

TRAINING PROGRAM FOR OPERATORS OF EFFLUENT TREATMENT PLANTS

DAY 7

VISIT TO AN ALL-BIOLOGICAL ETP

WORK EXERCISE: FEED BACK FORM TO BE SUBMITTED AFTER THE VISIT

A. GENERAL

Name of the Factory	
Address/Location	
Type of process	
Effluent discharged to	
Capacity of the ETP	
Land area used for ETP	
Consultant for the ETP	
Supplier of the ETP	
Resource person & ETP contact person	

B. OBSERVATIONS IN ETP

Note: Even if there are multiple modules of the ETP in the factory visited, the questions below need to be answered for the main (largest) ETP only.

Section of ETP	Parameter	
Effluent collection lines,	Type: underground pipe/covered channel/uncovered channel	
	Manholes: numbers, covering material (RCC slab/Steel cover)	
	Cleaning : Manual/mechanical	
Screens	N. of manual screens, bar size (mm)	
	Frequency of cleaning	
	No. of mechanical screen, pore size (mm),	
	type of screen (drum/ brush/mechanical bar)	
	quantity of screenings collected.	
Raw effluent collection	Collection tank : present/absent	
	type (circular/rectangular)	
	Volume (m3) and retention time (hrs)	
Raw effluent pumps	Type of pumps (centrifugal/submersible)	
	Numbers (working/standby), W/S	
	Capacity: m3/h, motor power: HP	
Equalisation tank	type (circular/rectangular)	
	Volume (m3) and retention time (hrs)	
	type of aeration system (surface/submerged)	
	Diffuser: type (disc/tubular), Nos.	
	Diffuser sheet material:	
	any dead spots? If yes how much surface area is dead (%)	

	Any coarse bubbles/torn diffusers	
	Water levels maintained,	
	Aerator/Blower: type, nos., capacity (HP)	
Equalised effluent transfer pumps	Type of pumps (centrifugal/submersible)	
	Numbers : W & S	
	Capacity: m ³ /h, motor power: HP	
	Pumping control : manual / level switch/ automatic	
Neutralisation	Dosing control system : Manual/Automatic	
	pH maintained after neutralization	
	Type & Concentration of acid dosed	
Cooling tower	Present/ Absent	
	Inlet & outlet temperature	
	Blower speed & power	
Aeration tank	Type of the tank : Rectangular/Circular	
	Total retention time	
	Total power consumption per m ³ of effluent treated	
	Make of diffusers:	
	Type of diffuser (tubular/disc), number of diffusers	
	Dead spots/coarse bubbles observed	
	Sludge settling volume in 30 minutes	
	MLSS maintained mg/l	
	Nutrient dosed, type & quantity used per day	
	DO maintained in the aeration tank, mg/l	

Blowers	Number of blowers (W/S)	
	Capacity (m ³ /h) and HP of each blower	
	Automatic DO control : Present/absent	
	Air pressure by blower, kg/cm ²	
	Make & type of blowers	
Secondary clarifier	Type of secondary clarifier : circular/rectangular/tube settler	
	Retention time provide in the tank, hrs	
	RAS, quantity and percentage maintained	
	TSS in return sludge concentration, mg/l	
	Any issues with sludge settling in the tank	
	WAS, quantity wasted per day and % of RAS wasted	
	Nature of treated effluent : clear /turbid/coloured	
Secondary sludge pumps	Type of pumps (centrifugal/submersible)	
	Numbers (working/standby), W/S	
	Capacity: m ³ /h, motor power: HP	
Sludge Thickener	Present/absent:	
	System type : with mechanism/without mechanism	
	Retention time of sludge in the tank: hrs	
	Percentage of inlet sludge and thickened sludge (%)	
Sludge dewatering	Mechanical system/ sludge drying beds/Not present	
	Capacity (kg/ cycle, kg/day) and make of the sludge dewatering unit present	
	No. of units and details (capacity of unit or total area of SDBs)	
	Solids content : inlet slurry, dewatered cake (%)	

	Usage of any conditioning chemical : Name & dosage	
	Feed pumps : nos., capacity and pressure.	
	Quantity of dewatered sludge per day (kg)	
Sludge maturation	Present /absent	
	Period of sludge storage (months)	
	Moisture content in sludge after maturation (%)	
	Final disposal method	
Laboratory	In house lab - Present/absent:	
	Tests conducted: pH, TSS, TDS, BOD, COD, colour,	
	Other parameters tested:	
	Bacteriological tests, if any:	
	Heavy metal tests, if any	
Online monitoring	Present/absent:	
	If yes, what are the parameters tested online	
ETP control	Manual /automatic/semi-automatic	
	If not manual, details of control system	
Record keeping (Do not ask to show any records)	How many records are maintained: Just give the type of records maintained (e.g Flow, Operational timings of equipment, DO, MLSS, SVI, SV30, RAS/WAS, chemical records, sludge details, effluent quality parameters etc.) and not details.	

Submission date & time:

Name & Signature of the Trainee: