Petroleum	Pump Ca	alculatio	n She	et (IMPC	ORTAN	: Make sepa	ate calculation	s for E	ACH ope	eration)		
Distributor Name:			Locati	Page:		GORMAN-RUPP						
									Date.		PUI	MPS
Product:	SP Grav :	Visc (SSU)	VP:	L	_iquid T	emp: Min_	Max	⁰F	Deliv	er Desired:	to	GPM
OPERATION: Unloading:	Trucks Tank Cars Barges	_ Loadir _	n g: Tr Tank Ba	ucks Cars irges		Fueling:	Aircraft Underwing Single Pt Overwing		Trans Other	f er: Tank t	to Tank	
(Suction: In.Hg	ystem provide g PSI) (Discharge	auge readings: e: PSI)	:				Venicles					
SUCTION SIDE	Indic STL	ate type pipe u	ised FRP		Ten GPI Viso Los	np. Degrees F M cosity SSU s Ft./100	". " Dia. P	ipe				
(\$1)	Dynamic Eri	ction Losses			Los	s Ft./100	" Dia. P	ipe ipe				
PIPE & FITTIN	GS	Equiv Ft	of Straigh	t Pine		F		ipe		Fai	uv Et of Lio	L
(S1a)	Qty	" Dia	" Dia	" Dia	a Size	 (S1b)						14.4
Straight Pipe						Strainer						
45 Degree Ells						Hose						
90 Degree Ells						Transport	Manifold					
Tees Straight Through						Emergeno	cy Valves					
Tees Side Outlet						Dry Disco	nnect Couplin	g				
Gate Valves						Other						
Plug Valves												
Swing Check Valves		-			_							
Butter Fly Valves					_							ļ
Twin Disc Check Valves					_							
Enlargement												
Contraction												
Total Equity Straight	" Dia Dir		CDM -		Et /100		lood Looo/Et)	_				
Total Equiv. Straight	טומ. אים יים בים "				5 FL/100) v [reau LUSS(F() =					
Total Equiv. Straight	Dia. Fij Dia Dir			L058	5 FL/100		lead Loss(Ft) =					
(S2) Static Suction Lift (if liqui	id is helow nump	ADD) or Posit	ive Suction	Head (if li	inuid ie	ahove numn	SUBTRACT	-				<u> </u>
(S3) Velocity Head (Add if Sid	nificant)				19414 13	usovo pump,						<u> </u>
(S4) TOTAL DYNAMIC SUC	TION HEAD (Sun	n of S1a, S1b, S	S2, and S3)									<u> </u>
	(001)		_,									

