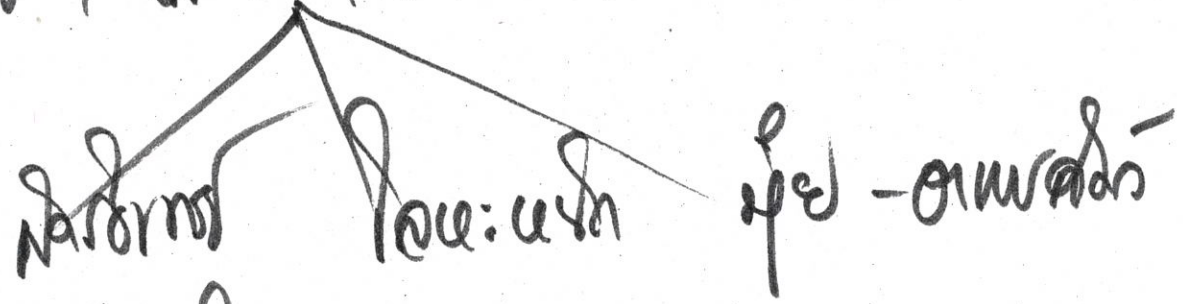
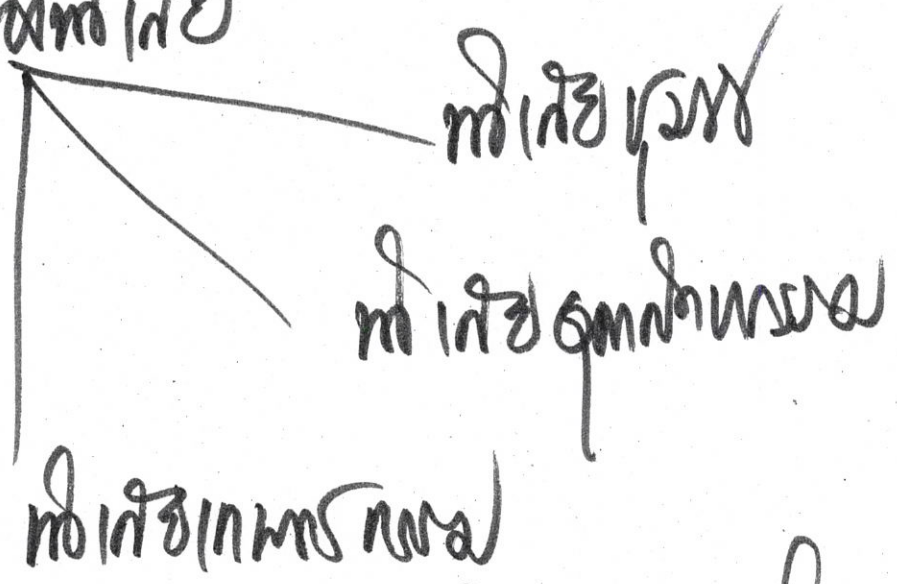


# ធនធានទឹកស្អាត

ប្រភេទទឹកស្អាត ប្រភេទទឹកស្អាត  
ប្រភេទទឹកស្អាត ប្រភេទទឹកស្អាត  
ប្រភេទទឹកស្អាត ប្រភេទទឹកស្អាត



## ប្រភេទទឹកស្អាត



ទឹកស្អាត (Domestic Wastewater)

ទឹកស្អាត ប្រភេទទឹកស្អាត

Organic

Organic; រដ្ឋបាល / រដ្ឋបាល

2

- ក្រសួង
- អគ្គនាយកដ្ឋាន រដ្ឋបាល
- អគ្គនាយកដ្ឋាន
- អគ្គនាយកដ្ឋាន

ក្រសួង រដ្ឋបាល រដ្ឋបាល រដ្ឋបាល Organic  
រដ្ឋបាល រដ្ឋបាល រដ្ឋបាល រដ្ឋបាល រដ្ឋបាល

- Organic - រដ្ឋបាល - រដ្ឋបាល
- រដ្ឋបាល
- រដ្ឋបាល
- រដ្ឋបាល

1 m³ water

1 m³ (80% methane  
= 0.8 kg)

