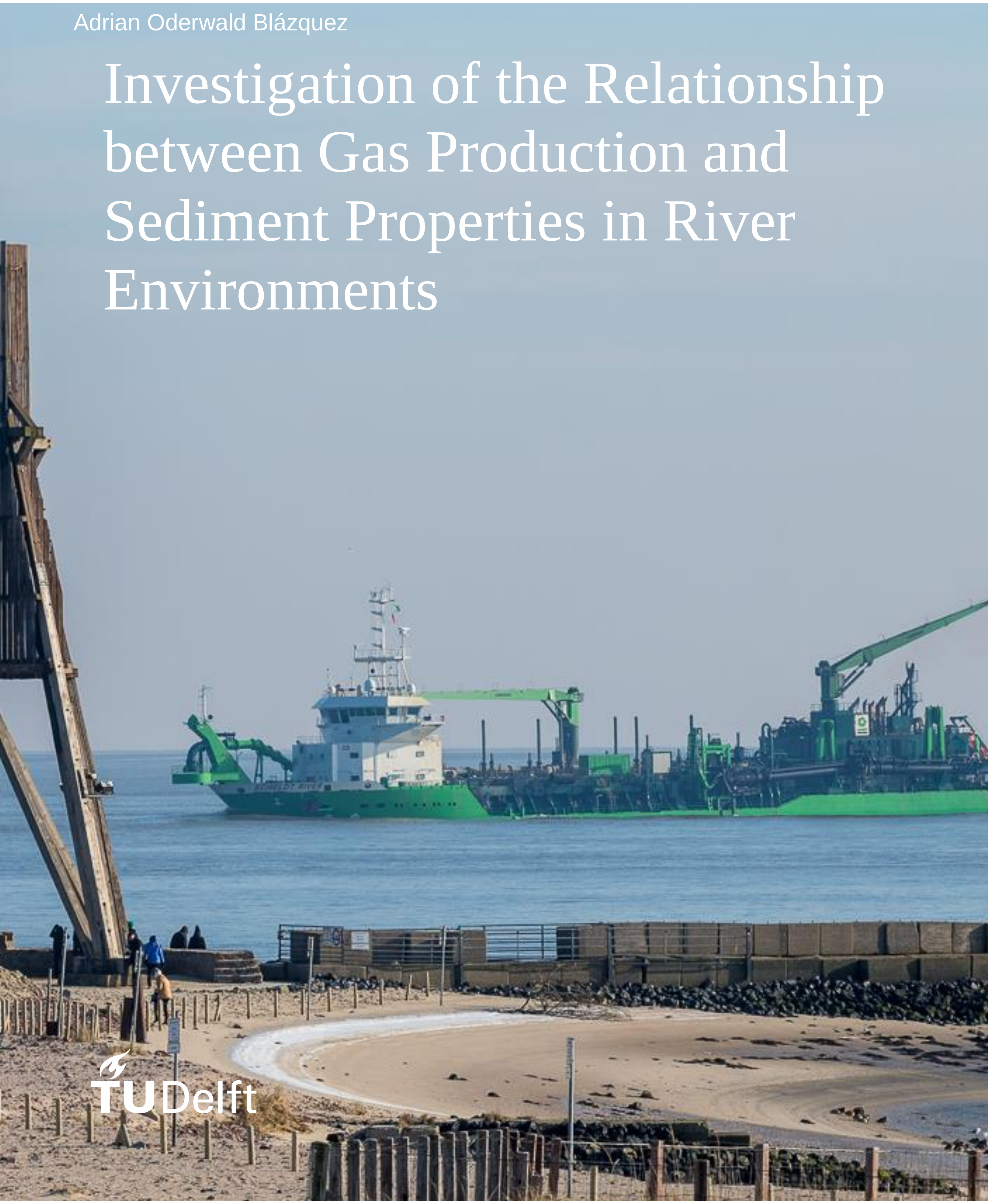
Adrian Oderwald Blázquez

# Investigation of the Relationship between Gas Production and Sediment Properties in River Environments



(source: https://www.dredgingtoday.com/tag/hamburg-port/)

# Investigation of the Relationship between Gas Production and Sediment Properties in River Environments

By

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4532759

in fulfilment of the requirements for the degree of

**Bachelor of Science**
in Applied Earth Sciences

at the Delft University of Technology,
to be defended publicly on Tuesday October 29, 2019 at 11:00 AM.

| | |
|---|---|
| Thesis committee: | Dr. J. Gebert<br>Dr. C. Chassagne |

# Acknowledgements

With this bachelor thesis I present my scientific research results on the quantification of gas production in river sediments as part of the *BIOMUD* project.

I would first like to thank my thesis supervisors Dr. Gebert and Dr. Chassagne of the Civil Engineering and Geosciences department at TU Delft. The door to Dr. Gebert's office was always open whenever I ran into trouble or had a question. She consistently helped me steer my work in the right direction.

I would also like to thank the experts who were involved in my research or who I consulted for advice: PhD Cand. Florian Zander (TU Delft) and Dr. Bernhard Neubüser (EPO). Without their participation and input, the scientific research could not have been successfully completed.

*Adrian Oderwald Blázquez*

*Delft, October 2019*

# Abstract

In riverine environments under anaerobic conditions, methane and carbon dioxide are produced as a result of biological activity, causing degradation of organic matter. Under aerobic conditions, the bacteria present degrade the organic matter, whereby the concentration of dissolved oxygen may be lowered. Thus, issues experienced in the investigation area (the Port of Hamburg) are hindered construction operations, increased greenhouse gas emissions and the echo-sounding equipment used for sonic-depth finding for ships possibly showing an erroneous depth. The purpose of this investigation was to find out how gas generation and respiration relate to the basic sediment properties and what mathematical model with the highest accuracy can predict gas generation and respiration (separately), while maintaining within a given (precision) error (1%).

Gas pressure was measured at the TU Delft for an incubation period of 100 days, which was later used to calculate the gas generation (mg C/g DW) with the use of the ideal gas law. Statistical methods used to analyze the data were: Pearson's correlation coefficient, multiple regression analysis, adjusted coefficient of determination and error analysis.

The results show that both gas generation and respiration have the highest Pearson's correlation coefficient with TOC. Furthermore, in the multiple linear regression, gas generation had the highest coefficient of determination in a regression between TOC as the primary parameter and iron content (in solids) as the secondary parameter ($R^2$=0.91495). For respiration, it was displayed in a regression between TOC (as the primary parameter) and copper content in the solids (as the secondary parameter) ($R^2$=0.881). This concludes that organic matter degradation is driven by the quantity of organic matter. The residual sum of squares showed a decrease from the linear (and non-linear) model to the multiple linear regression model. The prob>|t| value (which determines the probability of error for the multiple linear regression) was much lower than 1% for all parameters in both the gas generation and respiration model, so it can be deduced that the variables are contributing to the model in a statistically significant way. Together with the previously mentioned highest coefficient of determination, the most accurate model for both gas generation and respiration found in this investigation was the multiple linear regression model, although the model for gas generation presented little difference to that of the simpler non-linear model. The exponential nature of the optimal fit for the data suggests that there is a threshold. In areas with low organic matter content, the organic matter present is much less degradable, falling into the "slow" pool category.

It is recommended to investigate other mathematical models further. There is a possibility of a more accurate model (possibly a combination of a linear and non-linear model) for both gas generation and respiration which can model the parameters even better (higher coefficient of determination while still remaining within the permitted range of error). Furthermore, it is recommended to find out why the samples listed in tables 6 and 10 deviate more than accepted from the calculated value.

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# 1 Introduction

## 1.1 Background

Under aerobic conditions, the bacteria present in river sediments degrade the organic matter, whereby the concentration of dissolved oxygen may be lowered. Once oxygen is depleted, methane and carbon dioxide are produced as a result of biological activity degrading organic matter under anaerobic conditions. The consequence of degradation under anaerobic conditions is gas bubbles (mainly methane) released into the atmosphere which contributes to global warming. Other possible consequences which need to be explored further are fluid mud build-up and delayed consolidation rates. Below are two examples of chemical reaction formulas through which both types of degradation take place.

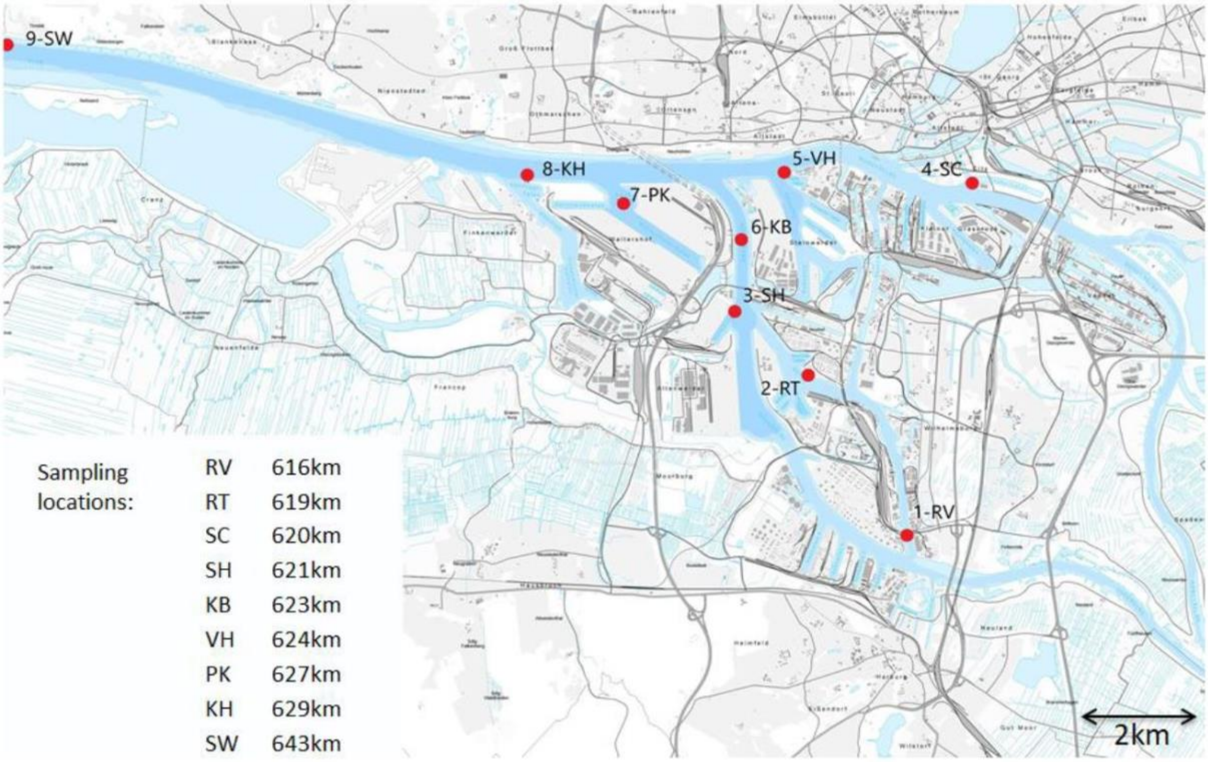
Aerobic conditions:

$$C_6H_{12}O_6 + 6\ O_2 \rightarrow 6\ CO_2 + 6\ H_2O + ATP\ (energy) \qquad (1)$$

Anaerobic conditions:

$$2\ CH_2O \rightarrow CH_4 + CO_2 + ATP\ (energy) \qquad (2)$$

The issues caused in the Port of Hamburg from these consequences could include hindered construction operations due to delays in consolidation, increased greenhouse gas emissions (methane) and echo-sounding equipment used for sonic-depth finding for ships showing a possibly erroneous depth due to reflection on gas bubbles. It was therefore of interest to investigate aerobic matter degradation in port sediments. Samples from the areas of highest sedimentation rates in the Port of Hamburg have been investigated to find the gas generation and respiration. The map in the figure below shows the locations where sampling took place.



Sampling locations:

| | |
|---|---|
| RV | 616km |
| RT | 619km |
| SC | 620km |
| SH | 621km |
| KB | 623km |
| VH | 624km |
| PK | 627km |
| KH | 629km |
| SW | 643km |

Fig. 1. Sampling locations in the investigation area, Hamburg, Germany (source: Hamburg Port Authority and BIOMUD project, Florian Zander)

The gas generation was found to follow an asymptotic relationship with regard to time, the fastest degradation (“fast” pool) of the organic sediment happens in the first eight days and then it slows down (“medium” pool) until it enters the slowest part (“slow” pool) of the curve at about 200 days (Gebert et al., 2006). In the lower part of the water column, the processes of sedimentation and consolidation generate up to four distinct layers on top of the river bed (RB): suspended particulate matter (SM), fluid mud (FM), pre-consolidated sediment (PS) and consolidated sediment (CS). These layers are represented graphically below. It is expected and assumed that organic matter content decreases with depth due to lower layers having been exposed to degradation for a longer period of time. In addition, the pools mentioned before will change with depth. The fast pool will almost be non-existent in lower layers, whereas the slow pool will be the most prevalent mechanism here. Vice versa is true for higher positioned layers.

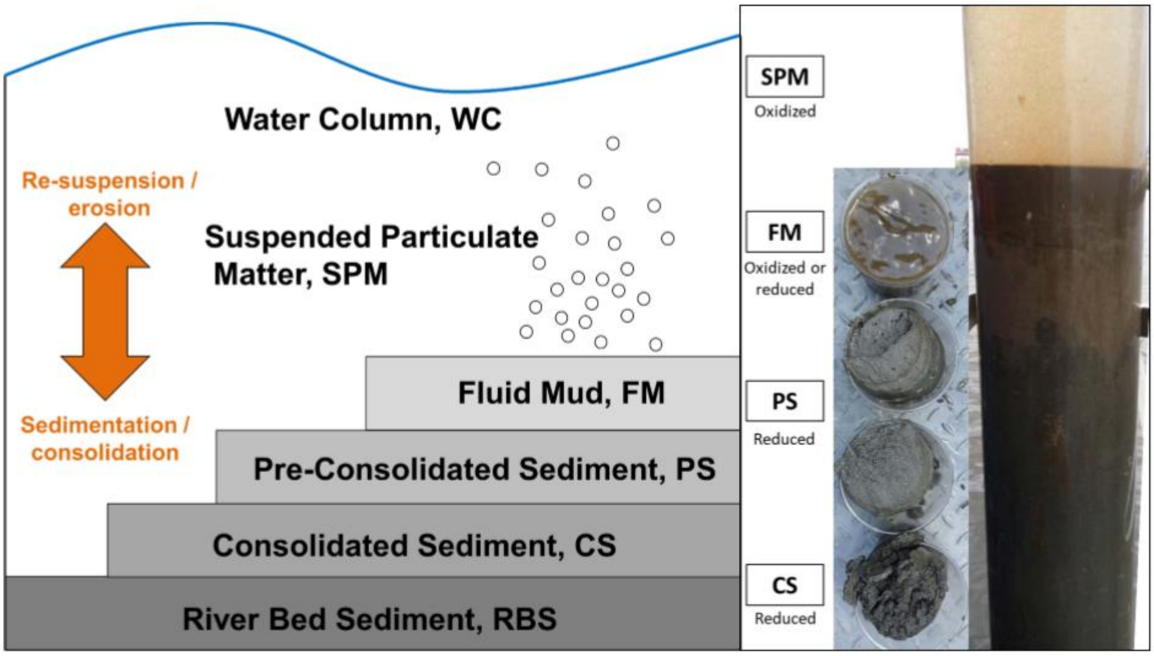


Fig. 2. Scheme of layers in river sediment (left) and photo river bed column and samples (source: Gebert, J., & Zander, F. (n.d.). *Spatial variability of the organic matter degradation of tidal Elbe sediments in the Port of Hamburg*. MUDNET.)

## 1.2 Research Questions

The purpose of this investigation was to find out how gas generation and respiration relate to the basic sediment properties. Hence, the research questions were:

- What is the relationship between gas generation and respiration to all the basic sediment properties of the organic deposit in the Elbe river?
- What is the mathematical model with the highest accuracy for gas generation and respiration, while maintaining within the given (precision) error?

## 1.3 Hypotheses

A previous investigation found that there is a strong relationship between total organic carbon (TOC) and gas generation (Li, 2019). However, following his thesis, additional data and parameters became available, widening the field of investigation on this topic. Even though the relationship was strong with TOC, not all variability could be explained from TOC (Pearson's coefficient of correlation was not close to 1; r=0.85) (Li, 2019). Therefore, it was hypothesized that also other properties affect gas generation and respiration besides TOC. From this it follows that a multiple linear regression model would predict gas generation and respiration more appropriately than in the result presented by Li (2019).

# 2 Literature Review

## 2.1 Organic Matter Degradation in River Sediments

Degradation of organic matter in river sediments happens due to microorganisms breaking down the present organic carbon compounds. This is possible through two pathways, through aerobic and anaerobic degradation. A scheme for the range of chemical half reactions for both anaerobic and aerobic conditions with redox potential decreasing with depth is found in figure 3. Some of the hydrogen released from these half reactions shown bond with carbon to form methane, which is one of the two gases measured from anaerobic experiments. High contents of $Fe_{2+}$ and $NH_{4+}$ in the pore water indicate that the sediment is under stable reduced conditions (with negative redox potentials); under positive redox potentials $Fe_{2+}$ and $NH_{4+}$ are oxidized in the pore water. Reduction potential, iron, nitrogen and sulfur therefore indicate the type of conditions (aerobic or anaerobic) which could even influence gas generation and respiration rates to a certain degree.

