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Hydrometric determinations — Vocabulary and symbols

AMENDMENT 1: Additional terms and definitions

Déterminations hydrométriques — Vocabulaire et symboles

AMENDEMENT 1: Termes et définitions supplémentaires

Reference number
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Foreword

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Amendment 1 to ISO 772:1996 was prepared by Technical Committee ISO/TC 113, *Hydrometric determinations*, Subcommittee SC 3, *Terminology and symbols*.

Amendment 1 to ISO 772:1996 gives additional English terms and definitions, used in the field of hydrometric determinations, to the terms and definitions included in ISO 772:1996.

Hydrometric determinations — Vocabulary and symbols

AMENDMENT 1: Additional terms and definitions

1 General terms

Page 22, clause 1

At the end of clause 1, General terms, add the following terms and definitions.

1.146
hydrometry
science of the measurement of water including the methods, techniques and instrumentation used

NOTE The adjective is “hydrometric”.

1.147
hydrological cycle
constant movement of water above, on and below the earth’s surface

1.148
hydrogeology
study of subsurface water in its geological context

1.149
hydraulic gradient
change in static head per unit distance in a given direction

1.150
static head
height, relative to an arbitrary reference level, of a column of water that can be supported by the static pressure at a given point

1.151
creek
⟨river⟩ small river, often a tributary to a larger river

1.152
creek
⟨sea coast⟩ recessed inlet on a sea coast or estuary

1.153
hydrograph
relation in graphical, equational or tabular form between time and flow variables such as depth, discharge, stage and velocity

NOTE Typically, stage and discharge hydrographs are used for open channel flows.

1.154
gradually-varied unsteady flow
generally nonuniform flow in which there are no abrupt changes in depth along the longitudinal axis of a channel and in which depth, together with discharge and velocity, changes with time

1.155
live storage
reservoir storage which can be drawn off for users downstream

1.156
total storage
reservoir storage between the lowest bed level and the top water level

1.157
flood storage
volume of water temporarily held above the top water level of a reservoir during a flood event

NOTE Flood storage is not retained in the reservoir but is discharged through an overflow until the normal top water level is reached.

1.158
boundary condition
condition to be satisfied by a dependent variable of a differential equation along the boundary of a model domain

NOTE Boundary conditions for the dependent variables are specified at the physical extremities of the modelled region for the duration of the model application.

1.159
Courant condition
condition for the numerical stability of the explicit formulation of a numerical scheme which requires that the ratio (C_r) of the propagation speed of a physical disturbance to that of a numerical signal should not exceed unity, i.e. $C_r \leqslant 1$

NOTE The condition is a requirement for an explicit-finite difference formulation applied to a hyperbolic partial differential equation.

1.160
explicit finite-difference numerical scheme
scheme which converts either the characteristic equation or the governing equation into an equation from which any unknown may be evaluated directly (explicitly) without an iterative computation

NOTE 1 Dependent variables on the advanced time level are determined one point at a time from known values and conditions at the present or previous time levels.

NOTE 2 The stability of an explicit scheme is conditional upon an error being a function of the time and distance finite-difference step sizes which may result in an error growing as the solution progresses.

NOTE 3 When the Courant condition is met, resulting in limitations in the maximum time and distance steps which can be used, generally an explicit scheme is stable, but there can be instances of instability.

NOTE 4 If the converted equation is linear and algebraic, an iterative computation is not needed.

1.161
implicit finite-difference numerical scheme
scheme which converts either the characteristic equation or the governing equation into a nonlinear algebraic equation from which an unknown may be evaluated iteratively

NOTE 1 All of the unknowns within the model domain are determined simultaneously.

NOTE 2 Generally an implicit scheme is stable.

NOTE 3 Although complex algorithms are required, generally an implicit scheme is computationally sufficient.

1.162
initial condition
description of the discharge, depth of flow or other dynamic condition at the beginning of a simulation period for unsteady flow models

NOTE For subsequent times, the state of the system is described by the governing equations and the boundary conditions.

1.163
method of characteristics
mathematical approach for solving boundary values by transforming the original partial differential equations representing the physical system into corresponding characteristic equations

NOTE Characteristic equations are ordinary differential equations and, generally, are more amenable to numerical solution than are the partial differential equations.