+  
methane = 1 kg

11 parameters

BOD	toxic	TCB
COD	ammonia	PCB
TKN	nitrate	
TDS		
TSS		
pH		

BOD  
COD  
TKN  
toxic  
Organic

ammonia  
TSS  
nitrate

nitrate &  $\text{NaO}_2$

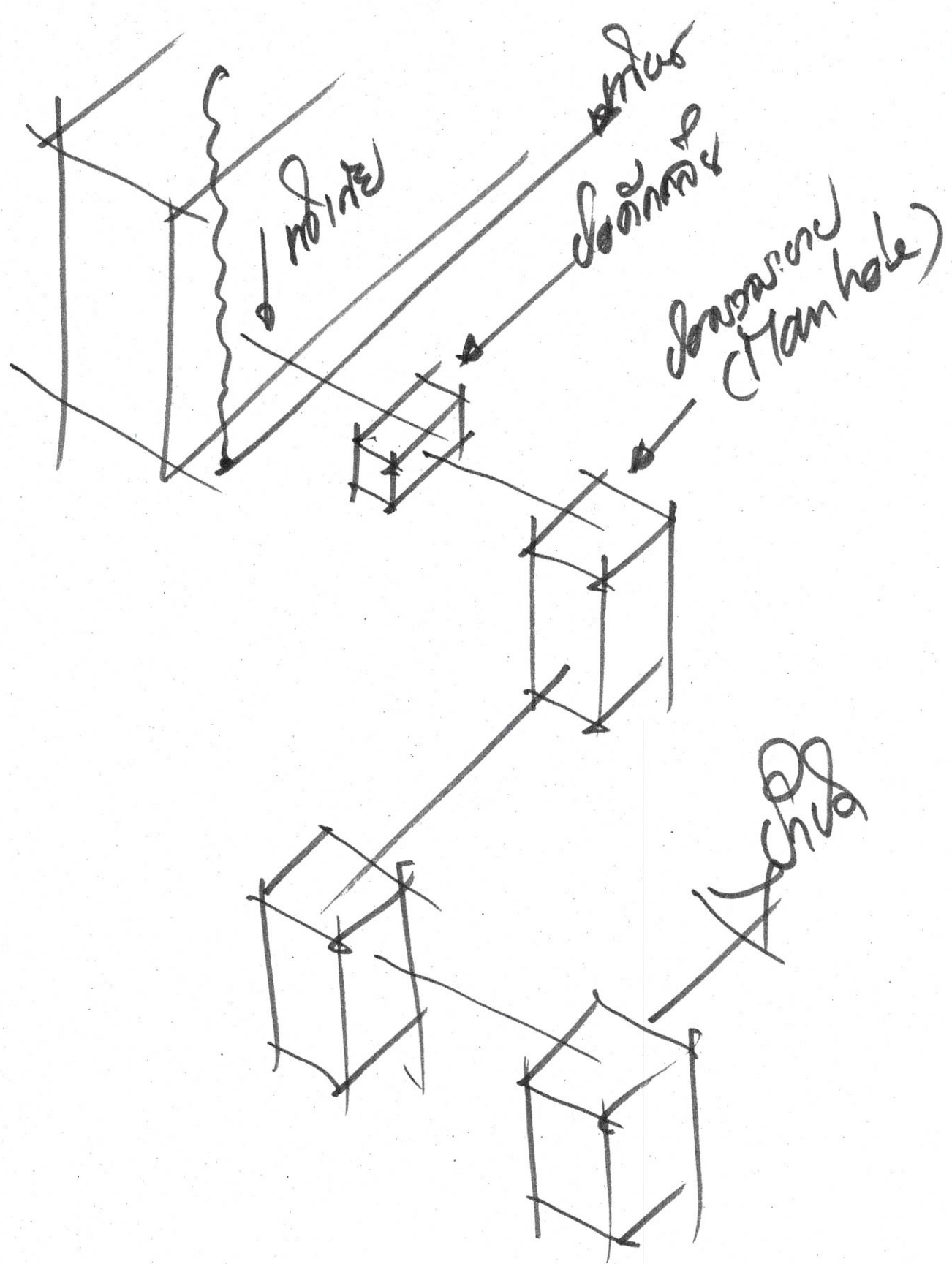
TCB PCB -> ammonia



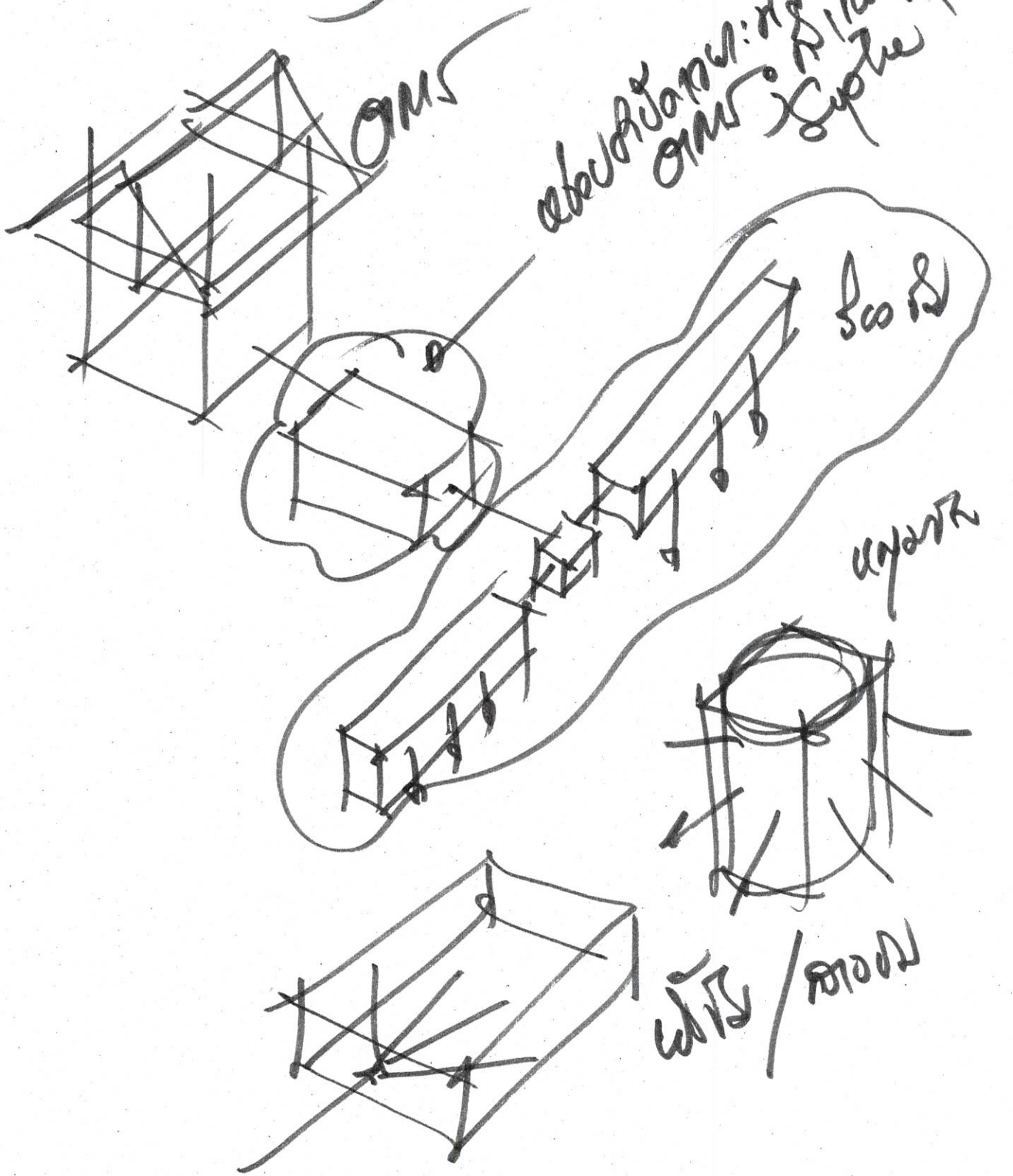




5

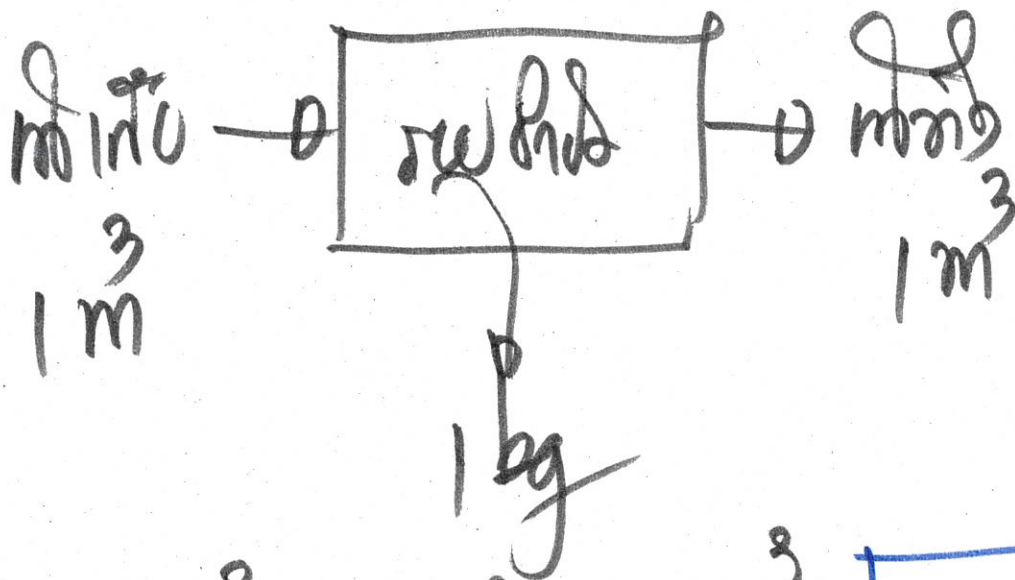


# W/mamndir; Disposal

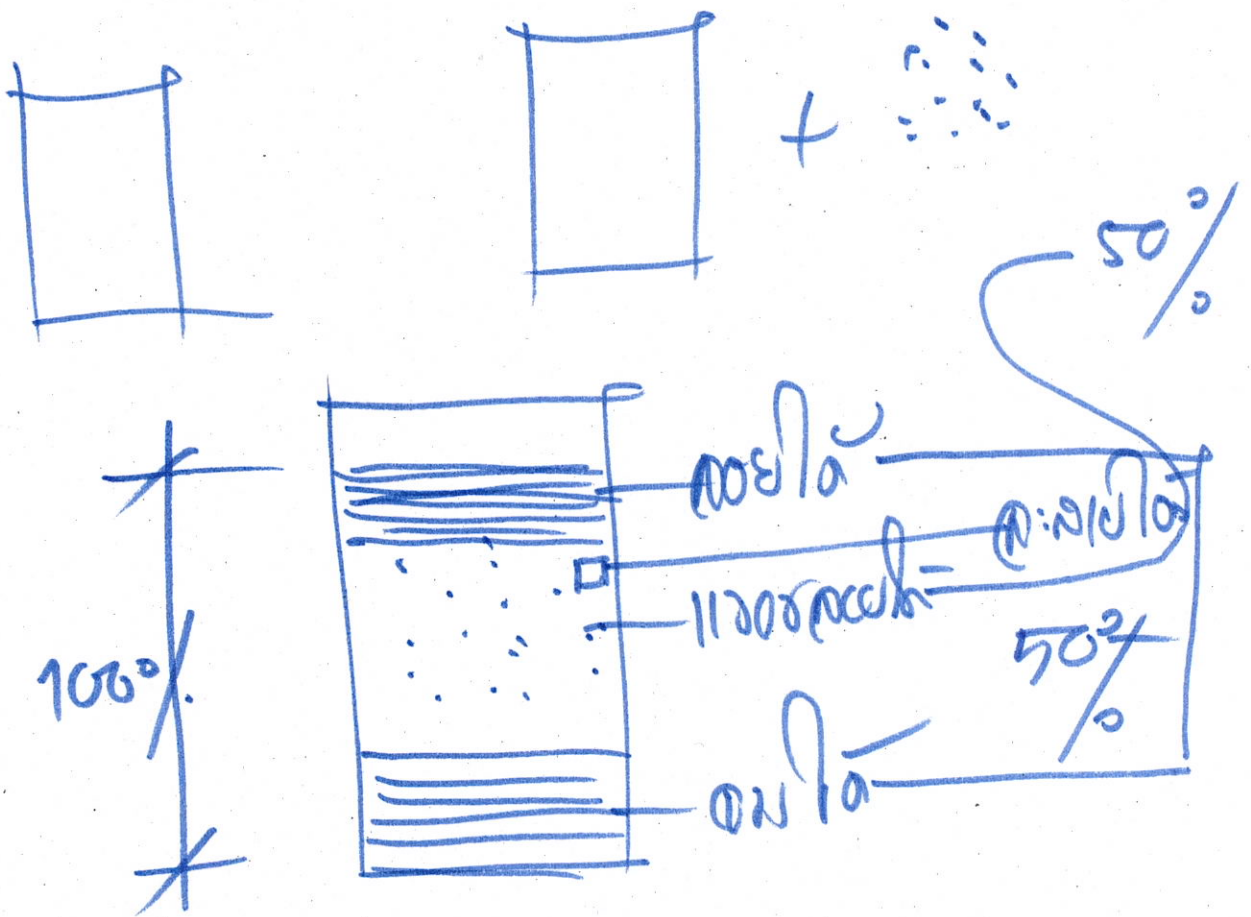


# மீளமைதி; Treatment

7



மீளமைதி  $1\text{ மீ}^3 =$  மீளமைதி  $1\text{ மீ}^3 +$  மீளமைதி  $1\text{ kg}$

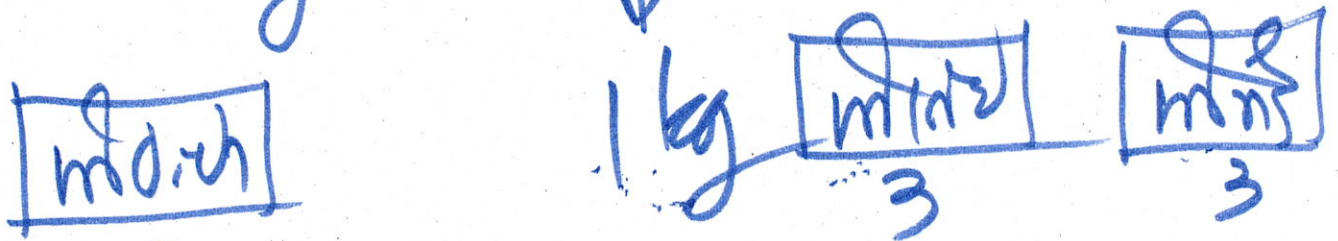
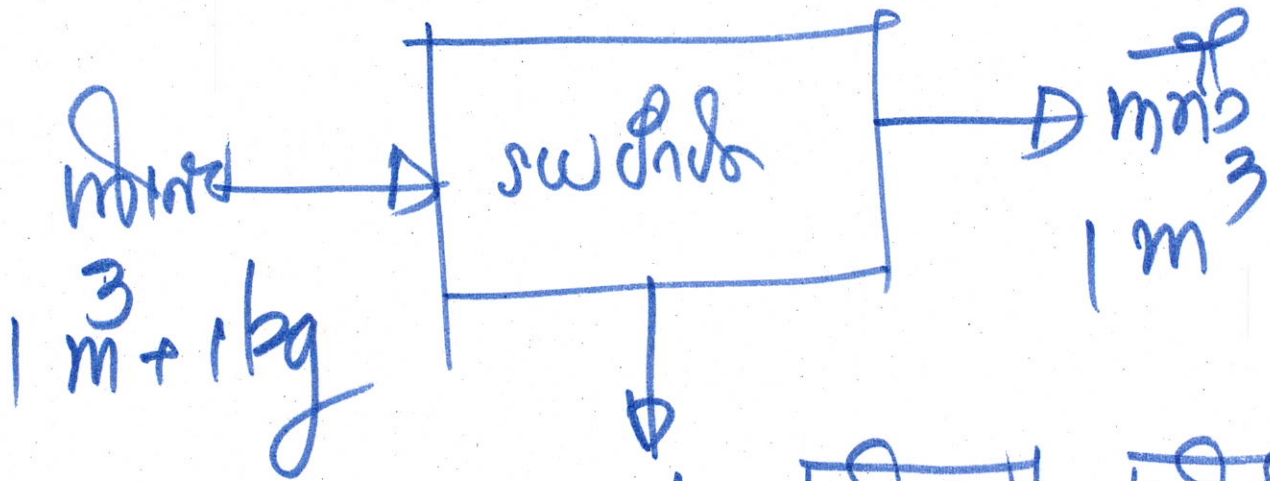




# मलिन मलिन मलिन मलिन मलिन

मलिन मलिन मलिन मलिन मलिन

- मलिन मलिन Sewage Sludge
- मलिन मलिन (Biogas)
- मलिन मलिन (Plant Biomass)