Typically, algae make up a large part of the suspended organic matter that eventually settles in the sediment (Bot et al., 2005). Organic matter contains mainly complex organic carbon compounds such as cellulose, hemicellulose, chlorophyll, etc. Chains of carbon, with each carbon atom linked to other carbons, form the “backbone” of organic molecules. These carbon chains, with varying amounts of attached oxygen, H, N, P and S, are the basis for both simple sugars, amino acids, long carbon chains and rings. Depending on their chemical structure, decomposition is rapid (sugars, starches and proteins), slow (cellulose, fats, waxes and resins) or very slow (lignin) (Bot et al., 2005). The organic matter in soils also contains metals. These occur either in an exchangeable form (especially Ca, Mg), or are in the form of complexes, where they are generally firmly bound (e.g. Cu, Mn, Zn, Al and Fe) (Blume et al., 2016). This shows that the most abundant life form in the investigation area will determine the organic chemistry of the river sediment. This will heavily influence the most common carbon chain length and the statistical distribution of the elements present, which will have a direct relation to gas generation.

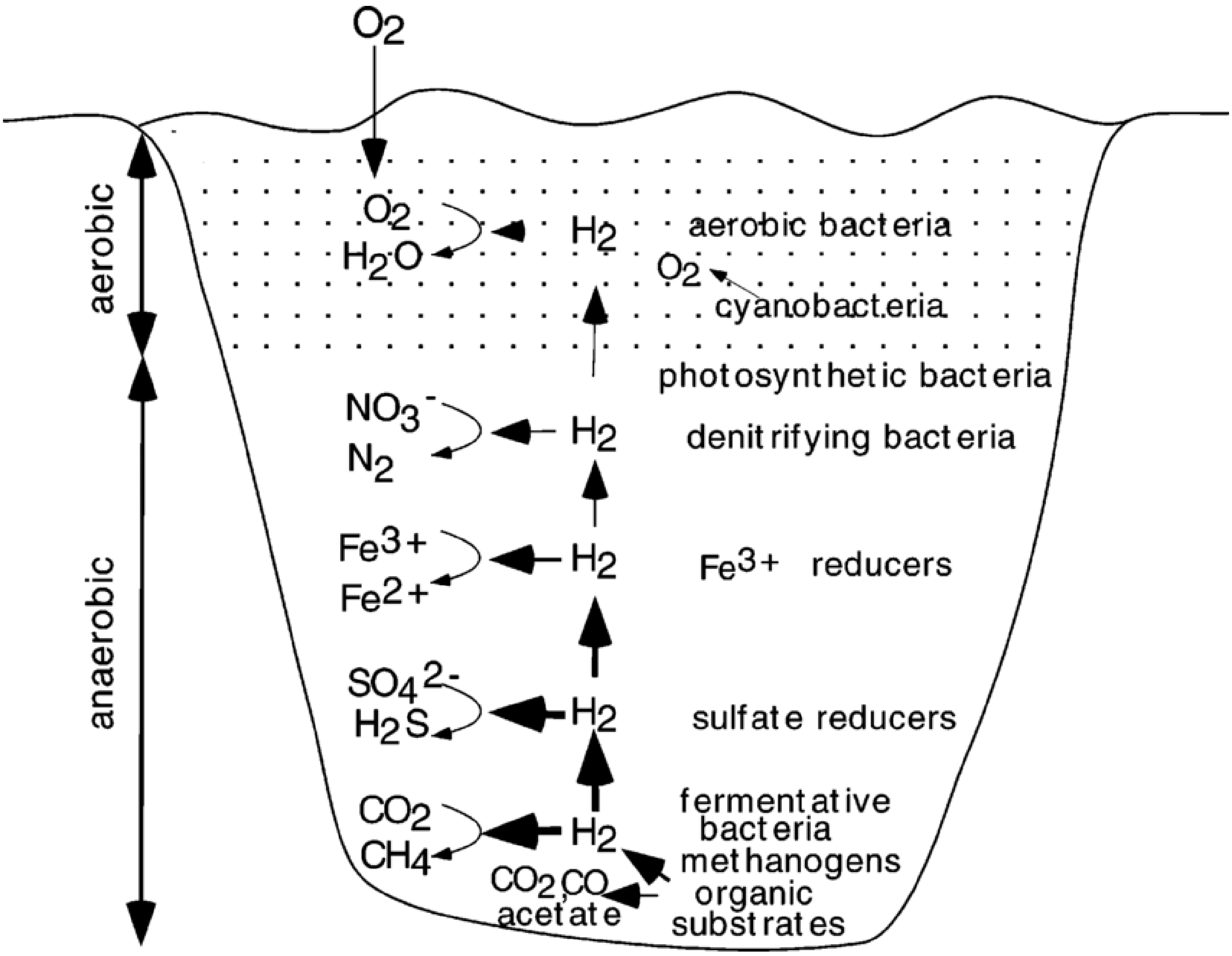


Fig. 3. Occurrence, Classification, and Biological Function of Hydrogenases: An Overview - Scientific Figure on ResearchGate. (source:https://www.researchgate.net/figure/Anaerobic-and-aerobic-bacterial-metabolism-in-an-aquatic-stratified-system-as-can-be_fig1_5918359)

pH affects decomposition and biomass production in degrading organic matter. In strongly acid or highly alkaline soils, the growing conditions for microorganisms are poor, resulting in low levels of biological oxidation of organic matter (Primavesi, 1984). Soil acidity also influences the availability of plant nutrients and thus regulates indirectly organic matter production (Bot et al., 2005).

## 2.2 Parameter Relationships and Gas Generation Models

Some relationships between gas generation and sediment properties are already known. Density fractionation (separation process in which the sample is divided into fractions based on density) was used to divide the sediment into a heavy and light fraction. The highest Pearson’s correlation coefficients (‘r’) to gas generation are nitrogen ($r=0.88$), water content ($r=0.89$) and the share of organic carbon and nitrogen in the heavy fraction ($r=0.88$ and $r=0.93$, respectively) (Gebert et al., 2019). Weaker relationships are also known, such as organic carbon in the light density fraction (r=0.27) (Gebert et al., 2019). It is important to mention that these relationships were established for landfill dredged material instead of fresh samples (such is the case for this investigation) and thus these relationships led to the conclusion that the degradable part of the organic matter had been degraded before the samples were collected and that the organic matter left for future degradation was now the share present in the pool of organo-mineral complexes (Gebert et al., 2019). A positive correlation was also found between gas production and the ratios TOC/P and TOC/S, water content, oxygen consumption ability, LOI at 550°C and P, Ca, Mn, Cu in the solids, as well as for $NH_{4+}$ and $Fe_{2+}$ in filtrate of pore water for the PS layer (Li, 2019).

In a report by Ruiz-Vásquez et al. in 2019 it was detected through experimentation with organic matter under anaerobic conditions that carbon dioxide and methane generation presented different rates of gas generation. Carbon dioxide showed a linear production rate while methane showed an exponential production rate. Knowing that methane has a much higher potential as a greenhouse gas (Dlugokencky, 1994), it is a priority to model its behaviour, and treat carbon dioxide as a secondary objective.

# 3 Methods

In this section, both the experimental methods and statistical methods are presented. First the method for the measurement of gas production from mud samples in different layers is described, followed by the statistical method subsection, which includes data description, Pearson’s correlation coefficient, multiple regression analysis and adjusted coefficient of determination and error analysis.

## 3.1 Gas Production Measurement Method

Initially, when the samples were placed in their glass bottle, oxygen is present in the headspace of the container. To create the needed anaerobic environment, nitrogen gas is injected and normal air that is initially present was ejected. Following a prescribed period of time, the measurement of pressure is carried out. The apparatus necessary to measure pressure in the samples are:

- Two thermometers
- Highly precise digital manometer (Keller Lex1)
- Needles (0.7 mm wide)
- Plastic tubing with a needle attachment
- Glass bottles (500 ml) with rubber stopper
- Stand and clamp

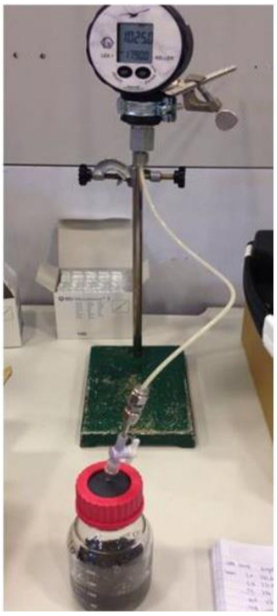


Fig. 4. Gas production measurement of the mud samples with the Keller Lex 1 digital manometer (photo taken in the laboratory of Civil Engineering and Geosciences faculty of TU Delft).

The samples were incubated in cabinets with the prescribed temperature (36°C or 20°C) displayed on the cabinet door. The actual temperature inside the cabinet varied due to the isolation of the cabinet, which is why it was mandatory to measure the temperature inside the cabinet with two thermometers. Two thermometers were used instead of just one to adjust for any errors one of them might show. First of all, the pressure meter had to be switched on, followed by connecting (through screwing) a new needle to the nozzle of the tube of the pressure meter, without yet removing the needle cap. A maximum of two glass beakers (500ml) containing the mud (about 165 grams) were removed at a time from the cabinet, to avoid the sample from cooling down (or heating up, in cases where the samples were held at 20°C). The cap of the needle was then removed and the needle inserted into the tough impermeable cork lid, as displayed in the figure above (gently at first, then with more force if it proved too difficult). The needles could only be used at most three times. Immediately after the needle opening came into contact with the interior of the beaker, the pressure will change from atmospheric pressure (which varied throughout the day) to the pressure inside the beaker, which had to be noted down in a table, always rounding the decimal up, even when the last value is a zero. When the pressure was under 1150 hPa (hectopascal), then no depressurizing was needed and the needle was removed from the cork lid in a simple reverse motion of the insertion. When the pressure was above 1150hPa the sample was depressurized first by unscrewing the needle. Depressurizing was needed due to safety concerns, to avoid fracturing of the glass beaker and any form of explosion due to the elevated pressure in the sealed container. A distinctive gas hiss was heard. When no more hissing sound was heard, needle was reconnected and it was observed if the pressure displayed on the pressure meter had dropped to atmospheric pressure. If it had not dropped to atmospheric pressure, the needle was unscrewed again to allow more gas to escape. When both samples were measured for their pressure, they were replaced in the cabinet. Anaerobic samples are kept at 36°C, while aerobic samples are kept at 20°C, for which the results are later normalized to that of the temperature of the anaerobic samples. Numerous individuals were given the task to carry out gas production measurements as part of the *BIOMUD* project.

From the ideal gas law, the equation for gas generation can be derived from the development of pressure inside the gas bottles. Gas generation is calculated using the variables total organic carbon (TOC), dry weight, vertical head, atmospheric pressure, pressure in the bottle, mol. of gas volume and the preceding result of the gas generation calculation. The formula is:

$$GG = \frac{TOC}{AP \times VH - VH} \div \frac{DW \div 1000}{MGV \times 1210.7} \div \frac{PB}{100} + GGP \qquad (4)$$

With:

**GG** : Gas generation (mg C/g TOC)

**TOC** : Total organic carbon (%DW)

**AP** : Atmospheric pressure (hectopascal)

**VH** : Vertical head (millilitres)
**DW** : Dry weight (grams)
**MGV** : Mol. gas volume
**PB** : Pressure in bottle (hectopascal)
**GGP** :Gas generation of the preceding result (mg C/g TOC)

Due to the size of the project, multiple individuals conducted periodic testing on the samples in the glass bottles and it is important to consider systematic errors. When testing is not automatic, i.e. the testing has to be carried out by humans; systematic errors will happen as humans are prone to causing imperfections. The measurement apparatus (highly precise digital manometer) will lose some measurement accuracy after extended use. The samples should ideally be kept at the specified temperature (36°C or 20°C), when the sample is removed from the cabinet, depending on how long the pressure measurement took, there will be varying temperature loss during testing.

## 3.2 Statistical Methods

### 3.2.1 Data Description

The data available is collected from several different parties into one Microsoft Excel spreadsheet. It comprises 118 columns, however some were found redundant or not applicable to this investigation. The number of data points per column is highly variant (high amounts of missing data), ranging from just six points, to 271 points (see appendix). Important data included is:

**General data**: HPA (sample) number, sampling date, layer and location.

**Sediment physical properties:** Water content, density, grain size distribution and density fractions.

**Sediment chemical properties**: pH, redox, EC, TC, TIC, TOC, TN, content of selected metals, chemical properties in the fraction of less than 20 µm, pore water composition, filtrate of pore water composition.

**Sediment (inorganic) composition**: Clay, sand, silt, silt-coarse, silt-fine

**Sediment biological properties**: Oxygen consumption in 3 hours, long-term respiration and gas generation.

### 3.2.2 Pearson’s Correlation Coefficient

In simple terms, Pearson’s correlation coefficient ‘r’ describes how well two sets of data show a perfectly linear relationship. If the coefficient is 1, it represents a perfect positive relationship, if it is -1 a perfect negative relationship. A Pearson’s correlation coefficient of 0 represents no relationship among the parameters. Visually, a correlation of 1 or -1 represents dots that all coincide perfectly with a straight line. The formula below shows how ‘r’ is calculated from the data points. Pearson’s correlation coefficient can also be expressed as the covariance between X and Y divided by the product of the standard deviation of X and of Y.

$$r_{xy} = \frac{\sum(x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum(x_i - \bar{x})^2 \sum(y_i - \bar{y})^2}} \tag{5}$$

With:
**$r_{xy}$** : Pearson’s correlation coefficient of the relationship between variables x and y
**$x_i$** : The values of the x-variable
**$\bar{x}$** : The mean of the values of the x-variable
**$y_i$** : The values of the y-variable
**$\bar{y}$** : The mean of the values of the y-variable

Once the Pearson’s correlation coefficients between all parameters are found, a correlation matrix can be constructed using software for statistics. In a correlation matrix, it is indicated how strong every parameter relates with the other parameters. OriginPro was used in this case to construct the matrix of correlations, which was afterwards exported into Microsoft Excel for ease of presentation. It was found that if the SPM and FM data is removed from the data set (leaving the PS and CS data) and the correlation is repeated, the absolute value of the Pearson’s correlation coefficients increase. This is due to the properties from the fluid layers being very different from the properties of the already settled layers.

### 3.2.3 Multiple Linear Regression Analysis

Pearson’s correlation coefficient was lower than accepted for prediction purposes in the investigation by Li (2019) to predict gas generation from the sediment properties. Therefore, there are additional parameters that influence gas generation and respiration than TOC alone. Hereon after, OriginPro was used for all types of analyses and outputs. The most accurate model can be created through iteration between the dependent variable and independent variable with a second independent variable until the highest increase in the adjusted R-squared value (explained in the next subsection) is found, above that of the linear or non-linear regression model. The goal was to create a model with which all statistically significant parameters are incorporated in a linear equation of multiple parameters and a constant (y-axis offset of the regression function, unless it passes through the origin point (0,0), in which there will be no constant). One dependent and two independent parameters (and the constant) will make up the equation, because the aim is to use as little parameters as possible to express gas generation. The model equation will have the following form:

$$y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 \tag{6}$$

Where y denotes the dependent variable (gas generation or respiration, in our case), $\beta_0$ denotes the y-axis intercept, $\beta_1$ and $\beta_2$ denote the regression factors and $x_1$ and $x_2$ denote the independent variables. It is important to notice that it is not necessarily the parameter with the next highest Pearson's correlation coefficient with G100 that will be the following term in the regression equation, as it depends on how well the correlation is to both the dependent variable and the first independent variable used.

### 3.2.4 Adjusted Coefficient of Determination and Error Analysis

The adjusted coefficient of determination (also named R-squared) is an altered type of the coefficient of determination that takes into account the number of predictors in the model. It provides a relative measure of the percentage of the dependent variable variance that the model explains. If the adjusted coefficient of determination increases (compared to a singular regression analysis, only one dependent variable and one independent variable) when a new parameter is introduced, it indicates that the new parameter improves the model more than would be expected by chance. The reverse is true if the coefficient of determination decreases. The range of R-squared is the same as for the absolute value of 'r' (StatSoft Inc., 2013).

The standard error of the multiple regression represents the mean distance (as well in the units of the dependent variable) that the measured values fall from the multiple regression line. However, error analysis is carried out through the value given by prob>|t| (also named the p-value of parameters). First of all, the t-value needs to be defined. The t-value is defined as the fitted value divided by the standard error. The calculated t-value is then compared to the critical t-value of a given confidence level '$\alpha$' (which refers to the likelihood that the true parameter lies outside the confidence interval), which OriginPro sets at 0.05 (5%), however, in this investigation 0.05 will not suffice, instead a confidence level of 0.01 is needed. If the calculated t-value is larger than the critical t-value, then it can be said that the parameter is significant. However, prob>|t| is easier to interpret: when prob>|t| is smaller than 1%, it can be said that that the parameter included in the regression is statistically significant, i.e. that the likelihood of error induced by including the parameter in the model is less than 1% (StatSoft Inc., 2013).

# 4 Results and Discussion

In this section, the raw data and results from the statistical methods subsection are presented and discussed. The section is divided into two subsections, the results for anaerobic conditions followed by the results for aerobic conditions.

## 4.1 Raw Data

Table 1: Raw data of pressure in bottles by layer and HPA number

| HPA number | Layer | Pressure in bottle (hPa) |
|---|---|---|
| 10201 | A | 1237 |
| | B | 1240 |
| | C | 1248 |
| 10202 | A | 1217 |
| | B | 1234 |
| | C | 1215 |
| 10203 | A | 1168 |
| | B | 1226 |
| | C | 1183 |
| 10205 | A | 1224 |
| | B | 1179 |
| | C | 1208 |
| 10208 | A | 1116 |
| | B | 1207 |
| | C | 1168 |
| 10209 | A | 1092 |
| | B | 1099 |
| | C | 1082 |
| 10210 | A | 1145 |
| | B | 1145 |
| | C | 1159 |
| 10211 | A | 1150 |
| | B | 1146 |
| | C | 1157 |

Note: HPA number = identification number given by the Hamburg Port Authority, Layer = sampling height (A being the highest, B from the middle and C the lowest).