1.164
momentum coefficient
Boussinesq coefficient
quantification of the deviation of the velocity at any point in a cross-section from a uniform velocity distribution in the same cross-section

NOTE Values of the coefficient:

a) unity indicates that a uniform velocity distribution is present in the cross-section;

b) 1,01 to 1,12 indicates a fairly straight prismatic channel;

c) < 1,0 indicates a large or deep channel.

1.165
standing wave
stationary wave
curved symmetrically-shaped wave on the water surface, and on the channel bed, that is virtually stationary

NOTE When standing waves form, the water surface and the bed surfaces are roughly parallel and in phase.

1.166
isotropic
having the same properties in all directions

1.167
photomultiplier
electronic device for amplifying and converting light pulses into measurable electrical signals

2 Velocity-area methods

Page 32, clause 2

At the end of clause 2, Velocity-area methods, add the following terms and definitions.

2.57
large river
river in which measurements are difficult because of its large discharge or its large physical parameters

2.58
flood flow
flow corresponding to or exceeding natural bankfull stage

NOTE It may or may not be confined within banks.

2.59
bankfull stage
stage at which an open watercourse just overflows its natural banks

2.60
rating curve
graphical representation of a stage-discharge relation or rating

2.61
divergence of tidal conditions
angular deviation in degrees between the flow axis of the ebb current and of the flood current, at a point where the axes cross

NOTE In a straight ideal reach, there will be no deviation. In most cases, when conditions are not ideal, the ebb and the flood directions are not on the same axis and there will be an angular deviation.

2.62
mixed tides
tides which have at least two markedly unequal successive high waters, or at least two markedly unequal successive low waters, or both

2.63
ebb predominance
situation where the ebb flow exceeds the flood flow, over a tidal cycle, at a point or on a vertical

NOTE Usually the extent of the predominance is assessed using integrations of velocity-time graphs.

2.64
flood predominance
situation where the flood flow exceeds the ebb flow, over a tidal cycle, at a point or on the vertical

NOTE 1 Usually the extent of the predominance is assessed using integrations of velocity-time graphs.

NOTE 2 When an integration value is a net zero, there is no predominance.

2.65
sand point
pipe with a well screen, underlying or adjacent to a stream, in which a gas-purge orifice could be installed

3 Notches, weirs and flumes

Page 43, clause 3

At the end of clause 3, Notches, weirs and flumes, add the following term and definition.

3.47
vertical underflow gate
vertical gate situated in a channel of rectangular cross-section with a flat bed for regulating the water level upstream of the gate or the discharge through the gate opening

NOTE 1 The gate is movable in vertical slots and it can be raised or lowered by hand or mechanically.

NOTE 2 The underflow is two-dimensional except at vertically narrow gate openings.

4 Dilution methods

Page 46, clause 4

Replace the term and definition entry 4.19 with the following:

4.19
becquerel
Bq
curie ⟨superseded⟩
$1\ Bq = 1\ s^{-1}$

NOTE 1 The becquerel is the special name for second to the power minus one, used as the SI unit of volumetric radioactivity; it has replaced the curie (Ci), where $1\ Ci = 3{,}7 \times 10^{10}$ Bq (exactly).

NOTE 2 The following multiples are used: $1\ kBq = 10^3$ Bq; $1\ MBq = 10^6$ Bq; $1\ GBq = 10^9$ Bq.

Page 50, clause 4

At the end of clause 4, Dilution methods, add the following terms and definitions.

4.43
radioactive tracer
emitter of gamma rays or beta particles which has properties that mimic the properties of the fluid being traced

cf. **radioactive isotope** (4.28)

4.44
radiation detector
part of the detection apparatus sensitive to gamma radiation that permits the measurement of activity or of count rate

NOTE The detector is comprised of a solid scintillation detector which uses the excitation of atoms or molecules by gamma radiation, and a photomultiplier tube and preamplifier.

4.45
lead castle
lead shield comprising a layer or mass of intervening material designed to attenuate or reduce the strength of radiation from a radioactive source during transport, or when not in use, and to protect analytical instruments from background radiation

4.46
radiation detector count rate
N_m
rate of production of electrical pulses in the radiation detector (i.e. the count rate measured by the detector), which is equal to the sum of the count rate due to the activity of the radioactive tracer together with the background count rate with no radioactive tracer present, and is given by the expression

$$N_m = N + N_b$$

where

N is the radioactive count rate;

N_b is the background count rate

NOTE This definition applies only to detectors where a pulse signal is the result of an individual directly or indirectly ionizing particle passing through the sensitive volume of the detector.

