

CUSTOMER	Customer: Vennessa Ventures		Qte#: Q07-2910 Rev.0 EqNo#: 02
	Project Name: Crucitas Project		Location: Costa Rica
PROCESS	Agitator Tag Number	: 10.5mx10.5m	Date: 23Feb2008
	Service Description	: CIP Tank Agitators	>
TANK	Temperature & Pressure	: 30 <degC> & Atmospheric Pressure	>
	Gas Flow Rate	: 0 No Gas is Added	>
	Final Mixture Viscosity	: 597-988 (τ_0 = 2.5 to 4.3 Pa) <mPa*s @5/s>	>
	Sp. Gr. of Mixture	: 1.262	<g/cm3>
	Sp. Gr. of Liquid	: 1.000 (1 cP)	<g/cm3>
	Sp. Gr. of Dry Solids	: 2.700	<g/cm3>
	Weight % Solids	: 30 to 33	<%w/w>
	Solids Settling Vel. d99	: 3.2 Free 1.8 Hindered	<cm/s>
	Particle Size Distributn	: d99=250 d80=75 d50=38	<um>
		: Plus 6 x 16 Mesh Activated Carbon	>
AGITATOR	Tank Diameter x Height	: 10.5 Diameter x 10.5 Straight Side	<m x m>
	Top / Bottom Geometry	: Flat / Flat	<mm/mm>
	Volume Agitated	: 823 to 823	<m^3>
	Liquid Level Range	: 9500 to 9500	<mm>
	Baffle Recommendation	: 4 @ 90 Deg. 655 Wide x Full Length	<mm>
SHAFT	Tank Operation	: Continuous Flow w Discharge thru Screens	>
	Agitator Model (Qty=7)	: MixPro 59GTH-50-20 w V-Belt on HS Shaft	>
	Agitator Shaft Seal	: No Shaft Seal is Used	>
	Mounting Type and Height	: On 685 mm Beams with 44 mm Bed-Plate	>
	Impeller System Used	: (2) 3683 mm MP1300SP w 3 Bolted Blades	>
	D/T Ratio	: 0.351 0.351	< - >
	Operating Speed	: 20.24	<Rpm>
	Power Used By Turbines	: 28.12	<kw>
	Tip Speed	: 3.9 3.9	< m/s >
	Other Agitation Scales	: 4 Ft2/s2 7.24 Fpm/6 115 Turns/hr	>
DRIVE	Total Impeller Pumping	: 94650 (Primary Pumping Capacity)	<m3/h>
	Agitator Function	: Uniform Suspens'n & Full Motion τ_0 =4.3 Pa>	>
	Gear Box Shaft (Upper)	: 150 Dia.x 245 Long from Mounting Ref.	<mm>
	Pipe Shaft (Lower)	: 219/194D.(8 Sch80) x 8313 Long	<mm>
	Total Length/Top Coupling	: 8513 Total/Shrink-Fit to Pipe	<mm/?>
MATERIALS	Impeller CL to Mtg.Ref.	: 4079 8513	< mm >
	Impeller Off-Bottom Dist.	: 7106 2672	< mm >
	Weight of Impeller	: 1400 1400	< kg >
	Pipe Shaft Stresses	: Shear= 30.12 Tensile= 50.8	<MPa>
	Hydraulic Safety Factor	: 2.5 2.5 Constant Level No Gas Added	>
LOADS	Speed Reduction	: 5VX Belt to All Helical Gear Reducer	>
	Reducer Model	: Hansen P4 Model: QVPE3-UDE H.Duty Shaft	>
	Gear Drive Ratio	: 79.775: 1 Triple Reduction	< R:1 >
	Gearbox Service Factor	: 1.76 Mech. 2.06 Thermal	<kw/kw>
	Belt Drive Details	: 1.08 : 1 Ratio & 1.37 Service Factor	>
WEIGHTS	Belt Drive Components	: 10.9"- 11.8" Pulleys 5VX 900(2) Belts	>
	Center to Center Distance	: 693 M2 Motor Mount & Guard By Hansen	<mm>
	Impeller Matl/Cover	: C/S + Nat.Rubber 6mm & 13mm Thk on Edges	>
	Gear Reducer Shaft Matl	: 42CrMoS4 (AISI 4150)	>
	Lower Shaft Matl/Cover	: C/S / No Covering on Shaft	>
MOTOR	DESIGN LOADS: (*)=APPROPRIATE SERVICE FACTOR APPLIED ALREADY		>
	Bending Moment (* 1.8SF)	: 30890	< N-m >
	Torque Moment (* 2.0SF)	: 35187	< N-m >
	Downward Load (* 2.0SF)	: 102654	< N >
	First Critical Speed	: 43.4 (0.47 Ratio)	<Rpm/(-)>
MOTOR	Weight of Agitator Drive	: 1338	< kg >
	Weight of Motor	: 277	< kg >
	Weight of Wet-End	: 3450	< kg >
	Total Weight of Agitator	: 5065	< kg >
	Motor Power / Rpm	: 37 (50 HP) / 1750 (460V/3/60Hz)	<kw/Rpm>
MOTOR	Total Power Used	: 30.3 (81 % of Nameplate)	< kW >
	Motor Frame Size	: 326T (Premium Efficiency)	>