

DISPOSAL PUMP APPLICATION DATA

LIQUID	Disposal Water (Slightly Sour)
FLOW RATE	Min flow PER PUMP: 0.16 m3/min (41 usgpm) Design flow PER PUMP: 0.48 m3/min (127 usgpm) TOTAL VOLUME: 0.16-0.96 m3/min (41-254 usgpm)
SUCTION PRESSURE	~156 ft (74 psig) from booster pump
DISCHARGE PRESSURE	Normal: 3190 psig Max: 3338 psig
REQUIRED HP	284 HP (300 HP motor quoted) PER PUMP
S.G.	1.1
VISCOSITY	Assumed 1.0 cP
TEMP	5-38°C
NPSHa	~156 ft (74 psig) from booster pump
NPSHr	approximately 25 ft of head @ 310 RPM with 2.25" plungers
H2S %	Present (assumed non-lethal)
SOLIDS (TYPE/SIZE)	Assumed Minimal
AREA CLASS	Class I Division II, 460V
SERVICE DUTY	Continuous (more than 4 hour per day average run time)
CONTAMINANTS	Assumed Light H2S with Chlorides

BOOSTER PUMP APPLICATION DATA

LIQUID	Disposal Water (Slightly Sour)
FLOW RATE	Min flow: 0.22 m3/min (60 usgpm) Normal flow: 0.96 m3/min (254 usgpm) Max flow: 1.85 m3/min (490 usgpm)
SUCTION PRESSURE	assumed atmospheric tank head
DIFFERENTIAL PRESSURE	~156 ft (74 psig)
REQUIRED HP	17.6 HP (25 HP motor quoted)
S.G.	1.1
VISCOSITY	Assumed 1.0 cP
TEMP	5-38°C
NPSHa	Assumed minimal (from tanks)
NPSHr	4.29 ft of head @ 254 gpm and 1800 RPM
H2S %	Present (assumed non-lethal)
SOLIDS (TYPE/SIZE)	Assumed Minimal
AREA CLASS	Class I Division II, 460V
SERVICE DUTY	Continuous (more than 4 hour per day average run time)
CONTAMINANTS	Assumed Light H2S with Chlorides

PUMP SIZING DATA

	Case	1	Case	2	Case	3
		MINIMUM FLOW		MAX 200HP FLOW		MAX 300HP FLOW & MAX PRESSURE
DISCHARGE PRESSURE	psig	3,190	psig	3,190	psig	3,338
SUCTION PRESSURE	psig	49	psig	49	psig	49
VOLUMETRIC EFFICIENCY	%	95%	%	95%	%	95%
MECHANICAL EFFICIENCY	%	90%	%	90%	%	90%
PUMPING RATE	m3/hour	9.30	m3/hour	21.00	m3/hour	28.75
BRAKE HP (VE & ME)		88		198		284
SUCTION PRESSURE	psig	49	psig	49	psig	49
DISCHARGE PRESSURE	psig	3190	psig	3190	psig	3338
INLET ADDER PRESSURE						
PUMPING RATE	usgpm	41	usgpm	92	usgpm	127
NUMBER OF PLUNGERS		5		5		5
PUMP MODEL		415Q		415Q		415Q
STROKE LENGTH	inches	5	inches	5	inches	5
SELECTED PLUNGER DIA.	inches	2.250	inches	2.250	inches	2.250
FLUID END OPTION		H		H		H
MAX. PLUNGER PRESSURE	psig	3,737	psig	3,737	psig	3,737
PUMP SPEED	rpm	100	rpm	226	rpm	310
% OF MAX. PUMP SPEED	%	25%	%	57%	%	78%
MAX. CONTINUOUS SPEED	rpm	400	rpm	400	rpm	400
MAX. INTERMITTENT SPEED	rpm		rpm	-	rpm	-
MAX API SPEED	rpm	310	rpm	310	rpm	310

SPECIAL COMMENTS:

NOTE: API674 RECOMMENDED SPEED FOR THE 415Q IS 310 RPM

Pump Sized By: Nathan Hutzul