NPSH CALCULATION (Review NPSH before finalizing Discharge)	 (N1) Atmospheric (N1a) Actual (N1b) Atmoside DEDUCTIONS (N3) Net Positive (N4) Net Positive (N4) Net Positive NOTE: If NPSH 	Pressure at S Elevation at s spheric Pres (N2) Vapor F (N2a) Total D (N2b) Safety I (N2c) Total D Suction Head Suction Head Suction Head	Sea Level a Job Site sure Avail Pressure of ynamic Suc Factor for E eductions f I Available I Required I of System s positive fur	adjusted for able at Job Liquid at ction Lift arometric F rom Atmosp (N1b - N2c) by Pump (S (N3 - N4) = number, sy nction as re	Specific Gra Ft. (Pres Site (N1 (Static Lift F luctuation (I here Availat ee pump pe vstem will f equired, and	ty of liquid pumped (33.9 Ft. / S.G.) tre Correction / S.G.) = N1a) = (Correction PSI x 2.31 / S.G.) = + Friction Loss Ft. as shown in S4 al e 2 Ft. for Water, 3 Ft. for Petroleum) e (N2 + N2a + N2b) = ormance curve at flow desired) = action as expected. If NPSH of sy damage to equipment can be exp	= bove) = Ft. bove) = Ft.) = Ft. vstem is negative numberected.	Ft. Ft. Ft. Ft. Ft. Ft. Ft. Ft. Ft.		
Pum	p Calculation S	heet (Cont	inued)			Temp. Degrees F.				
		Indicate	tvne nine	used		Viscosity SSU				
DISC	HARGE SIDE	STL	PVC	FRP		Loss Ft./100 " Dia. Pipe				
	-					Loss Ft./100 " Dia. Pipe				
(D1)	Dy	/namic Friction	on Losses			Loss Ft./100 " Dia. Pipe				
	PIPE & FITTINGS		Equiv.	Ft. of Straig	nt Pipe	EQUIPMENT	Equiv.	Ft. of Liquid		
(D1a)		Qty	" Dia	" Dia	" Dia	ize (D1b)				
Straight F	Pipe					Strainer				
45 Degre	ee Ells					Air Eliminator				
90 Degre	ee Ells					Meter				
Tees Str	raight Through					Loading Arm Ass'y (Top)	、			
Tees Sid	de Outlet					Loading Arm Ass'y (Bottom	1)			
Gate Val	lves					Hose Real Ass'y				
Plug Valv	/es					Nozzle - Overwing				
Swing Ch	neck Valves					Nozzle - Underwing				
Butter Fly	/ Valves					Nozzle - Single Point				
						Nozzie - Automotive				
Enlargem										
Contractio	011									
						Other				
Tota	al Equiv. Straight	" Dia. Pipe	@	GPM =	Loss	./100 x Head Loss(Et) =				
Tota	al Equiv. Straight	" Dia. Pipe	@	GPM =	Loss	./100 x Head Loss(Ft) =	— I I			
Tota	al Equiv. Straight	" Dia. Pipe	@	GPM =	Loss	./100 x Head Loss(Ft) =				
(D2) Static	c Discharge Head	•								
(D3) Veloc	city Head (Add if Significal	nt)								
(D4) TOTA	AL DYNAMIC DISCHARG	E (Sum of D1	a, D1b,D2	, and D3)						

ributor Name: Job Name:		Page: Date:		GORMAN							
OTAL DYNA	MIC HEAD										
(T1) T((T2) T((T3) S.	OTAL DYNAMIC SUCTIO OTAL DYNAMIC DISCHA AFETY FACTOR(use 5%	N HEAD (See Line S4, in suction ca RGE (See Line D4, in discharge cal % of Total Dynamic Discharge head)	alculations) = culations) = (1.05 x Lin	e T2) =	Ft. Ft.						
(T4) T	OTAL DYNAMIC HEAD (T1 + T2 + T3) =				Ft.					
NOTE: Af	fter determining Total D tors may involve pump	Dynamic Head at the desired flow design features, speed, best effice	rate, go to ciency, hors	the catalog to sel epower required,	ect best pump fo or NPSH require	r the job. Detern d by the pump.	nining				
NOTE: Af fac Model Numl (1)	fter determining Total D tors may involve pump ber: with	Dynamic Head at the desired flow design features, speed, best effic	rate, go to ciency, hors	the catalog to sel epower required, Motor HP is	ect best pump fo or NPSH require to deliver	r the job. Deterned by the pump.	nining Ft.				
NOTE: Af fac Model Numl (1) (2)	fter determining Total D tors may involve pump ber:with with	Dynamic Head at the desired flow design features, speed, best effic Dia. Impeller, operating at Dia. Impeller, operating at	rate, go to ciency, hors RPM. RPM.	the catalog to sel epower required, Motor HP is Motor HP is	ect best pump fo or NPSH require to deliver to deliver	r the job. Deterned by the pump GPM @ GPM @	nining Ft. Ft.				
NOTE: Af fac Model Numl (1) (2) (3)	fter determining Total D tors may involve pump ber: with with	Dynamic Head at the desired flow design features, speed, best effic Dia. Impeller, operating at Dia. Impeller, operating at Dia. Impeller, operating at	rate, go to ciency, hors RPM. RPM. RPM.	the catalog to sel epower required, Motor HP is Motor HP is Motor HP is	ect best pump fo or NPSH require to deliver to deliver to deliver	r the job. Deterned by the pump.	nining Ft. Ft. Ft.				

Pump Calculation Sheet (Continued)

SYSTEM SKETCH

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