The raw data in the table above was collected on the 5th of September and had been incubated for a period of 15 days. The gas generation was then calculated from the pressure in the bottle (as explain in the subsection ‘Gas production measurement method’) with the modified ideal gas law equation using total organic carbon (%DW), atmospheric pressure (hectopascal), vertical head (millilitres), dry weight (grams), mol. gas volume, pressure in bottle (hectopascal) and the gas generation of the preceding result (mg C/g TOC) as inputs. The pressure measurements and gas generation calculations made in this investigation were added to the gas generation column in the Microsoft Excel data file containing all the parameters and current data. The average gas generation over A, B and C for each sample group are presented in the table below.

Table 2: Average of gas generation by HPA number

| HPA number | Location | Layer | Gas Generation Average (mg C/g TOC) |
|---|---|---|---|
| 10201 | rv | spm | 14.21 |
| 10202 | rv | ps | 5.43 |
| 10203 | rv | cs | 11.09 |
| 10205 | rt | spm | 3.55 |
| 10208 | kh | spm | 1.13 |
| 10209 | kh | fm-ps | 1.73 |
| 10210 | kh | ps | 0.72 |
| 10211 | kh | pc-cs | 1.83 |

Note: HPA number = identification number given by the Hamburg Port Authority, location = Reiherstieg Vorhafen (RV), Rethe (RT), Köhlfleet mit Köhlfleethafen (KH), layer = level of consolidation.

## 4.2 Anaerobic Conditions

First of all, the parameter with the highest Pearson’s correlation coefficient to gas generation after 100 days of incubation (G100, units: mg C/g dry matter) was found. The parameters with the highest Pearson’s correlation coefficient to gas generation are presented below (full final correlation matrix can be found in the appendix). Logically, G100 has a Pearson’s correlation coefficient of exactly one with itself (see Appendix). Also as expected, G100 and G21 (gas generation after 100 days of incubation) are closely related to the other gas generation parameters (G-total, Pool 1, Pool 2, etc.) due to these parameters having been calculated from G100 and G21 (which excludes these variables for being an eligible independent variable to correlate with in the multiple regression analysis, in addition to them not being sediment properties).

Carbonic sediment properties such as total organic carbon (TOC), total inorganic carbon (TIC) and total carbon (TC) have a very strong relationship with G100 because methane and carbon dioxide being produced containing carbon, which originated from the organic matter present in the solid phase (in the sediment). TC has a slightly higher value for Pearson's correlation coefficient to gas generation than TOC and TIC, however TC had to be disregarded, as the inorganic carbon part of the TC is not degraded and does not find itself later bonded to the oxygen or hydrogen in carbon dioxide and methane respectively. For this reason, TOC was used the correlation analysis. Notably, the data included in the rheological parameters was very scarce, therefore the rheological parameters were excluded from this investigation. In addition, there was no coinciding data between G100 and pH (where there were measurements for pH, there were no measurements for G100 and vice versa), therefore resulting in a non-calculable Pearson's correlation coefficient, which is why it likewise had to be excluded. However, the pH of the pore water was calculable, giving r = -0.39. While it was found in the literature review that strong acid and highly alkaline solutions result in poor microorganism growth, the range of pH (6.7 - 8) was too narrow to assess the impact on gas generation given the moderate correlation.

Comparing the Pearson's correlation coefficients from the literature review to those found in this investigation, it is evident that the highest-ranking Pearson's correlation coefficients from the literature review are slightly different (TN: r=0.88, water content: r=0.89) (Gebert et al., 2019). This is due to the difference in the state of the material, it being landfilled dredged material instead of fresh samples and because in this investigation SPM and FM data were removed. The positive correlation claims established by Li (2019) for TOC/P and TOC/S, water content, oxygen consumption in three hours (AT(3h)), loss on ignition (LOI), P, Ca, Mn, Cu, $NH_{4+}$ (filtrate pore water) and $Fe_{2+}$ (filtrate pore water) can be backed by the results presented in this thesis, slight deviations in the Pearson's correlation coefficient can be attributed to the difference in layers and incubation time (21 days instead of 100 days).

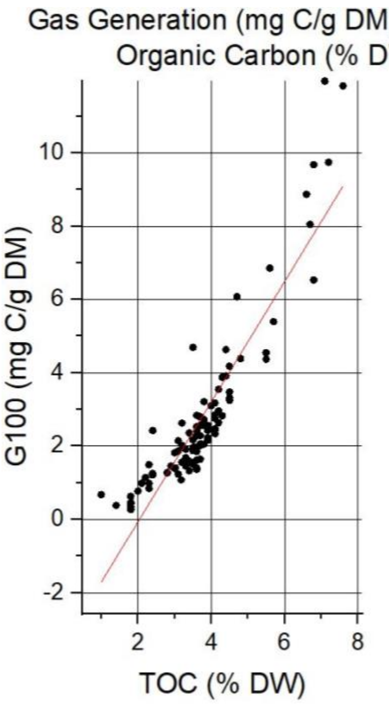
Table 3: Correlating parameters (above the absolute value of 0.6) with respect to G100

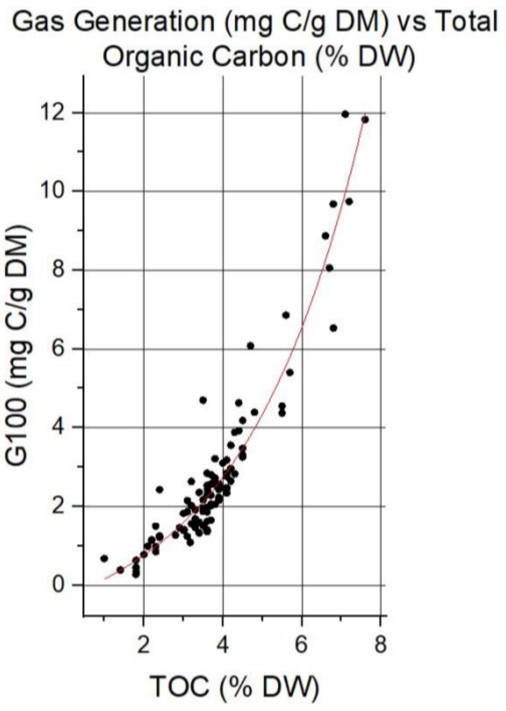
| Parameter | Pearson's R |
|---|---:|
| TN | 0.91 |
| TOC | 0.91 |
| TOC/S | 0.80 |
| Mn | 0.70 |

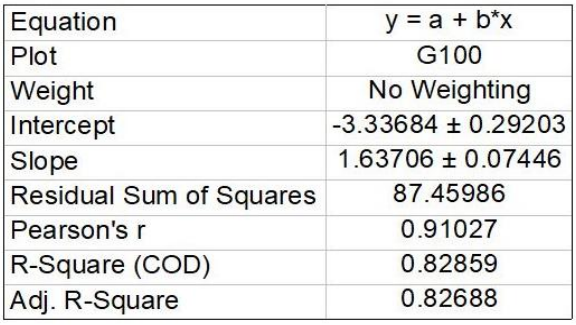
| | | | | |
|---|---|---|---|---|
| TIC | 0.87 | | Cu | 0.70 |
| Pool 1 (gas) | 0.90 | | Ca | 0.90 |
| Pool 2 (gas) | 0.60 | | TOC (20µm) | 0.86 |
| TC | 0.92 | | LOI- (20µm) | 0.77 |
| Water content | 0.80 | | Cd (20µm) | 0.79 |
| Fractionation (heavy) | -0.77 | | Cu (20µm) | 0.65 |
| Fractionation (light) | 0.77 | | Hg (20µm) | 0.61 |
| AT (3h) | 0.63 | | Zn (20µm) | 0.77 |
| LOI (20µm) | 0.77 | | $NH_4^+$ (filtrate pore water) | 0.61 |
| P | 0.74 | | | |

Note: 20µm = chemical properties analyzed in the fraction smaller than 20 µm, AT(3h) = oxygen consumption in three hours, TN = total nitrogen, TOC = total organic carbon, TIC = total inorganic carbon, TC = total carbon, LOI = loss on ignition, Fractionation (heavy/light) = share of bulk density present in the heavy/light fraction.

A linear regression model created from the identified relationship between gas generation and TOC can be seen below. It is evident from the scatter patterns below that an exponential decay model is more appropriate. This tells us that gas generation depends exponentially on TOC. The coefficient of determination in the linear model is very high ($R^2$=0.8269), however it increases even further ($R^2$=0.9145) when an exponential decay model is fit to the data.

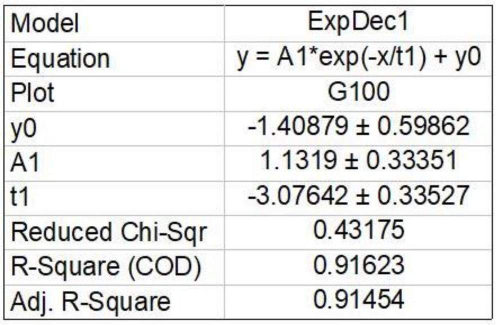






| Equation | y = a + b*x |
|---|---|
| Plot | G100 |
| Weight | No Weighting |
| Intercept | -3.33684 ± 0.29203 |
| Slope | 1.63706 ± 0.07446 |
| Residual Sum of Squares | 87.45986 |
| Pearson's r | 0.91027 |
| R-Square (COD) | 0.82859 |
| Adj. R-Square | 0.82688 |

Fig. 5. Linear relationship between gas generation and total organic carbon, scatter plot (above) and summary of model parameters (below)



| Model | ExpDec1 |
|---|---|
| Equation | y = A1*exp(-x/t1) + y0 |
| Plot | G100 |
| y0 | -1.40879 ± 0.59862 |
| A1 | 1.1319 ± 0.33351 |
| t1 | -3.07642 ± 0.33527 |
| Reduced Chi-Sqr | 0.43175 |
| R-Square (COD) | 0.91623 |
| Adj. R-Square | 0.91454 |

Fig. 6. Non-linear relationship between gas generation and total organic carbon, scatter plot (above) and summary of model parameters (below)

The linear model was improved through a multiple linear regression model. Following the first correlation with TOC, the next best parameter relation was found through iteration with G100 and TOC. It was discovered that from all the parameters included in the investigation, iron content in the solids correlates the highest with TOC to gas generation; by including iron, the coefficient of determination could be increased the most ($R^2$=0.91495). This $R^2$ means that 91% of the variability of gas generation incubated for 100 days can be explained by these two parameters (9% of data variability is explained by other parameters not investigated in this study). In addition, the residual sum of squares decreased from 87 (linear model) and 43 (non-linear model) to 42 (multiple linear regression model). In fact, all of the metal parameters highly improved the multiple linear regression model with TOC as the primary parameter. Comparing the generated multiple linear regression model to the exponential decay model, the coefficient of determination value has a very small difference of just 0.00041 (which is near to negligible). In reality, the most accurate model from the available data is a combination of both a linear and a non-linear model or a multiple non-linear regression model (which is outside of the scope for this investigation), as the singular non-linear (exponential decay) model presented similar adequacy with just one parameter, compared to the multiple linear regression.

Table 4: Multiple Linear Regression Statistics

| | G100 |
|---|---|
| Number of Points | 98 |
| Degrees of Freedom | 95 |
| Residual Sum of Squares | 41.72392 |
| Adj. R-Square | 0.91495 |

Table 5: Multiple Linear Regression Output

| | Value | Standard Error | t-Value | Prob>\|t\| |
|---|---|---|---|---|
| Intercept | -0.55906 | 0.37836 | -1.47761 | 0.14282 |
| TOC-n | 1.89387 | 0.05889 | 32.15786 | 7.36E-53 |
| Fe | -1.14E-04 | 1.21E-05 | -9.43831 | 2.62E-15 |

The above table presents the corresponding value for each parameter in the linear regression equation, with its corresponding standard error, t-value and prob>|t|. Hence, the equation to calculate gas generation from TOC and iron data is:

$$G100 = -0.55906 + 1.89387 \times TOC - 1.14 \times 10_{4} Fe \tag{7}$$

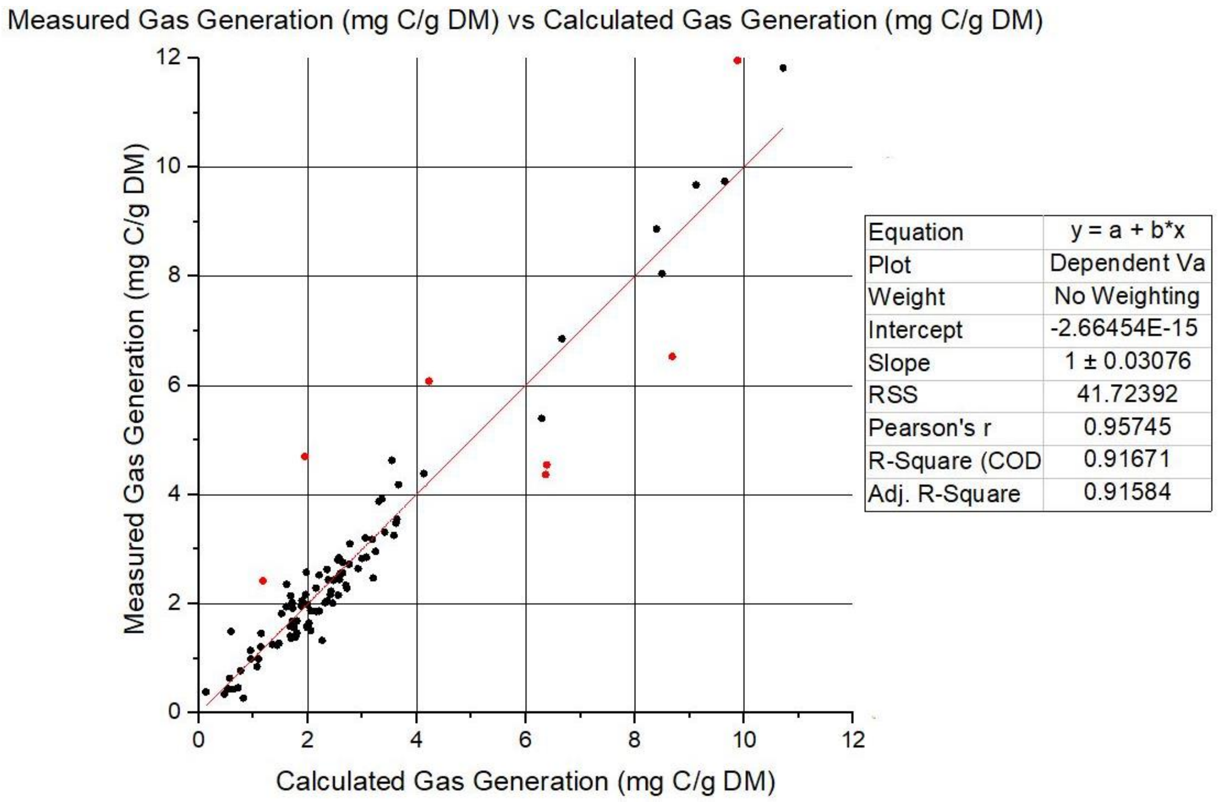
With

**G100**: Gas generation after 100 days (mg C/g dry weight) at 36°C

**TOC**: Total organic carbon (% dry weight)

**Fe**: Iron content in solids (mg/kg dry weight)

As explained in the methods section, prob>|t| determines the probability of error for the multiple linear regression. As both TOC and iron are much lower than 1%, it can be deduced that these variables are contributing to the model in a statistically significant way. The graph below shows the measured gas generation against the calculated gas generation.



| Equation | y = a + b*x |
|---|---|
| Plot | Dependent Va |
| Weight | No Weighting |
| Intercept | -2.66454E-15 |
| Slope | 1 ± 0.03076 |
| RSS | 41.72392 |
| Pearson's r | 0.95745 |
| R-Square (COD | 0.91671 |
| Adj. R-Square | 0.91584 |

Fig. 7. Measured Gas Generation (mg C/g DM) vs Calculated Gas Generation (mg C/g DM). In red: points with a higher standardized residual than 2 or lower than -2.

Then, the standardized residuals were investigated to identify points that deviate the strongest from the calculated values. If the standardized residual is less than -2, the observed frequency is less than the expected frequency and likewise if the standardized residual is greater than 2 the observed frequency is greater than the expected frequency (Simonoff, 2016). Hence, the threshold was defined between (-2, 2). In the above graph, these points are highlighted in red. The table below represents the points which fall outside the threshold.

Table 6: Data for gas generation outside of the specified threshold

| HPA number | Location | Layer | G100 | Standardized residual |
|---|---|---|---|---|
| 1080 | rv | cs | 4.55 | 3.14 |
| 1088 | sc | cs | 6.08 | -2.5 |
| 2208 | rv | cs | 4.37 | 3.36 |
| 5203 | rv | cs | 6.53 | 3.9 |
| 5230 | kb | cs | 2.42 | -2.01 |
| 1079 | rv | ps | 11.96 | -2.09 |
| 3233 | vh | ps | 4.70 | -4.1 |

## 4.3 Aerobic Conditions

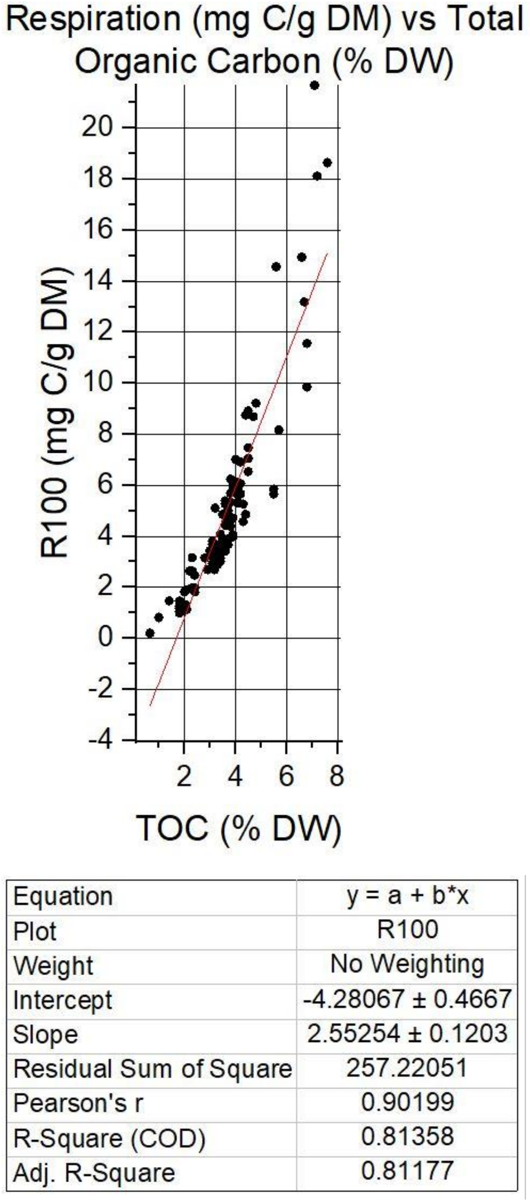
The same data processing approach from the previous subsection was used for samples undergoing respiration in aerobic conditions after 100 days of incubation (R100, units: mg C/g dry matter). Since respiration and gas generation are closely related, the results were similar and it is an indication that anaerobic and aerobic degradation are impacted by the same or similar sediment properties. For aerobic degradation, the parameter exhibiting the highest Pearson's correlation coefficient is TOC, with a similar degree as to that of anaerobic degradation.

