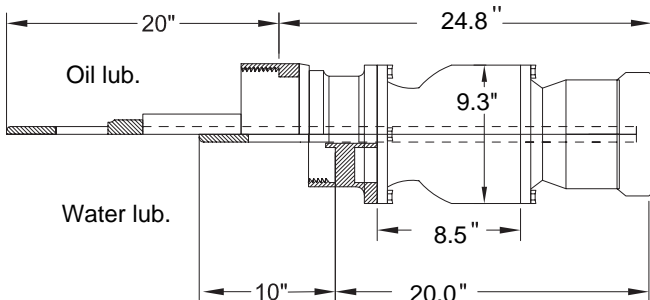
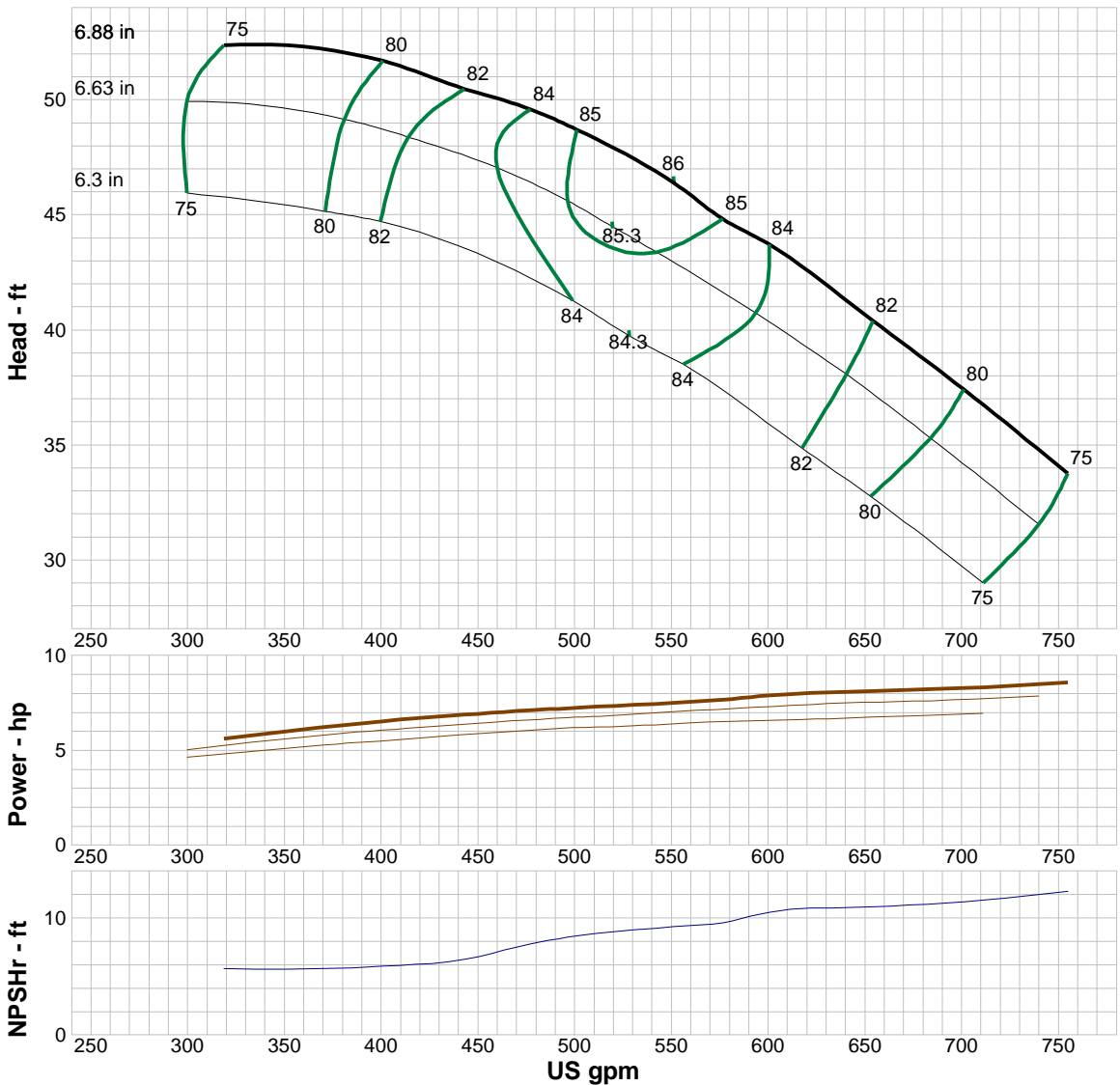
Motor:

Standard: NEMA
 Enclosure: TEFC
 Sizing criteria: Max Power on Design Curve
 Size: 10 hp
 Speed: 1800
 Frame: 215T

Pump Limits:

Temperature: 167 °F
 Pressure: 400 psi g
 Sphere size: 0.5 in
 Power: 136 hp
 Eye area: 12.6 in²

---- Data Point ----	
Flow:	551 US gpm
Head:	46.4 ft
Eff:	86%
Power:	7.5 hp
NPSHr:	9.26 ft
---- Design Curve ----	
Shutoff head:	55 ft
Shutoff dP:	23.8 psi
Min flow:	110 US gpm
BEP:	86% @ 551 US gpm
NOL power:	8.57 hp @ 755 US gpm
-- Max Curve --	
Max power:	8.57 hp @ 755 US gpm
--Additional Data--	
Std. Shaft Diameter :	1.5"
Max. Shaft Diameter:	C.F.
Opt. Lateral Setting:	0.13"
Std. Lateral:	0.53"
One Stage Subm. WT-LB:	159.5
One Stage Water Lub. WT-LB:	143.1
One Stage Oil Lub. WT-LB:	165.1
Add Stage WT-LB:	62
Impeller Weight:	14.6 lb
Min. Submergence:	19"



Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
725	1770	35.8	77.7	8.41	11.8
604	1770	43.5	83.9	7.91	10.5
483	1770	49.4	84.3	7.15	7.97
362	1770	52	77.7	6.1	5.79
242	1770	53	70.4	4.76	5.46

Company: Empresas Suarez S.A. de C.V.

Name:

Date: 8/1/2017



Pump:

Size: 9WBL-1C (1 stage)
 Type: LINE W_60 Hz
 Synch speed: 1800 rpm
 Curve: ETWBIEE
 Specific Speeds:
 Dimensions:
 Vertical Turbine:
 Speed: 1760 rpm
 Dia: 7.31 in
 Impeller: 9WBL-1C
 Ns: 1686
 Nss: 11293
 Suction: 8 in
 Discharge: RI 6" RI 8"
 Bowl size: 9.5 in
 Max lateral: ---
 Thrust K factor: 4.7 lb/ft

Search Criteria:

Flow: --- Head: ---

Fluid:

Water
 SG: 1
 Viscosity: 0.9946 cP
 NPSHa: ---
 Temperature: 68 °F
 Vapor pressure: 0.3391 psi a
 Atm pressure: 14.7 psi a

Motor:

Standard: NEMA
 Enclosure: TEFC
 Sizing criteria: Max Power on Design Curve
 Size: 5 hp
 Speed: 1800
 Frame: 184T

Pump Limits:

Temperature: 167 °F
 Pressure: 375 psi g
 Sphere size: 0.438 in
 Power: 64 hp
 Eye area: 11.9 in²

---- Data Point ----

Flow: 306 US gpm
 Head: 48.1 ft
 Eff: 83.5%
 Power: 4.45 hp
 NPSHr: 16.7 ft

---- Design Curve ----

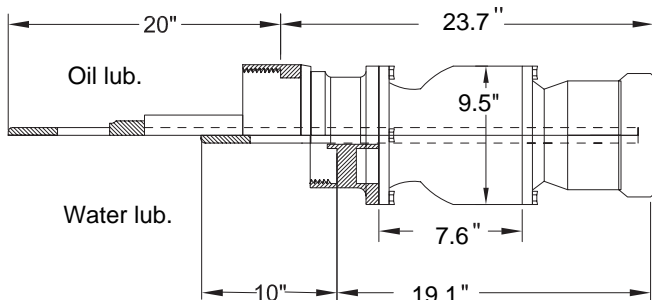
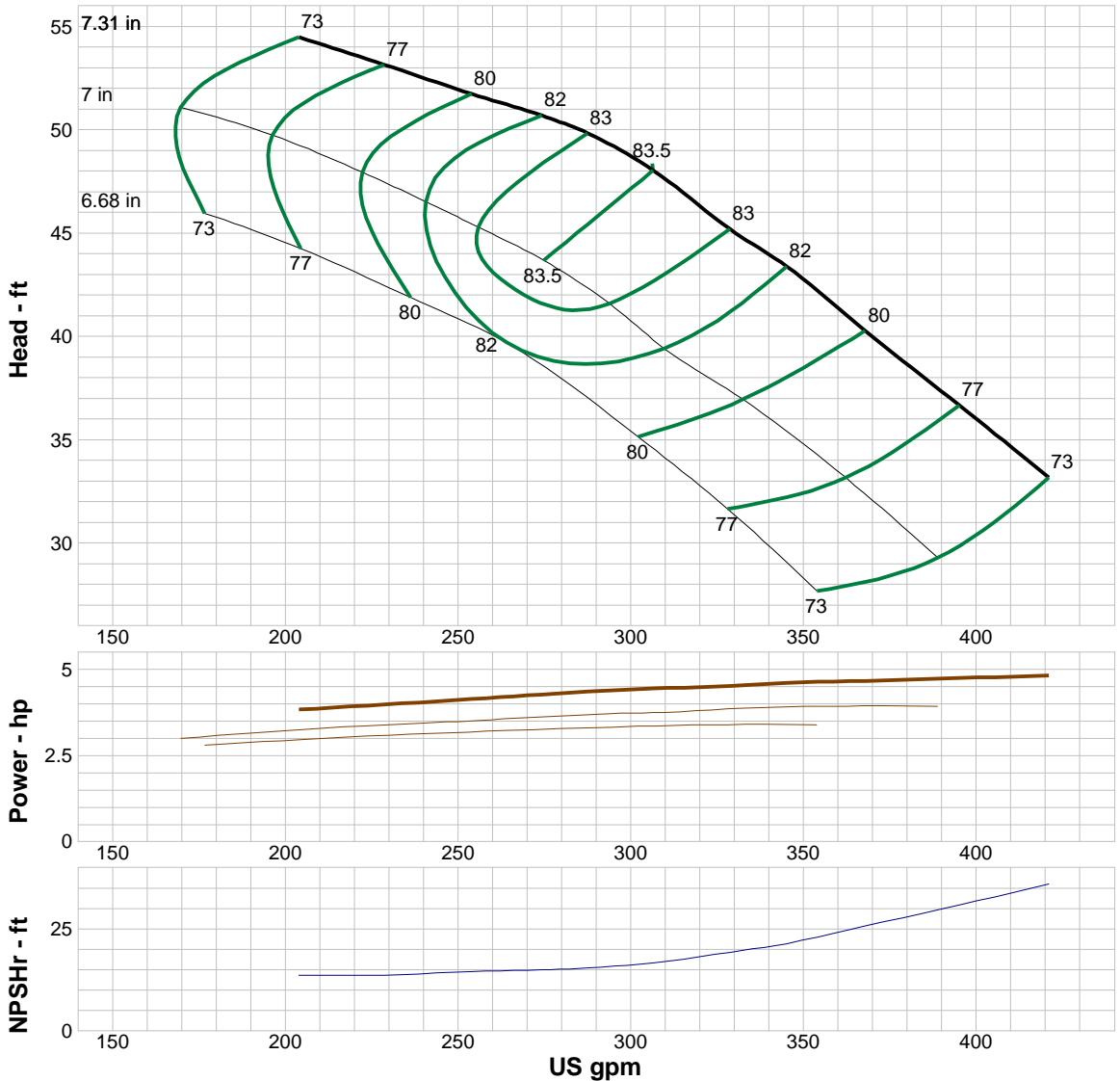
Shutoff head: 62.4 ft
 Shutoff dP: 27 psi
 Min flow: 61 US gpm
 BEP: 83.5% @ 306 US gpm
 NOL power:
 4.83 hp @ 421 US gpm

-- Max Curve --

Max power:
 4.83 hp @ 421 US gpm

--Additional Data--

Std. Shaft Diameter : 1.5"
 Max. Shaft Diameter: C.F.
 Opt. Lateral Setting: 0.13"
 Std. Lateral: 0.23"
 One Stage Subm. WT-LB: 154.8
 One Stage Water Lub. WT-LB: 138.2
 One Stage Oil Lub. WT-LB: 162.2
 Add Stage WT-LB: 59.1
 Impeller Weight: 12.9 lb
 Min. Submergence: 18"



Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
404	1760	35.4	75.6	4.78	32.7
337	1760	44.3	82.5	4.57	20.4
270	1760	50.9	81.6	4.25	14.9
202	1760	54.6	72.7	3.83	13.7
135	1760	58.2	61.9	3.44	13.7



Company: Empresas Suarez S.A. de C.V.

Name:

Date: 8/31/2017

Pump:

Size: 9WBH-1C (1 stage)
 Type: LINE W_60 Hz
 Synch speed: 1800 rpm
 Curve: ETWBJEE
 Specific Speeds:
 Dimensions:
 Vertical Turbine:
 Speed: 1770 rpm
 Dia: 7.31 in
 Impeller: 9WBH-1C
 Ns: 1663
 Nss: 6700
 Suction: 8 in
 Discharge: RI 6" RI 8"
 Bowl size: 9.5 in
 Max lateral: ---
 Thrust K factor: 4.7 lb/ft

Search Criteria:

Flow: --- Head: ---
 Fluid:
 Water
 SG: 1
 Viscosity: 0.9946 cP
 NPSHa: ---
 Temperature: 68 °F
 Vapor pressure: 0.3391 psi a
 Atm pressure: 14.7 psi a

Motor:

Standard: NEMA
 Enclosure: TEFC
 Sizing criteria: Max Power on Design Curve
 Size: 7.5 hp
 Speed: 1800
 Frame: 213T

Pump Limits:

Temperature: 167 °F
 Pressure: 375 psi g
 Sphere size: 0.438 in
 Power: 95 hp
 Eye area: 11.9 in²

---- Data Point ----

Flow: 375 US gpm
 Head: 55.1 ft
 Eff: 84.5%
 Power: 6.17 hp
 NPSHr: 8.21 ft

---- Design Curve ----

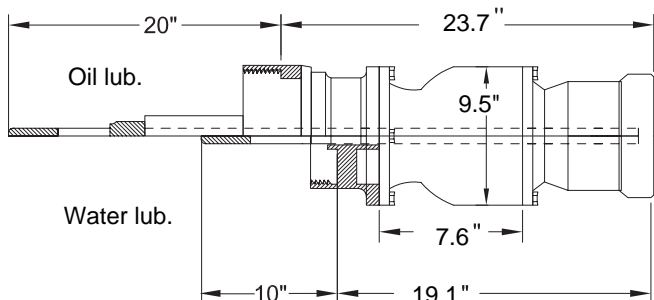
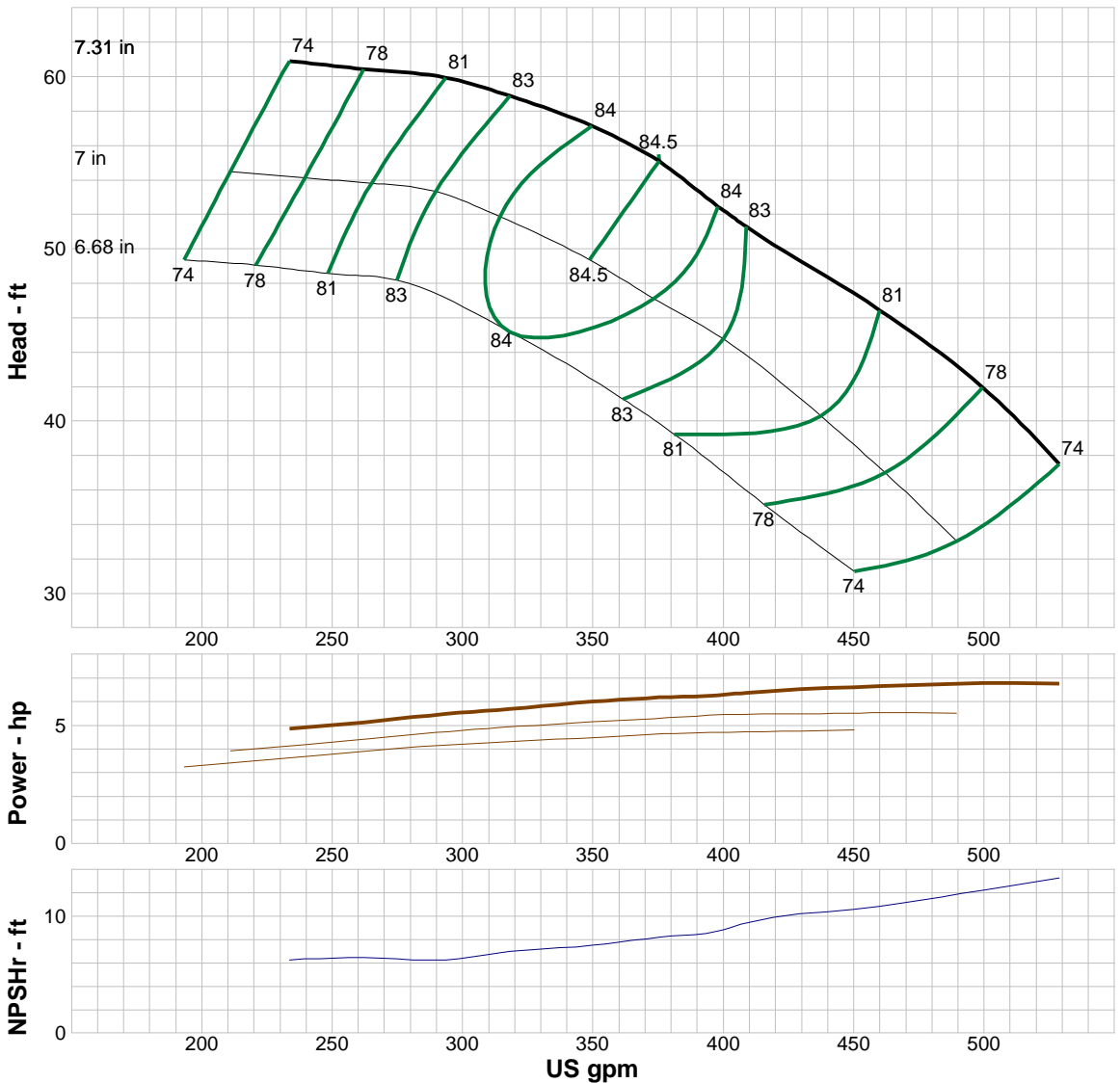
Shutoff head: 62.4 ft
 Shutoff dP: 27 psi
 Min flow: 75 US gpm
 BEP: 84.5% @ 375 US gpm
 NOL power:
 6.78 hp @ 499 US gpm

-- Max Curve --

Max power:
 6.78 hp @ 499 US gpm

--Additional Data--

Std. Shaft Diameter : 1.5"
 Max. Shaft Diameter: C.F.
 Opt. Lateral Setting: 0.13"
 Std. Lateral: 0.23"
 One Stage Subm. WT-LB: 154.8
 One Stage Water Lub. WT-LB: 138.2
 One Stage Oil Lub. WT-LB: 162.2
 Add Stage WT-LB: 59.1
 Impeller Weight: 12.9 lb
 Min. Submergence: 18"



Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
508	1770	40.6	76.8	6.78	12.6
423	1770	49.9	82.4	6.46	9.83
338	1770	57.8	83.6	5.89	7.32
254	1770	60.6	76.9	5.05	6.41
169	1770	62	65	4.23	5.89



Company: Empresas Suarez S.A. de C.V.

