

CHARACTERISTIC AND WATER POLLUTION INDICATOR

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CHARACTERISTIC AND WATER POLLUTION INDICATOR

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ABSTRACT

Water constitutes living thing requirement that momentarily, since well-nigh 70 % living thing component consisting of water. Notably divides water man usually be utilized for drink, wash, and bath and the need another. To industry universalize water usually constitutes one of raw material which indispensable. Therefore drinking needs water readiness and other source water that accomplishes quality.

In a state purification, water constitutes colourless liquid, odorless, and doesn't get hope. According to Suripin (2002) that water quality is alone ranges three characteristics which is Physical, Chemical, and Biological. Water sacrilege is betokened with descent of water quality gets to increase water causative particular can't function to correspond to its allotment.

Ground water quality becomes momentous, since a large part ground water user utilize that water is straightforward. Reasonably or not within reason appropriate its allotment that we shall ever can betoken to mark sense pollution or not marks sense pollution by sees severally good parameter chemically, physics and also biological.

Key word : *Characteristic, Sacrilege, Water*

INTRODUCTION

Water constitutes living thing requirement that momentarily, since well-nigh 70 % living thing component consisting of water. Notably divides water man usually be utilized for drink, wash, and bath and the need another. To universalize water industry usually constitutes one of raw material which indispensable. Therefore needs drinking water readiness and other source water that accomplishes quality.

Clear water absolute needful, since water constitutes one of media of a variety diseased infection kind, particularly diseased diarrhoea and kind of it. Resident that uses fresh water to have smaller trend suffer from as compared to resident that doesn't use fresh water.

Drinking water quality step-up by way of arrange processing to water who will be utilized as drinking water absolutely needful, particularly if that water is indigenous surface water. Intended processing can be begun of that very simple until fledged one, according to dinginess zoom of that water origin source. Progressively gross that water therefore excelsior will increase needed processing, one that matter will more and more too teches required just for `mengolah` that water, to be able to been utilized as drinking water.

According to `Pandia Dkk`. (1995) water amount step-up is constitute to stipulate both of quality afters, since gets someone standard of living forward therefore will excelsior too level amount of water required of that society. According to WHO (`World Health Organization`) total water who shall be accomplished for gets to reach health requisite is as big as 84,4 `per-day percapita`'s liters.

Amount and water quality that corresponds to man requirement constitute prescriptive essential factor its life health. Water amount is engaged mark sense materials any other preferably good compounds in shaped organic compound and also inorganic also marks sense microorganism that holds to play a part essential in determine water chemical composition (Achmad, 2004)

A variety freshwater source that can estimate quality and its amount specific. Intended water source are (i) surface water that constitute river water, and lake and (ii) pending ground water into it can call shallow or ground water ground water in. (iii) space water, which is atmospheric indigenous water, as rain and snow. Sources various quality that water is different according to condition and aught human activity around it (Soemirat, 2000)

Included shallow ground water well and surface water can qualified good if soiled vicinity the be not begrimed, therefore surface water and shallow and well ground water quality highly varied it.

Water for environmental sacrilege already happen for many years. Water quality becomes a part one be of important in resources developmental issue water. Water as source of human life as thing which momentarily for every human activity.

Water as source of life, notably divides man life shall correspond to default and water quality that basically will ascendant to that human health alone. In this case water shall most dodge of source or contaminant substance that can jeopardize man health.

Requirement will its water own heterogeneous and so do water source, one of it is well water. There are many society which largely utilize well water as source of requirement accomplishment will water. So us, particularly another society to be expected minimal have science about Physical characteristic, Chemical and Biological and gets to betoken begrimed

don't it a water environment. Base background therefore upon therefore we interest to work through this paper with title: Physical characteristic, Chemical, and Biological and Water Sacrilege Indicator.