Table 7: Correlating parameters (above the absolute value of 0.6) with respect to R100

| Parameter | Pearson's R | Parameter | Pearson's R |
|---|---:|---|---:|
| P | 0.72 | TOC (20µm) | 0.82 |
| TOC/S | 0.78 | LOI (20µm) | 0.76 |
| TN | 0.89 | Cd (20µm) | 0.72 |
| TOC | 0.90 | Zn (20µm) | 0.71 |
| TIC | 0.82 | Cu (20µm) | 0.60 |
| Pool 1 (respiration) | 0.91 | Fractionation (light) | 0.77 |
| Pool 2 (respiration) | 0.72 | Fractionation (heavy) | -0.77 |
| Water content | 0.83 | Ca | 0.85 |
| DOM (254) | 0.66 | Mn | 0.71 |
| AT (3h) | 0.63 | Cu | 0.68 |
| TC | 0.90 | | |

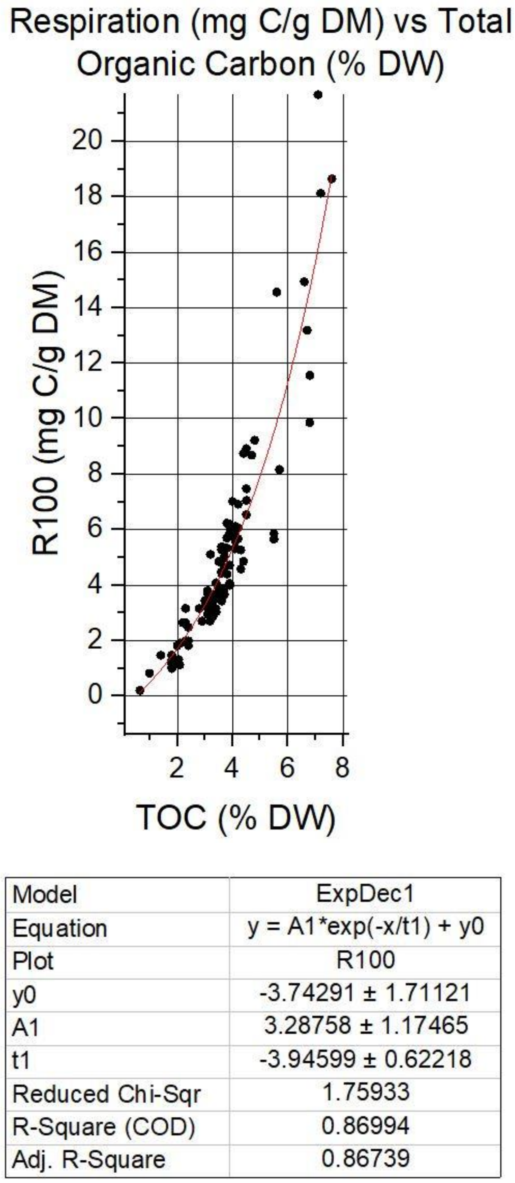
Note: 20µm = chemical properties analyzed in the fraction smaller than 20 µm, AT(3h) = oxygen consumption in three hours, TN = total nitrogen, TOC = total organic carbon, TIC = total inorganic carbon, TC = total carbon, LOI = loss on ignition, Fractionation (heavy/light) = share of bulk density present in the heavy/light fraction, DOM (254) = dissolved organic matter with UV absorption of 254 nm.

Following the identification of the highest Pearson's correlation coefficient, a linear and non-linear regression model was created as an initial benchmark for the multiple regression.



| Equation | y = a + b*x |
|---|---|
| Plot | R100 |
| Weight | No Weighting |
| Intercept | -4.28067 ± 0.4667 |
| Slope | 2.55254 ± 0.1203 |
| Residual Sum of Square | 257.22051 |
| Pearson's r | 0.90199 |
| R-Square (COD) | 0.81358 |
| Adj. R-Square | 0.81177 |

Fig. 8. Linear relationship between respiration and total organic carbon, scatter plot (above) and summary of model parameters (below)



| Model | ExpDec1 |
|---|---|
| Equation | y = A1*exp(-x/t1) + y0 |
| Plot | R100 |
| y0 | -3.74291 ± 1.71121 |
| A1 | 3.28758 ± 1.17465 |
| t1 | -3.94599 ± 0.62218 |
| Reduced Chi-Sqr | 1.75933 |
| R-Square (COD) | 0.86994 |
| Adj. R-Square | 0.86739 |

Fig. 9. Non-linear relationship between respiration and total organic carbon, scatter plot (above) and summary of model parameters (below)

Similarly as with the anaerobic results, the coefficient of determination of the exponential decay model ($R^2$=0.867) for the aerobic data greatly enhances when compared to that of the linear model ($R^2$=0.812), which is due to the data points displaying more of a curved trend. This was expected, because as we have already identified improvement in the same manner from the gas generation results (knowing that R100 and G100 are highly autocorrelated). In continuation, the multiple linear regression model was constructed by iterating all parameters until the highest coefficient of determination was found. The highest increase ($R^2$=0.881) was found in a multiple linear regression between R100, TOC and copper. This $R^2$ means that 88% of the variability of respiration from samples incubated for 100 days can be explained by these two parameters. The residual sum of squares decreased from 257 (linear model) and 179 (non-linear model) to 151 (multiple linear regression model). As with the anaerobic results, the metal parameters demonstrated the highest coefficient of correlations as components of the multiple regression analysis.

Table 8: Multiple Linear Regression Statistics

| | R100 |
|---|---:|
| Number of Points | 98 |
| Degrees of Freedom | 95 |
| Residual Sum of Squares | 151.18433 |
| Adj. R-Square | 0.88069 |

Table 9: Multiple Linear Regression Output

| | Value | Standard Error | t-Value | Prob>\|t\| |
|---|---:|---:|---:|---:|
| Intercept | -1.98048 | 0.55122 | -3.59289 | 5.20E-04 |
| TOC-n | 4.19059 | 0.23157 | 18.09642 | 1.52E-32 |
| Cu | -0.22059 | 0.02985 | -7.3912 | 5.65E-11 |

The value column from the table above gives the respective regression factor for the equation of the model. Thus, the equation for respiration from TOC and copper data is:

$$R100 = -1.98048 + 4.19059 \times TOC - 0.22059 \times Cu \qquad (8)$$

With

**R100**: Respiration after 100 days (mg C/g dry mass) at 36°C

**TOC**: Total Organic Carbon (% dry weight)

**Cu**: Copper content in solids (mg/kg dry weight)

Prob>|t| in the above table determines the probability of error for the multiple linear regression. Both TOC and copper are much lower than 1% and it can be deduced that these variables are contributing to the overall model in a statistically significant way. The graph below shows the measured gas generation against the calculated gas generation. The points with a higher standardized residual than 2 or lower than -2 are indicated in red.

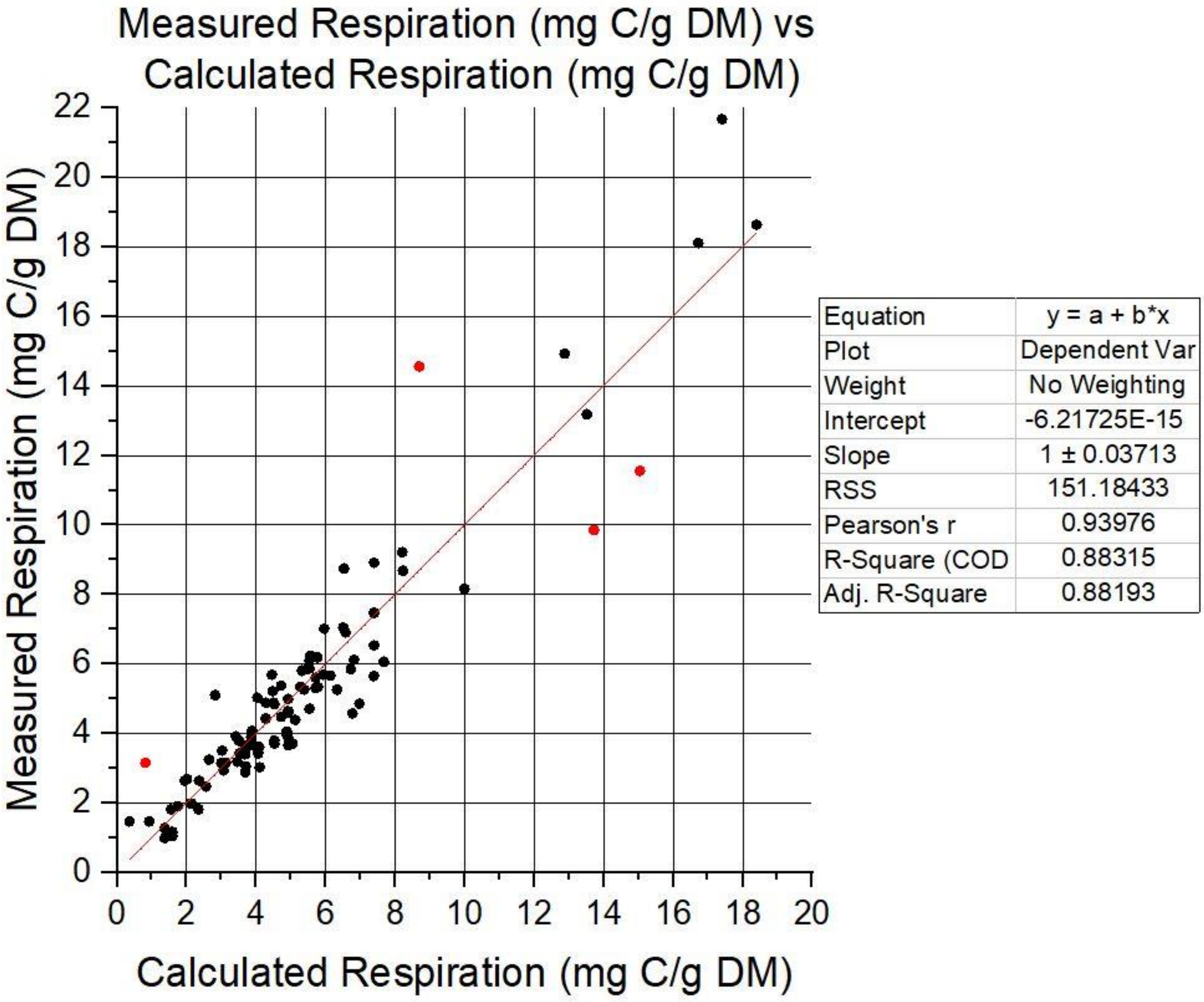


Fig. 10. Measured Gas Generation (mg C/g DM) vs Calculated Gas Generation (mg C/g DM). In red: points with a higher standardized residual than 2 or lower than -2.

Table 10: Data for respiration outside of the specified threshold

| HPA number | Location | Layer | R100 | Standardized residual |
|---|---|---|---|---|
| 5203 | rv | cs | 9.85 | 3.73 |
| 3218 | rv | cs | 14.56 | -4.06 |
| 4206 | pk | ps | 3.16 | -2.19 |
| 3219 | rv | ps/cs | 11.56 | 3.58 |

Noticeably, only one sample (HPA number: 5203) is outside the threshold for both gas generation and respiration. When a linear model between copper and clay is produced, it can be seen that they are highly autocorrelated. Clay often contains copper alongside primarily other elements such as aluminium, silicon and oxygen. For both G100 and R100 it was found that at a particular location (Reiherstieg Vorhafen (RV)) a highly elevated gas generation and respiration reading is displayed. From the thesis by Li (2019) it was deduced that this location had the highest biological activity, which can explain the highly elevated readings. Additionally, it is important to consider whether the metal concentrations are normal or have been concentrated more than normal due to human activities (metal pollution) in the part of the river where the investigation takes place.

# 5 Conclusion

In this section, the research questions of this thesis will be answered, and the investigation will be concluded.

**What is the relationship between gas generation and respiration to all the basic sediment properties of the organic deposit in the Elbe river?**

It was hypothesized that other sediment properties affect gas generation and respiration besides TOC. The results show that both gas generation and respiration have the highest Pearson's correlation coefficient with TOC. Furthermore, In the multiple linear regression, gas generation had the highest coefficient of determination (the criteria for the best ability to fit the data) in a regression between TOC as the primary parameter and iron content in solids as the secondary parameter ($R^2$=0.91495). For respiration, the highest coefficient of determination was displayed in a regression between TOC as the primary parameter and copper content (in the solids) as the secondary parameter ($R^2$=0.881). This leads to the conclusion that organic matter degradation (in the first 100 days) is driven by the quantity of organic matter (TOC), an increase in organic matter means an increase in the degradation of the organic matter. Interestingly, all metals in the solids ranked similarly high (higher above that of (filtrate) pore water, physical sediment properties and inorganic sediment composition parameter categories) in the iterations performed in the multiple linear regression analysis for both gas generation and respiration.

**What is the mathematical model with the highest accuracy for gas generation and respiration, while maintaining within a given (precision) error?**

For this research question it was hypothesized that a multiple linear regression model would predict gas generation and respiration more appropriately than in the correlation presented by Li (2019). The $R^2$ found for samples under anaerobic (incubated for 100 days) means that 91% of the variability can be explained by these two parameters. The residual sum of squares decreased (from 87 in the linear model and 43 in the non-linear model) to 42 in the multiple linear regression model. The $R^2$ found for samples under aerobic conditions (incubated for 100 days) means that 88% of the variability of respiration from samples incubated for 100 days can be explained by these two parameters. The residual sum of squares decreased (from 257 in the linear model and 179 in the non-linear model) to 151 in the multiple linear regression model. In fact, the hypothesis for this research question is true, the most accurate model for both gas generation and respiration found in this investigation was a multiple linear regression model, although the model for gas generation presented little difference to that of the simpler non-linear model (exponential decay). Thus, the exponential nature of the optimal fit for the data suggests that there is a threshold. In areas with low organic matter content, the organic matter present is much less degradable, falling into the “slow” pool category.

As a side note, the prob>|t| (which determines the probability of error for the multiple linear regression) is much lower than 1% for all parameters in both the gas generation and respiration model, so it can be deduced that the variables are contributing to the model in a statistically significant way.

# 6 Recommendations

There is a possibility that there is another model for both gas generation and respiration which can model the parameters more appropriately in the form of a higher coefficient of determination while still remaining within the permitted range of error. This model could be some form of single/multiple non-linear regression (exponential decay). However, this type of model is outside the scope of this project, but it is recommended to be investigated further. Furthermore, it is recommended to find out why the samples listed in table 6 and table 10 deviate so much from the calculated values. For example, it could mean that they depend on parameters that were not captured in the investigation.

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# Appendix

Table 11: Pearson’s correlation coefficients of parameters with respect to G100

| Parameter | Pearson’s R |
|---|---:|
| River (km) | -0.59 |
| TN-n | **0.91** |
| TOC-n | **0.91** |
| TIC-i | 0.87 |
| G21 | **0.92** |
| G21 | **0.99** |
| G21 | **0.95** |
| G100 | **0.93** |
| G100 | **1.00** |
| G100 | **0.96** |
| Pool 1 gas | 0.90 |
| Pool 2 gas | 0.60 |
| Pool 3 gas | -0.20 |
| G-total | 0.72 |
| G-total | 0.94 |
| G-total | 0.79 |
| Water content-tu | 0.80 |
| Redox | -0.08 |
| DOM-254 | 0.81 |
| DOM-270 | 0.32 |
| DOM-350 | 0.24 |
| Fractionation-heavy | -0.77 |
| Fractionation-light | 0.77 |
| Silt | 0.29 |
| Silt-fine | 0.36 |
| Silt-coarse | -0.44 |
| Clay | 0.48 |
| Sand | -0.47 |
| AT3h | 0.63 |
| LOI-n-20µm | 0.77 |
| P | 0.74 |
| S | 0.45 |
| Fe | 0.10 |
| Li | -0.08 |
| Al | -0.08 |
| Vn | -0.02 |
| Mg | -0.21 |
| Na | 0.27 |
| K | -0.12 |
| Mn | 0.70 |
| Cu | 0.70 |
| Ca | 0.90 |
| TOC-n-20µm | 0.86 |
| LOI-n-20µm | 0.77 |
| As-20µm | 0.02 |
| Pb-20µm | 0.19 |
| Cd-20µm | 0.79 |
| Cr-20µm | -0.58 |
| Cu-20µm | 0.65 |
| Ni-20µm | -0.24 |
| Hg-20µm | 0.61 |
| Zn-20µm | 0.77 |
| pH-value-pw | -0.39 |
| Electric conductivity-pw | -0.05 |
| Fe-pw | 0.24 |
| Mn-pw | 0.01 |
| DOC-fpw | 0.47 |
| TN-fpw | 0.60 |
| NO2-fpw | -0.03 |
| NO3-fpw | -0.21 |
| NH4-fpw | 0.61 |
| Fe-fpw | 0.22 |
| Mn-fpw | -0.02 |
| PO4-fpw | -0.05 |
| Na-fpw | -0.27 |
| Cl-fpw | -0.29 |
| Ca-fpw | -0.19 |
| Mg-fpw | -0.06 |
| SO42-fpw | -0.36 |
| SiO2-fpw | 0.26 |
| TOC/TN-n | -0.59 |
| TOC/S-n | 0.80 |
| TOC/P-n | 0.54 |
| TC-i | **0.92** |

Table 12: Pearson’s correlation coefficients of parameters with respect to R100

| Parameter | Pearson’s R |
|---|---|
| HPA | -0.15 |
| IfB | -0.10 |
| River-km | -0.57 |
| TN-n | 0.89 |
| TOC-n | **0.90** |
| TIC-i | 0.82 |
| R21 | 0.88 |
| R21 | **0.96** |
| R21 | **0.94** |
| R100 | **0.93** |
| R100 | **1.00** |
| R100 | **0.95** |
| Pool 1 | **0.91** |
| Pool 2 | 0.72 |
| Pool 3 | -0.14 |
| R-total | 0.85 |
| R-total | 0.83 |
| G21 | 0.85 |
| G21 | **0.93** |
| G21 | 0.88 |
| G100 | 0.85 |
| G100 | **0.95** |
| G100 | 0.87 |
| Pool 2 gas | 0.52 |
| Pool 3 gas | -0.15 |
| G-total | 0.67 |
| G-total | 0.75 |
| Water content-tu | 0.83 |
| Redox | -0.09 |
| DOM-254 | 0.66 |
| DOM-270 | 0.36 |
| DOM-350 | 0.28 |
| Fractionation-heavy | -0.77 |
| Silt | 0.33 |
| Silt-fine | 0.40 |
| Silt-coarse | -0.41 |
| AT3h | 0.63 |
| S | 0.47 |
| Fe | 0.16 |
| Li | -0.01 |
| Al | -0.01 |
| Vn | 0.03 |
| Mg | -0.14 |
| Na | 0.34 |

| Parameter | Pearson’s R |
|---|---|
| K | -0.04 |
| TOC-n-20µm | 0.82 |
| LOI-n-20µm | 0.76 |
| As-20µm | -0.02 |
| Pb-20µm | 0.24 |
| Cd-20µm | 0.72 |
| Cr-20µm | -0.58 |
| Cu-20µm | 0.60 |
| Ni-20µm | -0.20 |
| Hg-20µm | 0.57 |
| Zn-20µm | 0.71 |
| pH-value-pw | -0.36 |
| Electric conductivity-pw | -0.06 |
| Fe-pw | 0.20 |
| Mn-pw | 0.01 |
| DOC-fpw | 0.50 |
| TN-fpw | 0.52 |
| NO2-fpw | -0.06 |
| NO3-fpw | -0.15 |
| NH4-fpw | 0.53 |
| Fe-fpw | 0.26 |
| Mn-fpw | 0.03 |
| PO4-fpw | -0.07 |
| Na-fpw | -0.32 |
| Cl-fpw | -0.28 |
| Ca-fpw | -0.21 |
| Mg-fpw | -0.08 |
| SO42-fpw | -0.34 |
| SiO2-fpw | 0.20 |
| Mn | 0.71 |
| Cu | 0.68 |
| Ca | 0.85 |
| G-total | **0.92** |
| TOC/TN-n | -0.58 |
| TOC/S-n | 0.78 |
| TOC/P-n | 0.57 |
| Clay | 0.53 |
| Sand | -0.53 |
| Fractionation-light | 0.77 |
| Pool 1 gas | 0.84 |
| R-total | **0.98** |
| TC-i | **0.90** |
| P | 0.72 |
| | |