Name:

Date: 7/31/2017

Pump:

Size: 10WH-1C (1 stage)
 Type: LINE W_60 Hz
 Synch speed: 1800 rpm
 Curve: ETWBBEF
 Specific Speeds:
 Dimensions:
 Vertical Turbine:
 Speed: 1760 rpm
 Dia: 7.75 in
 Impeller: 10WH-1C
 Ns: 2874
 Nss: 7983
 Suction: 8 in
 Discharge: RI 6" RI 8"
 Bowl size: 9.6 in
 Max lateral: ---
 Thrust K factor: 6.1 lb/ft

Search Criteria:

Flow: --- Head: ---
 Fluid:
 Water
 SG: 1
 Viscosity: 0.9946 cP
 NPSHa: ---
 Temperature: 68 °F
 Vapor pressure: 0.3391 psi a
 Atm pressure: 14.7 psi a

Motor:

Standard: NEMA
 Enclosure: TEFC
 Sizing criteria: Max Power on Design Curve
 Size: 10 hp
 Speed: 1800
 Frame: 215T

Pump Limits:

Temperature: 167 °F
 Pressure: 450 psi g
 Sphere size: 0.61 in
 Power: 145 hp
 Eye area: 14.9 in²

---- Data Point ----

Flow: 732 US gpm
 Head: 39.4 ft
 Eff: 84.4%
 Power: 8.64 hp
 NPSHr: 10 ft

---- Design Curve ----

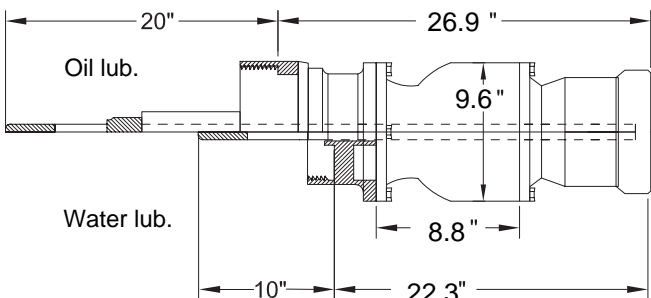
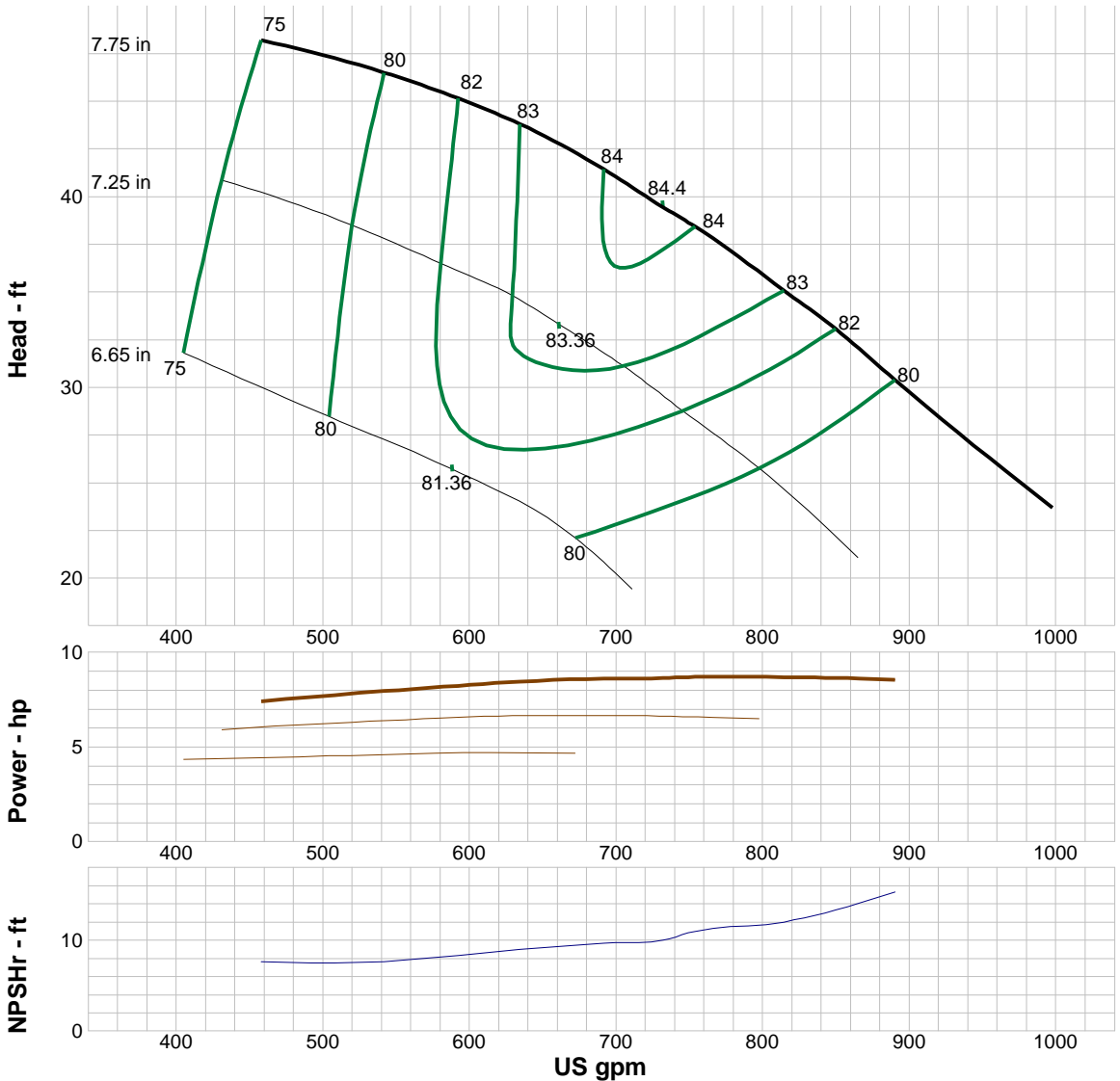
Shutoff head: 58 ft
 Shutoff dP: 25.1 psi
 Min flow: 140 US gpm
 BEP: 84.4% @ 732 US gpm
 NOL power:
 8.71 hp @ 754 US gpm

-- Max Curve --

Max power:
 8.71 hp @ 754 US gpm

--Additional Data--

Std. Shaft Diameter : 1.5"
 Max. Shaft Diameter: C.F.
 Opt. Lateral Setting: 0.13"
 Std. Lateral: 0.58"
 One Stage Subm. WT-LB: 162.2
 One Stage Water Lub. WT-LB: 157.8
 One Stage Oil Lub. WT-LB: 179.7
 Add Stage WT-LB: 64.3
 Impeller Weight: 15.8 lb
 Min. Submergence: 19"



Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
958	1760	26.1	76.6	8.34	18.7
798	1760	36	83.3	8.69	11.7
638	1760	43.6	83.1	8.46	9.05
479	1760	47.8	76.3	7.56	7.67
319	1760	51	66.8	6.56	7.67



Company: Empresas Suarez S.A. de C.V.

Name:

Date: 1/15/2018

Pump:

Size: 10HH-1C (1 stage)
 Type: LINE W_60 Hz
 Synch speed: 1800 rpm
 Curve: ETHBAEF
 Specific Speeds:
 Dimensions:
 Vertical Turbine:
 Speed: 1760 rpm
 Dia: 8.25 in
 Impeller: 10HH-1C
 Ns: 4953
 Nss: 7751
 Suction: 8 in
 Discharge: 8 in
 Bowl size: 9.6 in
 Max lateral: ---
 Thrust K factor: 13.6 lb/ft

Search Criteria:

Flow: --- Head: ---

Fluid:

Water
 SG: 1
 Viscosity: 0.9946 cP
 NPSHa: ---
 Temperature: 68 °F
 Vapor pressure: 0.3391 psi a
 Atm pressure: 14.7 psi a

Motor:

Standard: NEMA
 Enclosure: TEFC
 Sizing criteria: Max Power on Design Curve
 Size: 15 hp
 Speed: 1800
 Frame: 254T

Pump Limits:

Temperature: 167 °F
 Pressure: 450 psi g
 Sphere size: 1.438 in
 Power: 257 hp
 Eye area: 26.7 in²

---- Data Point ----

Flow: 1457 US gpm
 Head: 31.7 ft
 Eff: 82.3%
 Power: 14.2 hp
 NPSHr: 18.1 ft

---- Design Curve ----

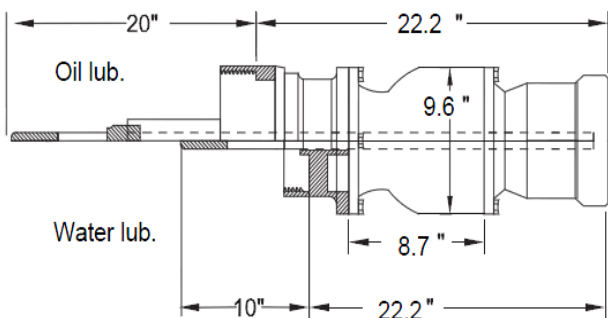
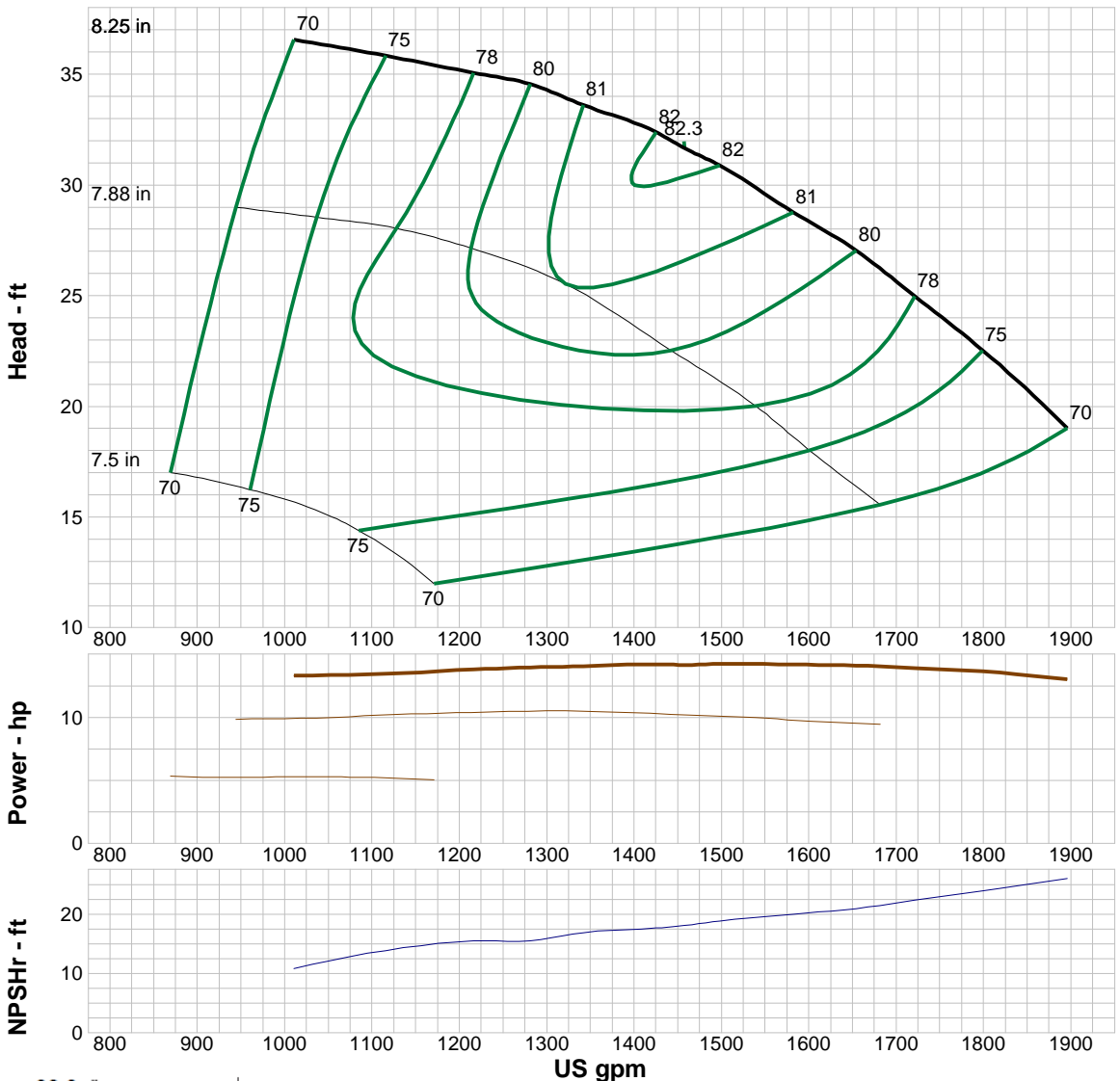
Shutoff head: 57.9 ft
 Shutoff dP: 25.1 psi
 Min flow: 284 US gpm
 BEP: 82.3% @ 1457 US gpm
 NOL power: 14.2 hp @ 1497 US gpm

-- Max Curve --

Max power: 14.2 hp @ 1497 US gpm

--Additional Data--

Std. Shaft Diameter : 1.5"
 Max. Shaft Diameter: C.F.
 Opt. Lateral Setting: 0.13"
 Std. Lateral: 0.54"
 One Stage Subm. WT-LB: 166.6
 One Stage Water Lub. WT-LB: 149.2
 One Stage Oil Lub. WT-LB: 156.0
 Add Stage WT-LB: 59.8
 Impeller Weight: 14.7 lb
 Min. Submergence: 30"



Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
1819	1760	21.8	73.9	13.5	24.4
1516	1760	30.4	81.8	14.2	19.1
1213	1760	35.1	77.9	13.8	15.4
910	1760	37.3	65.2	13.2	7.83
606	1760	39.4	50.7	12.8	-1.15

Company: Empresas Suarez S.A. de C.V.

Name:

Date: 8/31/2017



Pump:

Size: 10HXH-1C (1 stage)
 Type: LINE W_60 Hz
 Synch speed: 1800 rpm
 Curve: ETXBAEF
 Specific Speeds:
 Dimensions:
 Vertical Turbine:
 Speed: 1770 rpm
 Dia: 8.25 in
 Impeller: 10HXH-1C
 Ns: 3731
 Nss: 7947
 Suction: 8 in
 Discharge: RI 8"
 Bowl size: 9.7 in
 Max lateral: ---
 Thrust K factor: 10.3 lb/ft

Search Criteria:

Flow: --- Head: ---

Fluid:

Water
 SG: 1
 Viscosity: 0.9946 cP
 NPSHa: ---
 Temperature: 68 °F
 Vapor pressure: 0.3391 psi a
 Atm pressure: 14.7 psi a

Motor:

Standard: NEMA
 Enclosure: TEFC
 Sizing criteria: Max Power on Design Curve
 Size: 15 hp
 Speed: 1800
 Frame: 254T

Pump Limits:

Temperature: 167 °F
 Pressure: 450 psi g
 Sphere size: 0.875 in
 Power: 173 hp
 Eye area: 19.4 in²

---- Data Point ----

Flow: 1019 US gpm
 Head: 36.7 ft
 Eff: 80.3%
 Power: 11.8 hp
 NPSHr: 16.1 ft

---- Design Curve ----

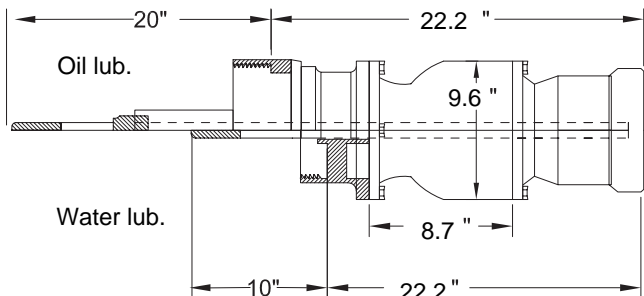
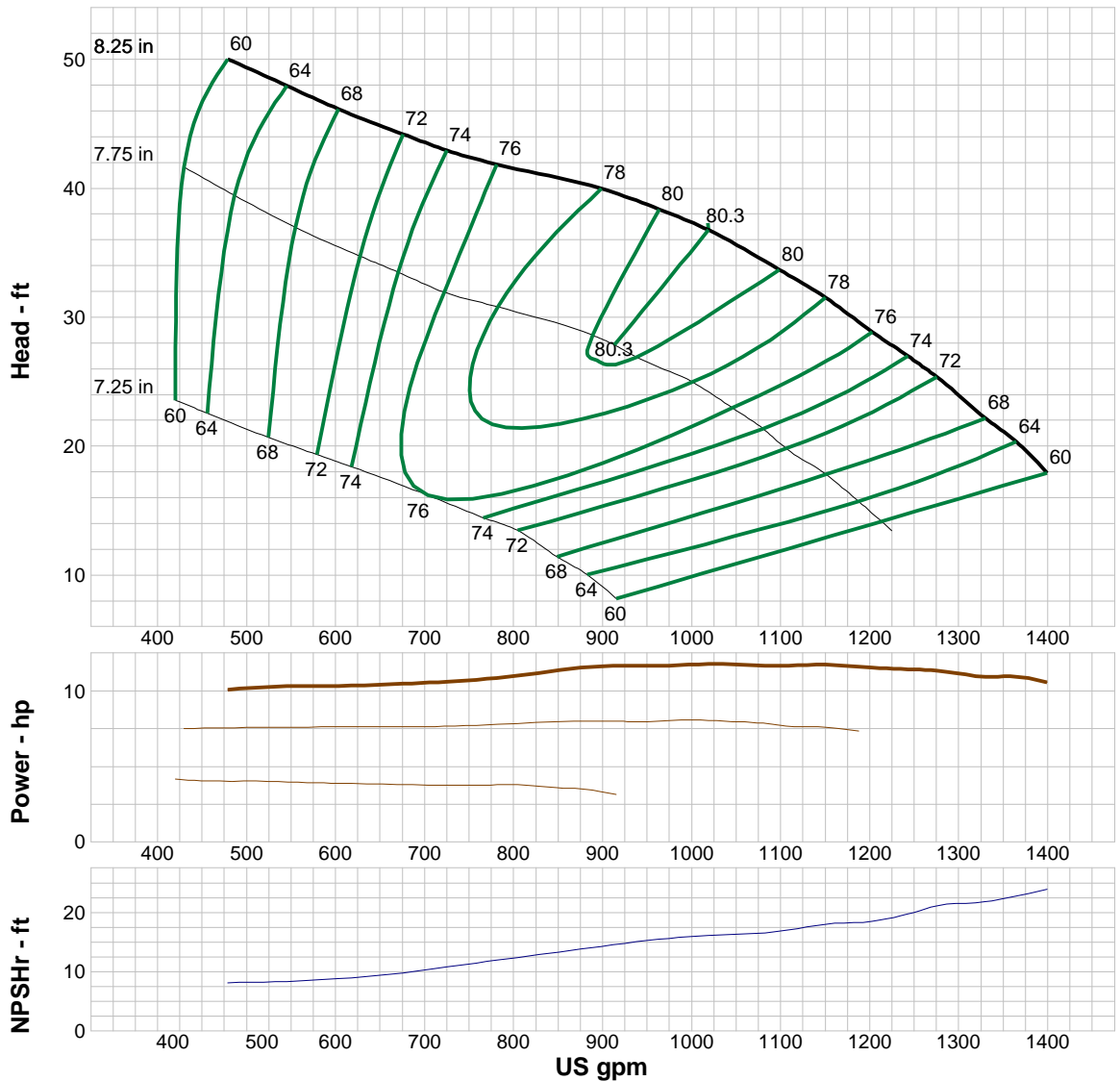
Shutoff head: 65.9 ft
 Shutoff dP: 28.5 psi
 Min flow: 200 US gpm
 BEP: 80.3% @ 1019 US gpm
 NOL power:
 11.8 hp @ 1019 US gpm

-- Max Curve --

Max power:
 11.8 hp @ 1019 US gpm

--Additional Data--

Std. Shaft Diameter : 1.5"
 Max. Shaft Diameter: C.F.
 Opt. Lateral Setting: 0.13"
 Std. Lateral: 0.47"
 One Stage Subm. WT-LB: 169.9
 One Stage Water Lub. WT-LB: 155.6
 One Stage Oil Lub. WT-LB: 162.4
 Add Stage WT-LB: 63.1
 Impeller Weight: 15.8 lb
 Min. Submergence: 28"



Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
1343	1770	21.5	66.4	10.9	22.2
1119	1770	32.8	79.2	11.7	17.3
895	1770	40	77.9	11.6	14.2
671	1770	44.3	71.8	10.5	9.74
448	1770	51	58.2	9.97	8.1



Company: Empresas Suarez S.A. de C.V.

Name:

Date: 7/27/2017

Pump:

Size: 10CC-2C (1 stage)
 Type: LINE W_60 Hz
 Synch speed: 1800 rpm
 Curve:ETCBBEF
 Specific Speeds:
 Dimensions:
 Vertical Turbine:
 Speed: 1760 rpm
 Dia: 7.7 in
 Impeller: 10CC-2C
 Ns: 1463
 Nss: 5253
 Suction: 6 in
 Discharge: RI 6" RI 8"
 Bowl size: 9.5 in
 Max lateral: ---
 Thrust K factor: 4 lb/ft

Search Criteria:

Flow: --- Head: ---

Fluid:

Water
 SG: 1
 Viscosity: 0.9946 cP
 NPSHa: ---
 Temperature: 68 °F
 Vapor pressure: 0.3391 psi a
 Atm pressure: 14.7 psi a

Motor:

Standard: NEMA
 Enclosure: TEFC
 Sizing criteria: Max Power on Design Curve
 Size: 7.5 hp
 Speed: 1800
 Frame: 213T

Pump Limits:

Temperature: 167 °F
 Pressure: 280 psi g
 Sphere size: 0.531 in
 Power: 68 hp
 Eye area: 9.74 in²

---- Data Point ----

Flow: 317 US gpm
 Head: 60.4 ft
 Eff: 85.3%
 Power: 5.67 hp
 NPSHr: 10.4 ft

---- Design Curve ----

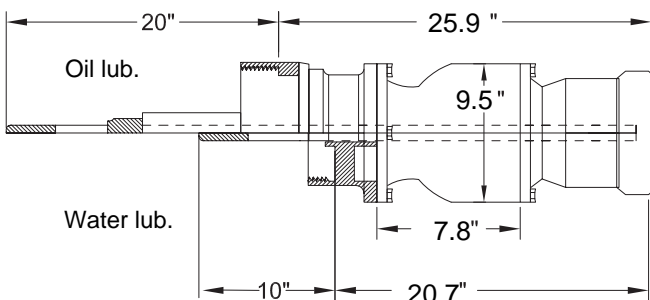
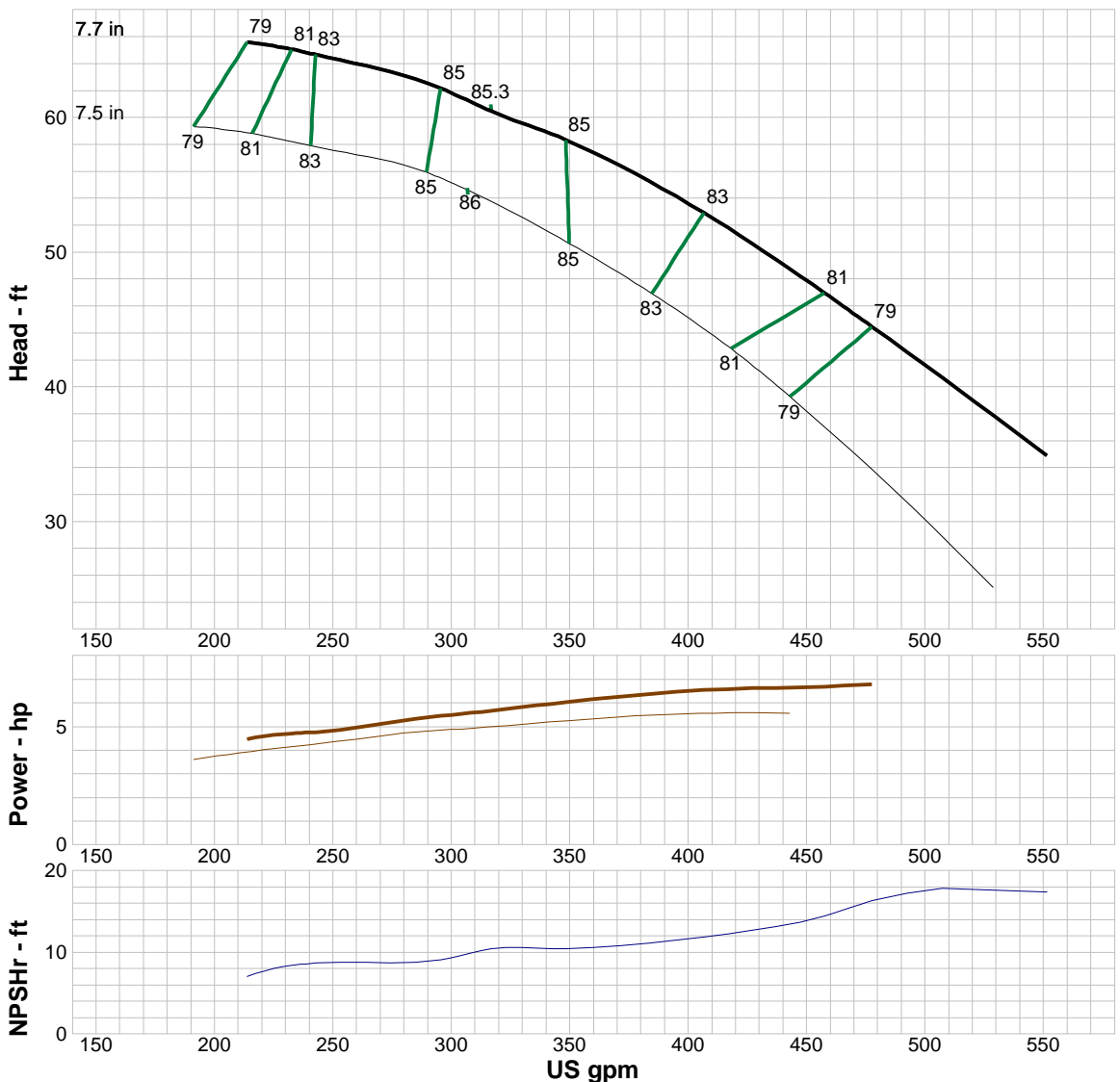
Shutoff head: 67.2 ft
 Shutoff dP: 29.1 psi
 Min flow: 65 US gpm
 BEP: 85.3% @ 317 US gpm
 NOL power:
 7.02 hp @ 533 US gpm

-- Max Curve --

Max power:
 7.02 hp @ 533 US gpm

--Additional Data--

Std. Shaft Diameter : 1.5"
 Max. Shaft Diameter: C.F.
 Opt. Lateral Setting: 0.13"
 Std. Lateral: 0.76"
 One Stage Subm. WT-LB: 159.2
 One Stage Water Lub. WT-LB: 153.8
 One Stage Oil Lub. WT-LB: 175.6
 Add Stage WT-LB: 61.6
 Impeller Weight: 13.1 lb
 Min. Submergence: 15"



Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
529	1760	37.7	73.9	7.01	17.1
441	1760	48.9	81.6	6.65	13.6
353	1760	57.9	84.8	6.08	10.6
265	1760	63.6	83.9	5.06	8.85
176	1760	66.6	75	4.01	4.36



Company: Empresas Suarez S.A. de C.V.

Name:

Date: 8/2/2017

Pump:

Size: 10CC-1C (1 stage)
 Type: LINE W_60 Hz
 Synch speed: 1800 rpm
 Curve: ETCBAEF
 Specific Speeds:
 Dimensions:
 Vertical Turbine:
 Speed: 1760 rpm
 Dia: 7.7 in
 Impeller: 10CC-1C
 Ns: 1543
 Nss: 3999
 Suction: 6 in
 Discharge: RI 6" RI 8"
 Bowl size: 9.5 in
 Max lateral: ---
 Thrust K factor: 4 lb/ft

Search Criteria:

Flow: --- Head: ---

Fluid:

Water
 SG: 1
 Viscosity: 0.9946 cP
 NPSHa: ---
 Temperature: 68 °F
 Vapor pressure: 0.3391 psi a
 Atm pressure: 14.7 psi a

Motor:

Standard: NEMA
 Enclosure: TEFC
 Sizing criteria: Max Power on Design Curve
 Size: 7.5 hp
 Speed: 1800
 Frame: 213T

Pump Limits:

Temperature: 167 °F
 Pressure: 280 psi g
 Sphere size: 0.531 in
 Power: 50 hp
 Eye area: 10.4 in²

---- Data Point ----

Flow: 301 US gpm
 Head: 53 ft
 Eff: 84%
 Power: 4.8 hp
 NPSHr: 13.8 ft

---- Design Curve ----

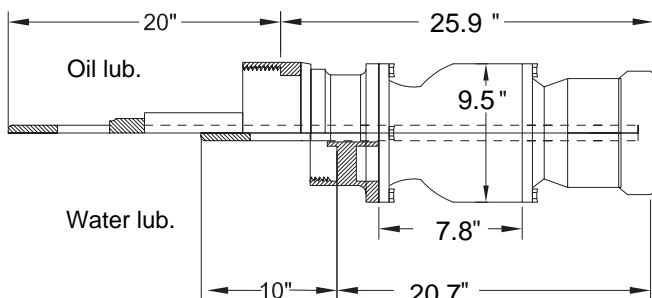
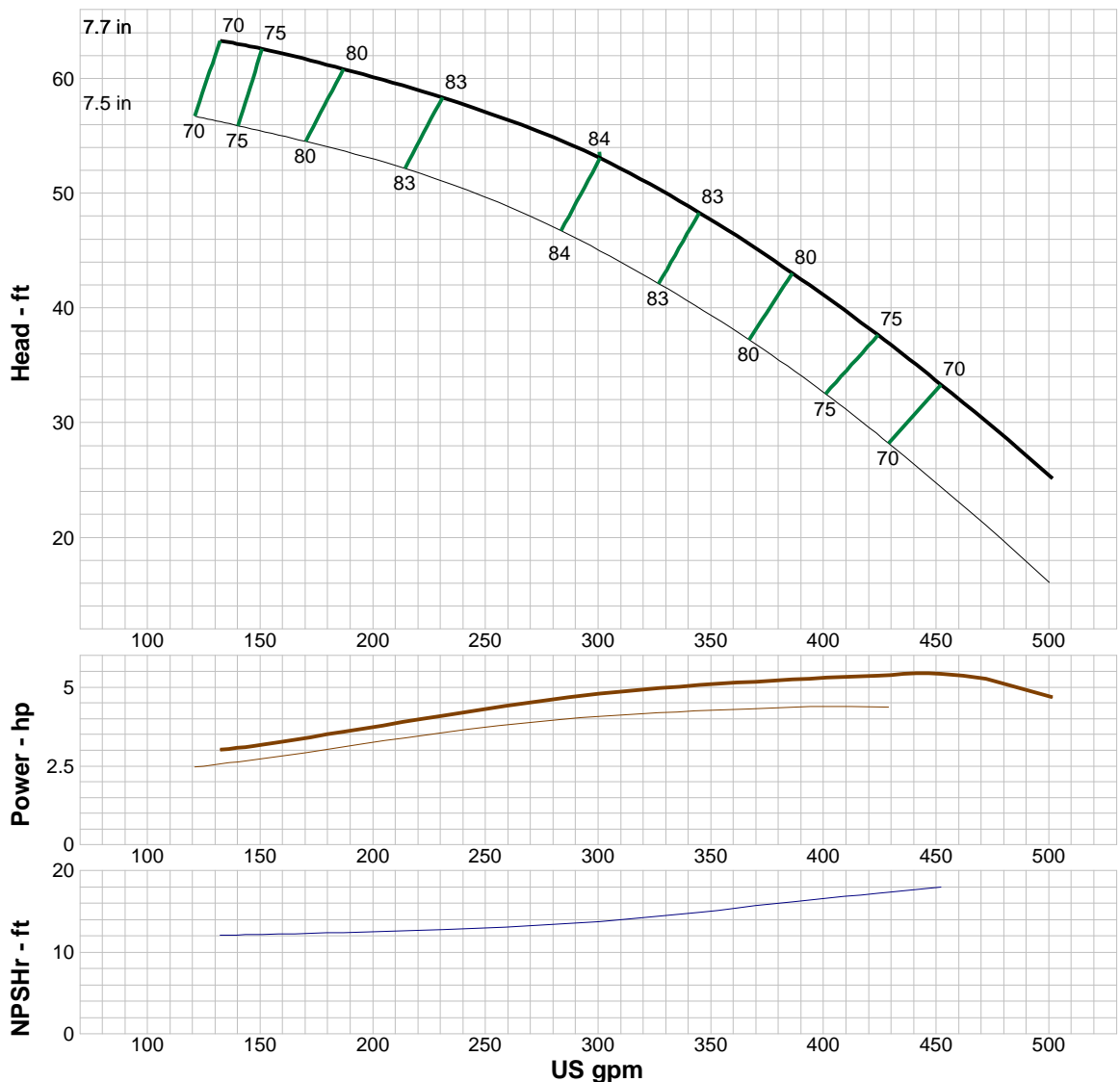
Shutoff head: 64.9 ft
 Shutoff dP: 28.1 psi
 Min flow: 60 US gpm
 BEP: 84% @ 301 US gpm
 NOL power:
 5.43 hp @ 452 US gpm

-- Max Curve --

Max power:
 5.43 hp @ 452 US gpm

--Additional Data--

Std. Shaft Diameter : 1.5"
 Max. Shaft Diameter: C.F.
 Opt. Lateral Setting: 0.13"
 Std. Lateral: 0.76"
 One Stage Subm. WT-LB: 159.2
 One Stage Water Lub. WT-LB: 153.8
 One Stage Oil Lub. WT-LB: 175.6
 Add Stage WT-LB: 61.6
 Impeller Weight: 13.1 lb
 Min. Submergence: 15"



Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
481	1760	28.5	68.8	4.99	18.8
401	1760	40.9	78	5.29	16.6
321	1760	50.9	83.5	4.92	14.3
241	1760	57.6	83.1	4.2	12.9
160	1760	62.1	76.3	3.28	12.3



Company: Empresas Suarez S.A. de C.V.

Name:

Date: 8/31/2017

Pump:

Size: 11WL-1C (1 stage)
 Type: LINE W_60 Hz
 Synch speed: 1800 rpm
 Curve: ETWBAEG
 Specific Speeds:
 Dimensions:
 Vertical Turbine:
 Speed: 1760 rpm
 Dia: 8.13 in
 Impeller: 11WL-1C
 Ns: 1912
 Nss: 9433
 Suction: 8 in
 Discharge: RI 8" R110"
 Bowl size: 11 in
 Max lateral: ---
 Thrust K factor: 7.1 lb/ft

Search Criteria:

Flow: --- Head: ---

Fluid:

Water
 SG: 1
 Viscosity: 0.9946 cP
 NPSHa: ---
 Temperature: 68 °F
 Vapor pressure: 0.3391 psi a
 Atm pressure: 14.7 psi a

Motor:

Standard: NEMA
 Enclosure: TEFC
 Sizing criteria: Max Power on Design Curve
 Size: 15 hp
 Speed: 1800
 Frame: 254T

Pump Limits:

Temperature: 167 °F
 Pressure: 380 psi g
 Sphere size: 0.5 in
 Power: 126 hp
 Eye area: 15.6 in²

---- Data Point ----

Flow: 696 US gpm
 Head: 57.3 ft
 Eff: 85.3%
 Power: 11.8 hp
 NPSHr: 9.87 ft

---- Design Curve ----

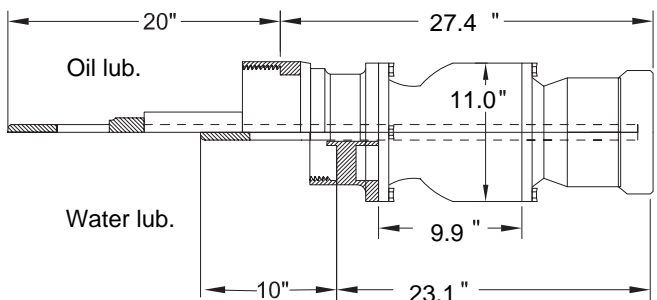
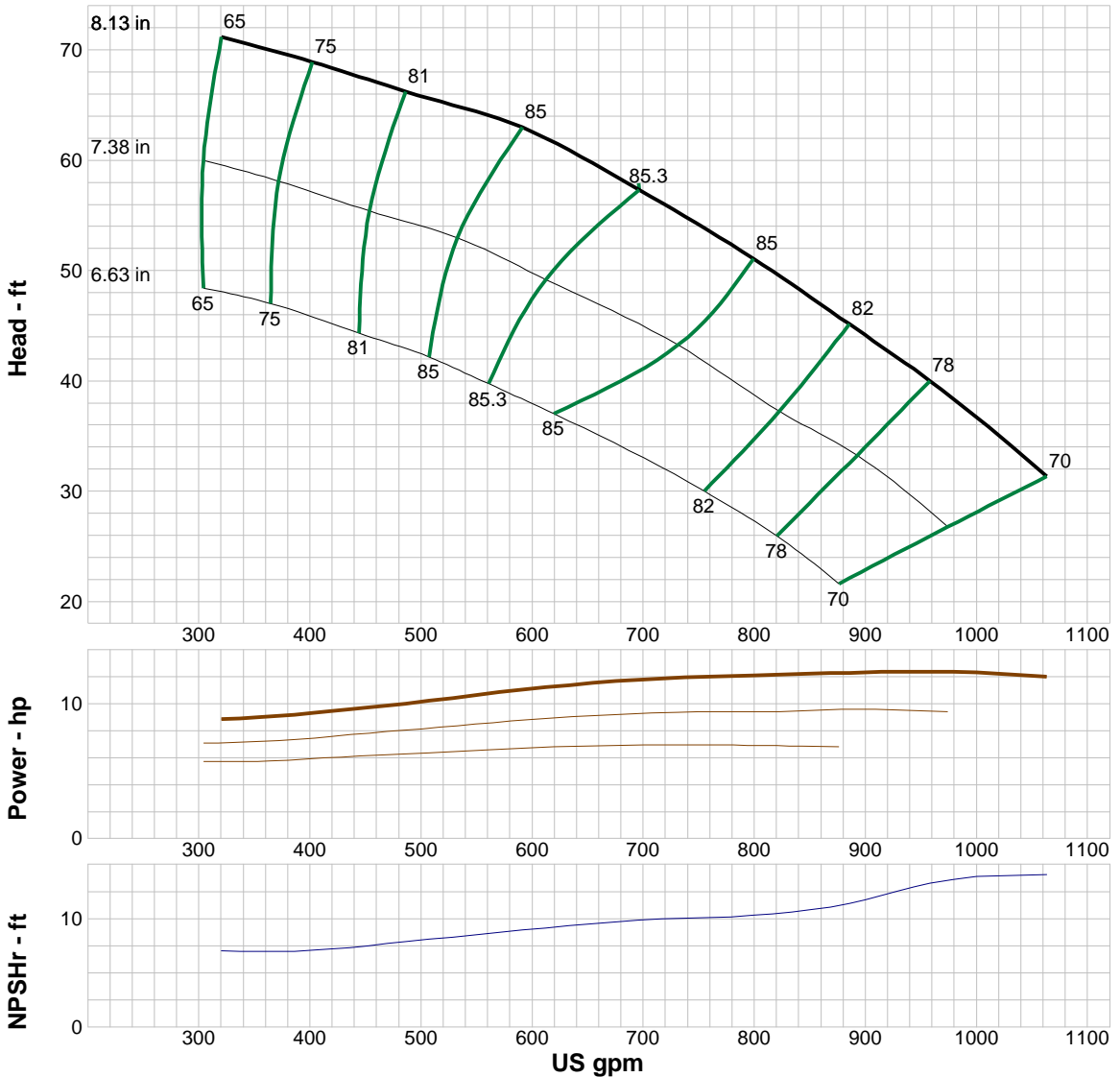
Shutoff head: 81.3 ft
 Shutoff dP: 35.2 psi
 Min flow: 118 US gpm
 BEP: 85.3% @ 696 US gpm
 NOL power:
 12.4 hp @ 958 US gpm

-- Max Curve --

Max power:
 12.4 hp @ 958 US gpm

--Additional Data--

Std. Shaft Diameter : 1.5"
 Max. Shaft Diameter: C.F.
 Opt. Lateral Setting: 0.25"
 Std. Lateral: 0.54"
 One Stage Subm. WT-LB: 238.5
 One Stage Water Lub. WT-LB: 272.2
 One Stage Oil Lub. WT-LB: 272.8
 Add Stage WT-LB: 100.1
 Impeller Weight: 21.9 lb
 Min. Submergence: 20"



Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
1020	1760	34.9	73.3	12.2	13.7
850	1760	47.6	83.2	12.2	10.9
680	1760	58.2	85.3	11.7	9.74
510	1760	65.5	81.9	10.3	8.13
340	1760	70.6	67.5	8.96	7.06

Company: Empresas Suarez S.A. de C.V.

Name:

Date: 8/31/2017



Pump:

Size: 11WH-1C (1 stage)
 Type: LINE W_60 Hz
 Synch speed: 1800 rpm
 Curve: ETWBEG
 Specific Speeds:
 Dimensions:
 Vertical Turbine:
 Speed: 1760 rpm
 Dia: 8.13 in
 Impeller: 11WH-1C
 Ns: 2235
 Nss: 9460
 Suction: 8 in
 Discharge: R18" RI 10"
 Bowl size: 11 in
 Max lateral: ---
 Thrust K factor: 7.1 lb/ft

Search Criteria:

Flow: --- Head: ---

Fluid:

Water
 SG: 1
 Viscosity: 0.9946 cP
 NPSHa: ---
 Temperature: 68 °F
 Vapor pressure: 0.3391 psi a
 Atm pressure: 14.7 psi a

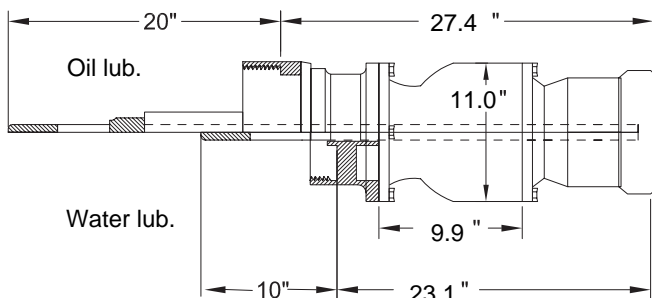
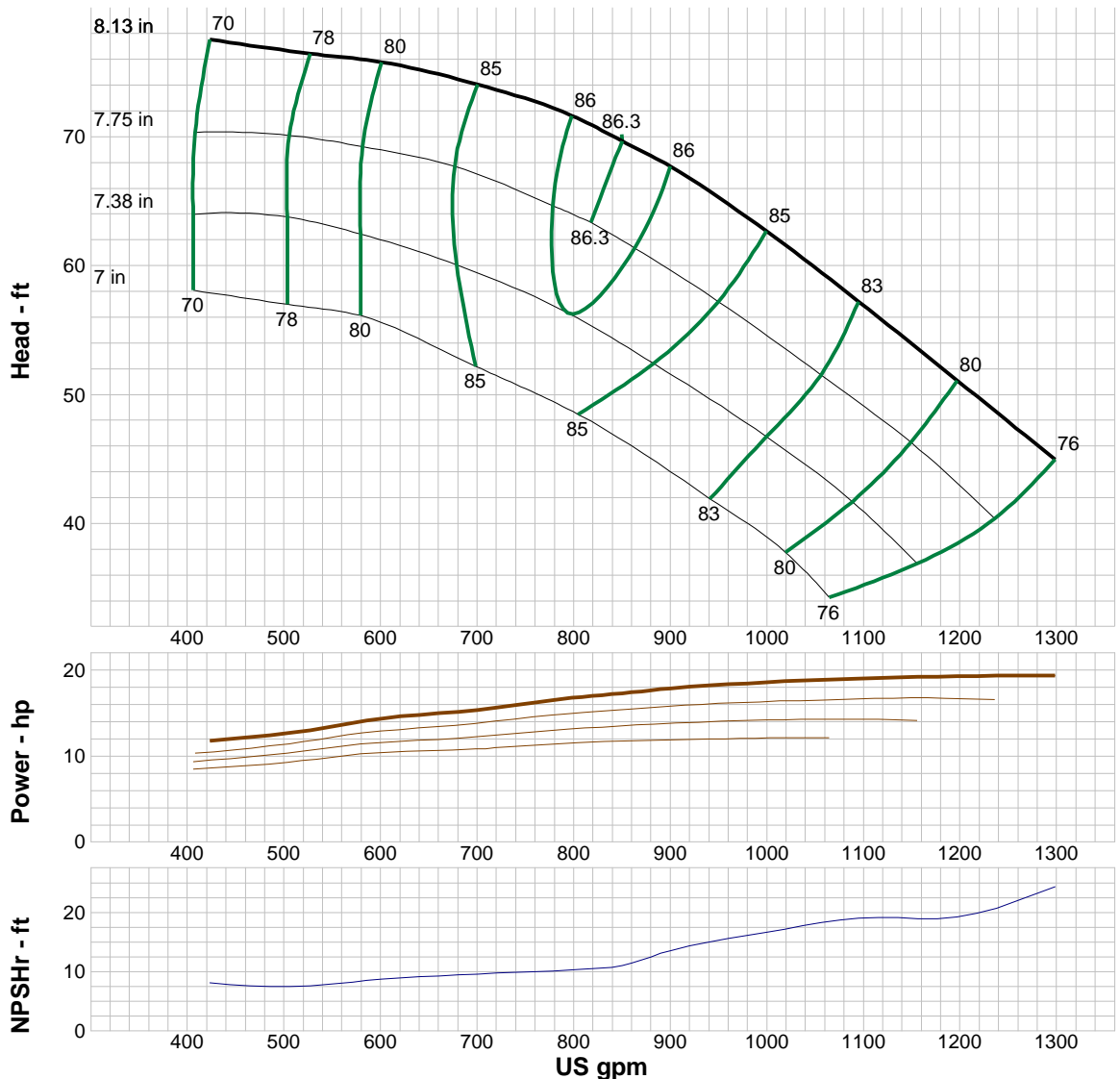
Motor:

Standard: NEMA
 Enclosure: TEFC
 Sizing criteria: Max Power on Design Curve
 Size: 20 hp
 Speed: 1800
 Frame: 256T

Pump Limits:

Temperature: 167 °F
 Pressure: 380 psi g
 Sphere size: 0.5 in
 Power: 195 hp
 Eye area: 15.6 in²

---- Data Point ----	
Flow:	850 US gpm
Head:	69.7 ft
Eff:	86.3%
Power:	17.3 hp
NPSHr:	11.1 ft
---- Design Curve ----	
Shutoff head:	80.4 ft
Shutoff dP:	34.8 psi
Min flow:	180 US gpm
BEP:	86.3% @ 850 US gpm
NOL power:	19.4 hp @ 1298 US gpm
-- Max Curve --	
Max power:	19.4 hp @ 1298 US gpm
--Additional Data--	
Std. Shaft Diameter : 1.5"	
Max. Shaft Diameter: C.F.	
Opt. Lateral Setting: 0.25"	
Std. Lateral: 0.54"	
One Stage Subm. WT-LB: 238.5	
One Stage Water Lub. WT-LB:272.2	
One Stage Oil Lub. WT-LB: 272.8	
Add Stage WT-LB: 100.1	
Impeller Weight: 21.9 lb	
Min. Submergence: 20"	



Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
1246	1760	48.1	78	19.3	21.7
1038	1760	60.4	84.2	18.8	17.6
830	1760	70.4	86.2	17.1	10.8
623	1760	75.4	81.1	14.6	8.96
415	1760	77.6	69.4	11.7	8.13

Company: Empresas Suarez S.A. de C.V.