4.47
radioactive decay
A
decrease in activity of a radioelement with time and described by the following expression:

$$A = A_0 \exp(-\lambda t)$$

where

A is the activity at time t;

A_0 is the activity at time t_0 (t = 0);

λ is the radioactive decay constant, expressed in reciprocal seconds, specific for each radioelement;

t is the time, expressed in seconds

NOTE 1 In terms of the **radiation detector count rate (4.46)**, this expression is given as

$$N = N_0 \exp(-\lambda t)$$

where N and N_0 are the relevant radioactive count rates determined under identical counting conditions.

NOTE 2 The radioactive decay constant is given by the following expression:

$$\lambda = 0{,}693 / T_{1/2}$$

where $T_{1/2}$ is the half-life of the radioelement.

4.48
dead time of the counting apparatus
τ
one of the following whichever is greater:

a) pulse resolving time of the associated electronics; or

b) minimum time from the initial production of a pulse due to radiation and that time the detector is next able to detect ionizing radiation

NOTE 1 It is related to the radiation detector count rate by the expression

$$N_{\tau 0} = \frac{N_{\mathrm{m}}}{1 - N_{\mathrm{m}}\tau}$$

where

N_{m} is the radiation detector count rate;

τ is the dead time of the system;

$N_{\tau 0}$ would be the count rate if the dead time were zero.

This expression is only true where the total time the system is dead does not approach the real time limit.

NOTE 2 The dead time is not necessarily a constant for a detector, it can vary with the count rate and the type of radiation being detected.

4.49
radionuclide generator
system, often automatic, which utilizes the property of certain water insoluble radionuclides, in producing a soluble radionuclide by radioactive decay

NOTE After a certain regeneration time, a dose of usable daughter nuclide is obtained by elution of the mother nuclide.

4.50
conservative tracer concentration
tracer concentration that would occur at a downstream cross-section if the mass of tracer passing the cross-section were the same as the injected mass

4.51
dispersion of a tracer
process by which differential velocities, turbulent motions and the rate of diffusion of a liquid causes the spreading of a cloud of dissolved or suspended substances throughout the liquid

NOTE In a stream, generally dispersion takes place vertically in the water columns, transversely across the stream and longitudinally in the direction of flow.

4.52
dispersion coefficient of a tracer
coefficient used to describe the capacity of a moving liquid to dissipate an initially localized substance or property throughout the liquid

NOTE In open channel flow, dispersion takes place vertically, transversely and longitudinally. Each component of the dispersion has its own dispersion coefficient.

4.53
time of trace of a tracer
time for the movement of liquid, or of dissolved materials, between cross-sections in an open channel

NOTE 1 Time of travel may refer to the leading edge, the peak concentration, the mass centroid or the trailing edge of a dissolved material in a stream.

NOTE 2 When the term is used for the time of travel for any part of the tracer other than the centroid, it should be qualified.

4.54
tracer recovery ratio
ratio of the tracer mass recovered in a stream to the tracer mass injected, as determined by sampling

4.55
unit tracer concentration
concentration of a tracer in a stream for one unit of injected conservative tracer in one unit of discharge

5 Instruments and equipment

Page 63, clause 5

At the end of clause 5, Instruments and equipment, add the following terms and definitions.

5.66
permanent flowmeter
flowmeter installed for a long period of time (in excess of about 12 months) and used to determine flow continuously or at discrete time intervals

NOTE 1 Any high costs incurred in the installation of these flowmeters may be tolerated as they are spread over a period of time.

NOTE 2 The measurements provided may be used as the basis for an archive system to examine present trends, to forecast future trends and to determine daily operational requirements.

5.67
temporary flowmeter
flowmeter installed for a specific period of time (no more than about 12 months) and used to determine flow continuously or at discrete time intervals

NOTE The installation of the flowmeter needs to be simple with minimal or no associated civil engineering costs.

5.68
portable flowmeter
flowmeter, not used as part of a fixed installation, used to obtain instantaneous measurements of flow or the velocity and depth components thereof

5.69
hydrometric equipment
equipment used for the hydrometric monitoring of hydrological parameters

5.70
recording device
device that records automatically, either continuously or at regular time intervals, the parameters sensed by any associated sensors

5.71
recording equipment
equipment comprising one or more sensors and a recording device

NOTE 1 The equipment producing a record demonstrating changes of value of a hydrological parameter with time may require the incorporation of a timing device.