# Matrix of correlations

| | HPA | IfB | River-km | TN-n | TOC-n | TIC-i | R21 | R21 | R21 | R100 | R100 | R100 | Pool 1 | Pool 2 | Pool 3 | R-total | R-total | G21 | G21 | G21 | G100 | G100 | G100 | Pool 2 gas | Pool 3 gas | G-total | G-total | Water content-tu | Redox | pH | DOM-254 | DOM-270 | DOM-350 | Fractionation-heavy | Silt | Silt-fine | Silt-coarse | AT3h | S | Fe | Li | Al | Vn | Mg | Na | K | TOC-n-20µm | LOI-n-20µm | As |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HPA | 1,00 | 0,99 | 0,09 | 0,02 | 0,13 | 0,04 | -0,14 | -0,11 | -0,14 | -0,21 | -0,15 | -0,21 | -0,18 | -0,38 | 0,20 | -0,24 | -0,19 | -0,20 | -0,14 | -0,17 | -0,22 | -0,16 | -0,20 | -0,14 | 0,08 | -0,09 | -0,13 | -0,18 | 0,14 | 0,23 | 0,51 | 0,44 | -0,38 | 0,10 | -0,08 | 0,01 | -0,27 | -0,14 | -0,06 | -0,29 | -0,26 | -0,33 | -0,35 | -0,38 | -0,51 | -0,42 | 0,36 | 0,09 | |
| IfB | 0,99 | 1,00 | 0,12 | 0,03 | 0,14 | 0,05 | -0,08 | -0,07 | -0,10 | -0,14 | -0,10 | -0,16 | -0,17 | -0,38 | 0,18 | -0,25 | -0,19 | -0,17 | -0,13 | -0,15 | -0,20 | -0,14 | -0,18 | -0,14 | 0,16 | -0,03 | -0,09 | -0,17 | 0,14 | 0,65 | 0,42 | 0,42 | -0,34 | 0,11 | -0,09 | 0,05 | -0,31 | -0,16 | -0,07 | -0,30 | -0,28 | -0,34 | -0,37 | -0,39 | -0,52 | -0,43 | 0,37 | 0,11 | |
| River-km | 0,09 | 0,12 | 1,00 | -0,62 | -0,67 | -0,49 | -0,61 | -0,59 | -0,65 | -0,56 | -0,57 | -0,56 | -0,57 | -0,51 | 0,15 | -0,55 | -0,57 | -0,63 | -0,58 | -0,63 | -0,64 | -0,59 | -0,64 | -0,46 | 0,06 | -0,57 | -0,58 | -0,54 | 0,53 | 0,64 | -0,61 | -0,17 | -0,22 | 0,66 | -0,47 | -0,60 | 0,44 | -0,48 | -0,54 | -0,30 | -0,18 | -0,14 | -0,13 | 0,05 | -0,12 | -0,05 | -0,65 | -0,63 | |
| TN-n | 0,02 | 0,03 | -0,62 | 1,00 | 0,97 | 0,81 | 0,80 | 0,90 | 0,90 | 0,79 | 0,89 | 0,84 | 0,79 | 0,66 | -0,09 | 0,77 | 0,79 | 0,83 | 0,90 | 0,89 | 0,81 | 0,91 | 0,87 | 0,48 | -0,18 | 0,61 | 0,73 | 0,86 | -0,14 | -0,02 | 0,85 | 0,25 | 0,38 | -0,82 | 0,48 | 0,62 | -0,53 | 0,69 | 0,66 | 0,38 | 0,20 | 0,20 | 0,23 | 0,02 | 0,35 | 0,14 | 0,69 | 0,67 | |
| TOC-n | 0,13 | 0,14 | -0,67 | 0,97 | 1,00 | 0,82 | 0,80 | 0,90 | 0,91 | 0,79 | 0,90 | 0,87 | 0,79 | 0,67 | -0,10 | 0,76 | 0,78 | 0,82 | 0,90 | 0,88 | 0,80 | 0,91 | 0,87 | 0,48 | -0,18 | 0,61 | 0,76 | 0,84 | -0,18 | 0,05 | 0,85 | 0,27 | 0,34 | -0,84 | 0,50 | 0,64 | -0,52 | 0,68 | 0,68 | 0,36 | 0,17 | 0,15 | 0,18 | -0,04 | 0,27 | 0,08 | 0,74 | 0,71 | |
| TIC-i | 0,04 | 0,05 | -0,49 | 0,81 | 0,82 | 1,00 | 0,66 | 0,79 | 0,81 | 0,70 | 0,82 | 0,81 | 0,69 | 0,75 | -0,19 | 0,73 | 0,82 | 0,74 | 0,85 | 0,84 | 0,76 | 0,87 | 0,86 | 0,45 | -0,23 | 0,53 | 0,68 | 0,63 | 0,03 | -- | 0,80 | 0,20 | 0,11 | -0,63 | 0,23 | 0,18 | -0,40 | 0,52 | 0,34 | -0,04 | -0,23 | -0,22 | -0,16 | -0,36 | 0,09 | -0,27 | 0,86 | 0,70 | |
| R21 | -0,14 | -0,08 | -0,61 | 0,80 | 0,80 | 0,66 | 1,00 | 0,93 | 0,93 | 0,90 | 0,88 | 0,80 | 0,97 | 0,60 | -0,19 | 0,80 | 0,64 | 0,82 | 0,82 | 0,77 | 0,82 | 0,83 | 0,75 | 0,50 | -0,16 | 0,63 | 0,59 | 0,89 | -0,17 | -- | 0,47 | 0,30 | 0,26 | -0,70 | 0,33 | 0,48 | -0,44 | 0,54 | 0,44 | 0,27 | 0,13 | 0,13 | 0,16 | 0,03 | 0,46 | 0,12 | 0,64 | 0,68 | |
| R21 | -0,11 | -0,07 | -0,59 | 0,90 | 0,90 | 0,79 | 0,93 | 1,00 | 0,96 | 0,88 | 0,96 | 0,87 | 0,93 | 0,62 | -0,15 | 0,80 | 0,73 | 0,86 | 0,94 | 0,86 | 0,86 | 0,95 | 0,85 | 0,53 | -0,17 | 0,67 | 0,71 | 0,87 | -0,09 | -- | 0,72 | 0,33 | 0,26 | -0,75 | 0,31 | 0,44 | -0,47 | 0,61 | 0,46 | 0,18 | 0,01 | 0,01 | 0,05 | -0,12 | 0,36 | -0,03 | 0,80 | 0,76 | |
| R21 | -0,14 | -0,10 | -0,65 | 0,90 | 0,91 | 0,81 | 0,93 | 0,96 | 1,00 | 0,90 | 0,94 | 0,92 | 0,94 | 0,75 | -0,13 | 0,88 | 0,86 | 0,86 | 0,91 | 0,89 | 0,86 | 0,92 | 0,89 | 0,53 | -0,17 | 0,65 | 0,74 | 0,82 | -0,15 | -- | 0,77 | 0,41 | 0,33 | -0,79 | 0,40 | 0,47 | -0,41 | 0,60 | 0,48 | 0,21 | 0,03 | 0,03 | 0,07 | -0,11 | 0,31 | 4,05 | 0,78 | 0,76 | |
| R100 | -0,21 | -0,14 | -0,56 | 0,79 | 0,79 | 0,70 | 0,90 | 0,88 | 0,90 | 1,00 | 0,93 | 0,92 | 0,96 | 0,79 | -0,19 | 0,90 | 0,81 | 0,82 | 0,83 | 0,80 | 0,82 | 0,84 | 0,79 | 0,48 | -0,15 | 0,63 | 0,63 | 0,81 | -0,21 | -- | 0,71 | 0,38 | 0,31 | -0,72 | 0,37 | 0,42 | -0,32 | 0,57 | 0,47 | 0,23 | 0,09 | 0,09 | 0,12 | -0,01 | 0,41 | 0,08 | 0,69 | 0,68 | |
| R100 | -0,15 | -0,10 | -0,57 | 0,89 | 0,90 | 0,82 | 0,88 | 0,96 | 0,94 | 0,93 | 1,00 | 0,95 | 0,91 | 0,72 | -0,14 | 0,85 | 0,83 | 0,85 | 0,93 | 0,88 | 0,85 | 0,95 | 0,87 | 0,52 | -0,15 | 0,67 | 0,75 | 0,83 | -0,09 | -- | 0,66 | 0,36 | 0,28 | -0,77 | 0,33 | 0,40 | -0,41 | 0,63 | 0,47 | 0,16 | -0,01 | -0,01 | 0,03 | -0,14 | 0,34 | -0,04 | 0,82 | 0,76 | |
| R100 | -0,21 | -0,16 | -0,56 | 0,84 | 0,87 | 0,81 | 0,80 | 0,87 | 0,92 | 0,92 | 0,95 | 1,00 | 0,85 | 0,85 | -0,12 | 0,89 | 0,95 | 0,80 | 0,86 | 0,86 | 0,81 | 0,87 | 0,87 | 0,49 | -0,13 | 0,63 | 0,78 | 0,71 | -0,14 | -- | 0,60 | 0,44 | 0,35 | -0,77 | 0,40 | 0,38 | -0,28 | 0,60 | 0,47 | 0,17 | -0,02 | -0,02 | 0,03 | -0,14 | 0,25 | -0,03 | 0,77 | 0,72 | |
| Pool 1 | -0,18 | -0,17 | -0,57 | 0,79 | 0,79 | 0,69 | 0,97 | 0,93 | 0,94 | 0,96 | 0,91 | 0,85 | 1,00 | 0,70 | -0,20 | 0,86 | 0,74 | 0,77 | 0,82 | 0,75 | 0,80 | 0,83 | 0,76 | 0,75 | -0,30 | 0,65 | 0,59 | 0,82 | 0,10 | -- | -- | 0,34 | 0,34 | -0,67 | 0,43 | 0,30 | -0,35 | 0,65 | 0,43 | 0,19 | 0,03 | 0,04 | 0,04 | -0,13 | 0,28 | -0,01 | 0,72 | 0,83 | |
| Pool 2 | -0,38 | -0,38 | -0,51 | 0,66 | 0,67 | 0,75 | 0,60 | 0,62 | 0,75 | 0,79 | 0,72 | 0,85 | 0,70 | 1,00 | -0,06 | 0,91 | 0,90 | 0,68 | 0,67 | 0,76 | 0,66 | 0,66 | 0,73 | 0,42 | -0,22 | 0,49 | 0,58 | 0,52 | 0,05 | -- | -- | 0,49 | 0,47 | -0,62 | 0,36 | 0,16 | -0,23 | 0,57 | 0,41 | 0,23 | 0,07 | 0,09 | 0,07 | -0,06 | 0,22 | 0,04 | 0,50 | 0,69 | |
| Pool 3 | 0,20 | 0,18 | 0,15 | -0,09 | -0,10 | -0,19 | -0,19 | -0,15 | -0,13 | -0,19 | -0,14 | -0,12 | -0,20 | -0,06 | 1,00 | 0,14 | 0,10 | -0,10 | -0,11 | -0,07 | -0,10 | -0,10 | -0,06 | -0,07 | 0,01 | -0,09 | -0,04 | -0,16 | 0,10 | -- | -- | 0,11 | 0,12 | -0,10 | -0,04 | 0,03 | -0,08 | -0,21 | -84,61 | -0,05 | -0,03 | -0,03 | 0,04 | 0,00 | -0,12 | -0,03 | -0,05 | -0,12 | |
| R-total | -0,24 | -0,25 | -0,55 | 0,77 | 0,76 | 0,73 | 0,80 | 0,80 | 0,88 | 0,90 | 0,85 | 0,89 | 0,86 | 0,91 | 0,14 | 1,00 | 0,92 | 0,76 | 0,78 | 0,80 | 0,76 | 0,78 | 0,80 | 0,61 | -0,28 | 0,59 | 0,62 | 0,68 | 0,11 | -- | -- | 0,48 | 0,47 | -0,71 | 0,41 | 0,26 | -0,34 | 0,60 | 0,45 | 0,21 | 0,05 | 0,06 | 0,07 | -0,10 | 0,24 | 0,01 | 0,65 | 0,79 | |
| R-total | -0,19 | -0,19 | -0,57 | 0,79 | 0,78 | 0,82 | 0,64 | 0,73 | 0,86 | 0,81 | 0,83 | 0,95 | 0,74 | 0,90 | 0,10 | 0,92 | 1,00 | 0,70 | 0,76 | 0,84 | 0,71 | 0,77 | 0,85 | 0,56 | -0,20 | 0,57 | 0,75 | 0,53 | 0,05 | -- | -- | 0,67 | 0,63 | -0,70 | 0,43 | 0,17 | -0,20 | 0,60 | 0,47 | 0,18 | -0,04 | -0,01 | 0,02 | -0,17 | 0,10 | -0,07 | 0,70 | 0,81 | |
| **G21** | -0,20 | -0,17 | -0,63 | 0,83 | 0,82 | 0,74 | 0,82 | 0,86 | 0,86 | 0,82 | 0,85 | 0,80 | 0,77 | 0,68 | -0,10 | 0,76 | 0,70 | 1,00 | 0,95 | 0,96 | 0,95 | 0,92 | 0,91 | 0,53 | -0,20 | 0,72 | 0,72 | 0,78 | -0,24 | -- | 0,80 | 0,31 | 0,23 | -0,76 | 0,30 | 0,42 | -0,45 | 0,63 | 0,52 | 0,23 | 0,08 | 0,08 | 0,13 | -0,04 | 0,35 | 0,05 | 0,72 | 0,68 | |
| **G21** | -0,14 | -0,13 | -0,58 | 0,90 | 0,90 | 0,85 | 0,82 | 0,94 | 0,91 | 0,83 | 0,93 | 0,86 | 0,82 | 0,67 | -0,11 | 0,78 | 0,76 | 0,95 | 1,00 | 0,97 | 0,92 | 0,99 | 0,93 | 0,52 | -0,19 | 0,70 | 0,76 | 0,80 | -0,09 | -- | 0,82 | 0,31 | 0,23 | -0,78 | 0,28 | 0,37 | -0,47 | 0,64 | 0,46 | 0,11 | -0,06 | -0,06 | -57,00 | -0,19 | 0,28 | -0,09 | 0,82 | 0,74 | |
| **G21** | -0,17 | -0,15 | -0,63 | 0,89 | 0,88 | 0,84 | 0,77 | 0,86 | 0,89 | 0,80 | 0,88 | 0,86 | 0,75 | 0,76 | -0,07 | 0,80 | 0,84 | 0,96 | 0,97 | 1,00 | 0,93 | 0,95 | 0,97 | 0,52 | -0,19 | 0,69 | 0,79 | 0,72 | -0,17 | -- | 0,88 | 0,36 | 0,26 | -0,80 | 0,34 | 0,41 | -0,43 | 0,64 | 0,50 | 0,16 | -0,02 | -0,01 | 0,04 | -0,15 | 0,24 | -0,05 | 0,79 | 0,71 | |
| **G100** | -0,22 | -0,20 | -0,64 | 0,81 | 0,80 | 0,76 | 0,82 | 0,86 | 0,86 | 0,82 | 0,85 | 0,81 | 0,80 | 0,66 | -0,10 | 0,76 | 0,71 | 0,95 | 0,92 | 0,93 | 1,00 | 0,93 | 0,95 | 0,73 | -0,23 | 0,78 | 0,77 | 0,74 | -0,20 | -- | 0,60 | 0,30 | 0,23 | -0,76 | 0,31 | 0,35 | -0,36 | 0,59 | 0,47 | 0,17 | 0,02 | 0,01 | 0,06 | -0,11 | 0,31 | -0,02 | 0,76 | 0,73 | |
| **G100** | -0,16 | -0,14 | -0,59 | 0,91 | 0,91 | 0,87 | 0,83 | 0,95 | 0,92 | 0,84 | 0,95 | 0,87 | 0,83 | 0,66 | -0,10 | 0,78 | 0,77 | 0,92 | 0,99 | 0,95 | 0,93 | 1,00 | 0,96 | 0,60 | -0,20 | 0,72 | 0,79 | 0,80 | -0,08 | -- | 0,81 | 0,32 | 0,24 | -0,77 | 0,29 | 0,36 | -0,44 | 0,63 | 0,45 | 0,10 | -0,08 | -0,08 | -0,02 | -0,21 | 0,27 | -0,12 | 0,86 | 0,77 | |
| **G100** | -0,20 | -0,18 | -0,64 | 0,87 | 0,87 | 0,86 | 0,75 | 0,85 | 0,89 | 0,79 | 0,87 | 0,87 | 0,76 | 0,73 | -0,06 | 0,80 | 0,85 | 0,91 | 0,93 | 0,97 | 0,95 | 0,96 | 1,00 | 0,67 | -0,22 | 0,73 | 0,83 | 0,68 | -0,15 | -- | 0,79 | 0,36 | 0,27 | -0,80 | 0,36 | 0,35 | -0,34 | 0,60 | 0,46 | 0,11 | -0,07 | -0,08 | -0,02 | -0,21 | 0,18 | -0,11 | 0,83 | 0,75 | |
| **Pool 2 gas** | -0,14 | -0,14 | -0,46 | 0,48 | 0,48 | 0,45 | 0,50 | 0,53 | 0,53 | 0,48 | 0,52 | 0,49 | 0,75 | 0,42 | -0,07 | 0,61 | 0,56 | 0,53 | 0,52 | 0,52 | 0,73 | 0,60 | 0,67 | 1,00 | -0,09 | 0,73 | 0,67 | 0,43 | -0,14 | -- | -0,04 | 0,14 | 0,11 | -0,72 | 0,28 | 0,17 | -0,06 | 0,37 | 0,30 | 0,08 | -0,02 | -0,03 | -68,79 | -0,10 | 0,16 | -0,05 | 0,57 | 0,54 | |
| **Pool 3 gas** | 0,08 | 0,16 | 0,06 | -0,18 | -0,18 | -0,23 | -0,16 | -0,17 | -0,17 | -0,15 | -0,15 | -0,13 | -0,30 | -0,22 | 0,01 | -0,28 | -0,20 | -0,20 | -0,19 | -0,19 | -0,23 | -0,20 | -0,22 | -0,09 | 1,00 | 0,40 | 0,30 | -0,17 | -0,12 | -- | -0,46 | -0,13 | -0,20 | 0,24 | -0,11 | -0,04 | 0,06 | -0,13 | -0,10 | -0,02 | -0,02 | 0,02 | -0,01 | 0,02 | 0,02 | 0,04 | -0,11 | -0,12 | |
| **G-total** | -0,09 | -0,03 | -0,57 | 0,61 | 0,61 | 0,53 | 0,63 | 0,67 | 0,65 | 0,63 | 0,67 | 0,63 | 0,65 | 0,49 | -0,09 | 0,59 | 0,57 | 0,72 | 0,70 | 0,69 | 0,78 | 0,72 | 0,73 | 0,73 | 0,40 | 1,00 | 0,91 | 0,58 | -0,24 | -- | 0,26 | 0,10 | 0,00 | -0,64 | 0,25 | 0,29 | -0,26 | 0,46 | 0,36 | 0,14 | 0,01 | 0,03 | 0,05 | -0,08 | 0,31 | 0,01 | 0,65 | 0,61 | |
| **G-total** | -0,13 | -0,09 | -0,58 | 0,73 | 0,76 | 0,68 | 0,59 | 0,71 | 0,74 | 0,63 | 0,75 | 0,78 | 0,59 | 0,58 | -0,04 | 0,62 | 0,75 | 0,72 | 0,76 | 0,79 | 0,77 | 0,79 | 0,83 | 0,67 | 0,30 | 0,91 | 1,00 | 0,54 | -0,19 | -- | 0,40 | 0,23 | 0,11 | -0,75 | 0,33 | 0,31 | -0,25 | 0,51 | 0,39 | 0,10 | -0,08 | -0,06 | -0,03 | -0,19 | 0,17 | -0,09 | 0,75 | 0,67 | |
| Water co | -0,18 | -0,17 | -0,54 | 0,86 | 0,84 | 0,63 | 0,89 | 0,87 | 0,82 | 0,81 | 0,83 | 0,71 | 0,82 | 0,52 | -0,16 | 0,68 | 0,53 | 0,78 | 0,80 | 0,72 | 0,74 | 0,80 | 0,68 | 0,43 | -0,17 | 0,58 | 0,54 | 1,00 | -0,26 | -0,13 | 0,63 | 0,11 | 0,23 | -0,74 | 0,44 | 0,68 | -0,57 | 0,61 | 0,63 | 0,55 | 0,43 | 0,43 | 0,45 | 0,29 | 0,62 | 0,39 | 0,45 | 0,54 | |
| Redox | 0,14 | 0,14 | 0,53 | -0,14 | -0,18 | 0,03 | -0,17 | -0,09 | -0,15 | -0,21 | -0,09 | -0,14 | 0,10 | 0,05 | 0,10 | 0,11 | 0,05 | -0,24 | -0,09 | -0,17 | -0,20 | -0,08 | -0,15 | -0,14 | -0,12 | -0,24 | -0,19 | -0,26 | 1,00 | 0,52 | -0,37 | -0,06 | -0,11 | 0,39 | -0,34 | -0,28 | -0,07 | -0,23 | -0,30 | -0,26 | -0,23 | -0,20 | -0,21 | -0,17 | -0,08 | -0,17 | -0,07 | 0,00 | |
| pH | 0,23 | 0,65 | 0,64 | -0,02 | 0,05 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -0,13 | 0,52 | 1,00 | 0,83 | 0,85 | 0,92 | 0,38 | -- | -- | -- | -0,11 | 0,10 | 0,61 | 0,66 | 0,67 | 0,69 | 0,73 | 0,53 | 0,70 | -0,42 | -0,22 | |
| DOM-254 | 0,51 | 0,42 | -0,61 | 0,85 | 0,85 | 0,80 | 0,47 | 0,72 | 0,77 | 0,71 | 0,66 | 0,60 | -- | -- | -- | -- | -- | 0,80 | 0,82 | 0,88 | 0,60 | 0,81 | 0,79 | -0,04 | -0,46 | 0,26 | 0,40 | 0,63 | -0,37 | 0,83 | 1,00 | 0,67 | 0,90 | -0,62 | 0,63 | 0,77 | -0,31 | 0,59 | 0,41 | 0,04 | -0,20 | -0,20 | -0,15 | -0,44 | -0,17 | -0,28 | 0,90 | 0,42 | |
| DOM-270 | 0,44 | 0,42 | -0,17 | 0,25 | 0,27 | 0,20 | 0,30 | 0,33 | 0,41 | 0,38 | 0,36 | 0,44 | 0,34 | 0,49 | 0,11 | 0,48 | 0,67 | 0,31 | 0,31 | 0,36 | 0,30 | 0,32 | 0,36 | 0,14 | -0,13 | 0,10 | 0,23 | 0,11 | -0,06 | 0,85 | 0,67 | 1,00 | 0,19 | -0,12 | 0,24 | 0,23 | 0,01 | 0,11 | 0,08 | -0,04 | -0,07 | -0,12 | -0,11 | -0,19 | -0,15 | -0,16 | 0,34 | 0,22 | |
| DOM-350 | -0,38 | -0,34 | -0,22 | 0,38 | 0,34 | 0,11 | 0,26 | 0,26 | 0,33 | 0,31 | 0,28 | 0,35 | 0,34 | 0,47 | 0,12 | 0,47 | 0,63 | 0,23 | 0,23 | 0,26 | 0,23 | 0,24 | 0,27 | 0,11 | -0,20 | 0,00 | 0,11 | 0,23 | -0,11 | 0,92 | 0,90 | 0,19 | 1,00 | -0,40 | 0,19 | 0,19 | 0,02 | 0,28 | 0,29 | 0,16 | 0,07 | 0,05 | 0,12 | -0,04 | 0,02 | 0,03 | 0,11 | 0,18 | |
| Fractiona | 0,10 | 0,11 | 0,66 | -0,82 | -0,84 | -0,63 | -0,70 | -0,75 | -0,79 | -0,72 | -0,77 | -0,77 | -0,67 | -0,62 | -0,10 | -0,71 | -0,70 | -0,76 | -0,78 | -0,80 | -0,76 | -0,77 | -0,80 | -0,72 | 0,24 | -0,64 | -0,75 | -0,74 | 0,39 | 0,38 | -0,62 | -0,12 | -0,40 | 1,00 | -0,67 | -0,60 | 0,51 | -0,69 | -0,72 | -0,37 | -0,15 | -0,16 | -0,19 | 0,00 | -0,24 | -0,09 | -0,57 | -0,53 | |
| Silt | -0,08 | -0,09 | -0,47 | 0,48 | 0,50 | 0,23 | 0,33 | 0,31 | 0,40 | 0,37 | 0,33 | 0,40 | 0,43 | 0,36 | -0,04 | 0,41 | 0,43 | 0,30 | 0,28 | 0,34 | 0,31 | 0,29 | 0,36 | 0,28 | -0,11 | 0,25 | 0,33 | 0,44 | -0,34 | -- | 0,63 | 0,24 | 0,19 | -0,67 | 1,00 | 0,66 | 0,25 | 0,39 | 0,62 | 0,61 | 0,48 | 0,50 | 0,51 | 0,39 | 0,35 | 0,49 | 0,30 | 0,28 | |
| Silt-fine | 0,01 | 0,05 | -0,60 | 0,62 | 0,64 | 0,18 | 0,48 | 0,44 | 0,47 | 0,42 | 0,40 | 0,38 | 0,30 | 0,16 | 0,03 | 0,26 | 0,17 | 0,42 | 0,37 | 0,41 | 0,35 | 0,36 | 0,35 | 0,17 | -0,04 | 0,29 | 0,31 | 0,68 | -0,28 | -- | 0,77 | 0,23 | 0,19 | -0,60 | 0,66 | 1,00 | -0,43 | 0,42 | 0,72 | 0,78 | 0,68 | 0,70 | 0,70 | 0,56 | 0,62 | 0,67 | 0,22 | 0,22 | |
| Silt-coars | -0,27 | -0,31 | 0,44 | -0,53 | -0,52 | -0,40 | -0,44 | -0,47 | -0,41 | -0,32 | -0,41 | -0,28 | -0,35 | -0,23 | -0,08 | -0,34 | -0,20 | -0,45 | -0,47 | -0,43 | -0,36 | -0,44 | -0,34 | -0,06 | 0,06 | -0,26 | -0,25 | -0,57 | -0,07 | -- | -0,31 | 0,01 | 0,02 | 0,51 | 0,25 | -0,43 | 1,00 | -0,32 | -0,36 | -0,31 | -0,25 | -0,25 | -0,24 | -0,14 | -0,45 | -0,19 | -0,35 | -0,28 | |
| AT3h | -0,14 | -0,16 | -0,48 | 0,69 | 0,68 | 0,52 | 0,54 | 0,61 | 0,60 | 0,57 | 0,63 | 0,60 | 0,65 | 0,57 | -0,21 | 0,60 | 0,60 | 0,63 | 0,64 | 0,64 | 0,59 | 0,63 | 0,60 | 0,37 | -0,13 | 0,46 | 0,51 | 0,61 | -0,23 | -0,11 | 0,59 | 0,11 | 0,28 | -0,69 | 0,39 | 0,42 | -0,32 | 1,00 | 0,57 | 0,29 | 0,17 | 0,16 | 0,18 | 0,04 | 0,24 | 0,13 | 0,48 | 0,45 | |
| S | -0,06 | -0,07 | -0,54 | 0,66 | 0,68 | 0,34 | 0,44 | 0,46 | 0,48 | 0,47 | 0,47 | 0,47 | 0,43 | 0,41 | -84,61 | 0,45 | 0,47 | 0,52 | 0,46 | 0,50 | 0,47 | 0,45 | 0,46 | 0,30 | -0,10 | 0,36 | 0,39 | 0,63 | -0,30 | 0,10 | 0,41 | 0,08 | 0,29 | -0,72 | 0,62 | 0,72 | -0,36 | 0,57 | 1,00 | 0,68 | 0,57 | 0,54 | 0,59 | 0,39 | 0,46 | 0,47 | 0,36 | 0,35 | |
| Fe | -0,29 | -0,30 | -0,30 | 0,38 | 0,36 | -0,04 | 0,27 | 0,18 | 0,21 | 0,23 | 0,16 | 0,17 | 0,19 | 0,23 | -0,05 | 0,21 | 0,18 | 0,23 | 0,11 | 0,16 | 0,17 | 0,10 | 0,11 | 0,08 | -0,02 | 0,14 | 0,10 | 0,55 | -0,26 | 0,61 | 0,04 | -0,04 | 0,16 | -0,37 | 0,61 | 0,78 | -0,31 | 0,29 | 0,68 | 1,00 | 0,96 | 0,97 | 0,95 | 0,88 | 0,78 | 0,94 | -0,17 | 0,03 | |
| Li | -0,26 | -0,28 | -0,18 | 0,20 | 0,17 | -0,23 | 0,13 | 0,01 | 0,03 | 0,09 | -0,01 | -0,02 | 0,03 | 0,07 | -0,03 | 0,05 | -0,04 | 0,08 | -0,06 | -0,02 | 0,02 | -0,08 | -0,07 | -0,02 | -0,02 | 0,01 | -0,08 | 0,43 | -0,23 | 0,66 | -0,20 | -0,07 | 0,07 | -0,15 | 0,48 | 0,68 | -0,25 | 0,17 | 0,57 | 0,96 | 1,00 | 0,99 | 0,95 | 0,93 | 0,77 | 0,97 | -0,33 | -0,13 | |
| Al | -0,33 | -0,34 | -0,14 | 0,20 | 0,15 | -0,22 | 0,13 | 0,01 | 0,03 | 0,09 | -0,01 | -0,02 | 0,04 | 0,09 | -0,03 | 0,06 | -0,01 | 0,08 | -0,06 | -0,01 | 0,01 | -0,08 | -0,08 | -0,03 | 0,02 | 0,03 | -0,06 | 0,43 | -0,20 | 0,67 | -0,20 | -0,12 | 0,05 | -0,16 | 0,50 | 0,70 | -0,25 | 0,16 | 0,54 | 0,97 | 0,99 | 1,00 | 0,97 | 0,95 | 0,81 | 0,99 | -0,36 | -0,14 | |
| Vn | -0,35 | -0,37 | -0,13 | 0,23 | 0,18 | -0,16 | 0,16 | 0,05 | 0,07 | 0,12 | 0,03 | 0,03 | 0,04 | 0,07 | 0,04 | 0,07 | 0,02 | 0,13 | -57,00 | 0,04 | 0,06 | -0,02 | -0,02 | -68,79 | -0,01 | 0,05 | -0,03 | 0,45 | -0,21 | 0,69 | -0,15 | -0,11 | 0,12 | -0,19 | 0,51 | 0,70 | -0,24 | 0,18 | 0,59 | 0,95 | 0,95 | 0,97 | 1,00 | 0,92 | 0,79 | 0,95 | -0,34 | -0,14 | |
| Mg | -0,38 | -0,39 | 0,05 | 0,02 | -0,04 | -0,36 | 0,03 | -0,12 | -0,11 | -0,01 | -0,14 | -0,14 | -0,13 | -0,06 | 0,00 | -0,10 | -0,17 | -0,04 | -0,19 | -0,15 | -0,11 | -0,21 | -0,21 | -0,10 | 0,02 | -0,08 | -0,19 | 0,29 | -0,17 | 0,73 | -0,44 | -0,19 | -0,04 | 0,00 | 0,39 | 0,56 | -0,14 | 0,04 | 0,39 | 0,88 | 0,93 | 0,95 | 0,92 | 1,00 | 0,76 | 0,96 | -0,52 | -0,29 | |
