다음 Page의 설계 추천은 설계 지원 요청자가 제시한 다음의 설계 기준들을 기준으로 추천 제시된 설계 사양들입니다.

관련 공정 : 하수 처리장

유입 가스 중 오염 성분 : H_2S

처리시 사용 미생물 : Thiobacillus균 또는 Acidithiobacillus균류

	System 1	System 2
유입 가스 유량	3,000 Am^3/hr.	3,000 Am^3/hr.
유입 가스 온도	30℃	30℃
유입 가스 중 오염 성분 농도	H_2S : 60 ppmv(max.)	H_2S : 6 ppmv(max.)
오염 제거 효율	90%	80% 이상

Biotrickling Filter

packed with HD Q-PAC®

using N-P-K Fertilizer for Nutrients

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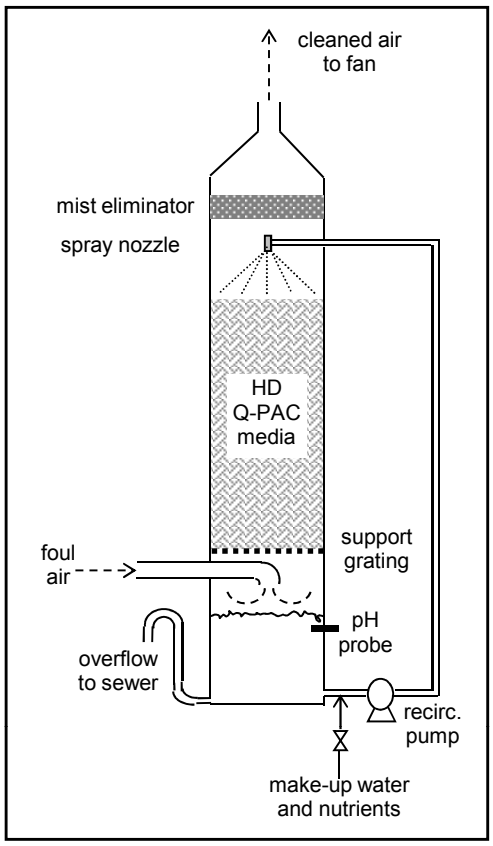
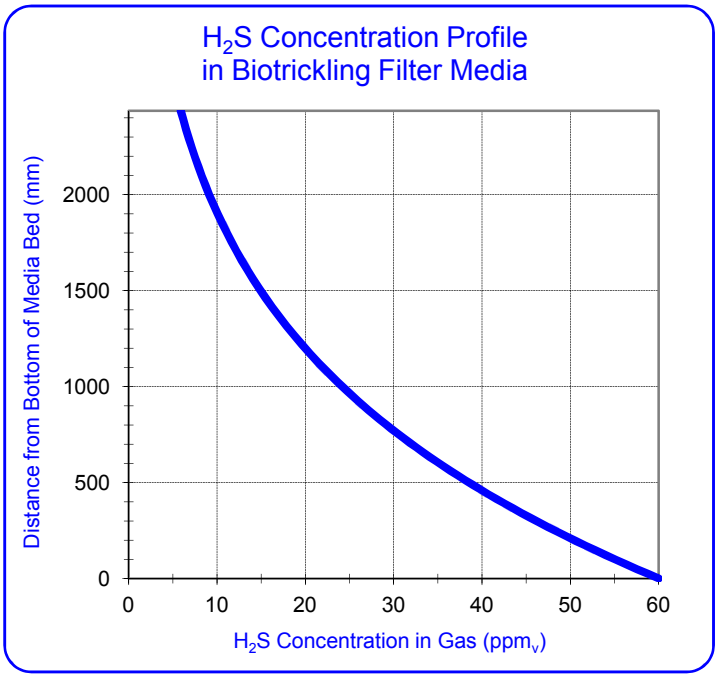
for System 1 (max inlet concentration)

Air Flow Rate:	3,000	Am³/h	2,703	Nm³/h
Wet-Bulb Temperature:	30	°C		
Pressure:	0.0	mbar	1.00	atm
Inlet H_2S Concentration:	60	ppm_v	91	mg/Nm³
Media Depth:	2438	mm		
Filter Cross Section:	3.3	m²		
Design Safety Factor:	1.20			
Make-up Water Alkalinity:	100	mg/L (as $CaCO_3$)		
Minimum Blowdown pH:	1.5			
H_2SO_4 in Blowdown:	0.23%			
Outlet H_2S Concentration:	5.9	ppm_v	9.0	mg/Nm³
Empty Bed Residence Time:	10	sec		
Superficial Gas Velocity:	0.25	m/sec		
H_2S Removal:	90%			
Media Volume:	8.2	m³	288	ft³
Average H_2S Destruction Rate:	27.3	g/h-m³		
Media Pressure Drop:	0.09	mbar		
Liquid Recirculation Rate:	136	L/min	8.2	m³/h
H_2SO_4 Production Rate:	0.11	mol/min	0.6	kg/h
Minimum Blowdown Rate:	4.4	L/min	0.3	m³/h