NOTE 2 If the record comprises observations of the changes of the value of a sensed hydrological variable linked to changes in one or more other physical parameters, the recording equipment should monitor adequately such linkages.

5.72
non-recording equipment
equipment comprising one or more sensors but no recording device

5.73
instrument carriage
device having one or more track wheels which run on the main cable, a pulley to support the instrument suspension cable and a point of attachment for the tow cable

5.74
load-activated brake
component of a manual gauging reel which prevents the reel handle from being driven by the load when the handle is released by the operator

5.75
payout rate
rate at which a traversing cable or a suspension cable is paid out by a gauging reel

5.76
torque limiter
device to limit the transmission of torque by causing the driving element to slip at a pre-determined rate

5.77
tower
pier post
principal support structure for a cableway

5.78
minimum winding diameter
minimum diameter of a drum or a pulley around which a cable may be wound or bent without causing damage to the cable

5.79
winding handle
handle of a manual gauging reel by which a motive force is applied

5.80
cableway support
structure that supports the main cable span across the stream

NOTE This structure may also provide mountings for the winch and pulleys (sheaves) carrying the tow and suspension cables.

5.81
personnel carriage
work platform or cabin suspended from track wheels running on the main cable from which gauging observations are made

5.82
track wheel
sheave (grooved wheel) that rides on the main cable to support the carriage

5.83
tracking window
test interval of limited size which follows, and centres itself automatically at, the depth indicated by the last received echo

NOTE 1 If the next echo falls within the window, the signal is accepted as correct; if it does not, the signal is rejected.

NOTE 2 The purpose of a tracking window is to screen out erroneous readings caused by reflecting materials in the water, such as fish and debris.

5.84
ping
series of acoustic pulses, of a given frequency, transmitted by an acoustic Doppler current profiler

5.85
ensemble
collection of pings

NOTE Because the measurement from a single ping has a relatively high uncertainty, the measurements from more than one ping are averaged to represent a single measurement.

5.86
transect
single pass across a river, lake or estuary

NOTE 1 A transect may be described as a collection of ensembles.

NOTE 2 One transect may constitute a single measurement of discharge.

6 Sediment transport

Page 71, clause 6

At the end of clause 6, Sediment transport, add the following terms and definitions.

6.57
bed-load transport model
physical or numerical model of hydraulic and sediment variables which can be used to predict the bed-load transport rates of sediment along the channel bed

6.58
bed-load sampler efficiency
ratio of the quantity of sediment trapped in a bed-load sampler to the quantity of the sediment in the stream that would be transported as bed load through the width of the flow occupied by the intake of the sampler, without the sampler in position

6.59
weathering
process of rock breakdown and chemical decomposition instigated by external agencies such as wind, rain, change in temperature and vegetation

8 Groundwater

Page 80, clause 8

After clause 7, add clause 8, Groundwater, which contains the following terms and definitions.

8.1
absorbed water
water and/or dissolved matter incorporated within the structure of solid, soil or mineral particles

8.2
abstraction
removal of water from a borehole or well

8.3
access tube
dip tube
pipe inserted into a well to permit safe installation of instruments, thus safeguarding them from touching or becoming entangled with the pump or other equipment in the well

8.4
adhesive water
water forming a film around soil particles, over absorbed water, and held by forces of molecular attraction after gravity water has drained, but having less strength than adsorption water and without perceptible emission of heat

NOTE Adsorbed water is entirely fixed, whereas adhesive or pellicular water may move from one particle to another.

8.5
adsorbed water
water held on the surface of individual soil particles by the forces of molecular attraction with emission of heat (heat of wetting)

8.6
air lifting
method of producing a discharge of water from a borehole by the injection of compressed air

8.7
API unit
unit or counting rate used for scaling gamma-ray logs and neutron logs

NOTE API is the abbreviation for the American Petroleum Institute.

8.8
apparent velocity of groundwater
apparent distance covered per unit time by groundwater in the saturated zone

NOTE It is defined as the product of the coefficient of permeability and hydraulic gradient, divided by the porosity of the porous medium through which the ground water is moving.