| Na | -0,51 | -0,52 | -0,12 | 0,35 | 0,27 | 0,09 | 0,46 | 0,36 | 0,31 | 0,41 | 0,34 | 0,25 | 0,28 | 0,22 | -0,12 | 0,24 | 0,10 | 0,35 | 0,28 | 0,24 | 0,31 | 0,27 | 0,18 | 0,16 | 0,02 | 0,31 | 0,17 | 0,62 | -0,08 | 0,53 | -0,17 | -0,15 | 0,02 | -0,24 | 0,35 | 0,62 | -0,45 | 0,24 | 0,46 | 0,78 | 0,77 | 0,81 | 0,79 | 0,76 | 1,00 | 0,82 | -0,20 | 0,02 | |
| K | -0,42 | -0,43 | -0,05 | 0,14 | 0,08 | -0,27 | 0,12 | -0,03 | 4,05 | 0,08 | -0,04 | -0,03 | -0,01 | 0,04 | -0,03 | 0,01 | -0,07 | 0,05 | -0,09 | -0,05 | -0,02 | -0,12 | -0,11 | -0,05 | 0,04 | 0,01 | -0,09 | 0,39 | -0,17 | 0,70 | -0,28 | -0,16 | 0,03 | -0,09 | 0,49 | 0,67 | -0,19 | 0,13 | 0,47 | 0,94 | 0,97 | 0,99 | 0,95 | 0,96 | 0,82 | 1,00 | -0,43 | -0,19 | |
| TOC-n-20 | 0,36 | 0,37 | -0,65 | 0,69 | 0,74 | 0,86 | 0,64 | 0,80 | 0,78 | 0,69 | 0,82 | 0,77 | 0,72 | 0,50 | -0,05 | 0,65 | 0,70 | 0,72 | 0,82 | 0,79 | 0,76 | 0,86 | 0,83 | 0,57 | -0,11 | 0,65 | 0,75 | 0,45 | -0,07 | -0,42 | 0,90 | 0,34 | 0,11 | -0,57 | 0,30 | 0,22 | -0,35 | 0,48 | 0,36 | -0,17 | -0,33 | -0,36 | -0,34 | -0,52 | -0,20 | -0,43 | 1,00 | 0,78 | |
| LOI-n-20µ | 0,09 | 0,11 | -0,63 | 0,67 | 0,71 | 0,70 | 0,68 | 0,76 | 0,76 | 0,68 | 0,76 | 0,72 | 0,83 | 0,69 | -0,12 | 0,79 | 0,81 | 0,68 | 0,74 | 0,71 | 0,73 | 0,77 | 0,75 | 0,54 | -0,12 | 0,61 | 0,67 | 0,54 | 0,00 | -0,22 | 0,42 | 0,22 | 0,18 | -0,53 | 0,28 | 0,22 | -0,28 | 0,45 | 0,35 | 0,03 | -0,13 | -0,14 | -0,14 | -0,29 | 0,02 | -0,19 | 0,78 | 1,00 | |
| As-20µm | 0,32 | 0,29 | -0,44 | -0,03 | 0,03 | 0,02 | 0,06 | 0,06 | 0,04 | -0,04 | -0,02 | -0,08 | 0,13 | -0,05 | 0,18 | 0,09 | 0,04 | -0,02 | -0,01 | -0,03 | 0,04 | 0,02 | 0,01 | 0,14 | -0,14 | -0,02 | -0,06 | -0,08 | -0,01 | -0,34 | 0,24 | 0,02 | 0,07 | 0,13 | 0,12 | 0,13 | -0,18 | 0,01 | 0,03 | -0,17 | -0,18 | -0,20 | -0,21 | -0,33 | -0,23 | -0,25 | 0,40 | 0,28 | |
| Pb-20µm | 0,33 | 0,33 | -0,51 | 0,02 | 0,13 | 0,08 | 0,34 | 0,26 | 0,34 | 0,32 | 0,24 | 0,29 | 0,42 | 0,49 | -0,14 | 0,46 | 0,35 | 0,28 | 0,18 | 0,24 | 0,25 | 0,19 | 0,23 | 0,10 | -0,17 | 0,06 | 0,11 | -0,06 | -0,16 | -0,35 | 0,50 | 0,24 | 0,43 | 0,04 | 0,31 | 0,35 | -0,06 | 0,13 | 0,12 | -0,20 | -0,22 | -0,28 | -0,29 | -0,40 | -0,37 | -0,34 | 0,45 | 0,36 | |
| Cd-20µm | 0,44 | 0,44 | -0,64 | 0,33 | 0,44 | 0,84 | 0,55 | 0,73 | 0,76 | 0,56 | 0,72 | 0,72 | 0,81 | 0,77 | -0,14 | 0,82 | 0,88 | 0,65 | 0,76 | 0,77 | 0,68 | 0,79 | 0,81 | 0,47 | -0,15 | 0,52 | 0,70 | 0,10 | -0,10 | -0,49 | 0,84 | 0,40 | 0,19 | -0,22 | 0,25 | 0,17 | -0,31 | 0,31 | 0,19 | -0,32 | -0,43 | -0,47 | -0,47 | -0,64 | -0,43 | -0,55 | 0,77 | 0,59 | |
| Cr-20µm | 0,37 | 0,32 | -0,21 | -0,39 | -0,32 | -0,56 | -0,41 | -0,51 | -0,55 | -0,52 | -0,58 | -0,62 | -0,40 | -0,37 | 0,10 | -0,39 | -0,52 | -0,48 | -0,56 | -0,57 | -0,52 | -0,58 | -0,60 | -0,36 | 0,06 | -0,40 | -0,55 | -0,31 | -0,06 | -0,22 | -0,59 | -0,14 | -0,19 | 0,36 | -0,12 | -0,07 | 0,07 | -0,20 | -0,12 | -0,09 | -0,01 | -0,04 | -0,07 | -0,10 | -0,20 | -0,08 | 0,00 | -0,06 | |
| Cu-20µm | 0,42 | 0,42 | -0,59 | 0,15 | 0,26 | 0,69 | 0,49 | 0,62 | 0,66 | 0,50 | 0,60 | 0,61 | 0,82 | 0,70 | -0,11 | 0,79 | 0,81 | 0,55 | 0,61 | 0,64 | 0,58 | 0,65 | 0,68 | 0,42 | -0,26 | 0,36 | 0,51 | -0,01 | -0,10 | -0,43 | 0,75 | 0,36 | 0,21 | -0,06 | 0,38 | 0,28 | -0,26 | 0,20 | 0,14 | -0,29 | -0,35 | -0,40 | -0,40 | -0,54 | -0,41 | -0,46 | 0,63 | 0,46 | |
| Ni-20µm | 0,47 | 0,45 | -0,37 | -0,17 | -0,05 | -0,26 | -0,09 | -0,16 | -0,18 | -0,14 | -0,20 | -0,22 | 0,05 | 0,13 | 0,02 | 0,10 | -0,09 | -0,13 | -0,22 | -0,21 | -0,19 | -0,24 | -0,26 | -0,18 | 0,01 | -0,16 | -0,25 | -0,13 | -0,16 | -0,21 | 0,07 | 0,11 | -0,03 | 0,17 | 0,09 | 0,17 | -0,06 | -0,03 | 0,06 | -0,06 | -0,02 | -0,08 | -0,11 | -0,18 | -0,26 | -0,14 | 0,23 | 0,15 | |
| Hg-20µm | 0,33 | 0,31 | -0,47 | -0,02 | 0,06 | 0,66 | 0,47 | 0,59 | 0,65 | 0,45 | 0,57 | 0,58 | 0,86 | 0,78 | -0,13 | 0,85 | 0,87 | 0,51 | 0,58 | 0,61 | 0,54 | 0,61 | 0,66 | 0,40 | -0,16 | 0,40 | 0,56 | -0,11 | -0,07 | -0,37 | 0,64 | 0,30 | 0,13 | 0,09 | 0,39 | 0,33 | -0,28 | 0,10 | 0,02 | -0,28 | -0,30 | -0,33 | -0,34 | -0,45 | -0,35 | -0,38 | 0,45 | 0,32 | |
| Zn-20µm | 0,44 | 0,43 | -0,66 | 0,32 | 0,43 | 0,82 | 0,57 | 0,72 | 0,77 | 0,57 | 0,71 | 0,71 | 0,83 | 0,79 | -0,11 | 0,85 | 0,88 | 0,64 | 0,74 | 0,75 | 0,68 | 0,77 | 0,80 | 0,47 | -0,20 | 0,48 | 0,65 | 0,10 | -0,12 | -0,46 | 0,87 | 0,42 | 0,25 | -0,20 | 0,31 | 0,24 | -0,32 | 0,31 | 0,22 | -0,29 | -0,39 | -0,44 | -0,43 | -0,60 | -0,41 | -0,51 | 0,76 | 0,58 | |
| pH-value- | -0,17 | -0,18 | 0,49 | -0,52 | -0,54 | -0,36 | -0,28 | -0,35 | -0,40 | -0,31 | -0,36 | -0,38 | -0,35 | -0,28 | 0,01 | -0,33 | -0,35 | -0,40 | -0,38 | -0,44 | -0,39 | -0,39 | -0,45 | -0,27 | 0,00 | -0,35 | -0,42 | -0,34 | 0,22 | 0,16 | -0,72 | -0,09 | -0,25 | 0,34 | -0,49 | -0,50 | 0,18 | -0,36 | -0,42 | -0,23 | -0,11 | -0,10 | -0,11 | 0,05 | -0,04 | -0,04 | -0,52 | -0,40 | |
| Electric c | 0,04 | 0,03 | 0,14 | -0,05 | -0,05 | 0,01 | -0,12 | -0,06 | -0,07 | -0,11 | -0,06 | -0,06 | -0,18 | -0,16 | 0,20 | -0,12 | -0,08 | -0,07 | -0,04 | -0,04 | -0,10 | -0,05 | -0,05 | -0,08 | 0,15 | -0,01 | 0,00 | -0,11 | -0,02 | 0,31 | 0,76 | 0,03 | 0,00 | 0,17 | -0,25 | -0,17 | -0,06 | -0,03 | -0,13 | -0,14 | -0,15 | -0,14 | -0,13 | -0,12 | -0,10 | -0,14 | 0,03 | -0,07 | |
| Fe-pw | 0,20 | 0,20 | -0,29 | 0,33 | 0,32 | 0,24 | 0,10 | 0,19 | 0,19 | 0,13 | 0,20 | 0,20 | 0,27 | 0,14 | 0,14 | 0,26 | 0,34 | 0,18 | 0,21 | 0,23 | 0,22 | 0,24 | 0,27 | 0,32 | 0,03 | 0,29 | 0,32 | 0,18 | -0,06 | 0,13 | 0,22 | 0,10 | 0,00 | -0,26 | 0,24 | 0,19 | -0,11 | 0,23 | 0,18 | 0,08 | 0,01 | 0,01 | 0,01 | -0,06 | 0,02 | -0,02 | 0,40 | 0,24 | |
| Mn-pw | -0,04 | -0,04 | -0,10 | 0,11 | 0,07 | -0,11 | 0,06 | 0,02 | 0,01 | 0,07 | 0,01 | -0,01 | -0,05 | -0,18 | 0,25 | -0,05 | -0,07 | 0,08 | 0,00 | 0,02 | 0,07 | 0,01 | 0,01 | 0,09 | 0,19 | 0,21 | 0,10 | 0,21 | -0,32 | 0,59 | 0,27 | 0,06 | -0,10 | -0,14 | 0,22 | 0,32 | -0,16 | 0,08 | 0,18 | 0,40 | 0,43 | 0,44 | 0,43 | 0,43 | 0,43 | 0,45 | -0,07 | -0,04 | |
| DOC-fpw | 0,10 | 0,11 | -0,18 | 0,34 | 0,34 | 0,46 | 0,39 | 0,41 | 0,51 | 0,54 | 0,50 | 0,60 | 0,19 | 0,31 | 0,02 | 0,28 | 0,46 | 0,48 | 0,46 | 0,53 | 0,49 | 0,47 | 0,55 | 0,29 | -0,08 | 0,34 | 0,44 | 0,20 | -0,16 | 0,30 | 0,68 | 0,89 | 0,25 | -0,18 | 0,23 | 0,21 | -0,05 | 0,19 | 0,13 | 0,02 | -0,02 | -0,05 | -0,03 | -0,09 | -0,03 | -0,07 | 0,34 | 0,30 | |
| TN-fpw | 0,06 | 0,05 | -0,40 | 0,66 | 0,63 | 0,65 | 0,34 | 0,51 | 0,56 | 0,37 | 0,52 | 0,55 | 0,42 | 0,41 | -0,03 | 0,44 | 0,56 | 0,49 | 0,59 | 0,62 | 0,50 | 0,60 | 0,65 | 0,31 | -0,09 | 0,37 | 0,56 | 0,34 | 0,01 | -0,28 | 0,88 | 0,22 | 0,27 | -0,42 | 0,28 | 0,20 | -0,21 | 0,43 | 0,25 | -0,06 | -0,24 | -0,22 | -0,20 | -0,35 | -0,10 | -0,26 | 0,62 | 0,52 | |
| NO2-fpw | -0,06 | -0,07 | 0,01 | 0,08 | 0,07 | -0,09 | 0,09 | 0,03 | 0,03 | -0,08 | -0,06 | -0,09 | -- | -- | -- | -- | -- | -0,05 | -0,04 | -0,07 | -0,03 | -0,03 | -0,05 | -0,03 | -0,20 | -0,18 | -0,17 | 0,08 | 0,09 | 0,59 | 0,43 | 0,72 | 0,33 | 0,00 | 0,02 | 0,00 | 0,07 | 0,02 | 0,03 | 0,09 | 0,06 | 0,05 | 0,07 | 0,04 | 0,01 | 0,04 | -0,04 | 0,01 | |
| NO3-fpw | 0,00 | 0,00 | 0,06 | -0,09 | -0,09 | -0,26 | -0,20 | -0,19 | -0,18 | -0,13 | -0,15 | -0,09 | -0,16 | 0,06 | -0,21 | -0,11 | -0,03 | -0,22 | -0,21 | -0,20 | -0,24 | -0,21 | -0,21 | -0,24 | 0,15 | -0,16 | -0,12 | -0,13 | 0,04 | 0,29 | 0,13 | 0,13 | 0,30 | 0,19 | -0,02 | -0,06 | 0,17 | -0,05 | -0,04 | 0,01 | 0,00 | 9,21 | -0,01 | -0,05 | -0,06 | 0,00 | -0,13 | -0,06 | |
| NH4-fpw | 0,05 | 0,05 | -0,41 | 0,66 | 0,64 | 0,67 | 0,36 | 0,52 | 0,58 | 0,38 | 0,53 | 0,56 | 0,46 | 0,46 | -0,02 | 0,49 | 0,61 | 0,50 | 0,60 | 0,63 | 0,52 | 0,61 | 0,66 | 0,32 | -0,10 | 0,38 | 0,56 | 0,35 | 0,02 | -0,27 | 0,87 | 0,20 | 0,27 | -0,43 | 0,27 | 0,19 | -0,22 | 0,43 | 0,26 | -0,06 | -0,25 | -0,22 | -0,19 | -0,36 | -0,10 | -0,27 | 0,62 | 0,52 | |
| Fe-fpw | -0,15 | -0,14 | -0,11 | 0,18 | 0,17 | 0,16 | 0,19 | 0,20 | 0,24 | 0,29 | 0,26 | 0,31 | 0,14 | 0,01 | -0,03 | 0,07 | 0,18 | 0,23 | 0,21 | 0,25 | 0,23 | 0,22 | 0,25 | 0,11 | -0,12 | 0,10 | 0,16 | 0,12 | -0,12 | 0,28 | 0,55 | 0,50 | 0,48 | -0,20 | 0,15 | 0,24 | -0,11 | 0,14 | 0,12 | 0,10 | 0,07 | 0,05 | 0,07 | 0,05 | 0,06 | 0,06 | 0,11 | 0,12 | |
| Mn-fpw | -0,10 | -0,09 | -0,07 | 0,09 | 0,05 | -0,13 | 0,10 | 0,04 | 0,02 | 0,09 | 0,03 | 19,10 | -0,03 | -0,22 | 0,10 | -0,11 | -0,17 | 0,06 | -0,02 | -0,01 | 0,04 | -0,02 | -0,03 | 0,06 | 0,17 | 0,18 | 0,07 | 0,23 | -0,28 | 0,48 | 0,24 | 0,02 | -0,11 | -0,13 | 0,26 | 0,36 | -0,13 | 0,07 | 0,16 | 0,42 | 0,45 | 0,47 | 0,46 | 0,46 | 0,47 | 0,48 | -0,10 | -0,06 | |
| PO4-fpw | -0,35 | -0,39 | 0,23 | -0,07 | -0,12 | -0,05 | -0,11 | -0,07 | -0,06 | -0,08 | -0,07 | -0,06 | -0,06 | 0,16 | -0,01 | 0,06 | 0,06 | -0,10 | -0,06 | -0,07 | -0,08 | -0,05 | -0,04 | -0,09 | -0,27 | -0,27 | -0,20 | -0,07 | 0,39 | 0,20 | -0,08 | 0,17 | 0,29 | 0,13 | -0,13 | -0,16 | 0,09 | -0,04 | -0,16 | -0,06 | -0,02 | -0,03 | -0,02 | 0,01 | 0,03 | 0,02 | -0,25 | -0,16 | |
| Na-fpw | -0,03 | -0,09 | 0,19 | -0,19 | -0,26 | -0,22 | -0,32 | -0,29 | -0,36 | -0,37 | -0,32 | -0,41 | -0,23 | -0,50 | 0,18 | -0,35 | -0,39 | -0,31 | -0,28 | -0,32 | -0,28 | -0,27 | -0,31 | -0,06 | 0,03 | -0,14 | -0,24 | -0,07 | 0,22 | 0,43 | -0,60 | -0,25 | -0,43 | 0,16 | -0,09 | -0,08 | -0,09 | -0,23 | -0,11 | 0,24 | 0,32 | 0,37 | 0,34 | 0,42 | 0,39 | 0,39 | -0,34 | -0,29 | |
| Cl-fpw | -0,12 | -0,18 | 0,22 | -0,28 | -0,31 | -0,29 | -0,22 | -0,25 | -0,36 | -0,28 | -0,28 | -0,39 | -0,11 | -0,42 | 0,00 | -0,29 | -0,45 | -0,32 | -0,31 | -0,40 | -0,29 | -0,29 | -0,38 | -0,10 | 0,05 | -0,14 | -0,30 | -0,05 | 0,28 | -0,21 | -0,73 | -0,25 | -0,41 | 0,31 | -0,26 | -0,21 | -0,04 | -0,18 | -0,12 | 0,16 | 0,26 | 0,29 | 0,25 | 0,35 | 0,36 | 0,33 | -0,36 | -0,23 | |
| Ca-fpw | 0,28 | 0,28 | 0,01 | -0,08 | -0,06 | -0,07 | -0,20 | -0,22 | -0,17 | -0,17 | -0,21 | -0,16 | -0,20 | -0,26 | 0,15 | -0,21 | -0,18 | -0,20 | -0,22 | -0,17 | -0,14 | -0,19 | -0,11 | 0,05 | -0,21 | -0,22 | -0,20 | -0,14 | -0,12 | 0,50 | 0,26 | 0,13 | -0,02 | 0,05 | 0,16 | 0,03 | 0,09 | -0,18 | 0,02 | 0,08 | 0,06 | 0,07 | 0,07 | 0,10 | -0,10 | 0,06 | 0,03 | -0,10 | |
| Mg-fpw | -0,11 | -0,11 | 0,01 | 0,06 | 0,00 | -0,15 | -0,08 | -0,08 | -0,04 | -0,04 | -0,08 | -0,02 | -0,19 | -0,22 | 0,30 | -0,14 | -0,04 | 0,00 | -0,07 | 0,00 | 0,00 | -0,06 | 0,01 | 0,05 | 0,03 | 0,02 | 0,03 | 0,03 | -0,31 | 0,57 | 0,32 | 0,05 | 0,32 | -0,06 | 0,24 | 0,25 | 0,02 | -0,04 | 0,08 | 0,33 | 0,32 | 0,35 | 0,37 | 0,39 | 0,24 | 0,36 | -0,19 | -0,15 | |
| SO42-fpw | 0,25 | 0,23 | 0,14 | -0,33 | -0,28 | -0,24 | -0,27 | -0,32 | -0,36 | -0,35 | -0,34 | -0,39 | -0,17 | -0,13 | 0,01 | -0,16 | -0,29 | -0,42 | -0,37 | -0,43 | -0,40 | -0,36 | -0,42 | -0,30 | -0,01 | -0,35 | -0,39 | -0,24 | 0,41 | -0,33 | -0,67 | -0,11 | -0,43 | 0,24 | -0,31 | -0,28 | 0,07 | -0,27 | -0,20 | -0,25 | -0,16 | -0,19 | -0,20 | -0,18 | -0,13 | -0,20 | -0,11 | -0,13 | |
| SiO2-fpw | -0,06 | -0,07 | -0,28 | 0,35 | 0,33 | 0,29 | 0,03 | 0,16 | 0,25 | 0,15 | 0,20 | 0,31 | 0,01 | 0,05 | 0,02 | 0,04 | 0,24 | 0,24 | 0,24 | 0,35 | 0,25 | 0,26 | 0,39 | 0,23 | 0,06 | 0,25 | 0,39 | 0,06 | -0,22 | -0,07 | 0,57 | 0,07 | 0,31 | -0,38 | 0,35 | 0,21 | 0,03 | 0,32 | 0,26 | 0,08 | -0,03 | -0,02 | -0,02 | -0,08 | -0,06 | -0,04 | 0,35 | 0,22 | |
| Mn | -0,26 | -0,26 | -0,45 | 0,80 | 0,73 | 0,51 | 0,69 | 0,73 | 0,71 | 0,66 | 0,71 | 0,63 | 0,66 | 0,51 | -0,08 | 0,61 | 0,57 | 0,71 | 0,71 | 0,69 | 0,66 | 0,70 | 0,65 | 0,41 | -0,09 | 0,56 | 0,57 | 0,83 | -0,18 | 0,44 | 0,62 | 0,05 | 0,26 | -0,68 | 0,52 | 0,69 | -0,57 | 0,53 | 0,58 | 0,67 | 0,56 | 0,58 | 0,57 | 0,45 | 0,67 | 0,55 | 0,29 | 0,40 | |
| Cu | 0,30 | 0,29 | -0,81 | 0,68 | 0,77 | 0,65 | 0,63 | 0,70 | 0,76 | 0,60 | 0,68 | 0,68 | 0,71 | 0,67 | -0,08 | 0,73 | 0,77 | 0,67 | 0,68 | 0,73 | 0,66 | 0,70 | 0,73 | 0,45 | -0,15 | 0,50 | 0,62 | 0,49 | -0,24 | -0,27 | 0,76 | 0,30 | 0,29 | -0,58 | 0,64 | 0,71 | -0,48 | 0,55 | 0,67 | 0,24 | 0,08 | 0,04 | 0,03 | -0,18 | 0,01 | -0,07 | 0,74 | 0,63 | |
| Ca | 0,28 | 0,29 | -0,59 | 0,77 | 0,84 | 0,96 | 0,66 | 0,82 | 0,84 | 0,69 | 0,85 | 0,82 | 0,70 | 0,75 | -0,07 | 0,77 | 0,85 | 0,76 | 0,88 | 0,87 | 0,78 | 0,90 | 0,88 | 0,47 | -0,20 | 0,55 | 0,71 | 0,52 | -0,11 | -0,19 | 0,91 | 0,49 | 0,26 | -0,63 | 0,26 | 0,24 | -0,44 | 0,54 | 0,49 | -0,03 | -0,19 | -0,23 | -0,20 | -0,38 | -0,10 | -0,31 | 0,81 | 0,67 | |
| G-total | -0,13 | -0,10 | -0,60 | 0,88 | 0,89 | 0,78 | 0,79 | 0,91 | 0,87 | 0,80 | 0,92 | 0,85 | 0,79 | 0,59 | -0,10 | 0,72 | 0,72 | 0,85 | 0,92 | 0,88 | 0,86 | 0,94 | 0,88 | 0,63 | 0,08 | 0,86 | 0,91 | 0,79 | -0,11 | -- | 0,60 | 0,25 | 0,15 | -0,76 | 0,32 | 0,39 | -0,42 | 0,62 | 0,46 | 0,14 | -0,04 | -0,02 | 0,02 | -0,17 | 0,32 | -0,06 | 0,85 | 0,76 | |
| TOC/TN-r | 0,21 | 0,20 | 0,36 | -0,72 | -0,61 | -0,50 | -0,66 | -0,59 | -0,67 | -0,65 | -0,58 | -0,62 | -0,63 | -0,55 | 0,12 | -0,61 | -0,58 | -0,63 | -0,59 | -0,63 | -0,60 | -0,59 | -0,61 | -0,33 | 0,11 | -0,46 | -0,50 | -0,69 | 0,17 | 0,08 | -0,60 | -0,12 | -0,40 | 0,58 | -0,58 | -0,70 | 0,41 | -0,44 | -0,56 | -0,61 | -0,51 | -0,54 | -0,55 | -0,44 | -0,60 | -0,53 | -0,15 | -0,25 | |
| TOC/S-n | 0,07 | 0,10 | -0,50 | 0,74 | 0,76 | 0,73 | 0,67 | 0,79 | 0,79 | 0,64 | 0,78 | 0,72 | 0,65 | 0,54 | -0,17 | 0,60 | 0,60 | 0,68 | 0,79 | 0,75 | 0,68 | 0,80 | 0,75 | 0,41 | -0,16 | 0,51 | 0,63 | 0,59 | -0,04 | 0,02 | 0,89 | 0,27 | 0,22 | -0,62 | 0,19 | 0,27 | -0,46 | 0,42 | 0,09 | -0,03 | -0,18 | -0,18 | -0,24 | -0,31 | 0,02 | -0,22 | 0,66 | 0,66 | |
| TOC/P-n | -0,27 | -0,25 | -0,15 | 0,48 | 0,44 | 0,42 | 0,53 | 0,57 | 0,54 | 0,52 | 0,57 | 0,50 | 0,34 | 0,26 | -0,16 | 0,28 | 0,24 | 0,51 | 0,55 | 0,50 | 0,48 | 0,54 | 0,47 | 0,23 | -0,09 | 0,38 | 0,40 | 0,54 | -0,03 | 0,47 | 0,69 | 0,06 | 0,12 | -0,52 | 0,09 | 0,23 | -0,39 | 0,30 | -0,01 | 0,21 | 0,16 | 0,18 | 0,06 | 0,15 | 0,38 | 0,19 | 0,13 | 0,27 | |
| Clay | 0,14 | 0,18 | -0,67 | 0,69 | 0,70 | 0,31 | 0,60 | 0,55 | 0,55 | 0,54 | 0,53 | 0,47 | 0,39 | 0,35 | 0,05 | 0,41 | 0,34 | 0,53 | 0,50 | 0,48 | 0,46 | 0,48 | 0,42 | 0,19 | -0,10 | 0,35 | 0,35 | 0,80 | -0,32 | -- | 0,23 | 0,22 | 0,21 | -0,64 | 0,47 | 0,77 | -0,58 | 0,47 | 0,73 | 0,83 | 0,76 | 0,76 | 0,73 | 0,63 | 0,77 | 0,73 | 0,26 | 0,33 | |
| Sand | -0,07 | -0,09 | 0,69 | -0,70 | -0,72 | -0,33 | -0,58 | -0,54 | -0,57 | -0,55 | -0,53 | -0,51 | -0,43 | -0,39 | -0,02 | -0,45 | -0,40 | -0,51 | -0,48 | -0,49 | -0,46 | -0,47 | -0,46 | -0,26 | 0,12 | -0,36 | -0,39 | -0,77 | 0,37 | -- | -0,46 | -0,26 | -0,23 | 0,71 | -0,76 | -0,84 | 0,32 | -0,51 | -0,80 | -0,87 | -0,76 | -0,77 | -0,75 | -0,63 | -0,71 | -0,74 | -0,32 | -0,36 | |
| Fractiona | -0,10 | -0,11 | -0,66 | 0,82 | 0,84 | 0,63 | 0,70 | 0,75 | 0,79 | 0,72 | 0,77 | 0,77 | 0,67 | 0,62 | 0,10 | 0,71 | 0,70 | 0,76 | 0,78 | 0,80 | 0,76 | 0,77 | 0,80 | 0,72 | -0,24 | 0,64 | 0,75 | 0,74 | -0,39 | -0,38 | 0,62 | 0,12 | 0,40 | -1,00 | 0,67 | 0,60 | -0,51 | 0,69 | 0,72 | 0,37 | 0,15 | 0,16 | 0,19 | 0,00 | 0,24 | 0,09 | 0,57 | 0,53 | |
| **Pool 1 gas** | -0,11 | -0,07 | -0,63 | 0,80 | 0,80 | 0,71 | 0,80 | 0,84 | 0,82 | 0,80 | 0,84 | 0,78 | 0,76 | 0,67 | -0,10 | 0,75 | 0,68 | 0,96 | 0,92 | 0,92 | 0,91 | 0,90 | 0,87 | 0,48 | -0,06 | 0,78 | 0,76 | 0,77 | -0,21 | -- | 0,78 | 0,17 | 0,08 | -0,72 | 0,28 | 0,38 | -0,45 | 0,58 | 0,44 | 0,19 | 0,05 | 0,06 | 0,09 | -0,07 | 0,38 | 0,03 | 0,73 | 0,69 | |
| **R-total** | -0,16 | -0,16 | -0,62 | 0,93 | 0,93 | 0,84 | 0,85 | 0,93 | 0,97 | 0,93 | 0,98 | 0,96 | 0,89 | 0,81 | -0,02 | 0,92 | 0,91 | 0,83 | 0,93 | 0,90 | 0,85 | 0,93 | 0,91 | 0,74 | -0,28 | 0,70 | 0,77 | 0,80 | 0,13 | -- | -- | 0,59 | 0,60 | -0,78 | 0,45 | 0,32 | -0,43 | 0,76 | 0,53 | 0,20 | -0,01 | 0,01 | 0,04 | -0,17 | 0,26 | -0,05 | 0,84 | 0,93 | |
| TC-i | 0,02 | 0,06 | -0,65 | 0,97 | 0,98 | 0,87 | 0,81 | 0,90 | 0,93 | 0,81 | 0,90 | 0,88 | 0,83 | 0,76 | -0,02 | 0,85 | 0,88 | 0,82 | 0,90 | 0,89 | 0,80 | 0,92 | 0,89 | 0,48 | -0,18 | 0,61 | 0,75 | 0,85 | -0,11 | -- | 0,82 | 0,35 | 0,26 | -0,85 | 0,48 | 0,58 | -0,50 | 0,65 | 0,59 | 0,30 | 0,09 | 0,10 | 0,15 | -0,08 | 0,35 | 0,05 | 0,84 | 0,74 | |
| P | 0,24 | 0,24 | -0,77 | 0,78 | 0,85 | 0,69 | 0,63 | 0,72 | 0,76 | 0,62 | 0,72 | 0,71 | 0,68 | 0,64 | -0,04 | 0,71 | 0,76 | 0,70 | 0,73 | 0,76 | 0,69 | 0,74 | 0,76 | 0,46 | -0,18 | 0,50 | 0,63 | 0,59 | -0,23 | -0,16 | 0,81 | 0,30 | 0,33 | -0,70 | 0,61 | 0,66 | -0,47 | 0,60 | 0,77 | 0,30 | 0,12 | 0,08 | 0,12 | -0,13 | 0,07 | -0,02 | 0,76 | 0,65 | |