$1\text{ m}^3 + 1\text{ kg} = 1\text{ m} = 1\text{ m}$

$A + B = C + D$



II<sup>o</sup>; Secondary → ମାଧ୍ୟମିକ ଶିକ୍ଷା  
ଏବଂ ଉଚ୍ଚ ମାଧ୍ୟମିକ ଶିକ୍ଷା

- Norm - g → Hissense + g → control  
Pimble

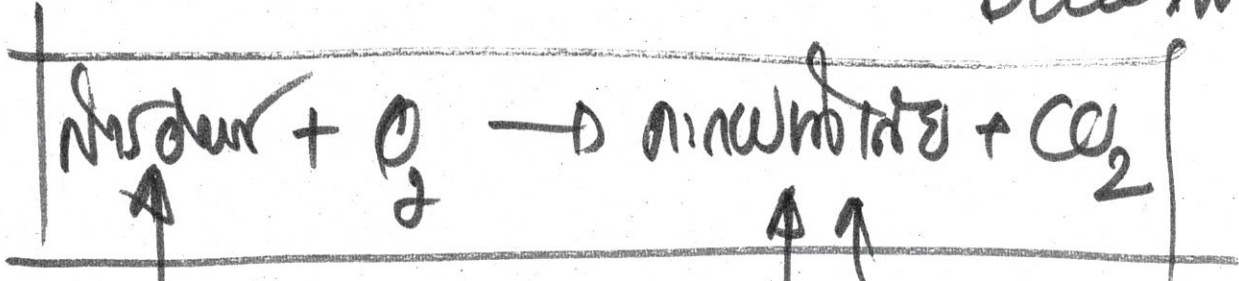
18/10/20

Gmmt



□ Nitrogenous waste +  $O_2$

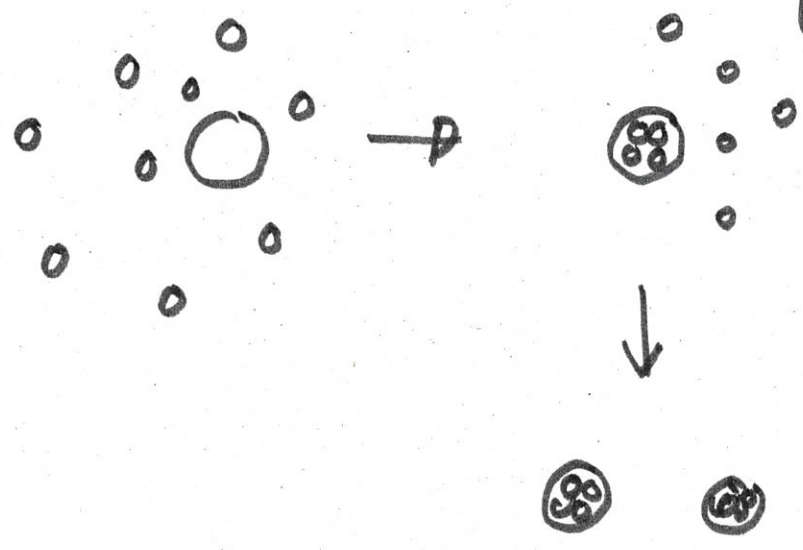
104 mg/L of  $PO_4$  and  $108$ ; Aerobic Treatment



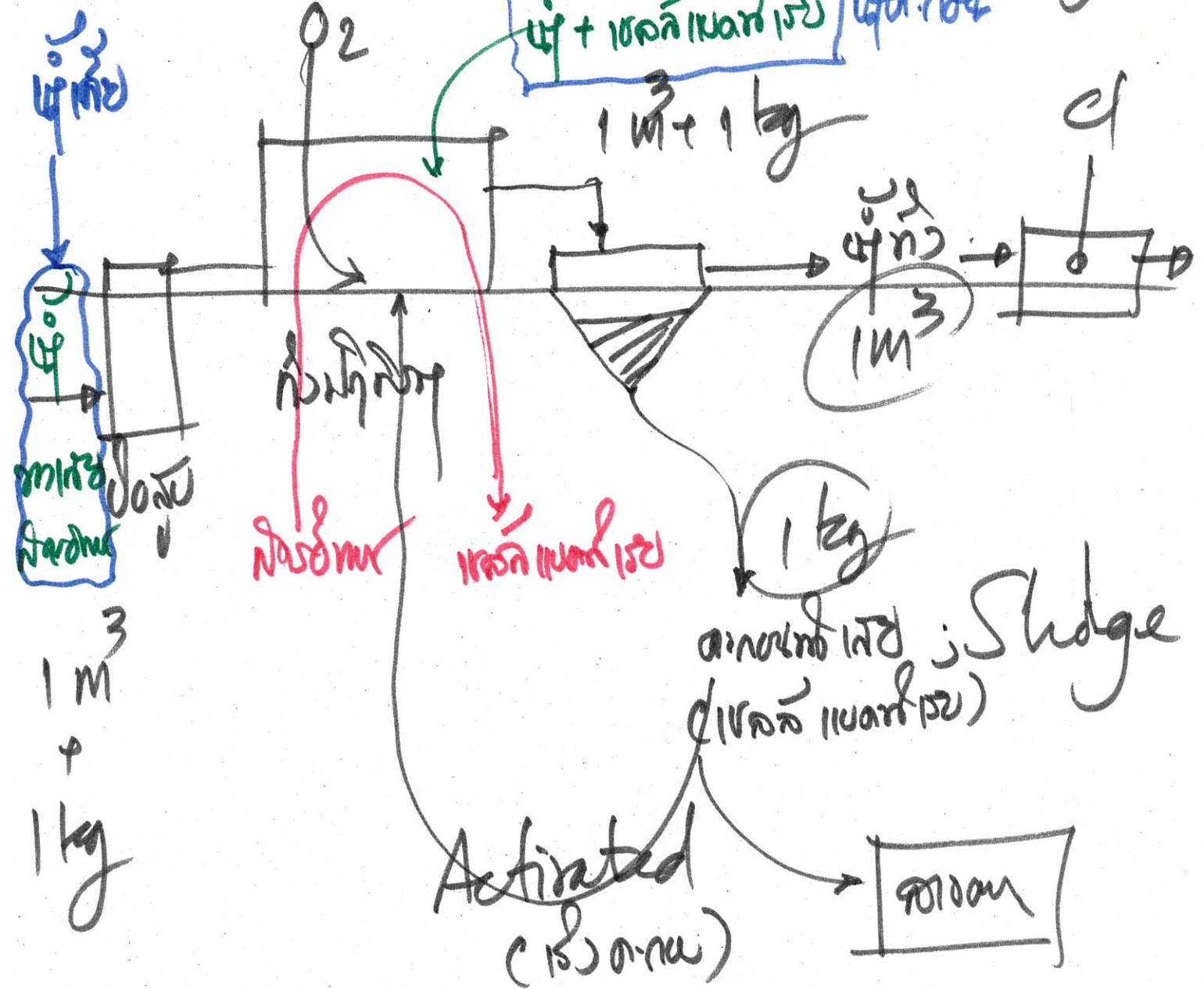
↑  
211

↑  
211

nitrogenous waste  
104 mg/L of  $PO_4$   
and 108 mg/L of  $PO_4$



12

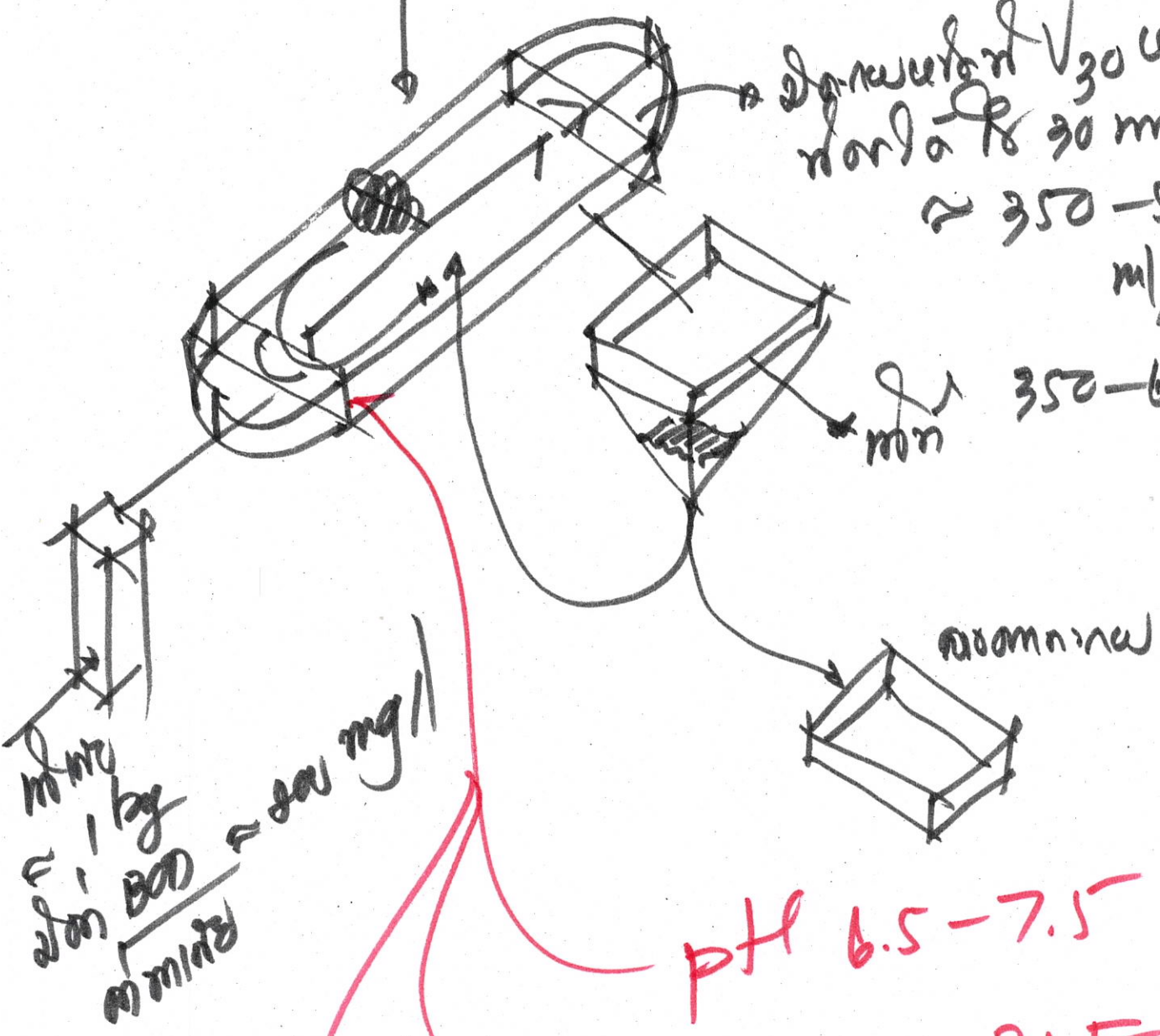


Water flow

main water supply  
to the system

flow rate of 30 m³/hr  
255-550  
l/m

\* 259-256



pH 6.5-7.5

BOD : N : P : Fe

100 : 5 : 1 : 0.2-0.5

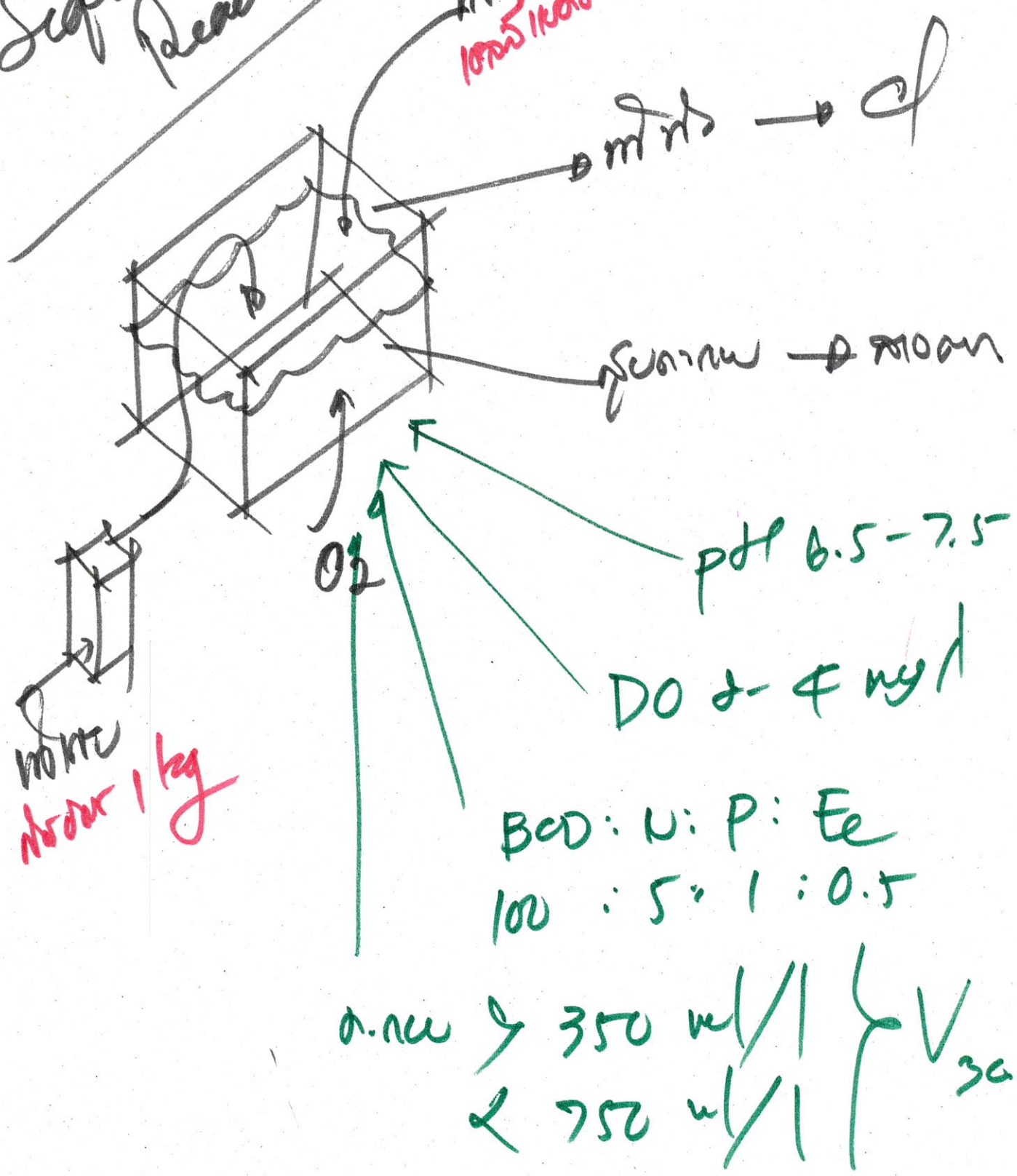
DO 1-2 mg/l

C4 mg/l

350-450



# SBR Sequencing Batch Reactor



mbrs  
1000 1000 1 kg

mbrs → of

pH 6.5-7.5

DO 2-4 mg/l

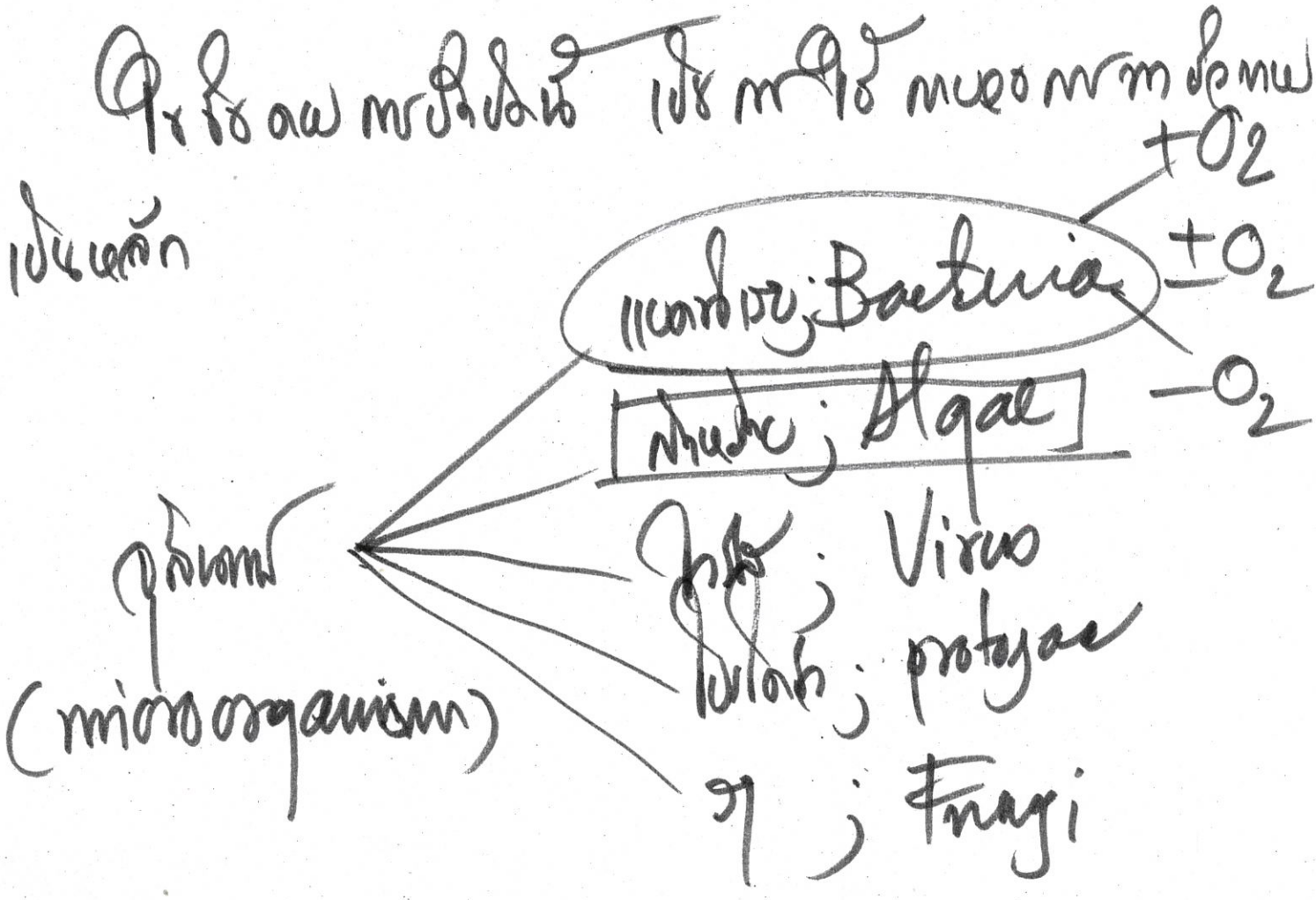
BOD: N: P: Fe  
100 : 5 : 1 : 0.5

a. nu → 350 ml/l  
← 750 ml/l } V<sub>30</sub>

mbrs  
1000 1 kg

- Activated Sludge;  $\text{O}_2$   $\text{m/s}$
- Oxidation Ditch;  $\text{m/s}$
- SBR;  $\text{m/s}$

ଅଧିକ  $\text{O}_2$  ଯୋଗ କରିବାକୁ ଯୋଗାଯୋଗ କରାଯାଏ (II<sup>o</sup> treatment)

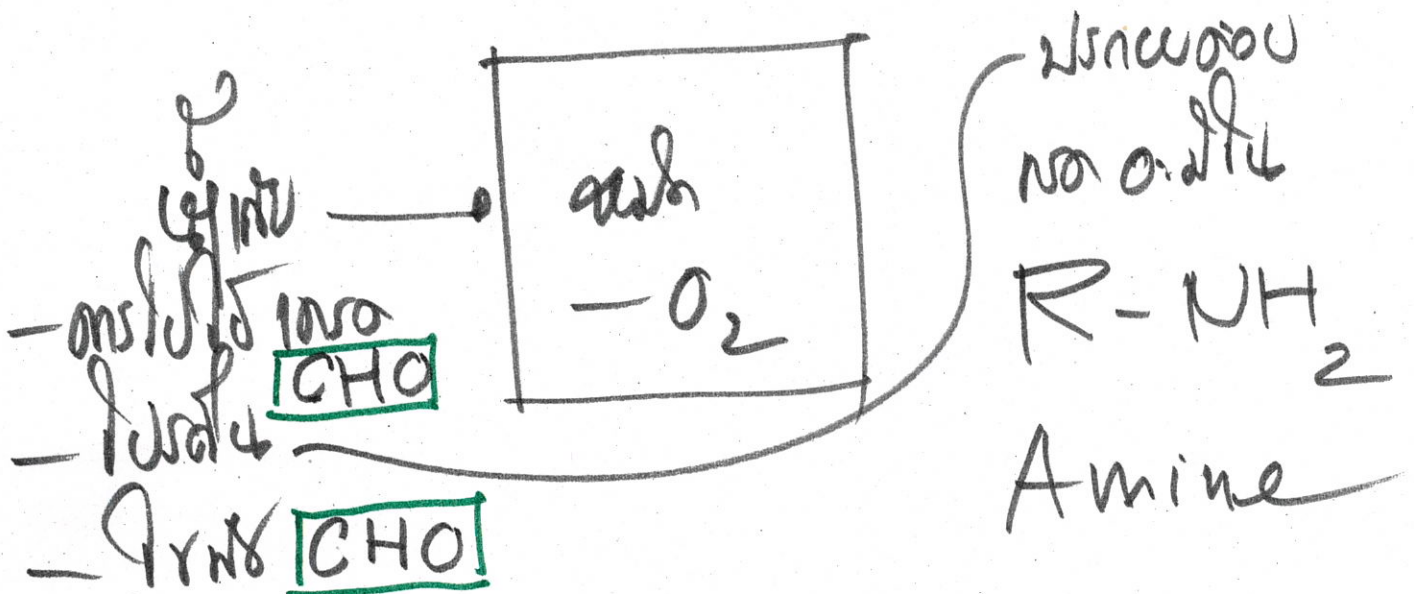


# Aerobic Bacteria on milk

ମିଳିଷିର —→ ଶରୀର ସାମଗ୍ରୀ  
 (ଶରୀର ମାଂସ)  
 ଶରୀର 350-650 ml/l ଶରୀର + O<sub>2</sub>

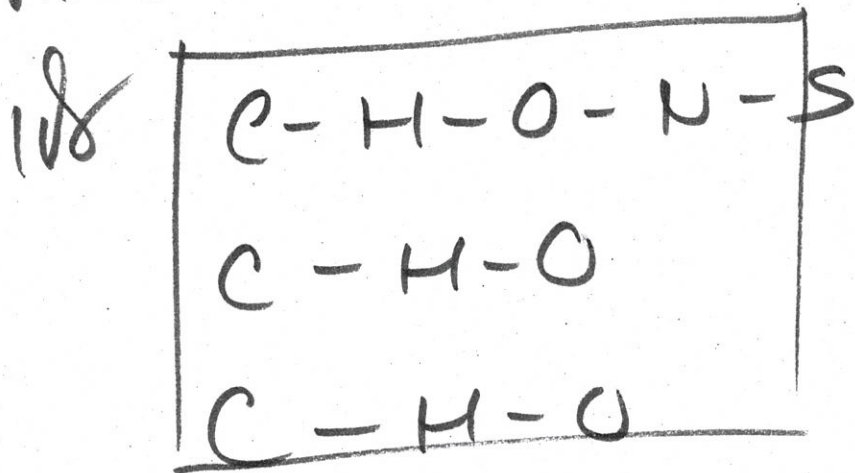
ମିଳିଷିର ସାମଗ୍ରୀ O<sub>2</sub> ସାମଗ୍ରୀ ନାହିଁ ନାହିଁ