Name:

Date: 9/6/2017

Pump:

Size: 12WH-1C (1 stage)
 Type: LINE W_60 Hz
 Synch speed: 1800 rpm
 Curve: ETWBBEH
 Specific Speeds:
 Dimensions:
 Vertical Turbine:
 Speed: 1785 rpm
 Dia: 8.69 in
 Impeller: 12WH-1C
 Ns: 2130
 Nss: 7803
 Suction: CB- 8"
 Discharge: RI 8, RI 10"
 Bowl size: 11.8 in
 Max lateral: ---
 Thrust K factor: 7.5 lb/ft

Search Criteria:

Flow: --- Head: ---

Fluid:

Water
 SG: 1
 Viscosity: 0.9946 cP
 NPSHa: ---
 Temperature: 68 °F
 Vapor pressure: 0.3391 psi a
 Atm pressure: 14.7 psi a

Motor:

Standard: NEMA
 Enclosure: TEFC
 Sizing criteria: Max Power on Design Curve
 Size: 30 hp
 Speed: 1800
 Frame: 286T

Pump Limits:

Temperature: 167 °F
 Pressure: 340 psi g
 Sphere size: 0.875 in
 Power: 219 hp
 Eye area: 20.5 in²

---- Data Point ----

Flow: 1152 US gpm
 Head: 75.3 ft
 Eff: 87%
 Power: 25.2 hp
 NPSHr: 16.1 ft

---- Design Curve ----

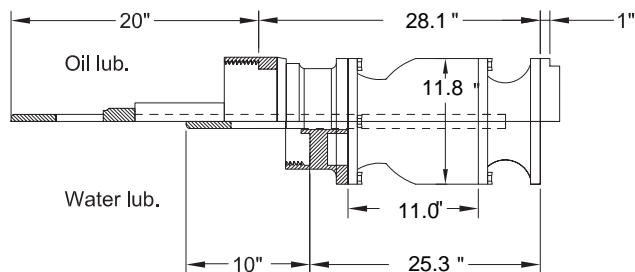
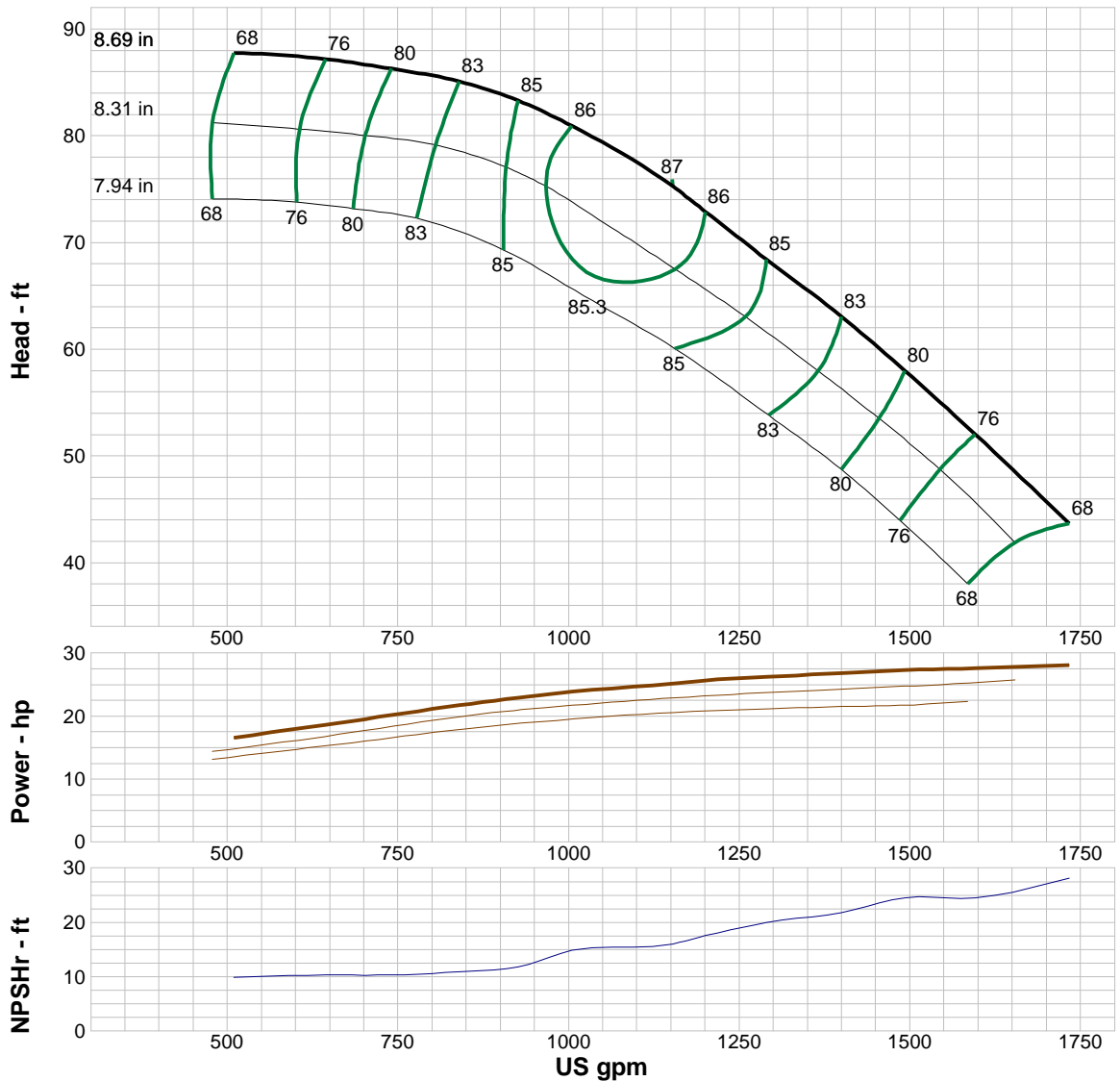
Shutoff head: 89.9 ft
 Shutoff dP: 38.9 psi
 Min flow: 200 US gpm
 BEP: 87% @ 1152 US gpm
 NOL power:
 28.1 hp @ 1733 US gpm

-- Max Curve --

Max power:
 28.1 hp @ 1733 US gpm

--Additional Data--

Std. Shaft Diameter : 1.69"
 Max. Shaft Diameter: C.F.
 Opt. Lateral Setting: 0.25"
 Std. Lateral: 0.53"
 One Stage Subm. WT-LB: N/A
 One Stage Water Lub. WT-LB: 307.3
 One Stage Oil Lub. WT-LB: 309.4
 Add Stage WT-LB: 135.7
 Impeller Weight: 25.5 lb
 Min. Submergence: 24"



Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
1663	1785	47.9	72	27.8	26.3
1386	1785	63.7	83.2	26.8	21.6
1109	1785	76.9	86.7	24.8	15.7
832	1785	85.2	82.8	21.6	10.9
554	1785	87.6	70.7	17.3	10



Company: Empresas Suarez S.A. de C.V.

Name:

Date: 8/3/2017

Pump:

Size: 12HXH-1C (1 stage)
 Type: LINE W_60 Hz
 Synch speed: 1800 rpm
 Curve: ETXB AEH
 Specific Speeds:
 Dimensions:
 Vertical Turbine:
 Speed: 1785 rpm
 Dia: 9.47 in
 Impeller: 12HXH-1C
 Ns: 4469
 Nss: 7693
 Suction: 10 in
 Discharge: RE 10" RI 12"
 Bowl size: 11.5 in
 Max lateral: ---
 Thrust K factor: 11 lb/ft

Search Criteria:

Flow: --- Head: ---

Fluid:

Water
 SG: 1
 Viscosity: 0.9946 cP
 NPSHa: ---
 Temperature: 68 °F
 Vapor pressure: 0.3391 psi a
 Atm pressure: 14.7 psi a

Motor:

Standard: NEMA
 Enclosure: TEFC
 Sizing criteria: Max Power on Design Curve
 Size: 30 hp
 Speed: 1800
 Frame: 286T

Pump Limits:

Temperature: 167 °F
 Pressure: 430 psi g
 Sphere size: 1.5 in
 Power: 429 hp
 Eye area: 32.8 in²

---- Data Point ----

Flow: 2114 US gpm
 Head: 39.2 ft
 Eff: 82.5%
 Power: 25.4 hp
 NPSHr: 23.7

---- Design Curve ----

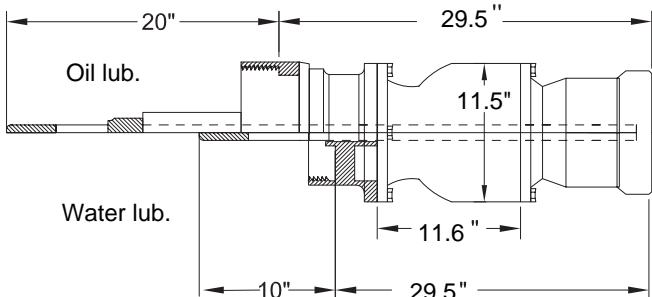
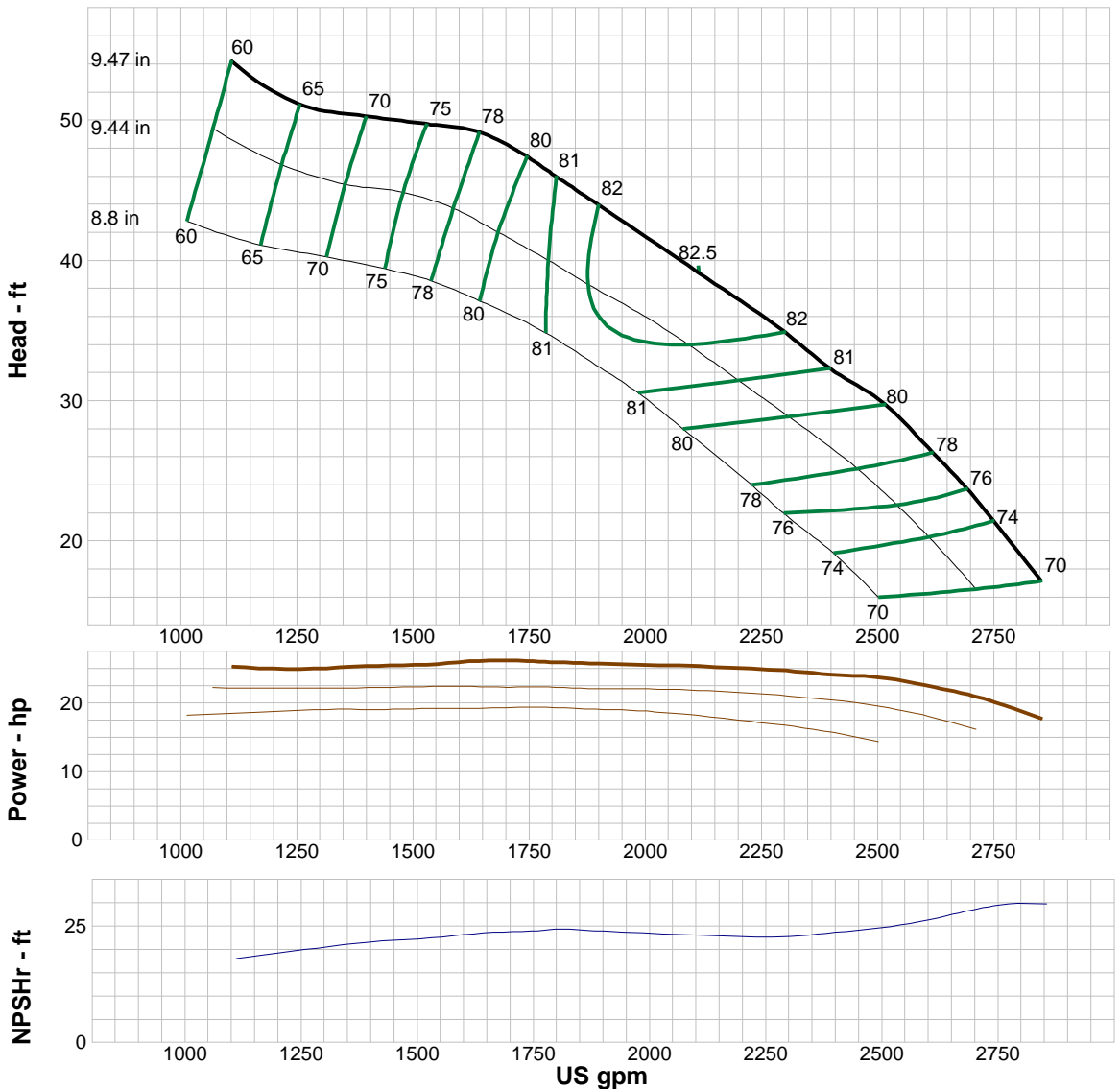
Shutoff head: 74.3 ft
 Shutoff dP: 32.1 psi
 Min flow: 430 US gpm
 BEP: 82.5% @ 2114 US gpm
 NOL power:
 27 hp @ 430 US gpm

-- Max Curve --

Max power:
 27 hp @ 430 US gpm

--Additional Data--

Std. Shaft Diameter : 1.94"
 Max. Shaft Diameter: C.F.
 Opt. Lateral Setting: 0.13"
 Std. Lateral: 0.68"
 One Stage Subm. WT-LB: N/A
 One Stage Water Lub. WT-LB: 255.5
 One Stage Oil Lub. WT-LB: 292.5
 Add Stage WT-LB: 123.1
 Impeller Weight: 28.4 lb
 Min. Submergence: 17"



Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
2740	1785	21.9	74.4	20.3	---
2283	1785	35.3	82.1	24.8	---
1826	1785	45.6	81.2	25.9	---
1370	1785	50.5	69	25.3	---
913	1785	58.4	53.4	25.8	---



Company: Empresas Suarez S.A. de C.V.

Name:

Date: 8/31/2017

Pump:

Size: 12Z-1C (1 stage)
 Type: LINE W_60 Hz
 Synch speed: 1800 rpm
 Curve: ETZBAEH
 Specific Speeds:
 Dimensions:
 Vertical Turbine:
 Speed: 1785 rpm
 Dia: 9.38 in
 Impeller: 12Z-1C
 Ns: 2349
 Nss: 8030
 Suction: CB- 8 in
 Discharge: RI 8" RE 10"
 Bowl size: 11.3 in
 Max lateral: ---
 Thrust K factor: 10.6 lb/ft

Search Criteria:

Flow: --- Head: ---

Fluid:

Water
 SG: 1
 Viscosity: 0.9946 cP
 NPSHa: ---
 Temperature: 68 °F
 Vapor pressure: 0.3391 psi a
 Atm pressure: 14.7 psi a

Motor:

Standard: NEMA
 Enclosure: TEFC
 Sizing criteria: Max Power on Design Curve
 Size: 30 hp
 Speed: 1800
 Frame: 286T

Pump Limits:

Temperature: 167 °F
 Pressure: 584 psi g
 Sphere size: 0.625 in
 Power: 338 hp
 Eye area: 20.1 in²

---- Data Point ----

Flow: 1157 US gpm
 Head: 68.7 ft
 Eff: 82.3%
 Power: 24.4 hp
 NPSHr: 22.6 ft

---- Design Curve ----

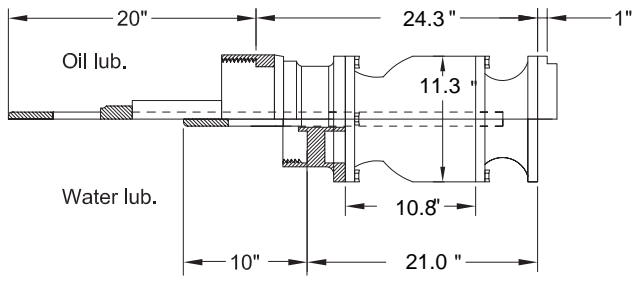
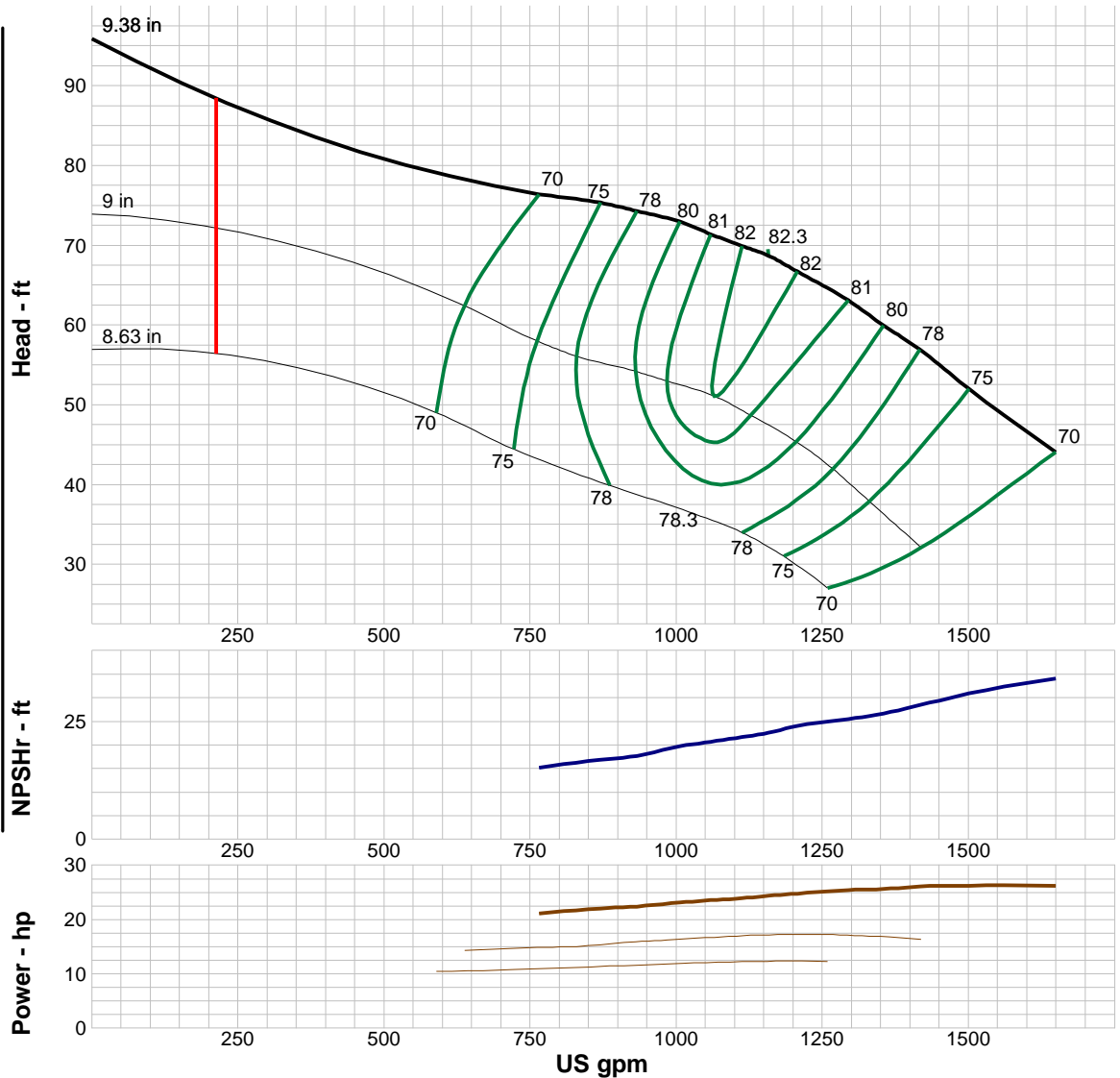
Shutoff head: 95.9 ft
 Shutoff dP: 41.5 psi
 Min flow: 212 US gpm
 BEP: 82.3% @ 1157 US gpm
 NOL power:
 26.3 hp @ 1501 US gpm

-- Max Curve --

Max power:
 26.3 hp @ 1501 US gpm

--Additional Data--

Std. Shaft Diameter : 1.5"
 Max. Shaft Diameter: C.F.
 Opt. Lateral Setting: 0.13"
 Std. Lateral: 0.3"
 One Stage Subm. WT-LB: N/A
 One Stage Water Lub. WT-LB: 241.9
 One Stage Oil Lub. WT-LB: 263.1
 Add Stage WT-LB: 120.6
 Impeller Weight: 23.7 lb
 Min. Submergence: 16"



Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
1583	1785	47.6	72.2	26.2	32.6
1319	1785	61.7	80.6	25.5	26
1055	1785	71.5	80.9	23.5	20.6
791	1785	76.1	71.2	21.3	15.6
528	1785	82.4	58.8	18.8	11.6



Company: Empresas Suarez S.A. de C.V.

Name:

Date: 9/5/2017

Pump:

Size: 12MS-2C (1 stage)
 Type: LINE W_60 Hz
 Synch speed: 1800 rpm
 Curve: ETMBBEH
 Specific Speeds:
 Dimensions:
 Vertical Turbine:
 Speed: 1760 rpm
 Dia: 8.88 in
 Impeller: 12MS-2C
 Ns: 3075
 Nss: 5492
 Suction: CB-8 "
 Discharge: RI 8, RE 10"
 Bowl size: 11.4 in
 Max lateral: ---
 Thrust K factor: 7.5 lb/ft

Search Criteria:

Flow: --- Head: ---

Fluid:

Water
 SG: 1
 Viscosity: 0.9946 cP
 NPSHa: ---
 Temperature: 68 °F
 Vapor pressure: 0.3391 psi a
 Atm pressure: 14.7 psi a

Motor:

Standard: NEMA
 Enclosure: TEFC
 Sizing criteria: Max Power on Design Curve
 Size: 20 hp
 Speed: 1800
 Frame: 256T

Pump Limits:

Temperature: 167 °F
 Pressure: 350 psi g
 Sphere size: 0.5 in
 Power: 190 hp
 Eye area: 17.9 in²

---- Data Point ----

Flow: 1100 US gpm
 Head: 53.6 ft
 Eff: 82.3%
 Power: 18.1 hp
 NPSHr: 21.5 ft

---- Design Curve ----

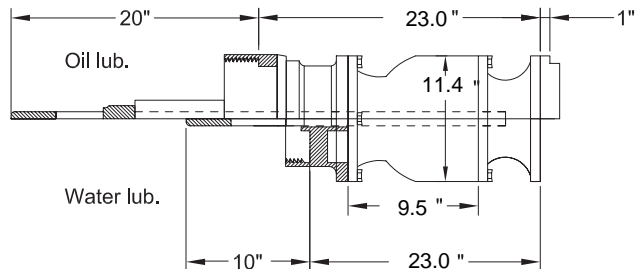
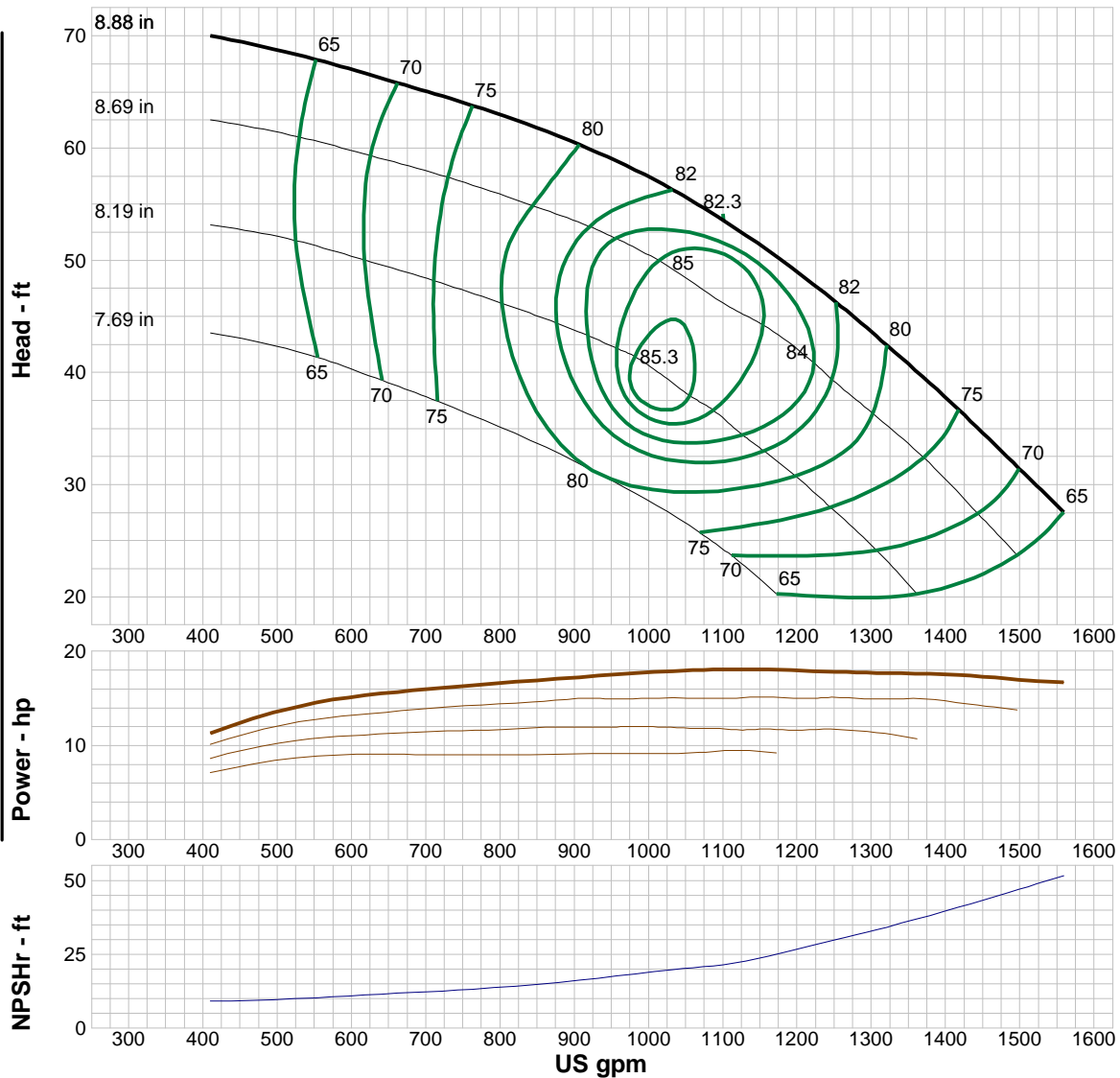
Shutoff head: 74 ft
 Shutoff dP: 32 psi
 Min flow: 229 US gpm
 BEP: 82.3% @ 1100 US gpm
 NOL power:
 18.1 hp @ 1100 US gpm

-- Max Curve --

Max power:
 18.1 hp @ 1100 US gpm

--Additional Data--

Std. Shaft Diameter : 1.5"
 Max. Shaft Diameter: C.F.
 Opt. Lateral Setting: 0.13"
 Std. Lateral: 0.5"
 One Stage Subm. WT-LB: 233.5
 One Stage Water Lub. WT-LB:212.1
 One Stage Oil Lub. WT-LB: 233.5
 Add Stage WT-LB: 96.4
 Impeller Weight: 19.3 lb
 Min. Submergence: 16"



Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
1496	1760	31.6	70.2	17	46.8
1247	1760	46.5	82	17.8	29.7
998	1760	57.4	81.5	17.7	18.9
748	1760	64.1	74.3	16.3	13
499	1760	68.7	64.6	13.3	9.89



Company: Empresas Suarez S.A. de C.V.