A. Problem formulation

Base that background, therefore gets to be made by problem formula as follows:

1. How is Physical Characteristic, Chemical and Biological of water?
2. How meant by Water Sacrilege indicator.

B. To the effect Writing

There is aim even expectable of inscriptive this therefore is as follows:

1. To know Water Characteristic.
2. To know Water Sacrilege indicator.

C. Inscriptive benefit

There is benefit even expectable of inscriptive this therefore is as follows:

1. Can know water Characteristic.
2. Can know Water Sacrilege indicator.

LIBRARY AND SOLLUTION STUDY

1. Water characteristic

70 % surrounding imbricate water surface earth, with surrounding amount 1 368 million Km^3 . Water exists in various form, e.g. steam, ice, liquid and snow. Freshwater especially available at river, lake, ground water (*ground water*), and iceberg (*glaciers*). All water object at linked continent with oceanic and atmospheric through *hidrologi's* cycle that happens *continu's* (Effendi, 2003)

Water has typical characteristic that doesn't be had by another compound. That characteristic as changed as water temperature that happens to slow so water has character as depositor of good heat. This character enable not water become heat or cold even in instantaneous.

Water constitutes good dissolving. Water can dissolve various chemical compound type another. Rainwater contains chemical compound in number few, meanwhile oceanic water can contain chemical compound until 35 000 mg / liter . This character enable nutrient element (*nutrient*) dissolved at transport goes to all living thing body network and enable *toksic's*

materials that flares up into living thing body network is dissolved to been issued back to. This character also enable water is utilized as detergent that good and adulterating material thinner (*pollutan`*) ingoing goes to warm up water (Effendi, 2003)

In a state purification, water constitutes colourless liquid, odorless, and doesn't get hope. According to `Suripin` (2002) that water quality is alone ranges three characteristics which is Physical, Chemical, and Biological.

a. Physical characteristic

Principal physical characteristic one accomplishes water quality determined by solid material entire one floats and also that dissolved, muddiness, color, odor and taste and temperature. Muddiness in water consisting of clay, clay and organic matter and microorganism, muddiness clings to concentrate particles on whatever available in water. Muddiness for drinking water is drawn the line no more than 10 `mg/l.

Color in water begat by marks sense material that leach or colloid in `suspensi` or Mineral.

Admissible colour intensity bounds is 5 `mg / l. Artless ala the sun shines have disinfection character and overhanging on water colouration material, but its influence at only depth many centimeters of feculent water levels.

Odorless pure water and not gets hope. Taste in water usually effect marks sense dissolved salts. Odor and evoked taste deep water because microorganism present, mineral material, dissolved gas and organic matter.

Water temperature constitute important thing deep its bearing with purpose aim. Processing to remove `pollution`s materials and its transportation. Water temperature clings to its source. Deeps water normal temperature (tropic) about 20 °C – 30 °C. for fresh water system, `deal`s temperature ranging among 5 °C until 10 °C.

b. Chemical characteristic

Chemical material content whatever available in water influent to water purpose suitability in common characteristic `chemical` water covers `pH`, alkalinity, cation, and dissolved anion and `kesadahan`.

`pH` is made as gauge of acidity and water wetness that is defined as logarithm of its round trip `mol`s deep concentration per liter. Pure water on 24 °C weighed by `berkenaan` with ion ion H⁺ and OH⁻. Ion ` each have content 10⁻⁷ `mole` per liter. `pH`s thus purification water is 7. Waters with `pH` upon 7 gets acid characters, and `pH` under 7 gets `acic`s characters. `pH`s point water can be measured by potentiometer that measure electricity potency that aroused by ion ion H⁺, or with indicators dipped material colour, e.g. `methyl orange` or `phenolphthalein`.

Mostly water gets `alkaline`'s character because salt `alkaline` so common is at earths. `ketidakmurnian` is this water effect marks sense carbonate and bicarbonate of calcium, sodium, and magnesium. Stated alkalinity in `mg / l`. `Ekivalen` is calcium carbonate. Water acidity is caused marks sense `carbondioksida` in water. It is measured based a lot of calcium carbonate required just for counteracts acid carbonate and be declared for deep `mg / l`.