ମିଳିଷିର —→ ସାମଗ୍ରୀ + ମିଳିଷିର  
 - O<sub>2</sub>

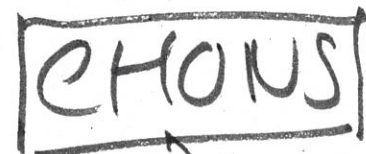




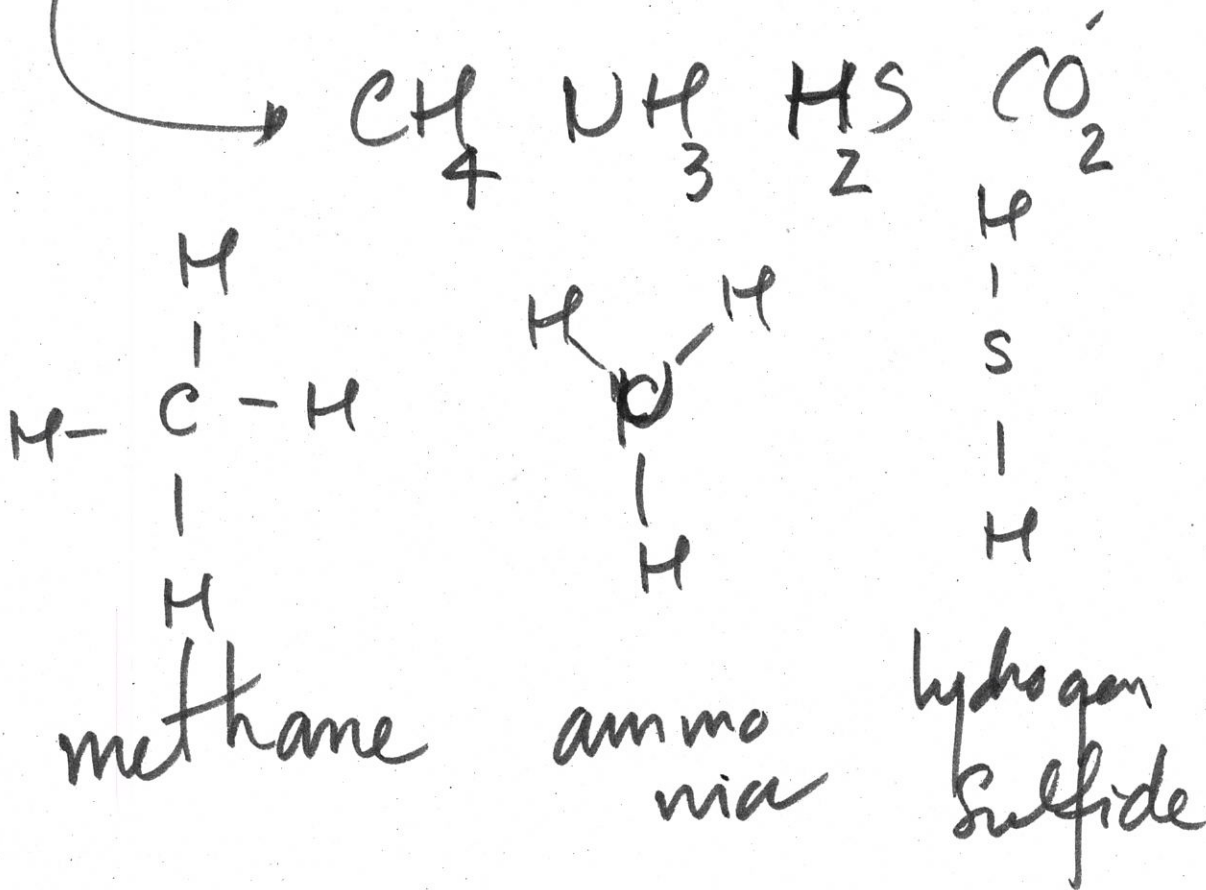
Wird die Aminosäurekette an der  
am Stickstoff + der Kohlenstoffkette  
ist



am Stickstoff



und



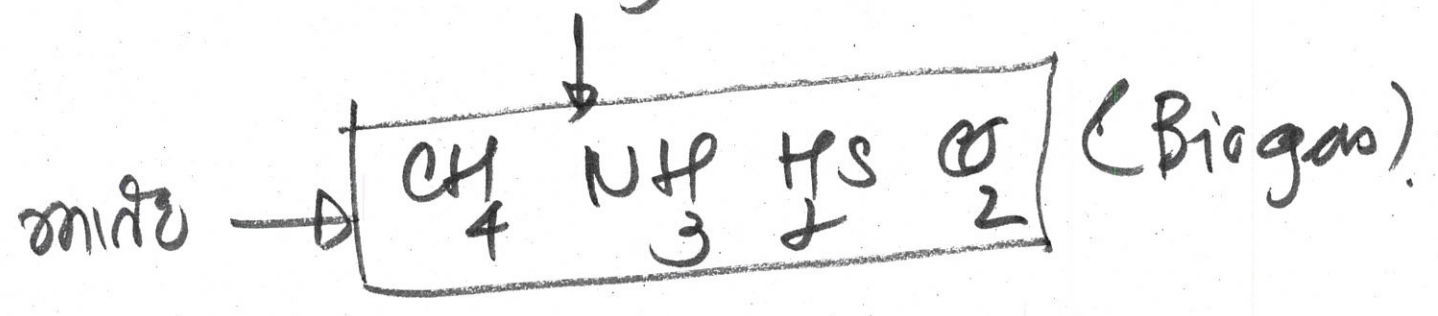
CHONS (microbes)

↓ -O<sub>2</sub>

acidogenesis (microbes)

Organic acid   
 ↙ acetic   
 ↘ malic   
     propionic

methanogenesis (microbes)