Name:

Date: 8/3/2017

Pump:

Size: 12MS-3C (1 stage)
 Type: LINE W_60 Hz
 Synch speed: 1800 rpm
 Curve: ETMBCEH
 Specific Speeds:
 Dimensions:
 Vertical Turbine:

Speed: 1770 rpm
 Dia: 8.88 in
 Impeller: 12MS-3C
 Ns: 2935
 Nss: 5485
 Suction: CB-8 in
 Discharge: RI 8" RE 10"
 Bowl size: 11.4 in
 Max lateral: ---
 Thrust K factor: 7.5 lb/ft

Search Criteria:

Flow: --- Head: ---

Fluid:

Water
 SG: 1
 Viscosity: 0.9946 cP
 NPSHa: ---

Temperature: 68 °F
 Vapor pressure: 0.3391 psi a
 Atm pressure: 14.7 psi a

Motor:

Standard: NEMA
 Enclosure: TEFC
 Sizing criteria: Max Power on Design Curve

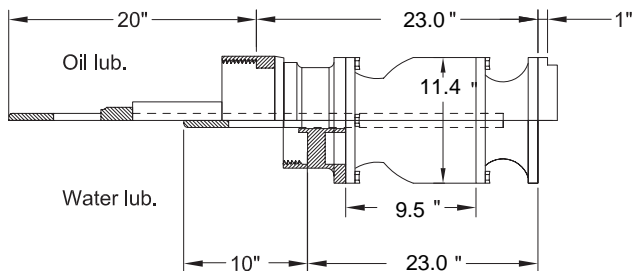
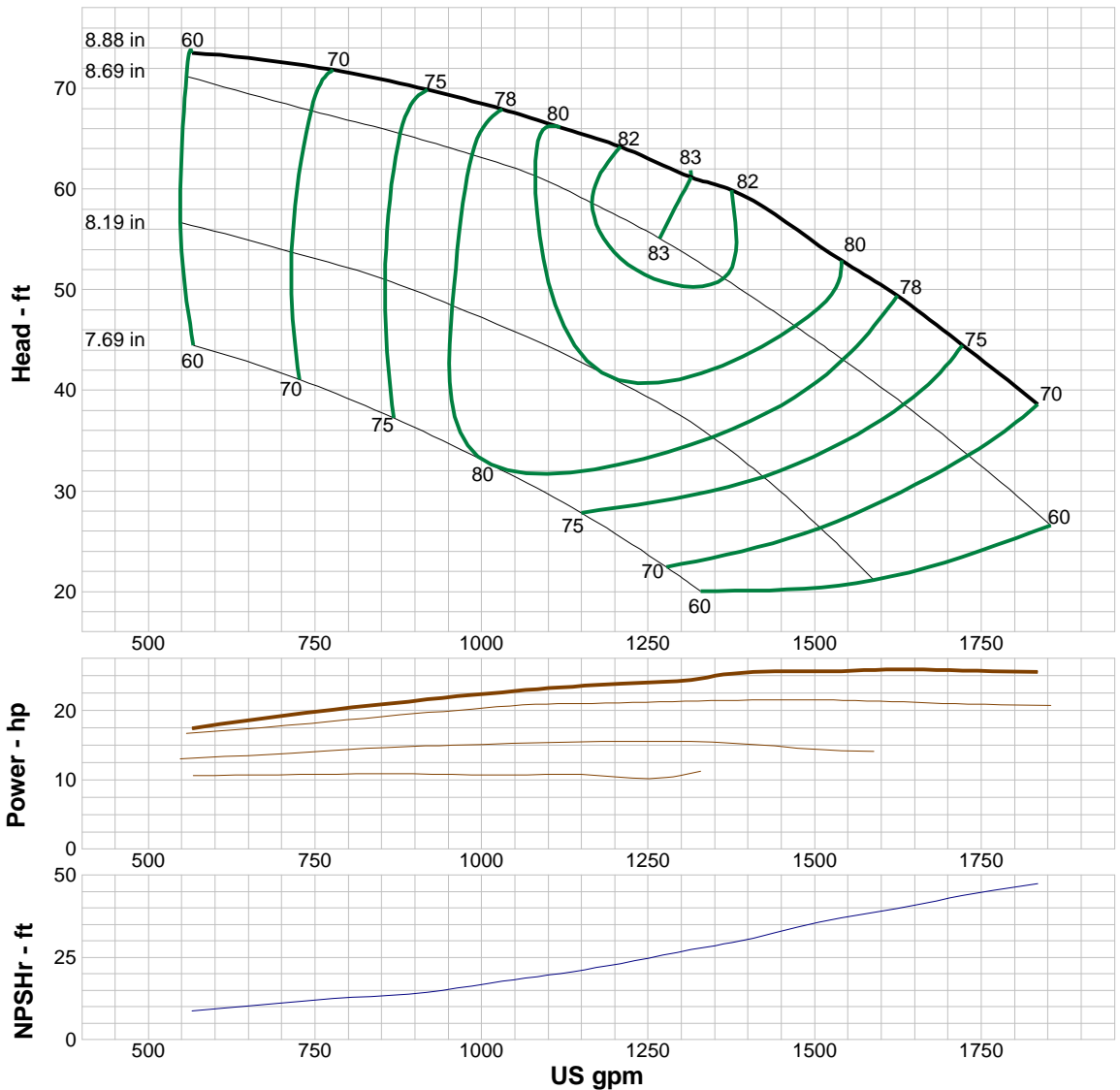
Size: 30 hp
 Speed: 1800
 Frame: 286T

Pump Limits:

Temperature: 167 °F
 Pressure: 350 psi g
 Sphere size: 0.813 in

Power: 255 hp
 Eye area: 17.9 in²

---- Data Point ----	
Flow:	1314 US gpm
Head:	61.2 ft
Eff:	83%
Power:	24.5 hp
NPSHr:	27.4 ft
---- Design Curve ----	
Shutoff head:	79.2 ft
Shutoff dP:	34.3 psi
Min flow:	262 US gpm
BEP:	83% @ 1314 US gpm
NOL power:	26 hp @ 1623 US gpm
-- Max Curve --	
Max power:	26 hp @ 1623 US gpm
--Additional Data--	
Std. Shaft Diameter :	1.5"
Max. Shaft Diameter:	C.F.
Opt. Lateral Setting:	0.13"
Std. Lateral:	0.5"
One Stage Subm. WT-LB:	N/A
One Stage Water Lub. WT-LB:	221.1
One Stage Oil Lub. WT-LB:	233.5
Add Stage WT-LB:	96.4
Impeller Weight:	19.3 lb
Min. Submergence:	16"



Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
1762	1770	42.4	73.2	25.7	45.1
1468	1770	55.9	80.9	25.5	33.9
1174	1770	64.9	81.3	23.7	22
881	1770	70.4	73.7	21.2	14
587	1770	73.4	61.1	17.7	9.08



Company: Empresas Suarez S.A. de C.V.

Name:

Date: 8/2/2017

Pump:

Size: 14MS-1C (1 stage)
 Type: LINE W_60 Hz
 Synch speed: 1800 rpm
 Curve: ETMBAEJ
 Specific Speeds:
 Dimensions:
 Vertical Turbine:
 Speed: 1770 rpm
 Dia: 10.88 in
 Impeller: 14MS-1C
 Ns: 2727
 Nss: 6868
 Suction: CB-10
 Discharge: RI 10 " RI 12"
 Bowl size: 13.5 in
 Max lateral: ---
 Thrust K factor: 10 lb/ft

Search Criteria:

Flow: --- Head: ---

Fluid:

Water
 SG: 1
 Viscosity: 0.9946 cP
 NPSHa: ---
 Temperature: 68 °F
 Vapor pressure: 0.3391 psi a
 Atm pressure: 14.7 psi a

Motor:

Standard: NEMA
 Enclosure: TEFC
 Sizing criteria: Max Power on Design Curve
 Size: 50 hp
 Speed: 1800
 Frame: 326T

Pump Limits:

Temperature: 167 °F
 Pressure: 303 psi g
 Sphere size: 1 in
 Power: 265 hp
 Eye area: 25.3 in²

---- Data Point ----

Flow: 1776 US gpm
 Head: 82 ft
 Eff: 83.2%
 Power: 44.2 hp
 NPSHr: 27.9 ft

---- Design Curve ----

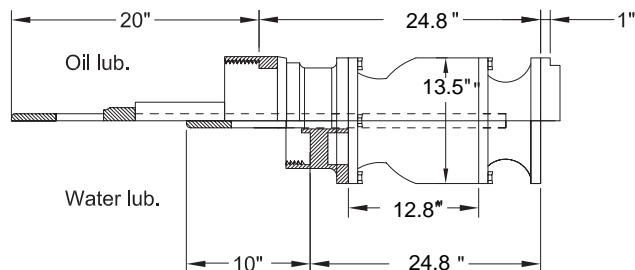
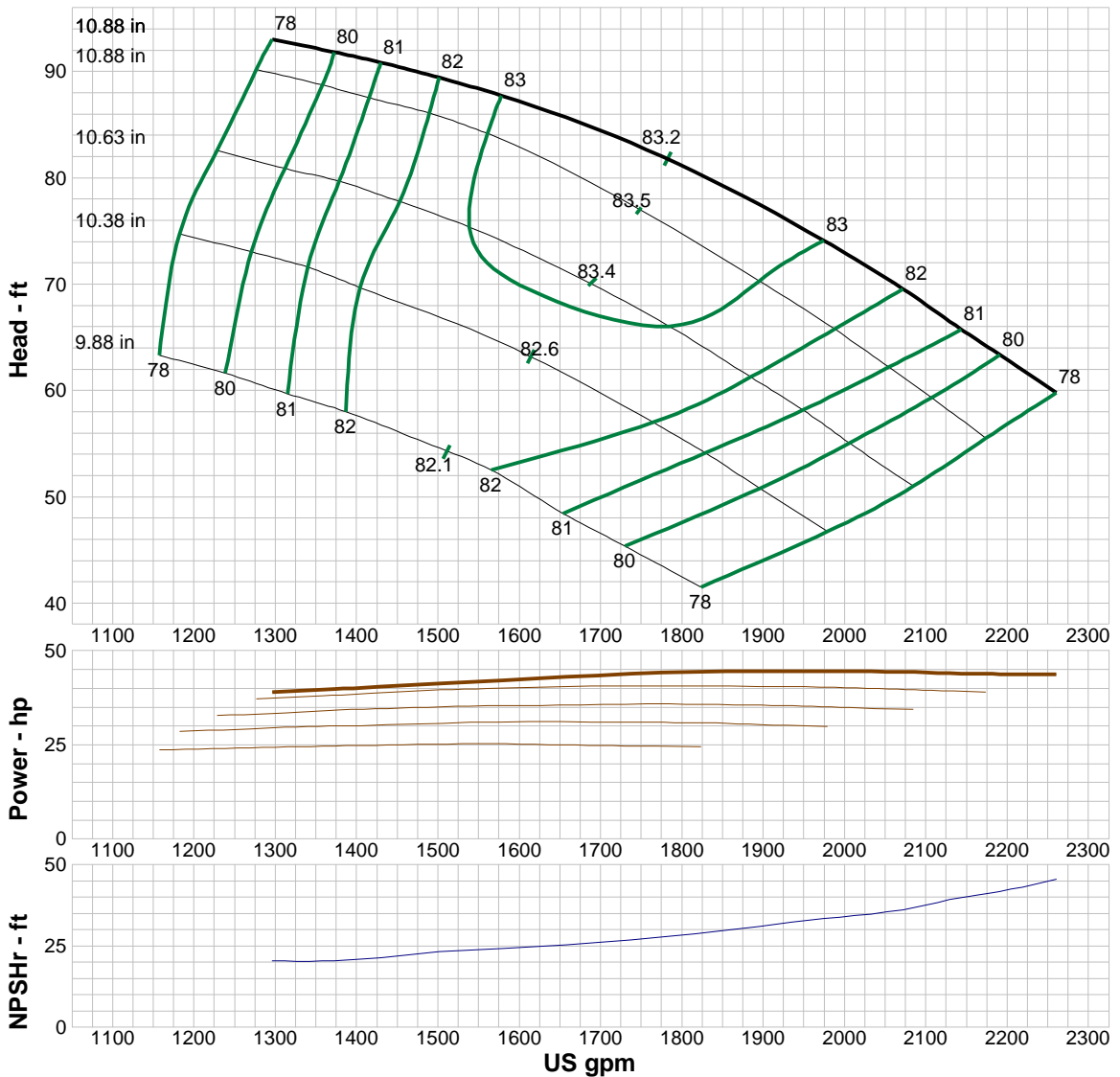
Shutoff head: 95.7 ft
 Shutoff dP: 41.4 psi
 Min flow: 354 US gpm
 BEP: 83.2% @ 1776 US gpm
 NOL power:
 44.5 hp @ 1974 US gpm

-- Max Curve --

Max power:
 44.5 hp @ 1974 US gpm

--Additional Data--

Std. Shaft Diameter :115/16
 Max. Shaft Diameter: C.F.
 Opt. Lateral Setting:0.06
 Std. Lateral:0.58
 One Stage Subm. WT-LB:N/A
 One Stage Water Lub. WT-LB:394.4
 One Stage Oil Lub. WT-LB:383.5
 Add Stage WT-LB:185.1
 Impeller Weight:43
 Min. Submergence:30



Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
2170	1770	64.4	80.4	43.9	41
1808	1770	80.7	83.2	44.2	28.8
1446	1770	90.5	81.2	40.7	21.8
1085	1770	96.3	72.5	37	20.6
723	1770	102	63	33.4	20.8



Company: Empresas Suarez S.A. de C.V.

Name:

Date: 7/31/2017

Pump:

Size: 14LS-1C (1 stage)
 Type: LINE W_60 Hz
 Synch speed: 1800 rpm
 Curve: ETLBAEJ
 Specific Speeds:
 Dimensions:
 Vertical Turbine:
 Speed: 1785 rpm
 Dia: 11.313 in
 Impeller: 14LS-1C
 Ns: 2621
 Nss: 8032
 Suction: CB-10"
 Discharge: RI 10" RI 12"
 Bowl size: 13.7 in
 Max lateral: ---
 Thrust K factor: 19.7 lb/ft

Search Criteria:

Flow: --- Head: ---

Fluid:

Water
 SG: 1
 Viscosity: 0.9946 cP
 NPSHa: ---
 Temperature: 68 °F
 Vapor pressure: 0.3391 psi a
 Atm pressure: 14.7 psi a

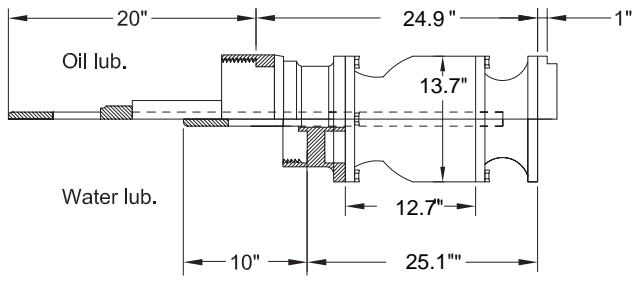
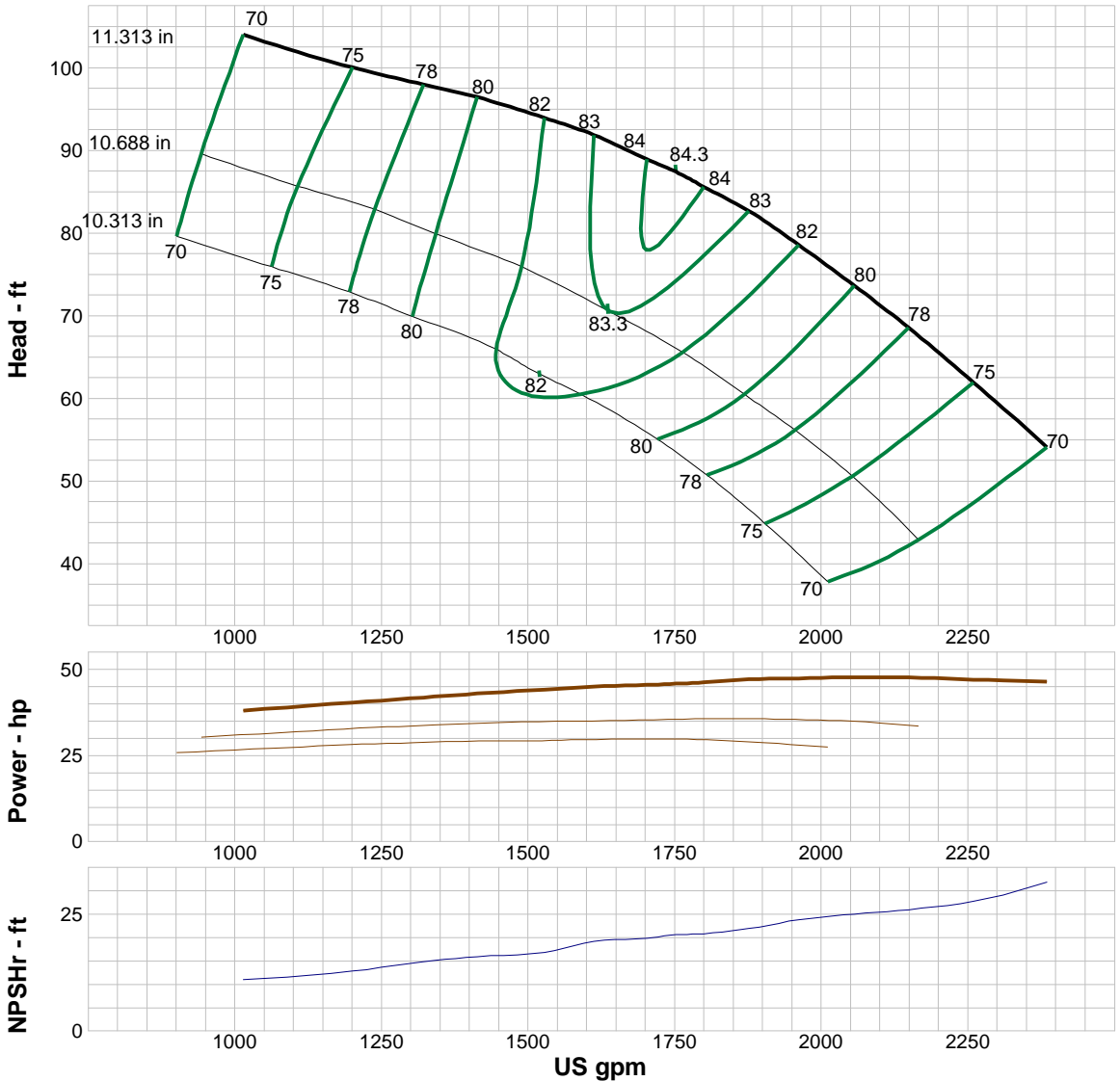
Motor:

Standard: NEMA
 Enclosure: TEFC
 Sizing criteria: Max Power on Design Curve
 Size: 50 hp
 Speed: 1800
 Frame: 326T

Pump Limits:

Temperature: 167 °F
 Pressure: 540 psi g
 Sphere size: 0.75 in
 Power: 432 hp
 Eye area: 31.5 in²

---- Data Point ----	
Flow:	1751 US gpm
Head:	87.4 ft
Eff:	84.3%
Power:	45.9 hp
NPSHr:	20.6 ft
---- Design Curve ----	
Shutoff head:	129 ft
Shutoff dP:	55.8 psi
Min flow:	350 US gpm
BEP:	84.3% @ 1751 US gpm
NOL power:	47.8 hp @ 2056 US gpm
-- Max Curve --	
Max power:	47.8 hp @ 2056 US gpm
--Additional Data--	
Std. Shaft Diameter :	1.94"
Max. Shaft Diameter:	C.F.
Opt. Lateral Setting:	0.25
Std. Lateral:	0.69
One Stage Subm. WT-LB:	N/A
One Stage Water Lub. WT-LB:	354.6
One Stage Oil Lub. WT-LB:	372.2
Add Stage WT-LB:	177.8
Impeller Weight:	42.3
Min. Submergence:	30



Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
2288	1785	60.1	73.8	47	28.8
1907	1785	81.2	82.6	47.3	22.6
1526	1785	94	82	44.2	16.9
1144	1785	101	73.5	39.7	12.3
763	1785	109	63.3	34.9	8.61



Company: Empresas Suarez S.A. de C.V.