`kesadahan` is water constitutes thing that momentarily deep `penyediaan` fresh water. Water with `kesadahan` high require soap more a lot of before molded `basa`. `sadah`'s water contain carbonate and sulphate or chloride and nitrate, of calcium and magnesium, beside iron and aluminium. `kesadahan` is temporary effect water calcium existence and bicarbonate magnesium, can be removed by `dididihkan` or adds underwater whitewash. `kesadahan` is permanent water, effect marks sense calcium and sulphate magnesium, chloride and nitrate gets to be attempered by special conduct.

c. Biological characteristic

Surface water usually contains various being kind live, meanwhile ground water usually more clear, since winnow process by `akifer`. Being type lives that maybe available in water covers macroscopic, microscopic and bacteria.

`Species` is macroscopic being gets to be differentiated by naked eye, meanwhile being microscoping to require microscopes assistive tool to differentiate its species. `*Escherichia coli` are bacteria non `patogen` the living one in quick-tempered animal body. In water, this bacteria usually issues excrement, so its underwater existence can make bacteria existence indication `patogen`. Fresh water quality is determined with existence or `ketidakberadaan` is this bacteria through `Escherichia Coli` test.*

Fungi microscopic being with Alga can be found deep ground water. Alga is botanical little the living one at water. If in large quantities gets to have muddiness and water color, over and above also give share to perceive and water odor that doesn't be wanted.

Water constitutes chemical compound that consisting of atom h and O. one water molecule consisting of one atom o one gets covalent bond with two H.'S atoms the one water Molecules with another water molecules foses by one hydrogen bonds among atom h by atom o of the other water molecule. mark sense hydrogen bond this is water causative have typical character.

Character, effect and this water utility gets to be seen on Table 1.

Table 1. Character, Effect and Water utility

Number	Character	Effect and Water utility
1	- Dissolving that really	- Transport` is alimentary substance substance and material `buangan` that resulting biological process.
2	- Constanta` at electrical highest in another purification liquid.	- Solubility and ionization of water compound comes under tall.
3	- Higher surface tension instead of liquid another.	- Colourless, begetting needed light for photosynthesis reaches particular depth.
4	- Transparent to light observable and light that have greater wavelength from `ultraviolet`.	- Freezing water (es) float, `sirkulation` is vertical constrains to stratify water body.
5	- Supreme specific gravity in liquid (fase cair) on 4 °C.	- Determining hot Transfer and water molecule among atmospheric with water body.
6	- Higher evapourational heat of significant another.	
7	- `kalar`'s capacity overbids to be compared with by liquid any other but `ammonia`.	- Stability of being temperature and geographical region.
8	- Latent heat and fusion overbids instead of other substance but `ammonia`.	- Stable temperature on freezing point.

Water constitutes pretty good dissolving for there are many material, so water constitutes `transport`s media main for alimentary substance substance and `buangan`/'s product resulting waste of life process. Therefore water that is at earth never available in a state purification, but always there is compound or Mineral / element other one is gotten in it. Even so meaningless that waters at earths it was begrimed, its example is water of mountain or river headwaters.

2. Waters Adulterating indicator

Water waters of the spring take may not trouble environmental water balance. Environmental water balance factor this not only gets bearing by total volume (debit) water that is utilized only, but one more importantly is how look after that environmental water doesn't deviate of its normal state (Wardhana, 1995)

Base its definition, water sacrilege is betokened with descent of water quality gets to increase water causative particular can't function to correspond to its allotment. One that intended with that given zoom is default specified water quality and functioning as refuses fathom to determine have its adulterating happening water, also constitute instruction about water quality level that will be reached or kept by each adulterating operation works program water (Kementerian Lingkungan Hidup, 2001)

According to `Wardhana` (1995) indicator or that sign water environmentally was begrimed is mark sense change or sign who can thru observe; mark sense changing water temperature, changing `pH` or hydrogen ion Concentration, mark sense discoloration, odor and water taste, its arises sediment, colloidal, dissolved material, mark sense microorganism and increases it environmental water radioactivity.

Ground water quality becomes momentous, since a large part ground water user utilize that water is straightforward. If even do processing just confines to physical or chemical processing that modestly. Contamination medley with hazard rate (toksisitas) one that varying and expensive cost for recovering quality (remediation) therefore look after ground water will better than contaminating then fixes it. Severally `contaminantion` has cumulative character and resistant, sometimes also ala `kasat` winks not looked its existence or smelly.