8.9
aquiclude
formation or group of formations which, although porous and capable of absorbing water slowly, will not transmit water rapidly enough to furnish a sufficient supply for a well or spring even under saturated conditions

8.10
aquifer
lithological unit, group of lithological units, or part of a lithological unit containing sufficient saturated permeable material to yield significant quantities of water to wells, boreholes, or springs

8.11
aquifer loss
head loss at a pumped or overflowing well associated with groundwater flow through the aquifer to the well face

8.12
aquifer properties
properties of an aquifer that determine its hydraulic behaviour and its response to abstraction

8.13
aquifuge
impermeable formation which has no interconnected openings and hence cannot absorb or transmit water

8.14
aquitard
saturated but poorly permeable stratum that impedes groundwater movement and does not yield water to wells, but that may transmit appreciable water to and from adjacent aquifers

8.15
argillaceous
containing clay minerals

8.16
artificial recharge
augmentation of the natural infiltration of precipitation, or surface water, into underground formation by some method of construction, spreading of water, or by artificially changing natural conditions

8.17
bed resolution
minimum bed thickness that can be resolved

8.18
bonding
seal between a borehole lining and the geological formation

8.19
borehole
hole, usually vertical, bored to determine ground conditions, for extraction of water or measurement of groundwater level

8.20
cable boom
rigid support from which the geophysical sonde and cable are suspended

8.21
calibration tail
section of field log carrying information on sonde calibration

8.22
casing
tubular retaining structure, which is installed in a drilled borehole or excavated well, to maintain the borehole opening

NOTE Plain casing prevents the entry of water (see also 8.70 and 8.71).

8.23
casing string
set of lengths of casing assembled for lowering into a borehole

8.24
coefficient of permeability
rate of flow of a fluid through a unit cross-section of a porous mass under a unit hydraulic gradient at a specified temperature

8.25
column pipe
part of the rising main within the well

8.26
composite log
several well logs of the same or similar types, suitable for correlation, spliced together to form a single continuous record

8.27
cone of depression
portion of the potentiometric surface that is perceptibly lowered as a result of abstraction of groundwater from a well

8.28
confined groundwater
body of groundwater overlain by material sufficiently impermeable to inhibit free hydraulic connection with overlying groundwater, except at the intake

NOTE Confined groundwater moves under the pressure due to difference in head between intake and discharge areas of the confined water body and is under sufficient pressure to rise above the bottom of the upper confining bed, if given an opportunity to do so.

8.29
confining bed
bed or body of impermeable material stratigraphically adjacent to an aquifer that restricts or reduces the natural flow of groundwater to or from the aquifer

8.30
connate water
water which has entered a rock formation and has been entrapped in the interstices of the rock material (either sedimentary or extrusive igneous) for a geologically long period of time, and has been out of contact with the atmosphere for at least an appreciable part of geologic period, extending up to the limit of capillary rise of water

8.31
capillary fringe
capillary zone
zone immediately above the water table extending up to the limit of capillary rise of water

NOTE It may consist solely of capillary water or it may be combined with gravity water in transit to the water table. All pores are filled, but the water is at a lower pressure than atmospheric pressure.

8.32
core
section of geological formation obtained from a borehole by drilling

8.33
curve matching
comparison of individual borehole data in graphical form with standard or control data

8.34
drawdown
reduction in static head within the aquifer resulting from abstraction

8.35
Darcy's law
law expressing the proportionality of the specific discharge of a fluid flowing through a porous medium to the hydraulic gradient under laminar flow conditions

NOTE It is expressed as:

$$q = Ki$$

or

$$Q = KAi$$

where

Q is the quantity of water flowing in the aquifer material;

K is a constant, depending upon porosity and permeability of the aquifer material; called coefficient of permeability;

i is the loss of head per unit length (or hydraulic gradient);

q is the specific discharge of water in the aquifer material;

A is the cross-sectional area of aquifer material through which the water flows.

8.36
dispersion
⟨groundwater⟩ process by which a liquid substance introduced into a groundwater system spreads as it moves through the system

8.37
drilling circulation
movement of drilling fluid, such as air, foam or liquid, used to clear the borehole during drilling

8.38
equipotential line
line connecting points having the same potentiometric head

8.39
filter pack
granular material introduced into a well between the aquifer and a screen or perforated lining to prevent or control the movement of particles from the aquifer into the well

8.40
fishing tool
grappling equipment used to locate and recover items from within a borehole

8.41
steady flow
⟨groundwater⟩ flow in which parameters such as velocity, pressure, density, and temperature do not vary sufficiently with time to affect the required accuracy of measurement

8.42
uniform flow
⟨groundwater⟩ flow in which the magnitude and direction of flow at a given moment are constant with respect to distance

8.43
flownet
net of intersecting equipotential lines and flow lines

8.44
fluid column
part of a borehole filled with fluid

8.45
flushed zone
zone at a relatively short radial distance from the borehole immediately behind the mud cake where all of the pore spaces are filled with borehole fluid

8.46
foot valve
non-return valve fitted at the bottom of a suction pipe of a pump

8.47
formation
geological unit or series of units

8.48
geophysical log
continuous record of a physical or chemical property, plotted against depth or time

8.49
grain size
particle size
principal dimension of the basic particle making up an aquifer or lithological unit

8.50
groundwater
water within the saturated zone

8.51
groundwater balance
concept that all inputs of water in a defined space and time are equal to the sum of all outputs of water, and the changes of water storage, in the same space and time

8.52
groundwater basin
physiographic or geological unit containing at least one aquifer of significant areal extent capable of furnishing a substantial water supply

8.53
groundwater cascade
descent of groundwater on a steep hydraulic gradient to a lower and flatter water table slope

NOTE A cascade occurs below a groundwater barrier or dam, and at the contact of less permeable material with more permeable material, downslope.

8.54
groundwater dam
groundwater barrier
natural or artificial body of material of low permeability which impedes the horizontal movement of groundwater

8.55
groundwater divide
groundwater ridge
line on a water table on each side of which the water table slopes downward in the direction away from the line

8.56
groundwater hydrology
branch of hydrology relating to subsurface or subterranean water

8.57
groundwater budgeting
detailed estimate of the amount of water added to the groundwater reservoir of a given area (recharge) balanced against estimates of amounts of withdrawals from the groundwater reservoir of the area during a specified period

8.58
groundwater mound
high region on a potentiometric surface, resulting from recharge

8.59
groundwater recharge
recharge of an aquifer
replenishment or addition of water to the groundwater storage by natural processes or artificial methods

8.60
grout
mixture of cement and water

8.61
header information
description of type of data required for inclusion in a table or as input to a computer program

8.62
hydraulic conductivity
volume of water at the existing kinematic viscosity that will move in unit time under a unit hydraulic gradient through a unit area measured perpendicularly to the direction of flow

NOTE This definition assumes an isotropic medium in which the pores are completely filled with water.

8.63
hydraulic head
height of potentiometric surface (for confined aquifer) or water table (for unconfined aquifer) at a particular location above a datum

8.64
hydrograph
〈groundwater〉 graph which shows the variation in water level against time

8.65
impermeable material
material that does not permit water to move through it at perceptible rates under the hydraulic gradients normally present

8.66
incompetent stratum
stratum unable to stand without support

8.67
invaded zone
portion of formation surrounding a borehole into which drilling fluid has partially penetrated

8.68
jig
calibrating device for logging sondes

8.69
leachate
liquid that has percolated through solid wastes

8.70
lining
tube or wall used to support the sides of a well, and sometimes to prevent the entry of water

cf. **casing** (8.22)

8.71
lining tube
preformed tube used as the lining for a well

cf. **casing** (8.22) and **screen** (8.94)

8.72
lithology
physical character and mineralogical composition that gives rise to the appearance and properties of a rock

8.73
logging
recording of data

8.74
mud cake
residue deposited on the borehole wall during drilling

8.75
observation well
well used for observing groundwater head or quality

8.76
open borehole
unlined borehole

8.77
overflowing well
well from which groundwater is discharged at the ground surface without the aid of pumping

8.78
packer
device placed in a borehole to seal or plug it at a specific point

8.79
permeability
characteristic of a material that determines the rate at which fluids pass through it under the influence of differential pressure

8.80
permeable material
material that permits water to move through it at perceptible rates under the hydraulic gradients normally present

8.81
phreatic surface
upper boundary of an unconfined groundwater body, at which the water pressure is equal to the atmospheric pressure

8.82
piping
internal erosion of a foundation or embankment caused by seepage

8.83
plummet
plumb bob used for determining the apparent depth of a borehole

8.84
pore pressure
pressure of water in the interstices or voids between the grains of a rock or soil mass

8.85
porosity
ratio of the volume of pore space in a sample to the bulk volume of that sample

8.86
potentiometric surface
surface that represents the static head of groundwater

8.87
radius of influence
radius of the cone of depression