Name:

Date: 8/3/2017

Pump:

Size: 14MS-2C (1 stage)
 Type: LINE W_60 Hz
 Synch speed: 1800 rpm
 Curve: ETMBBEJ
 Specific Speeds:
 Dimensions:
 Vertical Turbine:
 Speed: 1770 rpm
 Dia: 10.88 in
 Impeller: 14MS-2C
 Ns: 2766
 Nss: 6252
 Suction: CB 10 in
 Discharge: RI 10" RI 12"
 Bowl size: 13.5 in
 Max lateral: ---
 Thrust K factor: 10 lb/ft

Search Criteria:

Flow: --- Head: ---

Fluid:

Water
 SG: 1
 Viscosity: 0.9946 cP
 NPSHa: ---
 Temperature: 68 °F
 Vapor pressure: 0.3391 psi a
 Atm pressure: 14.7 psi a

Motor:

Standard: NEMA
 Enclosure: TEFC
 Sizing criteria: Max Power on Design Curve
 Size: 60 hp
 Speed: 1800
 Frame: 364T

Pump Limits:

Temperature: 167 °F
 Pressure: 303 psi g
 Sphere size: 1 in
 Power: 333 hp
 Eye area: 26.5 in²

---- Data Point ----

Flow: 2052 US gpm
 Head: 87 ft
 Eff: 84%
 Power: 53.7 hp
 NPSHr: 31.3 ft

---- Design Curve ----

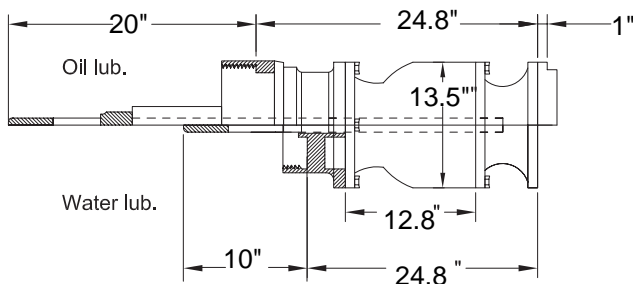
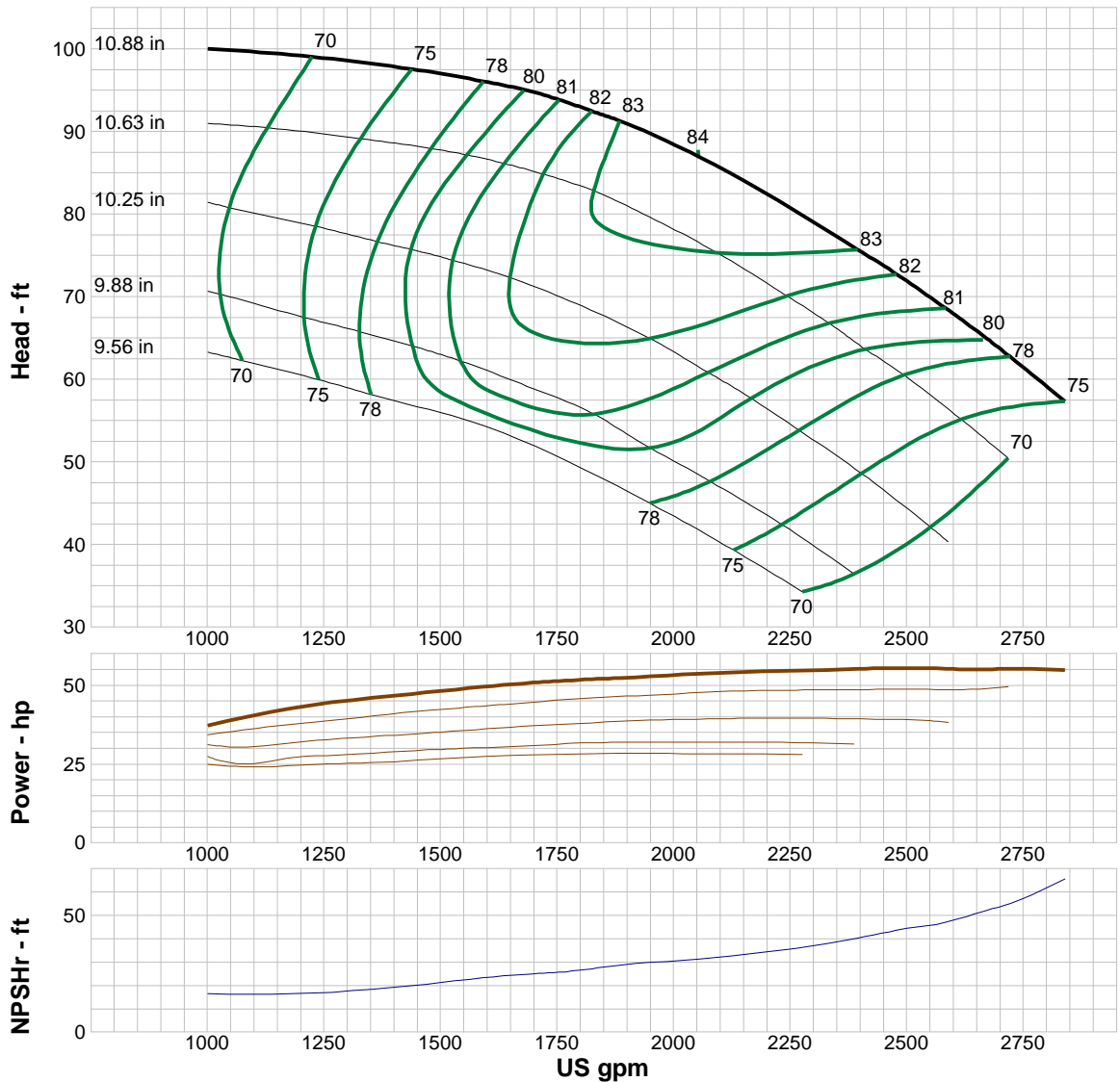
Shutoff head: 112 ft
 Shutoff dP: 48.5 psi
 Min flow: 410 US gpm
 BEP: 84% @ 2052 US gpm
 NOL power:
 55.5 hp @ 2477 US gpm

-- Max Curve --

Max power:
 55.5 hp @ 2477 US gpm

--Additional Data--

Std. Shaft Diameter :115/16
 Max. Shaft Diameter: C.F.
 Opt. Lateral Setting:0.06
 Std. Lateral:0.58
 One Stage Subm. WT-LB:N/A
 One Stage Water Lub. WT-LB:394.4
 One Stage Oil Lub. WT-LB:383.5
 Add Stage WT-LB:185.1
 Impeller Weight:42.6
 Min. Submergence:30



Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
2724	1770	62.6	77.9	55.3	55.4
2270	1770	79.8	83.4	54.6	37
1816	1770	92.6	81.9	51.9	27
1362	1770	98.1	73.2	46	18.8
908	1770	100	67.2	34.4	16.4



Company: Empresas Suarez S.A. de C.V.

Name:

Date: 8/2/2017

Pump:

Size: 14HH-1C (1 stage)
 Type: LINE W_60 Hz
 Synch speed: 1800 rpm
 Curve: ETHBAEJ
 Specific Speeds:
 Dimensions:
 Vertical Turbine:
 Speed: 1785 rpm
 Dia: 9.81 in
 Impeller: 14HH-1C
 Ns: 4974
 Nss: 10670
 Suction: CB-10"
 Discharge: RI 10" RI 12"
 Bowl size: 13.3 in
 Max lateral: ---
 Thrust K factor: 20 lb/ft

Search Criteria:

Flow: --- Head: ---

Fluid:

Water
 SG: 1
 Viscosity: 0.9946 cP
 NPSHa: ---
 Temperature: 68 °F
 Vapor pressure: 0.3391 psi a
 Atm pressure: 14.7 psi a

Motor:

Standard: NEMA
 Enclosure: TEFC
 Sizing criteria: Max Power on Design Curve
 Size: 50 hp
 Speed: 1800
 Frame: 326T

Pump Limits:

Temperature: 167 °F
 Pressure: 400 psi g
 Sphere size: 0.688 in
 Power: 161 hp
 Eye area: 48 in²

---- Data Point ----

Flow: 2777 US gpm
 Head: 50.3 ft
 Eff: 85.7%
 Power: 41.1 hp
 NPSHr: 17.3 ft

---- Design Curve ----

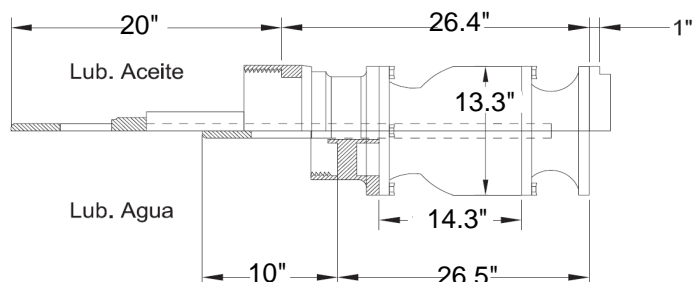
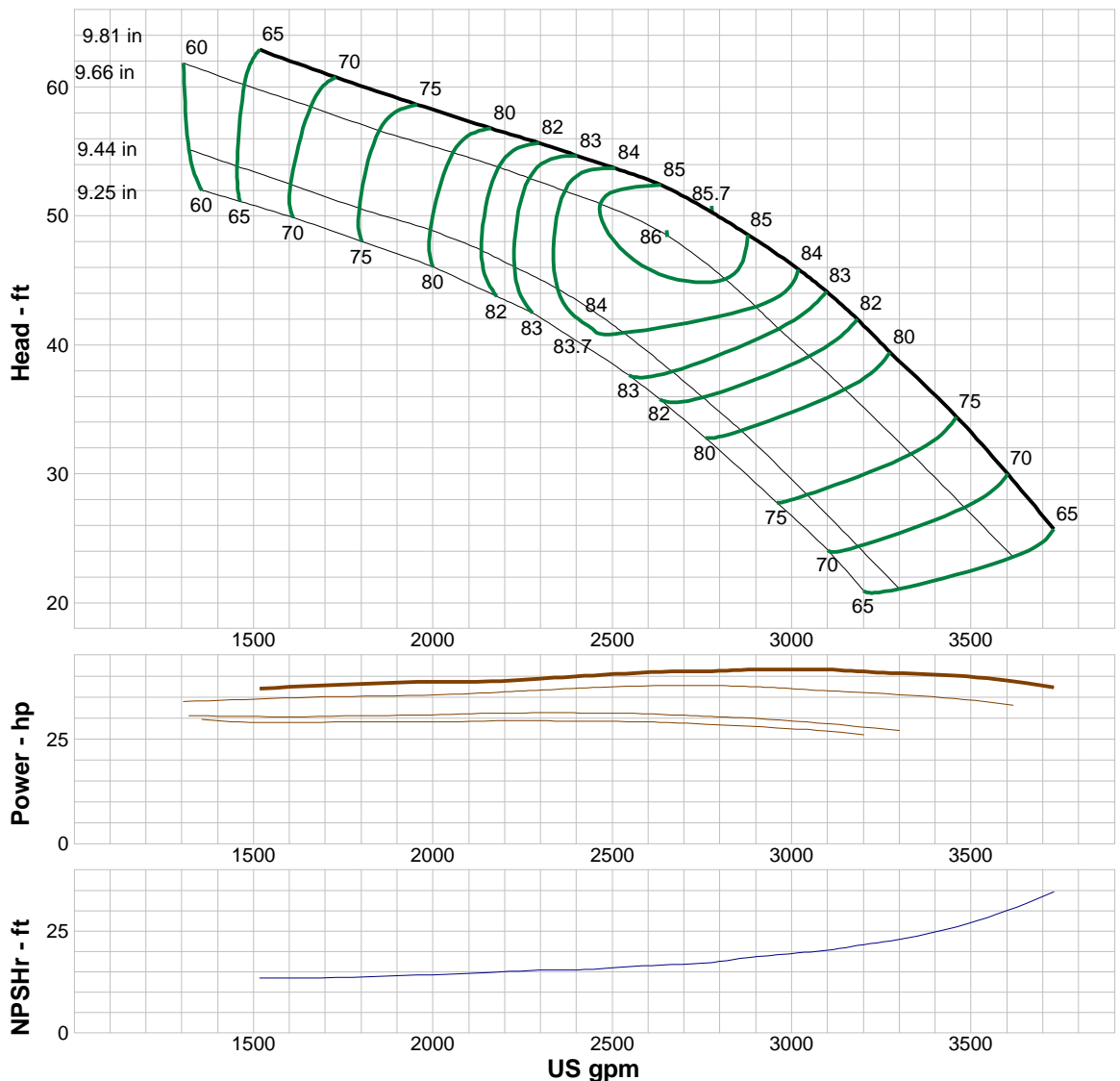
Shutoff head: 64.7 ft
 Shutoff dP: 28 psi
 Min flow: 555 US gpm
 BEP: 85.7% @ 2777 US gpm
 NOL power:
 41.6 hp @ 3018 US gpm

-- Max Curve --

Max power:
 41.6 hp @ 3018 US gpm

--Additional Data--

Std. Shaft Diameter :115/16
 Max. Shaft Diameter: C.F.
 Opt. Lateral Setting:0.13
 Std. Lateral:0.71
 One Stage Subm. WT-LB:N/A
 One Stage Water Lub. WT-LB: 368.9
 One Stage Oil Lub. WT-LB:358.3
 Add Stage WT-LB:178.7
 Impeller Weight:42.1
 Min. Submergence:30



Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
3580	1785	30.6	70.7	39.1	29.5
2983	1785	46.5	84.2	41.6	19.4
2386	1785	54.8	82.9	39.9	15.5
1790	1785	60.2	71.4	38.1	13.8
1193	1785	66.1	57.4	35.7	13.4



Company: Empresas Suarez S.A. de C.V.

Name:

Date: 8/2/2017

Pump:

Size: 14HH-2C (1 stage)
 Type: LINE W_60 Hz
 Synch speed: 1800 rpm
 Curve: ETHBBEJ
 Specific Speeds:
 Dimensions:
 Vertical Turbine:
 Speed: 1785 rpm
 Dia: 10.56 in
 Impeller: 14HH-2C
 Ns: 5491
 Nss: 13878
 Suction: CB-12"
 Discharge: RI 10" RI 12"
 Bowl size: 13.3 in
 Max lateral: ---
 Thrust K factor: 20 lb/ft

Search Criteria:

Flow: --- Head: ---

Fluid:

Water
 SG: 1
 Viscosity: 0.9946 cP
 NPSHa: ---
 Temperature: 68 °F
 Vapor pressure: 0.3391 psi a
 Atm pressure: 14.7 psi a

Motor:

Standard: NEMA
 Enclosure: TEFC
 Sizing criteria: Max Power on Design Curve
 Size: 60 hp
 Speed: 1800
 Frame: 364T

Pump Limits:

Temperature: 167 °F
 Pressure: 400 psi g
 Sphere size: 0.688 in
 Power: 232 hp
 Eye area: 56.2 in²

---- Data Point ----

Flow: 3609 US gpm
 Head: 53 ft
 Eff: 86.3%
 Power: 55.9 hp
 NPSHr: 15.3 ft

---- Design Curve ----

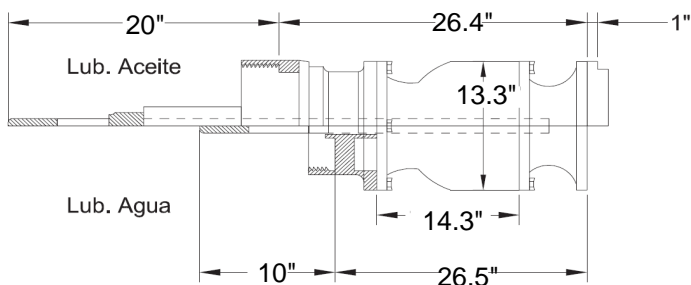
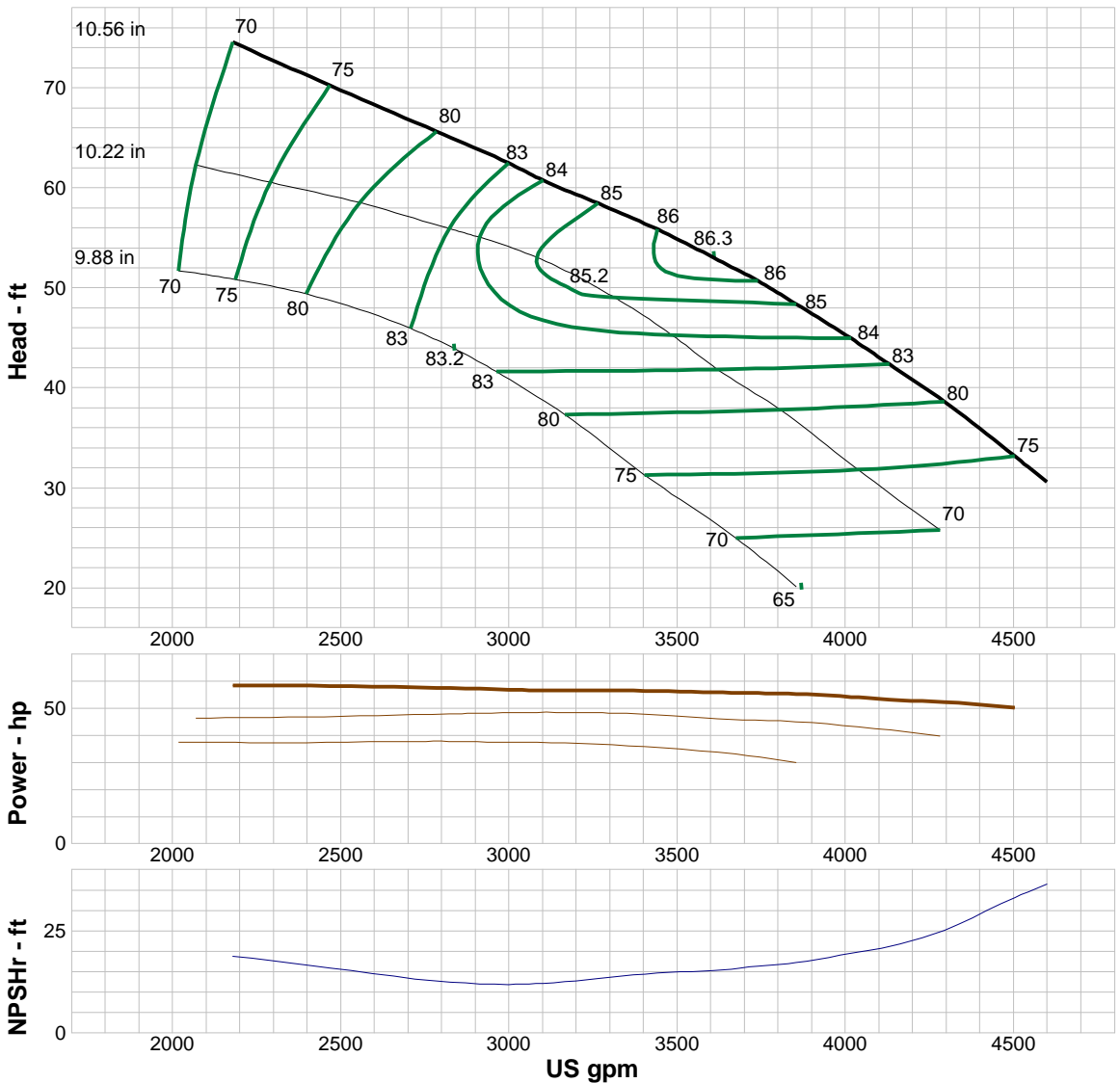
Shutoff head: 77.4 ft
 Shutoff dP: 33.5 psi
 Min flow: 1080 US gpm
 BEP: 86.3% @ 3609 US gpm
 NOL power:
 59.5 hp @ 1080 US gpm

-- Max Curve --

Max power:
 59.5 hp @ 1080 US gpm

--Additional Data--

Std. Shaft Diameter :115/16
 Max. Shaft Diameter: C.F.
 Opt. Lateral Setting:0.13
 Std. Lateral:0.71
 One Stage Subm. WT-LB: N/A
 One Stage Water Lub. WT-LB:368.9
 One Stage Oil Lub. WT-LB:358.3
 Add Stage WT-LB:178.8
 Impeller Weight:42.1
 Min. Submergence:30



Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
4414	1785	35.5	77.1	51.1	29.8
3678	1785	51.8	86.1	55.8	15.9
2942	1785	63.3	82.2	57.2	12.1
2207	1785	74.1	70.5	58.5	18.5
1471	1785	85.1	57.7	59.2	25.9



Company: Empresas Suarez S.A. de C.V.