~ 50% in biogas

ନିମ୍ନଲିଖିତ କେଉଁ କେଉଁ ମାଧ୍ୟମରେ ମିଳିଥାଏ  
କୃତ୍ରିମ ଉପାଦାନର ନାମ

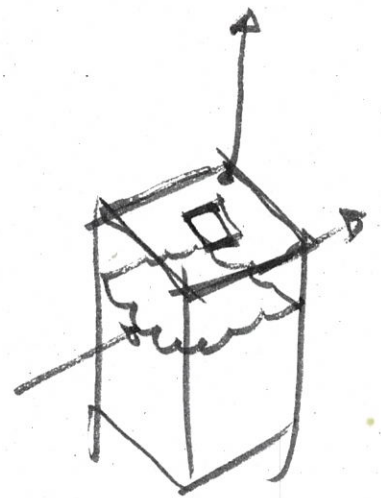
ଜୀବନୀୟ ଓ ଓଗାନିକ୍;  $CHONSP$

P ଉପାଦାନର ଗୋଟିଏ  $PO_4^{3-}$

ମାଧ୍ୟମ. =  $CHONSP$

ଉଦାହରଣ ମଧ୍ୟରେ ଦିଅନ୍ତୁ

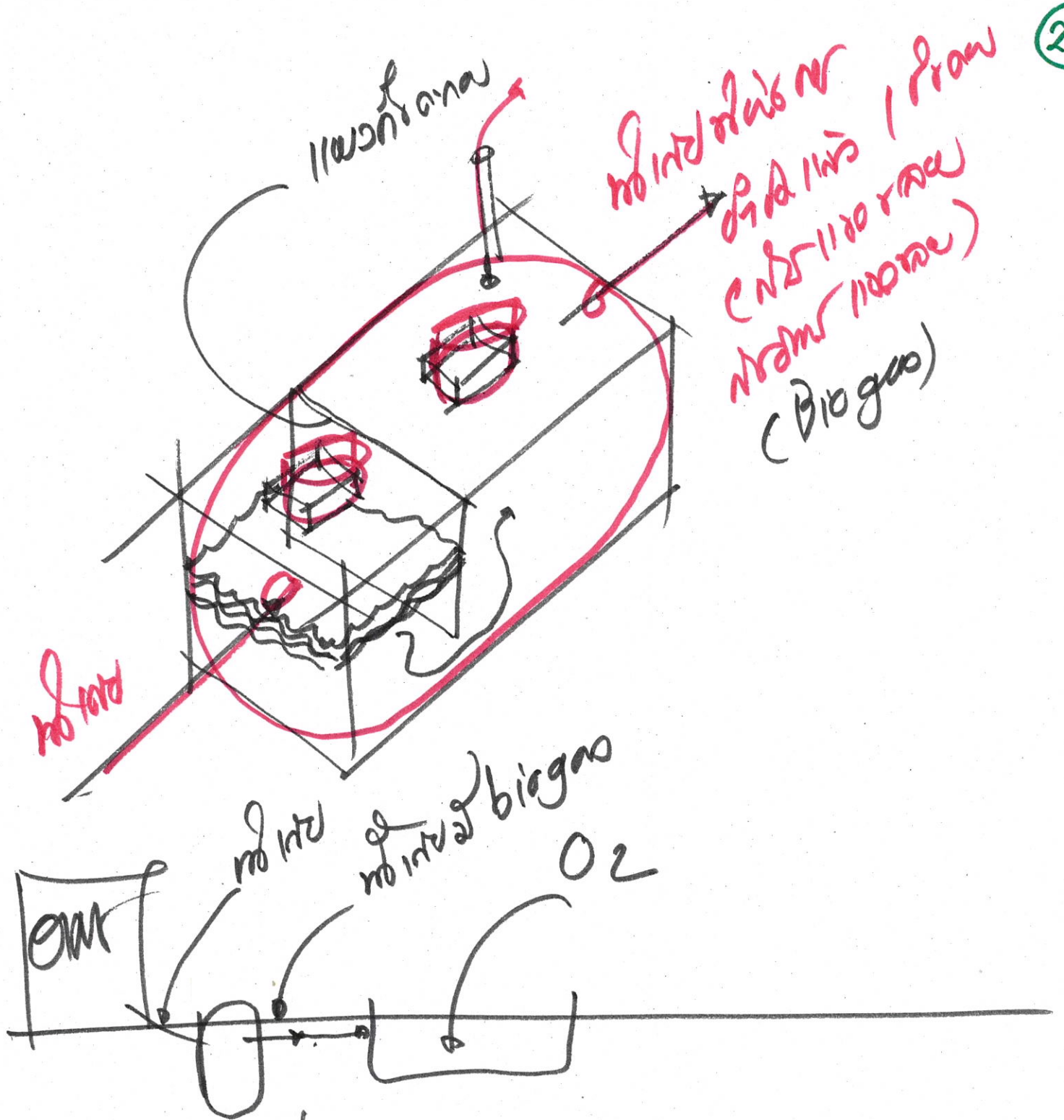
1. କୃତ୍ରିମ ଜୀବନୀୟ ଉପାଦାନର ନାମ



$CHONSP \rightarrow CH_4 \quad NH_3 \quad H_2S \quad CO_2 \quad P$

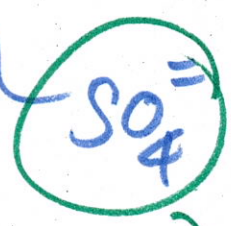
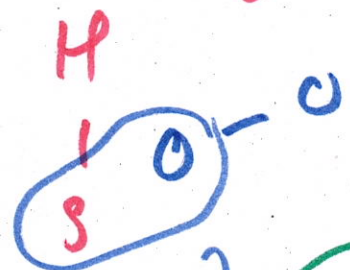
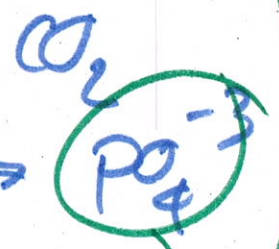
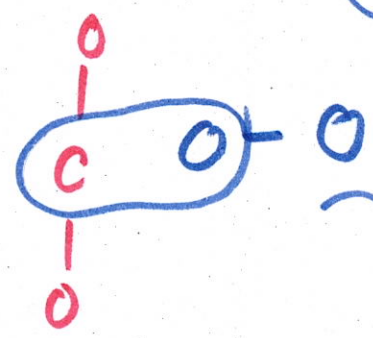
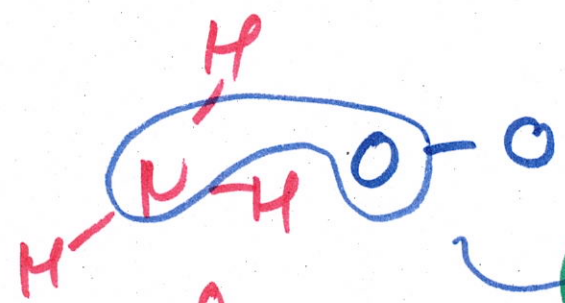
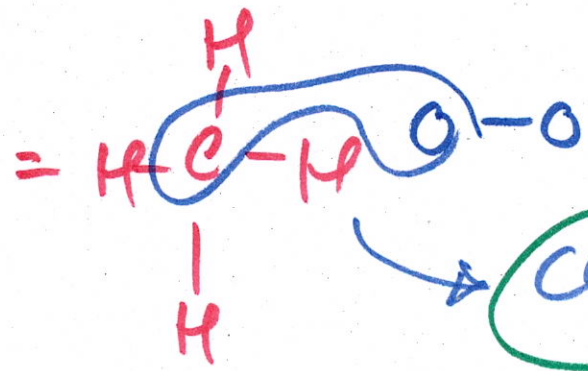
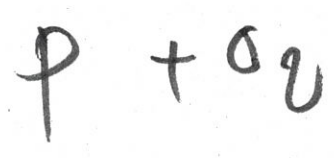
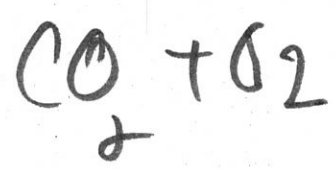
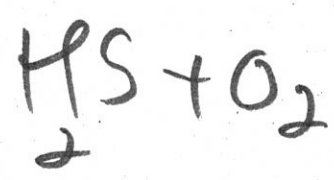
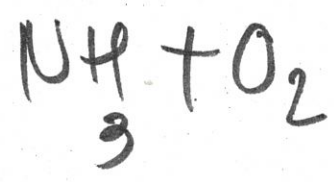
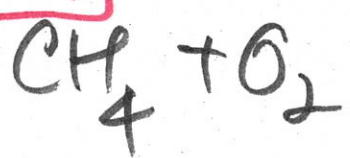
ଓଗାନିକ୍  $\rightarrow$  Biogas



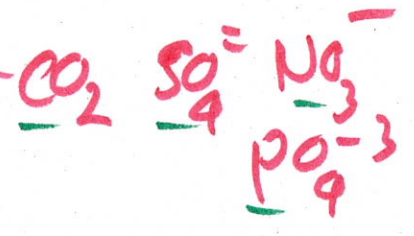
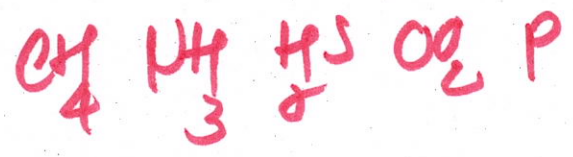
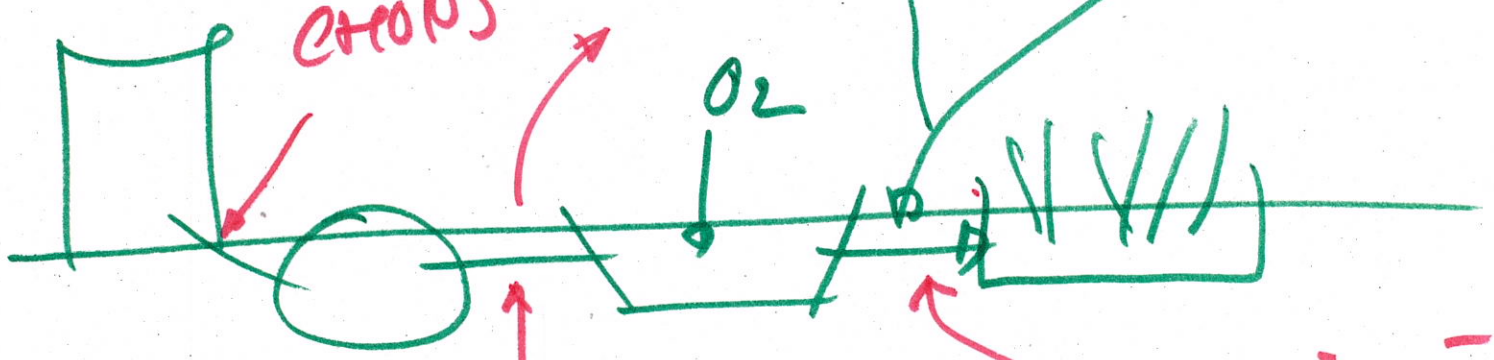


2.  $\text{biogas} + \text{O}_2 \rightarrow \text{control volume}$   
(control)

on



transfer  
electrons



ନିମ୍ନ ମାତ୍ରା ମିଳିତ ଓଡ଼ିଆ ଶବ୍ଦମାନଙ୍କର

ନିମ୍ନଲିଖିତ ୩ ଧରଣ

— ମିଶ୍ରଣ ଶବ୍ଦମାନଙ୍କର

ନିମ୍ନଲିଖିତ + ଓ → ଶବ୍ଦମାନଙ୍କର + ଓ<sub>୨</sub>

— ମିଶ୍ରଣ ଶବ୍ଦମାନଙ୍କର

ନିମ୍ନଲିଖିତ + ଓ → ନିମ୍ନଲିଖିତ + ଶବ୍ଦମାନଙ୍କର

— ମିଶ୍ରଣ ଶବ୍ଦମାନଙ୍କର

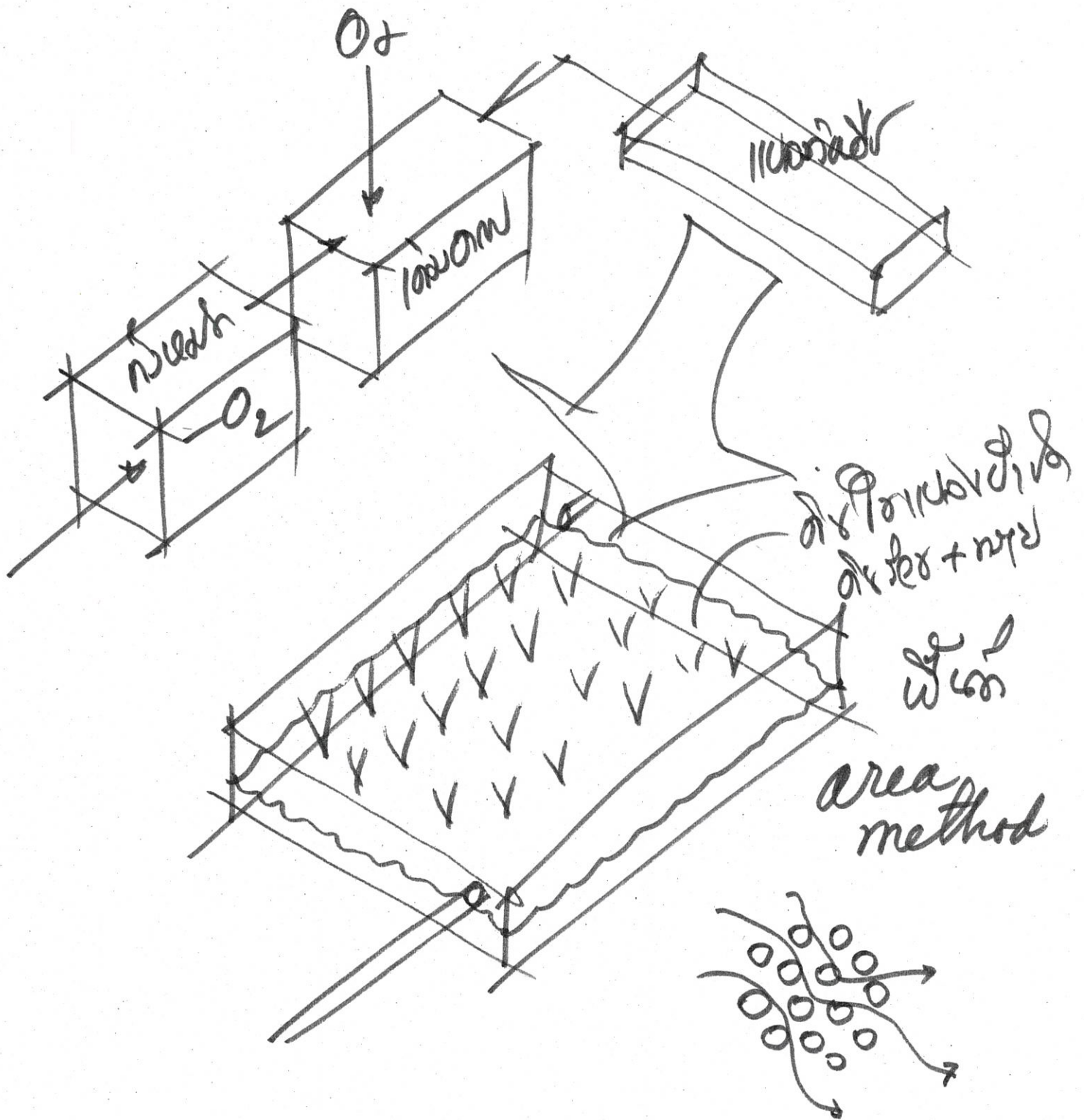
ନିମ୍ନଲିଖିତ + ଓ → ଶବ୍ଦମାନଙ୍କର + ଓ ଓ ଶବ୍ଦମାନଙ୍କର  
ମିଶ୍ରଣ

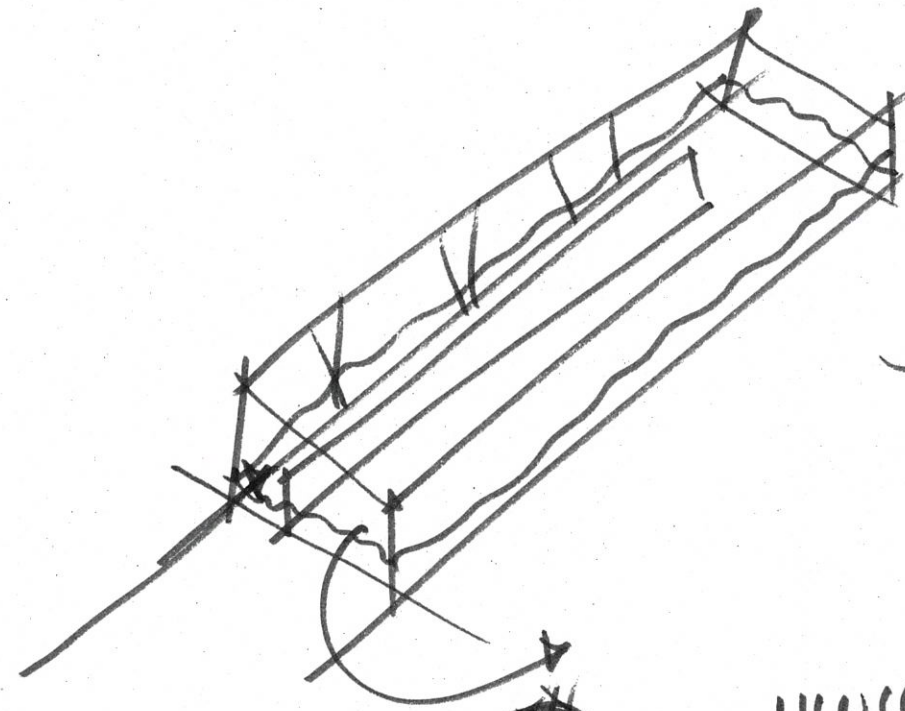
ଉପରୋକ୍ତ



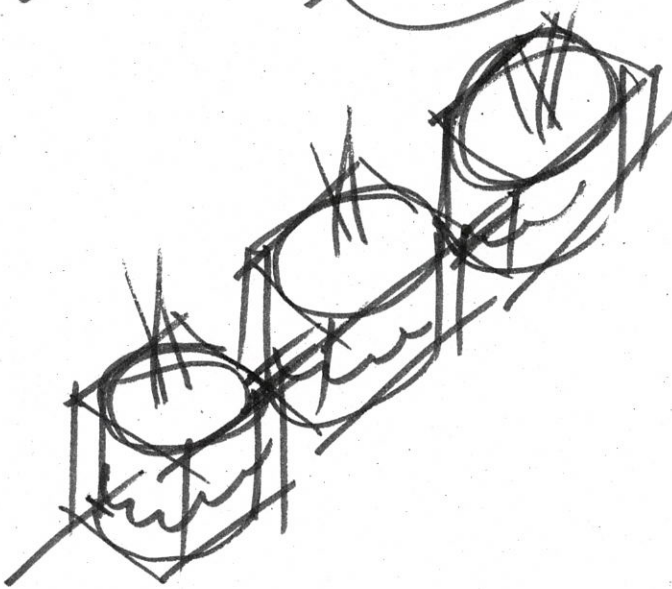
Ques. how do you estimate the area of a field?

(23)





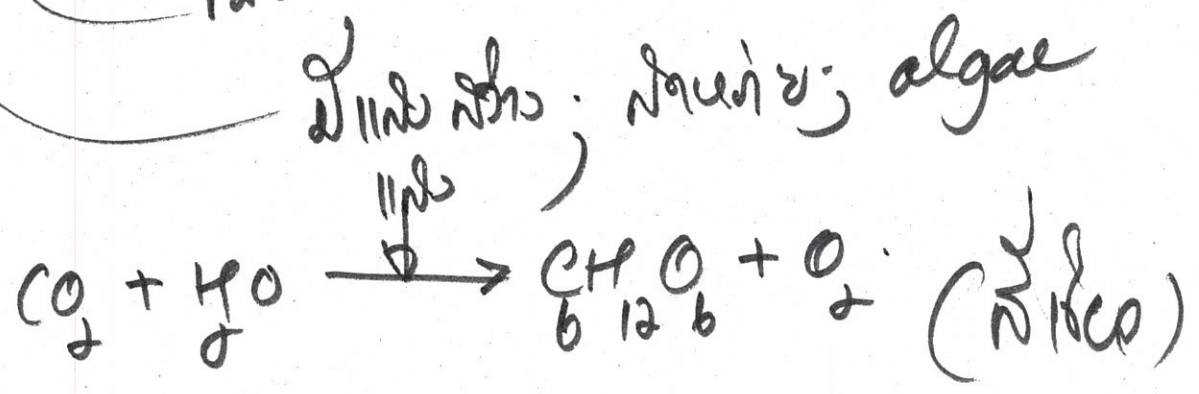
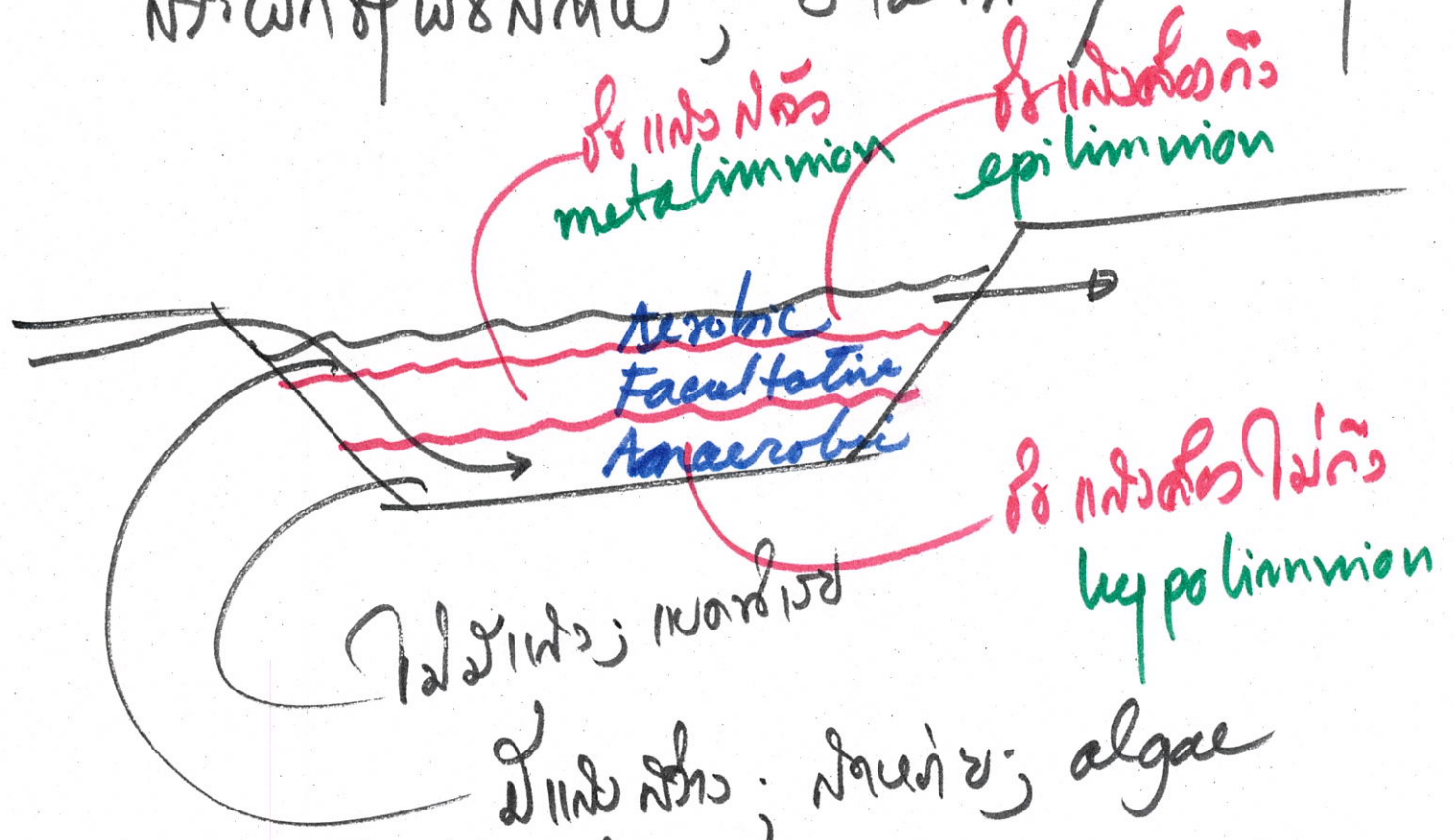
1100505  
; trench  
method



1100505; unit  
method

નિષ્ક્રિયતા અને ઓક્સિજન ટોચ

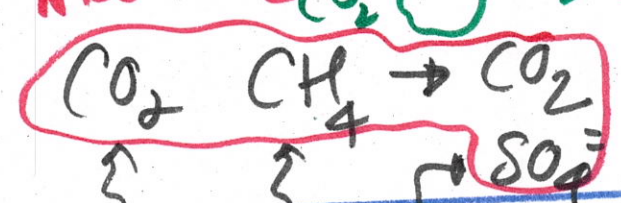
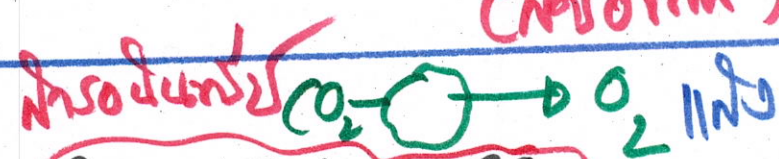
સ્થિતિ અને સ્થિતિ; Stabilization pond



નિષ્ક્રિયતા અને ઓક્સિજન ટોચ



algae (Inorganic carbon)  $+ CO_2 + H_2O$



U4

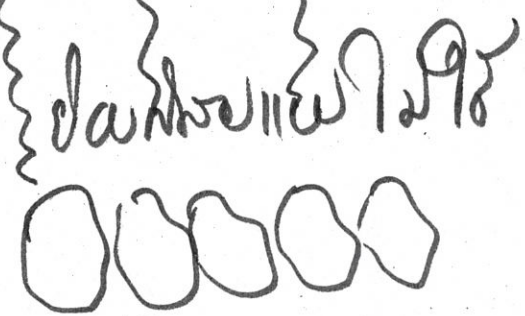
น้ำ

น้ำ

น้ำ

น้ำ

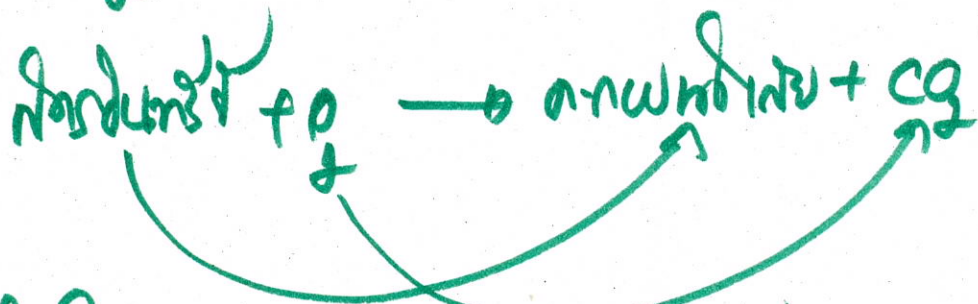
น้ำ



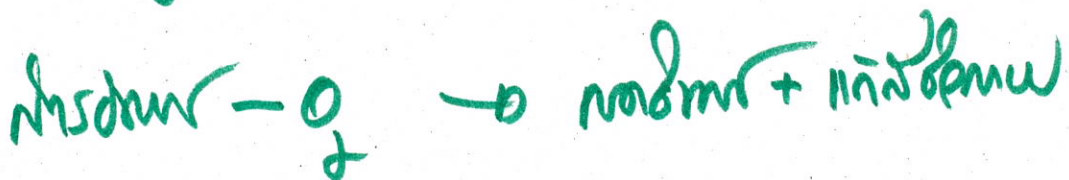
Organic polymer

ការបំបែកកំប៉ុង ឬ កំប៉ុង កំប៉ុង កំប៉ុង កំប៉ុង

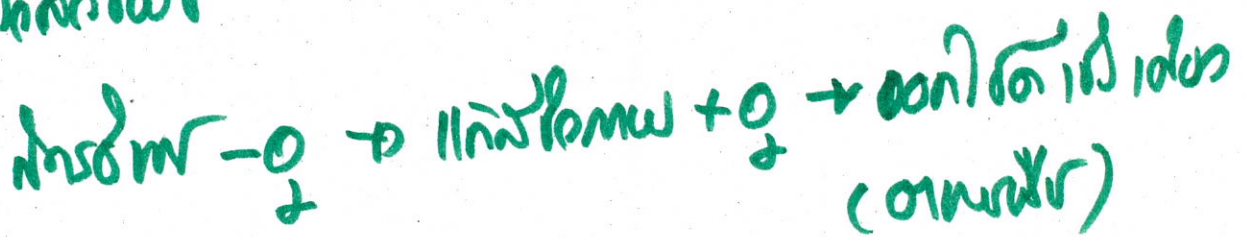
1. កំប៉ុង កំប៉ុង កំប៉ុង កំប៉ុង កំប៉ុង



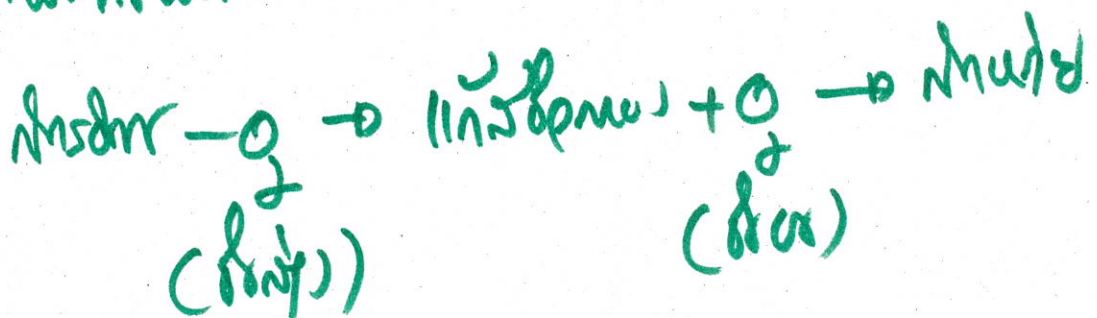
2. កំប៉ុង កំប៉ុង កំប៉ុង កំប៉ុង កំប៉ុង



3. កំប៉ុង កំប៉ុង



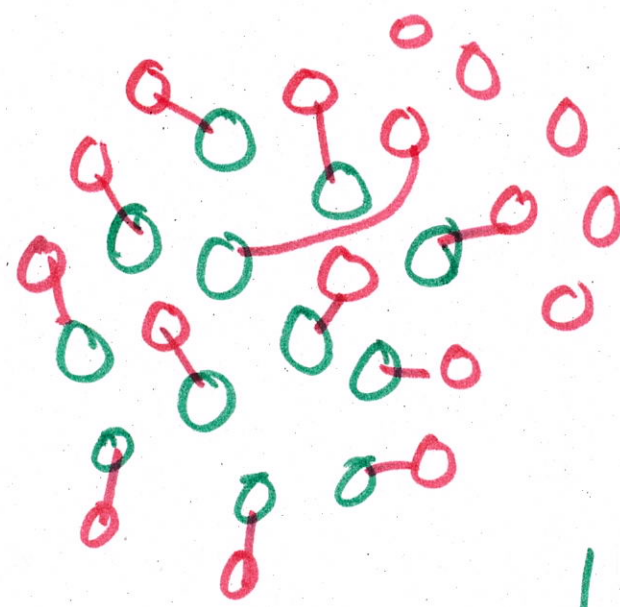
4. កំប៉ុង កំប៉ុង កំប៉ុង





mineral water

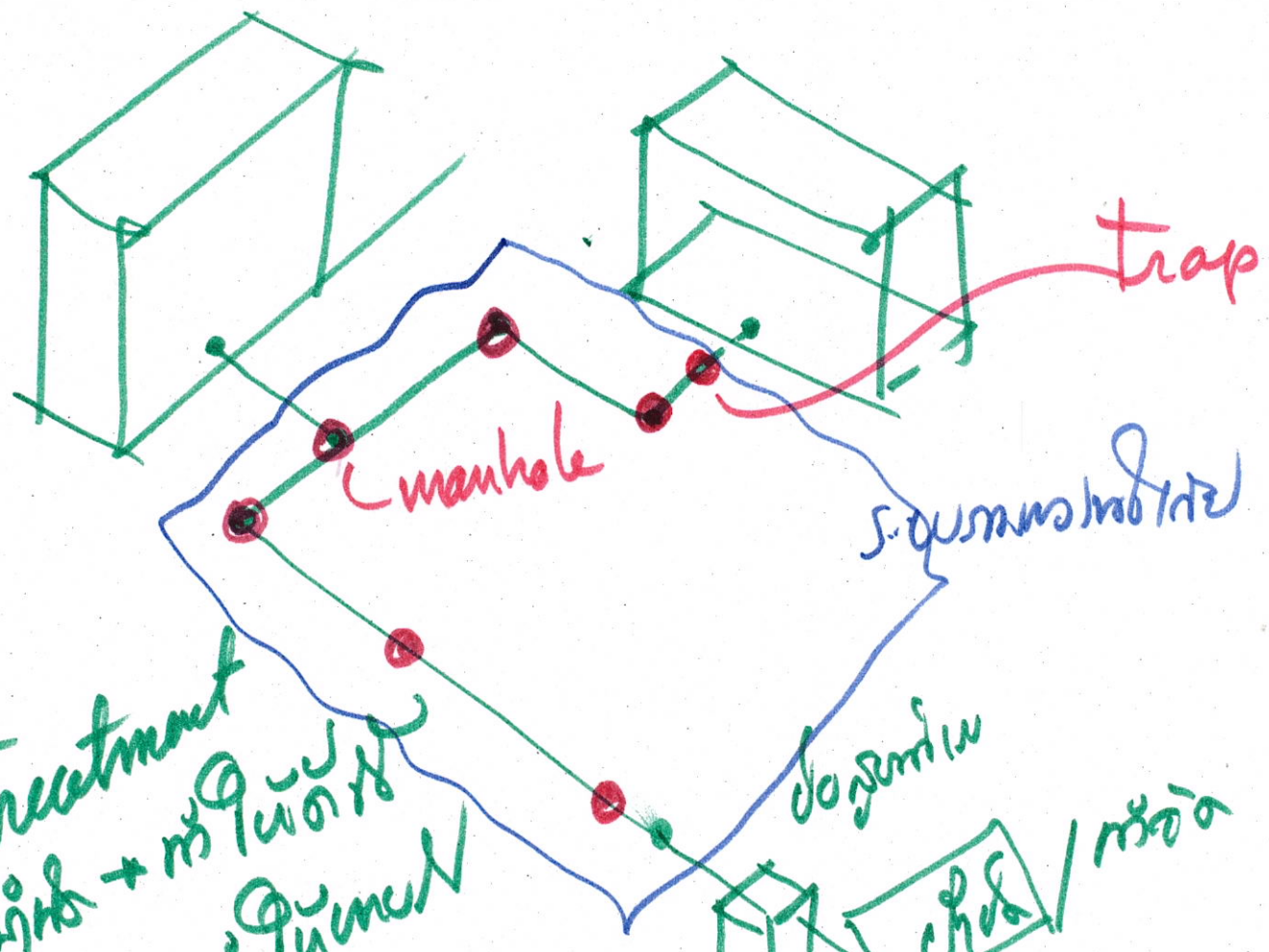
98 Coliform bacteria in: Bact  
in mineral water must not exceed 1%  
in 100 ml:  $c \approx 1$  kg calcium  
of concentration 0.5 - 1 ppm



— pH = 7.0  
— mineral  
water  
after

60 m<sup>3</sup>/day  $\approx$  1 kg / 100 ml  
90 m<sup>3</sup>/day  $\approx$  1.5 kg / 100 ml  
water must not





Treatment  
 nhũ + m. quansuoc  
 mua + m. quansuoc  
 Disposal  
 1 m. quansuoc  
 80% m. quansuoc

-BED COD TSS THV  
 TDS pH  
 Trichomonas  
 -TCB, FCB  
 m  
 an  
 anan

I  
 II  
 III

lact - hml  
 $980_2 \rightarrow anu$   
 $880_2 \rightarrow 11m$   
 $ur \rightarrow anu$   
 $anua \rightarrow O_2$   
 m. quansuoc  
 mua  
 anan