Biotrickling Filter

packed with HD Q-PAC®

using N-P-K Fertilizer for Nutrients

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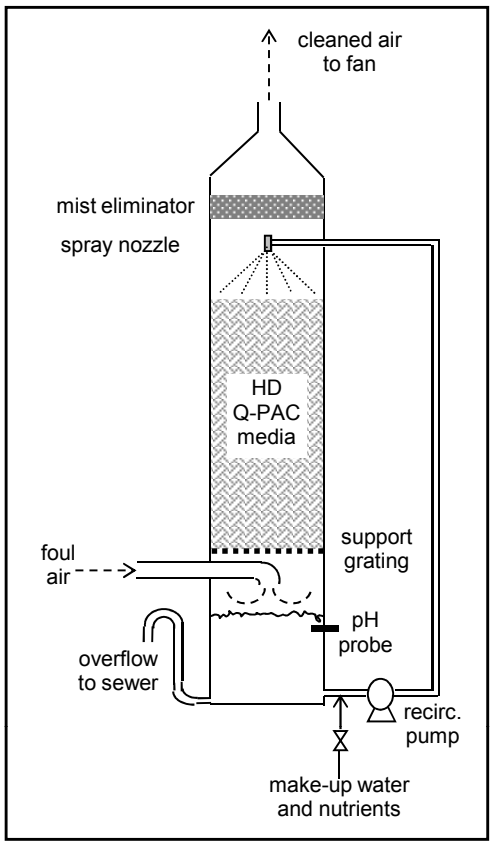
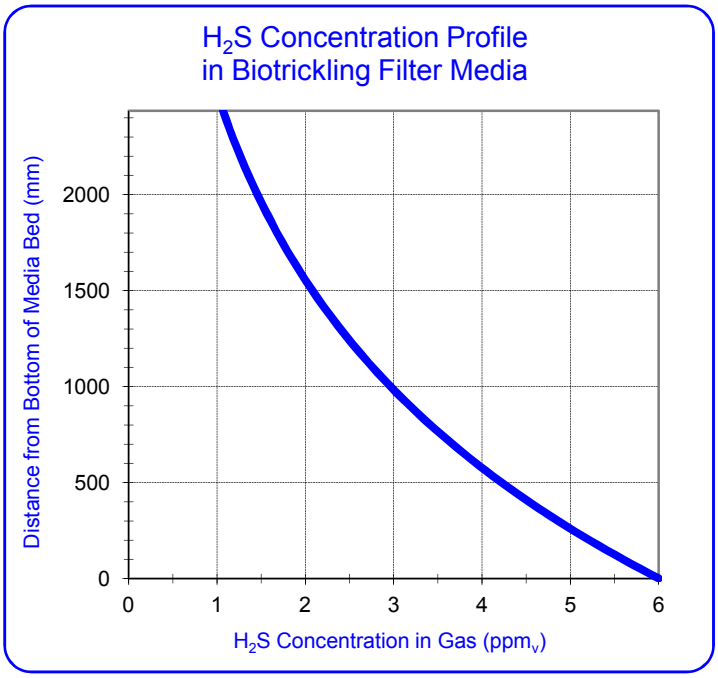
for System 2 (max inlet concentration)

Air Flow Rate:	3,000	Am³/h	2,703	Nm³/h
Wet-Bulb Temperature:	30	°C		
Pressure:	0.0	mbar	1.00	atm
Inlet H_2S Concentration:	6	ppm_v	9	mg/Nm³
Media Depth:	2438	mm		
Filter Cross Section:	2.3	m²		
Design Safety Factor:	1.20			
Make-up Water Alkalinity:	100	mg/L (as $CaCO_3$)		
Minimum Blowdown pH:	1.5			
H_2SO_4 in Blowdown:	0.23%			
Outlet H_2S Concentration:	1.1	ppm_v	1.6	mg/Nm³
Empty Bed Residence Time:	7	sec		
Superficial Gas Velocity:	0.36	m/sec		
H_2S Removal:	82%			
Media Volume:	5.7	m³	200	ft³
Average H_2S Destruction Rate:	3.6	g/h-m³		
Media Pressure Drop:	0.18	mbar		
Liquid Recirculation Rate:	95	L/min	5.7	m³/h
H_2SO_4 Production Rate:	0.01	mol/min	0.1	kg/h
Minimum Blowdown Rate:	0.4	L/min	0.0	m³/h