According to `Notodarmojo` (2005) soiled sacrilege and ground water was become place divers, well in small scale and also regional. Ground water quality degradation and earth as medium it gets happening because things. `Percolation` from `effluent` `septic tank, surface current seepage already begrimed, waste final discharge place, or spill even (*spilling*) of contaminant that don't deliberate, constituting cause that often been met.

If which sacrilege that happens so weight and exceed soiled filtration capacity to begrimed water, therefore soiled filtration energy that `descend` will. If `contamination`s beginning ground water usually is hard at thins since ground water move so slowing. Organic waste degradation be not easily presto been solved as on surface water because scanty ground water contain oxygen and by one whit `composes`s bacteria composition. In consequence needful time which long time to clear artless ala ground water. Its slowing is waste which degraded and

also `non degradation` will cause `contamination` ground water becomes permanent (Darmono, 2001)

Water sacrilege terminological demography State's Minister decree and Number Environment; to P 02 / MENKLH / I / 1988 sections 1 about environmental quality standard establishments is entering or at inserts it living thing, energy substance and or other component into water and or its changed `tatanan` water by man activity or by physical process, so water quality is down get to causative particular zoom water become less or haven't its functioning again in accordance with destines it.

In section 2, water on water source terminological utility / destines it is grouped as:

1. Faction a, which is applicable water as drinking water straightforward without beforehand processing;
2. Faction b, which is usable water as water of standard for what do at o as drinking water and family need;
3. Faction c, which is water which can used to stationary fishery and ranch;
4. Faction d., which is applicable water for stationary agricultural, and gets to be utilized for urban effort, industry and country electricity.

By definition aforesaid water sacrilege if a water source that includes in `As faction category, e.g. one islandic well then experiences sacrilege in shaped waste seepage molten of an industry therefore previous well category be not `As faction a again, but simple becomes faction b since previous water have can't direct utilize as drinking water without via beforehand processing. That well water thus as reducing / not functioning again in accordance with destines it (Achmad, 2004).

According to `Entjang` (2000) good well shall measure up as follows:

1. Requisite localizes. To avoid defilement who shall be noticed is well distance with latrine, waste hole in the ground, hole in the ground for waste water and another filth sources. This distance clings to natural of the soil and earth inclination. In a general way gets to be said by distance no less than 10 meters and are laboured that its position don't lie under defilement source places as one are named up the stairs;
2. Construction requisite. for well to dig up without pump: (1) well wall 3 meters in its of surface soil at makes from wall that don't penetrate water (di semen) that infiltration water not happens from this coat and (2) next wall coat is (sebelah bawahnya) at makes from brick that don't be bricked up. For infiltration area and if at `timbang`, well wall won't fall over;
3. Well depth is made until reaches aqueous geology quite a lot dry season despite;

4. At aboveground being made stonewall that waterproof, as high as minimal 70 `cm` to prevent defilements of water level water for health;
5. Well floor, at wall \pm 1 5 its broad meters of well walls. Made rather oblique and in height 20 `cm` upon surface soil, its form is rounded or rectangular;
6. Well basic was given by that gravel water is not feculent at the moment `ditambah`;
7. Buildings surrounding surface soil well be made slantwise to make easy drying up;
8. Water discharge channel waste of about well is made bricks up that waterproof and its length at least 10 meters.

Water quality parameter chemically comprise of umpteen kind amongst those: BOD, COD, iron, copper, dissolved oxygen and `pH`. Besides can also sight physics and also biological ala to `toxisitas pollution` in warms up water. Water quality about reasonable is utilized or unreasonably allotment it that we shall ever can betoken to mark sense `pollution` or not marks sense `pollution` by sees severally good parameter chemically, physics and also biological.

CONCLUTION

Base description of material upon therefore we can take conclusion:

1. Water constitutes the most basic requirement of all human life sector, where is its characteristic can be sighted of various aspects good aspect chemical, physics and also biological.
2. Waters adulterating indicator not despite its characteristic too by sees of severally parameter each aspect good aspect chemical, physics and also biological.

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