Name:

Date: 8/31/2017

Pump:

Size: 14HXH-1C (1 stage)
 Type: LINE W_60 Hz
 Synch speed: 1800 rpm
 Curve: ETXB AEJ
 Specific Speeds:
 Dimensions:
 Vertical Turbine:
 Speed: 1760 rpm
 Dia: 11.81 in
 Impeller: 14HXH-1C
 Ns: 4096
 Nss: 9442
 Suction: CB-12 in
 Discharge: RI 10" RI 12 "
 Bowl size: 14.1 in
 Max lateral: ---
 Thrust K factor: 24.8 lb/ft

Search Criteria:

Flow: --- Head: ---

Fluid:

Water
 SG: 1
 Viscosity: 0.9946 cP
 NPSHa: ---
 Temperature: 68 °F
 Vapor pressure: 0.3391 psi a
 Atm pressure: 14.7 psi a

Motor:

Standard: NEMA
 Enclosure: TEFC
 Sizing criteria: Max Power on Design Curve
 Size: 60 hp
 Speed: 1800
 Frame: 364T

Pump Limits:

Temperature: 167 °F
 Pressure: 420 psi g
 Sphere size: 1.5 in
 Power: 420 hp
 Eye area: 47.4 in²

---- Data Point ----

Flow: 2858 US gpm
 Head: 70.7 ft
 Eff: 85.3%
 Power: 59.8 hp
 NPSHr: 25.1 ft

---- Design Curve ----

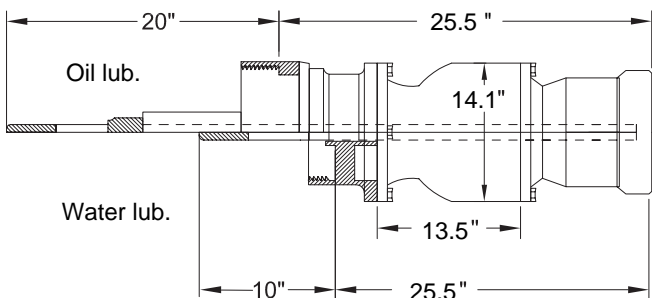
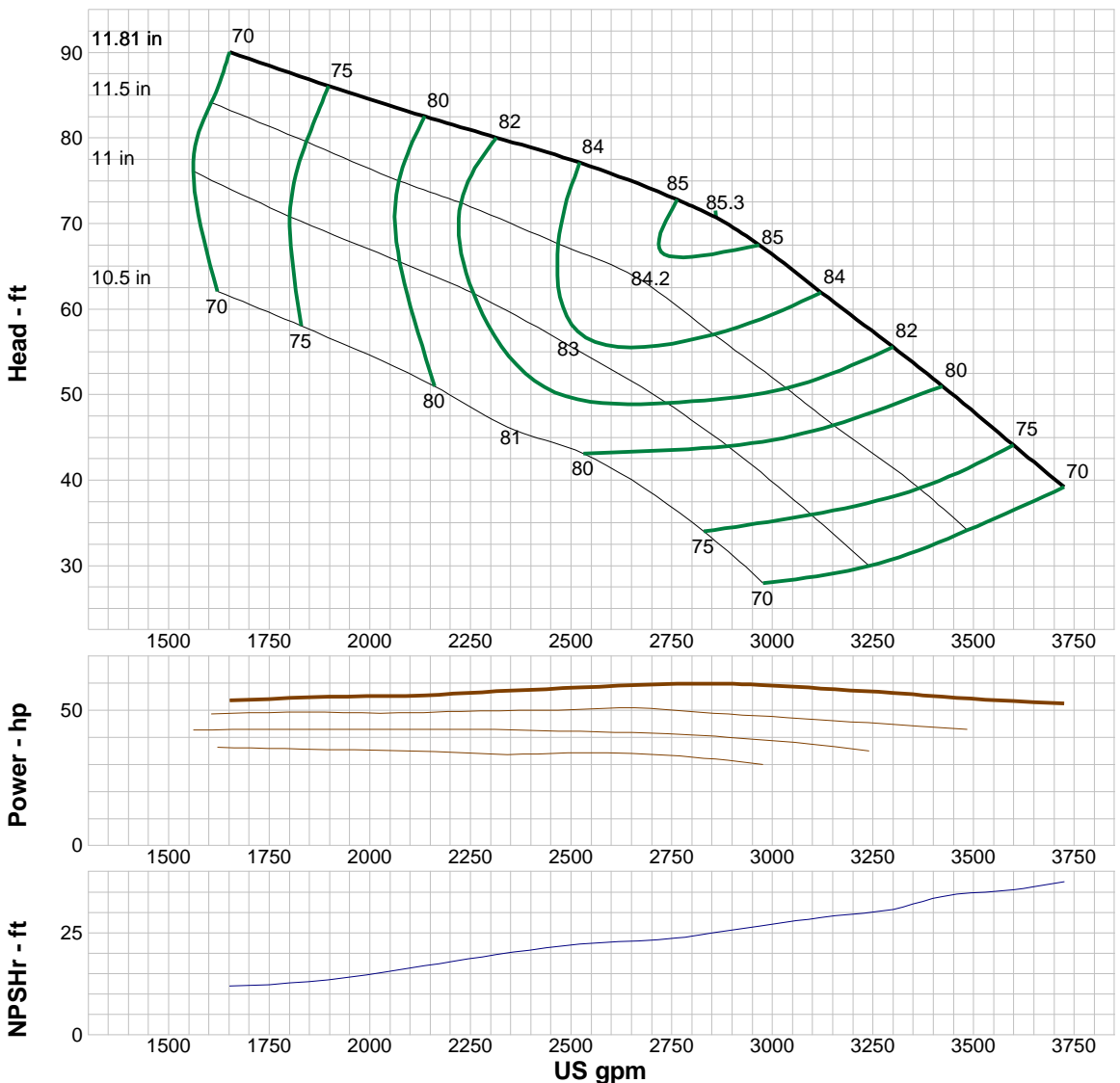
Shutoff head: 132 ft
 Shutoff dP: 57 psi
 Min flow: 594 US gpm
 BEP: 85.3% @ 2858 US gpm
 NOL power:
 59.8 hp @ 2858 US gpm

-- Max Curve --

Max power:
 59.8 hp @ 2858 US gpm

--Additional Data--

Std. Shaft Diameter : 1.9"
 Max. Shaft Diameter: C.F.
 Opt. Lateral Setting: 0.25"
 Std. Lateral: 0.69"
 One Stage Subm. WT-LB: N/A
 One Stage Water Lub. WT-LB: 368.4
 One Stage Oil Lub. WT-LB: 357.5
 Add Stage WT-LB: 174.5
 Impeller Weight: 43.4 lb
 Min. Submergence: 34"



Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
3574	1760	45	75.7	53.6	35.3
2978	1760	67.1	84.9	59.4	26.9
2382	1760	79.1	82.7	57.5	20.5
1787	1760	87.8	72.8	54.4	12.8
1191	1760	97.4	60.7	51	8.89



Company: Empresas Suarez S.A. de C.V.

Name:

Date: 8/30/2017

Pump:

Size: 18HH-2C (1 stage)
 Type: LINE W_60 Hz
 Synch speed: 1800 rpm
 Curve: ETHBBEN
 Specific Speeds:
 Dimensions:
 Vertical Turbine:
 Speed: 1760 rpm
 Dia: 14 in
 Impeller: 18HH-2C
 Ns: 4997
 Nss: 14080
 Suction: C
 Discharge: N/A
 Bowl size: 18.2 in
 Max lateral: ---
 Thrust K factor: 35 lb/ft

Search Criteria:

Flow: --- Head: ---

Fluid:

Water
 SG: 1
 Viscosity: 0.9946 cP
 NPSHa: ---
 Temperature: 68 °F
 Vapor pressure: 0.3391 psi a
 Atm pressure: 14.7 psi a

Motor:

Standard: NEMA
 Enclosure: TEFC
 Sizing criteria: Max Power on Design Curve
 Size: 250 hp
 Speed: 1800
 Frame: 447T

Pump Limits:

Temperature: 167 °F
 Pressure: 314 psi g
 Sphere size: 0.875 in
 Power: 920 hp
 Eye area: 97.9 in²

---- Data Point ----

Flow: 8006 US gpm
 Head: 99.5 ft
 Eff: 88.5%
 Power: 227 hp
 NPSHr: 32.4 ft

---- Design Curve ----

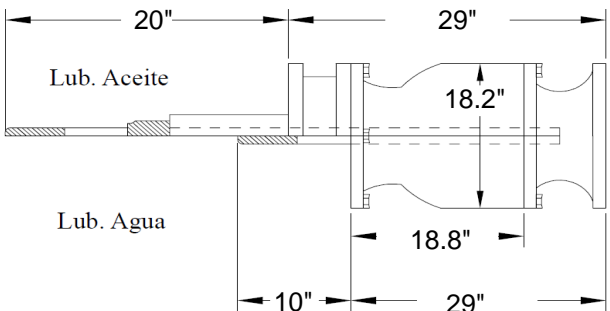
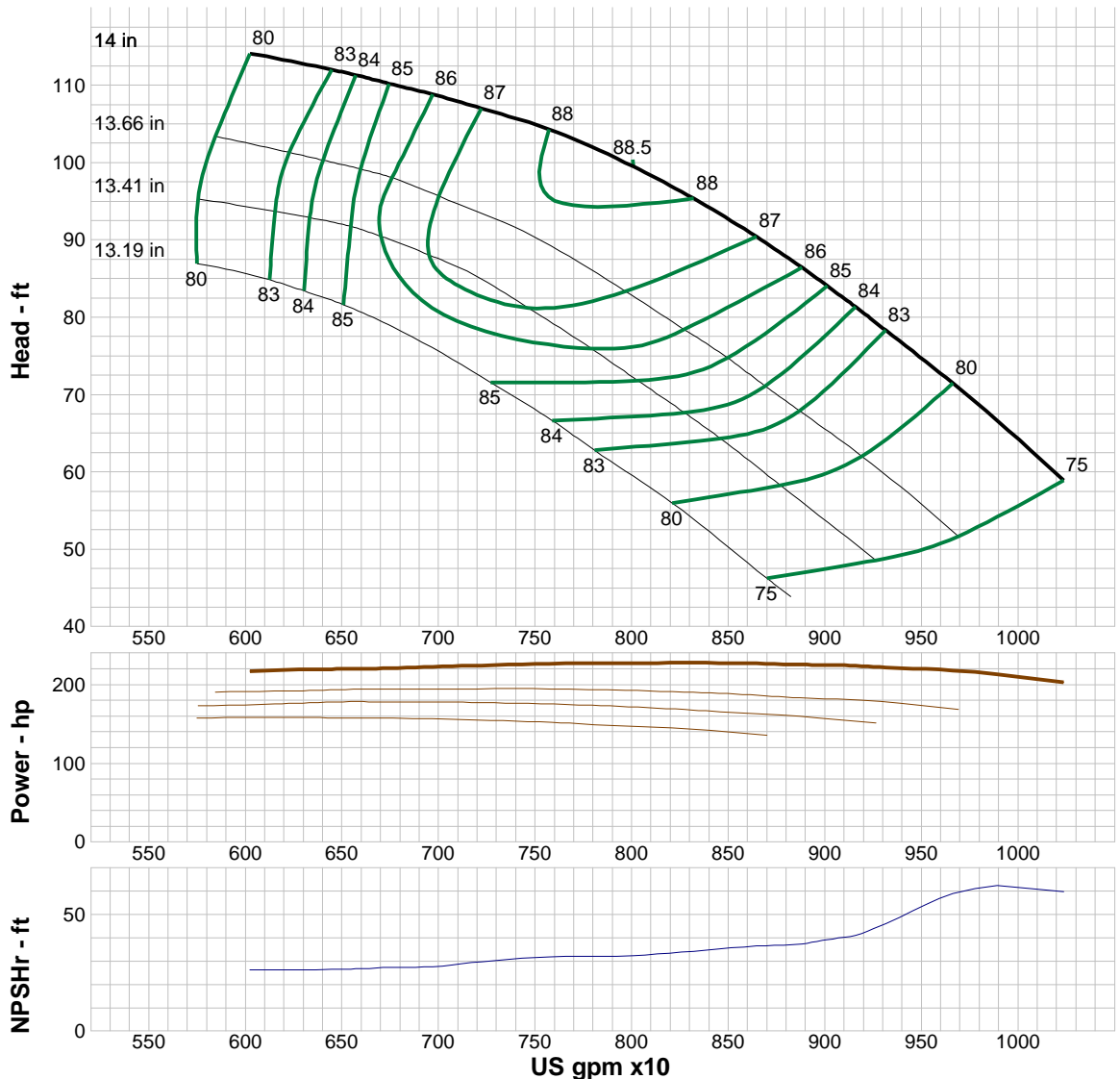
Shutoff head: 116 ft
 Shutoff dP: 50.4 psi
 Min flow: 2400 US gpm
 BEP: 88.5% @ 8006 US gpm
 NOL power:
 228 hp @ 8318 US gpm

-- Max Curve --

Max power:
 228 hp @ 8318 US gpm

--Additional Data--

Std. Shaft Diameter :1.94"
 Max. Shaft Diameter: C.F.
 Opt. Lateral Setting:0.25
 Std. Lateral:0.95
 One Stage Subm. WT-LB:N/A
 One Stage Water Lub. WT-LB:590.0
 One Stage Oil Lub. WT-LB:598.4
 Add Stage WT-LB:388.4
 Impeller Weight:81.4
 Min. Submergence:46



Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
9824	1760	67.9	78.6	214	59.2
8187	1760	97.1	88.2	227	33.5
6550	1760	111	83.8	220	26.6
4912	1760	120	72.1	210	25.8
3275	1760	128	60.5	199	25.1



Company: Empresas Suarez S.A. de C.V.

Name:

Date: 7/31/2017

Pump:

Size: 18HH-1C (1 stage)
 Type: LINE W_60 Hz
 Synch speed: 1800 rpm
 Curve: ETHBAEN
 Specific Speeds:
 Dimensions:
 Vertical Turbine:
 Speed: 1785 rpm
 Dia: 13 in
 Impeller: 18HH-1C
 Ns: 5212
 Nss: 10015
 Suction: C
 Discharge: N/A
 Bowl size: 18.2 in
 Max lateral: ---
 Thrust K factor: 35 lb/ft

Search Criteria:

Flow: --- Head: ---

Fluid:

Water
 SG: 1
 Viscosity: 0.9946 cP
 NPSHa: ---
 Temperature: 68 °F
 Vapor pressure: 0.3391 psi a
 Atm pressure: 14.7 psi a

Motor:

Standard: NEMA
 Enclosure: TEFC
 Sizing criteria: Max Power on Design Curve
 Size: 200 hp
 Speed: 1800
 Frame: 447T

Pump Limits:

Temperature: 167 °F
 Pressure: 314 psi g
 Sphere size: 0.875 in
 Power: 680 hp
 Eye area: 84.9 in²

---- Data Point ----

Flow: 6793 US gpm
 Head: 85.9 ft
 Eff: 87.3%
 Power: 169 hp
 NPSHr: 33.4 ft

---- Design Curve ----

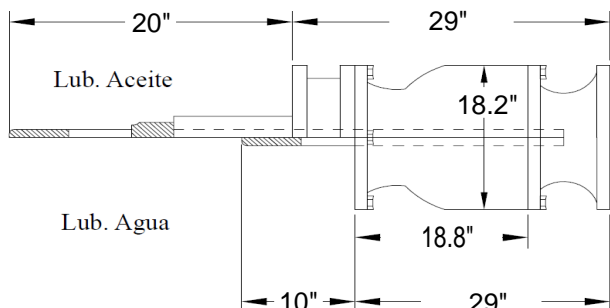
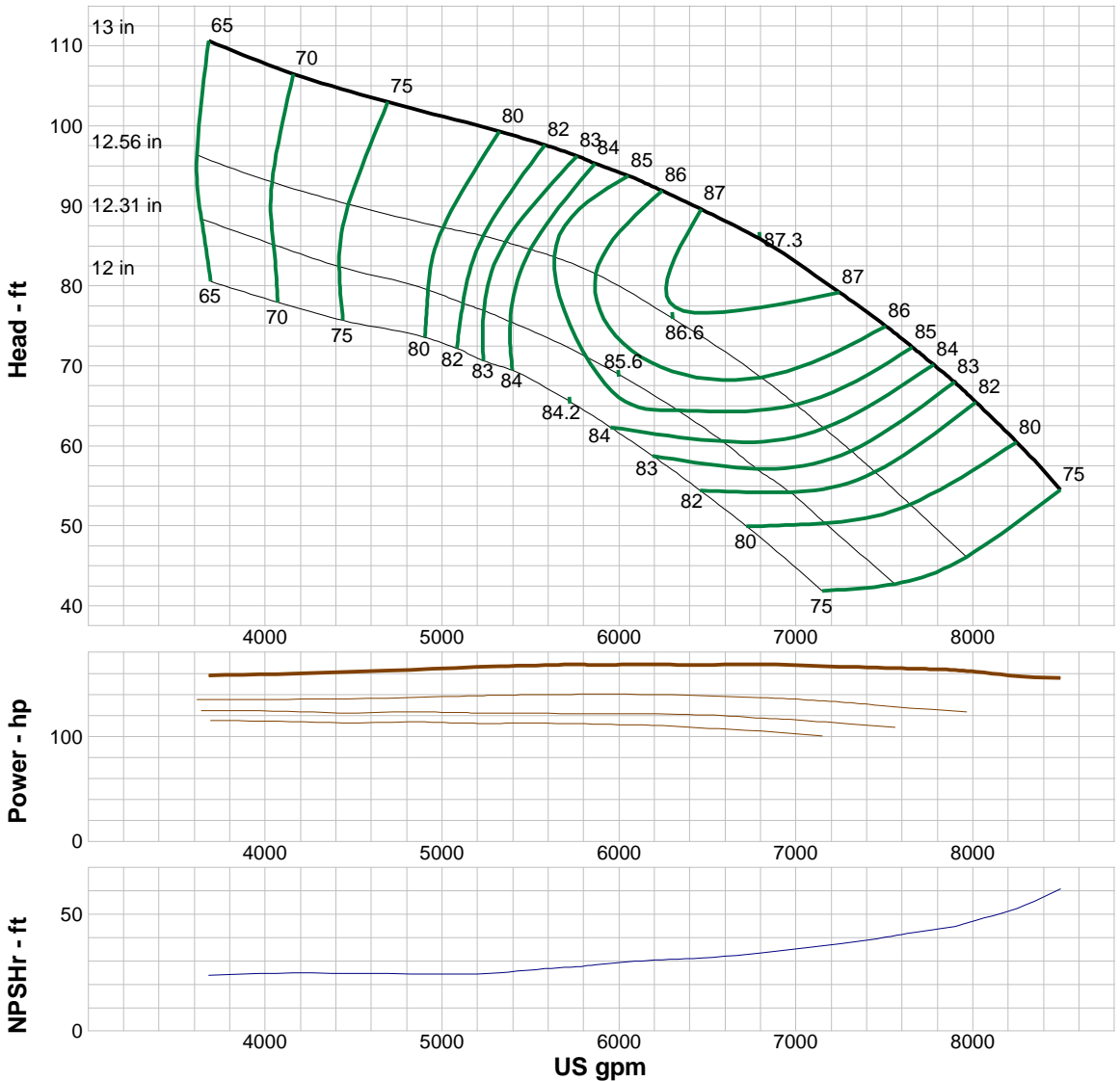
Shutoff head: 121 ft
 Shutoff dP: 52.2 psi
 Min flow: 2040 US gpm
 BEP: 87.3% @ 6793 US gpm
 NOL power: 169 hp @ 6793 US gpm

-- Max Curve --

Max power: 169 hp @ 6793 US gpm

--Additional Data--

Std. Shaft Diameter :115/16
 Max. Shaft Diameter: C.F.
 Opt. Lateral Setting:0.25
 Std. Lateral:0.95
 One Stage Subm. WT-LB:N/A
 One Stage Water Lub. WT-LB:590.0
 One Stage Oil Lub. WT-LB:598.4
 Add Stage WT-LB:388.4
 Impeller Weight:81.4
 Min. Submergence:46



Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
8153	1785	62.4	80.8	159	50.5
6794	1785	85.8	87.3	169	33.4
5435	1785	98.6	80.9	167	25.7
4076	1785	107	69.2	159	24.7
2718	1785	119	55	155	22.2



Company: Empresas Suarez S.A. de C.V.

Name:

Date: 8/1/2017

Pump:

Size: 19WM-1C (1 stage)
 Type: LINE W_60 Hz
 Synch speed: 1800 rpm
 Curve: ETWBAEM
 Specific Speeds:
 Dimensions:
 Vertical Turbine:
 Speed: 1770 rpm
 Dia: 12.6 in
 Impeller: 19WM-1C
 Ns: 3781
 Nss: 11264
 Suction: C
 Discharge: N/A
 Bowl size: 18 in
 Max lateral: ---
 Thrust K factor: 32 lb/ft

Search Criteria:

Flow: --- Head: ---

Fluid:

Water
 SG: 1
 Viscosity: 0.9946 cP
 NPSHa: ---
 Temperature: 68 °F
 Vapor pressure: 0.3391 psi a
 Atm pressure: 14.7 psi a

Motor:

Standard: NEMA
 Enclosure: TEFC
 Sizing criteria: Max Power on Design Curve
 Size: 250 hp
 Speed: 1800
 Frame: 447T

Pump Limits:

Temperature: 167 °F
 Pressure: 400 psi g
 Sphere size: 1 in
 Power: 852 hp
 Eye area: 74.5 in²

---- Data Point ----

Flow: 6051 US gpm
 Head: 121 ft
 Eff: 86.5%
 Power: 214 hp
 NPSHr: 29 ft

---- Design Curve ----

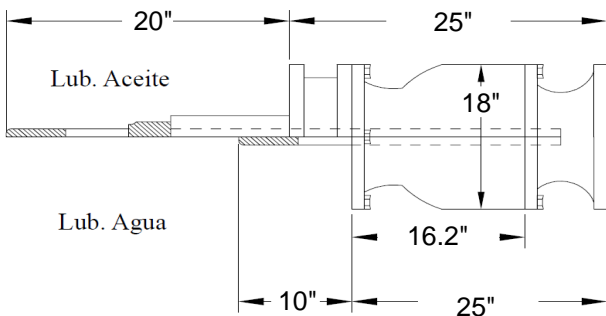
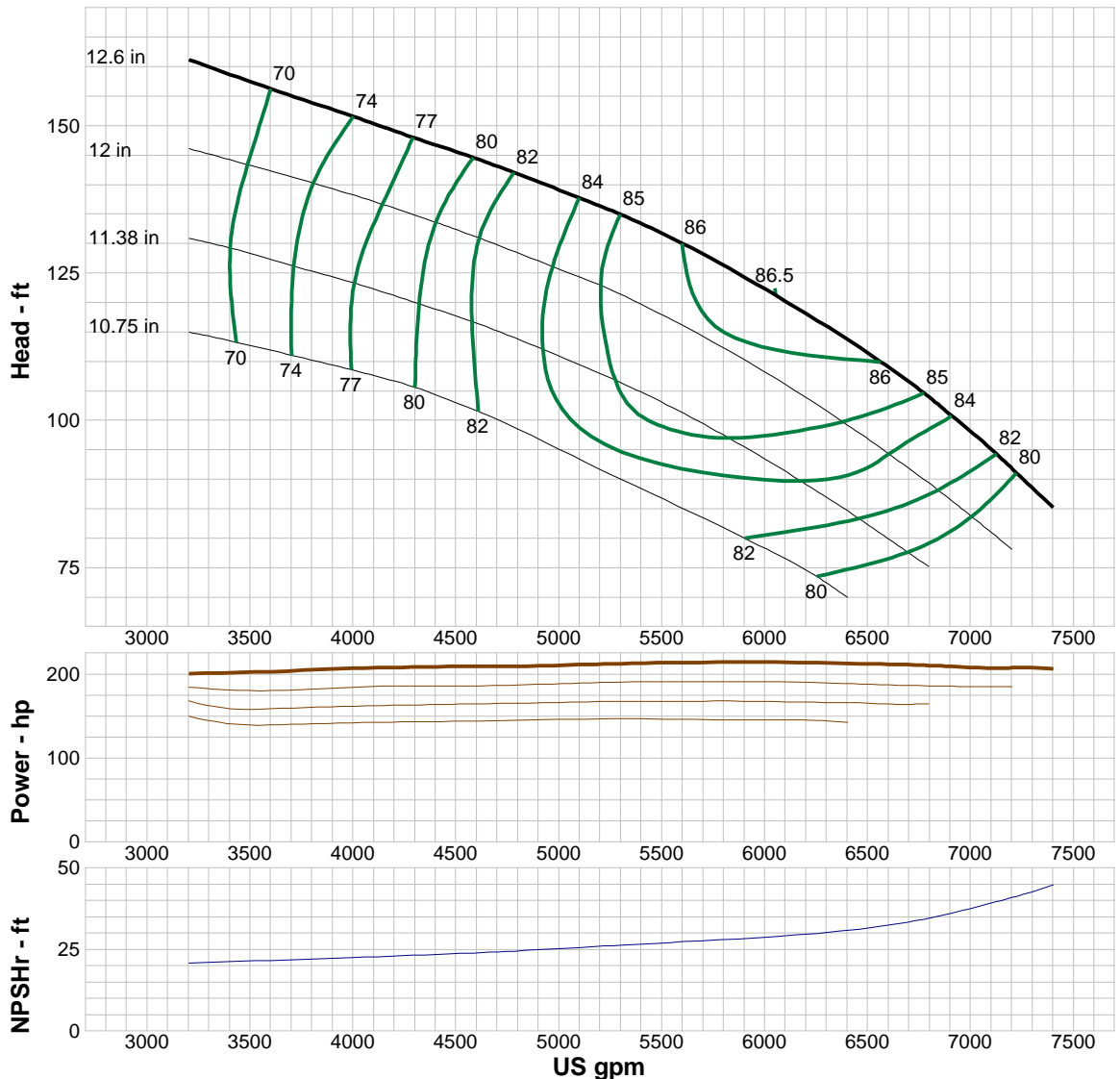
Shutoff head: 202 ft
 Shutoff dP: 87.4 psi
 Min flow: 1800 US gpm
 BEP: 86.5% @ 6051 US gpm
 NOL power:
 214 hp @ 6051 US gpm

-- Max Curve --

Max power:
 214 hp @ 6051 US gpm

--Additional Data--

Std. Shaft Diameter : 2.5"
 Max. Shaft Diameter: C.F.
 Opt. Lateral Setting: 0.13"
 Std. Lateral: 0.68"
 One Stage Subm. WT-LB: N/A
 One Stage Water Lub. WT-LB:570.5
 One Stage Oil Lub. WT-LB: 581.8
 Add Stage WT-LB: 348.7
 Impeller Weight:84.4 lb
 Min. Submergence: 42"



Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
7104	1770	94.9	82.2	207	39.4
5920	1770	124	86.4	214	28.5
4736	1770	143	81.6	209	24.4
3552	1770	157	69.4	203	21.6
2368	1770	172	54.6	195	19.2



Company: Empresas Suarez S.A. de C.V.

Name:

Date: 8/1/2017

Pump:

Size: 20WH-1C FIRST (1 stage)
 Type: LINE W_60 Hz
 Synch speed: 1800 rpm
 Curve: ETWB AEO
 Specific Speeds:
 Dimensions:
 Vertical Turbine:
 Speed: 1770 rpm
 Dia: 13.18 in
 Impeller: 20WH-1C FIRST
 Ns: 3273
 Nss: 9993
 Suction: C
 Discharge: N/A
 Bowl size: 18 in
 Max lateral: ---
 Thrust K factor: 31 lb/ft

Search Criteria:

Flow: --- Head: ---

Fluid:

Water
 SG: 1
 Viscosity: 0.9946 cP
 NPSHa: ---
 Temperature: 68 °F
 Vapor pressure: 0.3391 psi a
 Atm pressure: 14.7 psi a

Motor:

Standard: NEMA
 Enclosure: TEFC
 Sizing criteria: Max Power on Design Curve
 Size: 300 hp
 Speed: 1800
 Frame: 449T

Pump Limits:

Temperature: 167 °F
 Pressure: 380 psi g
 Sphere size: 1 in
 Power: 930 hp
 Eye area: 97.9 in²

---- Data Point ----

Flow: 6494 US gpm
 Head: 151 ft
 Eff: 87%
 Power: 285 hp
 NPSHr: 28.1 ft

---- Design Curve ----

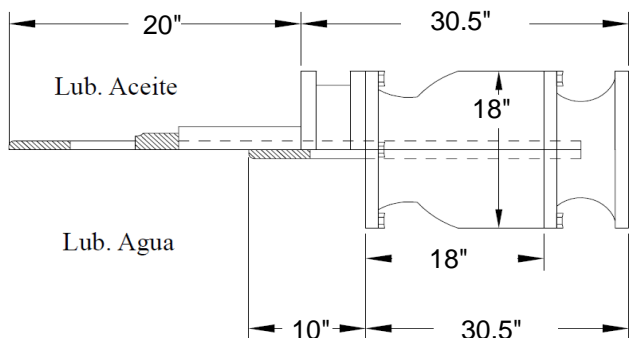
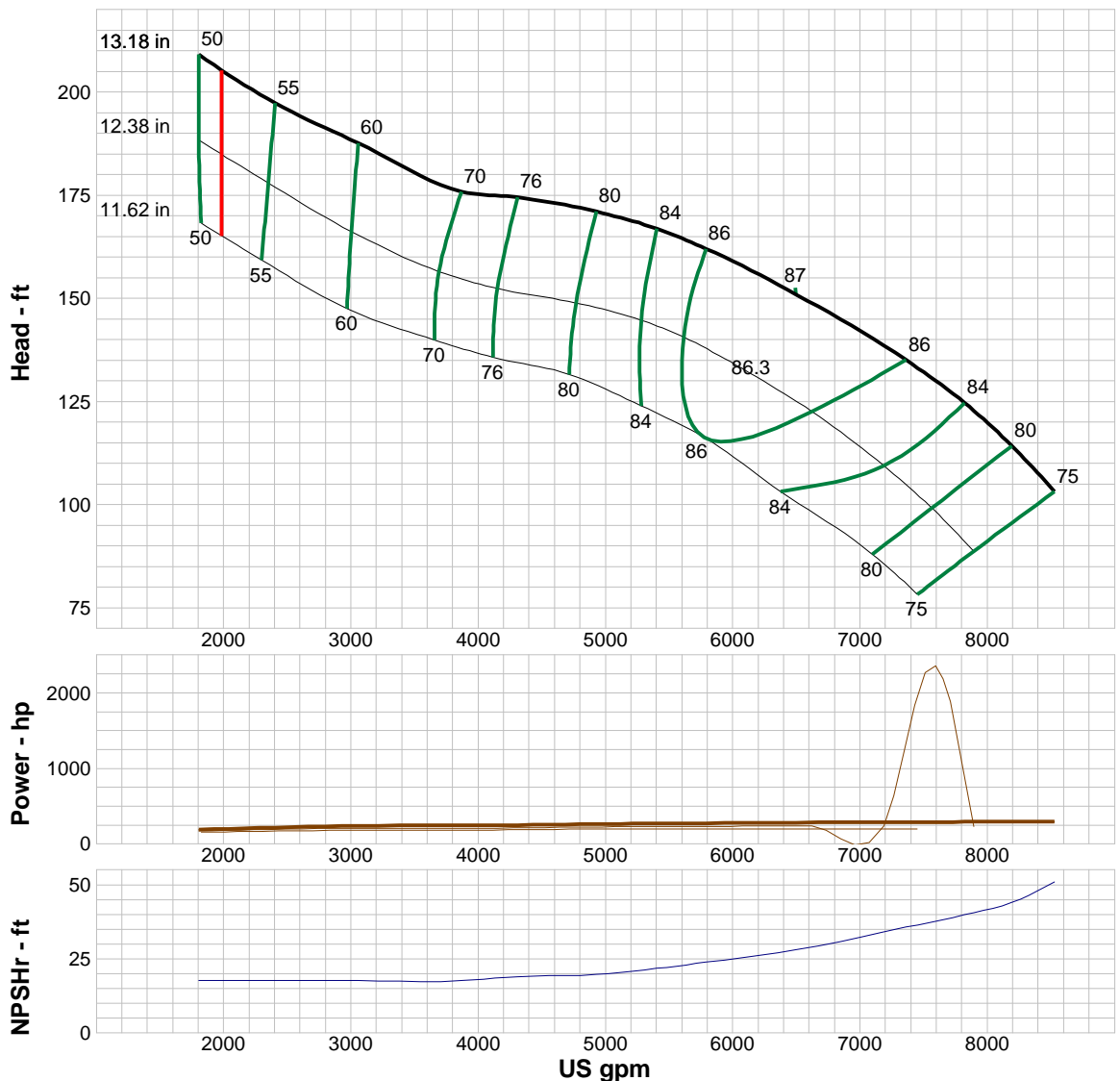
Shutoff head: 234 ft
 Shutoff dP: 101 psi
 Min flow: 1980 US gpm
 BEP: 87% @ 6494 US gpm
 NOL power:
 296 hp @ 8524 US gpm

-- Max Curve --

Max power:
 296 hp @ 8524 US gpm

--Additional Data--

Std. Shaft Diameter :2 1/4
 Max. Shaft Diameter: C.F.
 Opt. Lateral Setting:0.25
 Std. Lateral:0.39
 One Stage Subm. WT-LB:N/A
 One Stage Water Lub. WT-LB:571.5
 One Stage Oil Lub. WT-LB:582.8
 Add Stage WT-LB:350.7
 Impeller Weight:86.4
 Min. Submergence:45



Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
8183	1770	114	80.1	295	44
6819	1770	145	86.6	287	30.9
5455	1770	166	84.3	272	22.1
4091	1770	175	73.1	248	18.4
2728	1770	193	57.5	229	17.6



Company: Empresas Suarez S.A. de C.V.

Name:

Date: 8/1/2017

Pump:

Size: 20WH-1C ADD (1 stage)
 Type: LINE W_60 Hz
 Synch speed: 1800 rpm
 Curve: ETWBEO
 Specific Speeds:
 Dimensions:
 Vertical Turbine:

Speed: 1770 rpm
 Dia: 13.31 in
 Impeller: 20WH-1C AD
 Ns: 3698
 Nss: 9311
 Suction: 22 in
 Discharge:RI 10"
 Bowl size: 18 in
 Max lateral: ---
 Thrust K factor: 31 lb/ft

Search Criteria:

Flow: --- Head: ---

Fluid:

Water
 SG: 1
 Viscosity: 0.9946 cP
 NPSHa: ---

Temperature: 68 °F
 Vapor pressure: 0.3391 psi a
 Atm pressure: 14.7 psi a

Motor:

Standard: NEMA
 Enclosure: TEFC
 Sizing criteria: Max Power on Design Curve

Size: 300 hp
 Speed: 1800
 Frame: 449T

Pump Limits:

Temperature: 167 °F
 Pressure: 380 psi g
 Sphere size: 1 in

Power: 849 hp
 Eye area: 80.7 in²

---- Data Point ----

Flow: 6971 US gpm
 Head: 145 ft
 Eff: 86%
 Power: 297 hp
 NPSHr: 23.9 ft

---- Design Curve ----

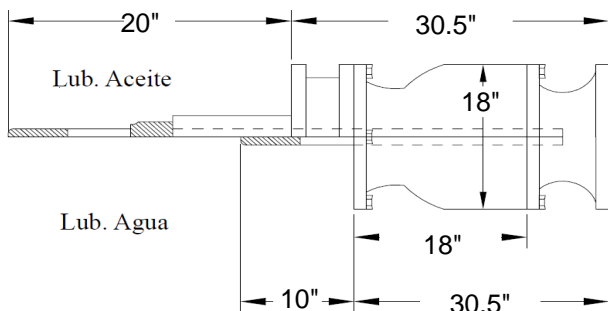
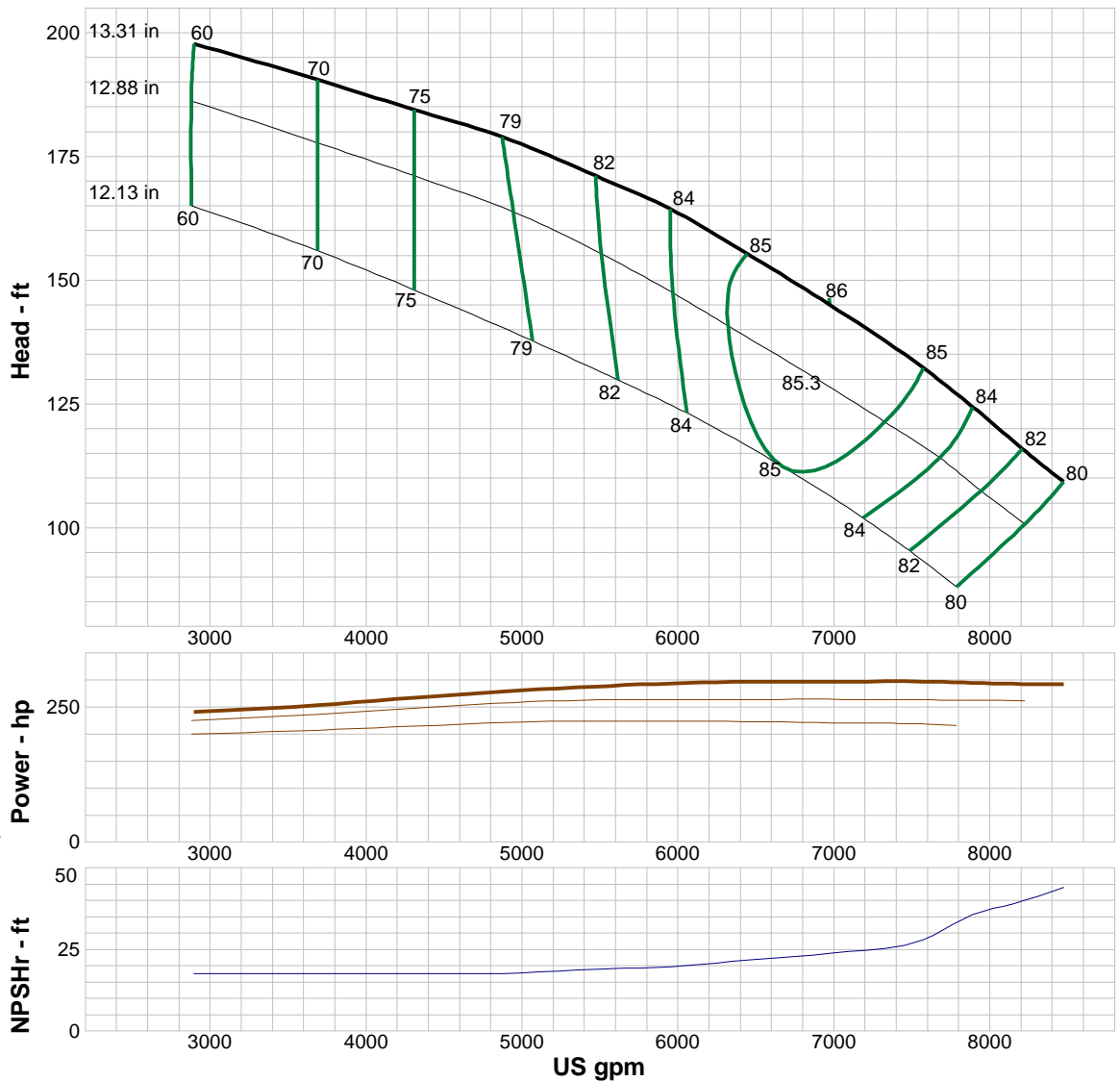
Shutoff head: 222 ft
 Shutoff dP: 96.1 psi
 Min flow: 2100 US gpm
 BEP: 86% @ 6971 US gpm
 NOL power:
 297 hp @ 7571 US gpm

-- Max Curve --

Max power:
 297 hp @ 7571 US gpm

--Additional Data--

Std. Shaft Diameter :2.25
 Max. Shaft Diameter: C.F.
 Opt. Lateral Setting:0.25
 Std. Lateral:0.39
 One Stage Subm. WT-LB:N/A
 One Stage Water Lub. WT-LB:571.5
 One Stage Oil Lub. WT-LB:582.8
 Add Stage WT-LB:350.7
 Impeller Weight:86.4
 Min. Submergence:45



Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
8131	1770	118	82.5	293	---
6776	1770	149	85.6	297	---
5421	1770	172	81.8	287	---
4066	1770	187	73.1	262	---
2710	1770	199	57.7	238	---



Company: Empresas Suarez S.A. de C.V.

Name:

Date: 8/9/2017

Pump:

Size: 28HXH-1C (1 stage)
 Type: LINE W_60 Hz
 Synch speed: 1800 rpm
 Curve: ETXBAEW-12
 Specific Speeds:
 Dimensions:
 Vertical Turbine:
 Speed: 1760 rpm
 Dia: 21.69 in
 Impeller: 28HXH-1C
 Ns: 3430
 Nss: 9500
 Suction: C
 Discharge: N/A
 Bowl size: 27.6 in
 Max lateral: ---
 Thrust K factor: 64.2 lb/ft

Search Criteria:

Flow: --- Head: ---

Fluid:

Water
 SG: 1
 Viscosity: 0.9946 cP
 NPSHa: ---
 Temperature: 68 °F
 Vapor pressure: 0.3391 psi a
 Atm pressure: 14.7 psi a

Motor:

Standard: ---
 Enclosure: ---
 Sizing criteria: Max Power on Design Curve

 Speed: ---
 Frame: ---

Pump Limits:

Temperature: 167 °F
 Pressure: 130 psi g
 Sphere size: 1.5 in
 Power: 600 hp
 Eye area: 168 in²

Pump Selection Warnings:

Design curve maximum power exceeds limit for the pump.

---- Data Point ----

Flow: 13687 US gpm
 Head: 144 ft
 Eff: 82.2%
 Power: 607 hp
 NPSHr: 34 ft

---- Design Curve ----

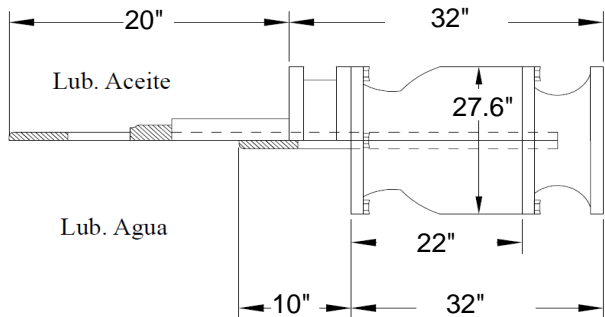
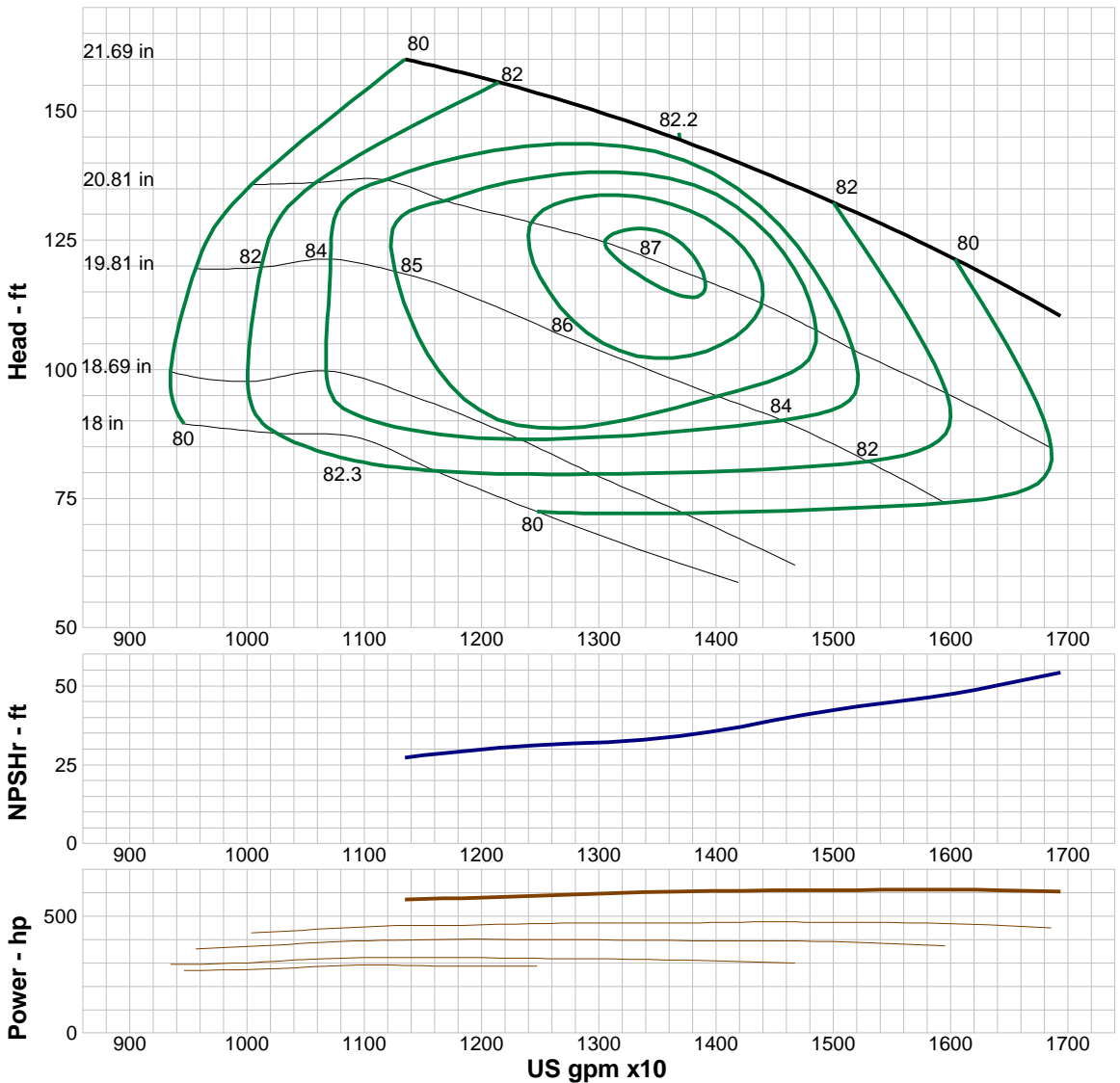
Shutoff head: 174 ft
 Shutoff dP: 75.3 psi
 Min flow: 4200 US gpm
 BEP: 82.2% @ 13687 US gpm
 NOL power:
 614 hp @ 16033 US gpm

-- Max Curve --

Max power:
 614 hp @ 16033 US gpm

--Additional Data--

Std. Shaft Diameter :215/16
 Max. Shaft Diameter: C.F.
 Opt. Lateral Setting:0.19
 Std. Lateral:1.88
 One Stage Subm. WT-LB: N/A
 One Stage Water Lub. WT-LB:1483.8
 One Stage Oil Lub. WT-LB:1545.8
 Add Stage WT-LB:843.8
 Impeller Weight:200.8
 Min. Submergence:60



Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
16259	1760	119	79.5	612	49.3
13549	1760	145	82.2	605	33.7
10839	1760	163	78.7	567	25.5
8129	1760	178	72	537	15.5
5420	1760	193	65.2	507	5.46