| | As-20µm | Pb-20µm | Cd-20µm | Cr-20µm | Cu-20µm | Ni-20µm | Hg-20µm | Zn-20µm | pH-value-pw | Electric conductivity-pw | Fe-pw | Mn-pw | DOC-fpw | TN-fpw | NO2-fpw | NO3-fpw | NH4-fpw | Fe-fpw | Mn-fpw | PO4-fpw | Na-fpw | Cl-fpw | Ca-fpw | Mg-fpw | SO42-fpw | SiO2-fpw | Mn | Cu | Ca | G-total | TOC/TN-n | TOC/S-n | TOC/P-n | Clay | Sand | Fractionation-ligh | Pool 1 gas | R-total | TC-i | P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HPA | 0,32 | 0,33 | 0,44 | 0,37 | 0,42 | 0,47 | 0,33 | 0,44 | -0,17 | 0,04 | 0,20 | -0,04 | 0,10 | 0,06 | -0,06 | 0,00 | 0,05 | -0,15 | -0,10 | -0,35 | -0,03 | -0,12 | 0,28 | -0,11 | 0,25 | -0,06 | -0,26 | 0,30 | 0,28 | -0,13 | 0,21 | 0,07 | -0,27 | 0,14 | -0,07 | -0,10 | -0,11 | -0,16 | 0,02 | 0,24 |
| IfB | 0,29 | 0,33 | 0,44 | 0,32 | 0,42 | 0,45 | 0,31 | 0,43 | -0,18 | 0,03 | 0,20 | -0,04 | 0,11 | 0,05 | -0,07 | 0,00 | 0,05 | -0,14 | -0,09 | -0,39 | -0,09 | -0,18 | 0,28 | -0,11 | 0,23 | -0,07 | -0,26 | 0,29 | 0,29 | -0,10 | 0,20 | 0,10 | -0,25 | 0,18 | -0,09 | -0,11 | -0,07 | -0,16 | 0,06 | 0,24 |
| River-km | -0,44 | -0,51 | -0,64 | -0,21 | -0,59 | -0,37 | -0,47 | -0,66 | 0,49 | 0,14 | -0,29 | -0,10 | -0,18 | -0,40 | 0,01 | 0,06 | -0,41 | -0,11 | -0,07 | 0,23 | 0,19 | 0,22 | 0,01 | 0,01 | 0,14 | -0,28 | -0,45 | -0,81 | -0,59 | -0,60 | 0,36 | -0,50 | -0,15 | -0,67 | 0,69 | -0,66 | -0,63 | -0,62 | -0,65 | -0,77 |
| TN-n | -0,03 | 0,02 | 0,33 | -0,39 | 0,15 | -0,17 | -0,02 | 0,32 | -0,52 | -0,05 | 0,33 | 0,11 | 0,34 | 0,66 | 0,08 | -0,09 | 0,66 | 0,18 | 0,09 | -0,07 | -0,19 | -0,28 | -0,08 | 0,06 | -0,33 | 0,35 | 0,80 | 0,68 | 0,77 | 0,88 | -0,72 | 0,74 | 0,48 | 0,69 | -0,70 | 0,82 | 0,80 | 0,93 | 0,97 | 0,78 |
| TOC-n | 0,03 | 0,13 | 0,44 | -0,32 | 0,26 | -0,05 | 0,06 | 0,43 | -0,54 | -0,05 | 0,32 | 0,07 | 0,34 | 0,63 | 0,07 | -0,09 | 0,64 | 0,17 | 0,05 | -0,12 | -0,26 | -0,31 | -0,06 | 0,00 | -0,28 | 0,33 | 0,73 | 0,77 | 0,84 | 0,89 | -0,61 | 0,76 | 0,44 | 0,70 | -0,72 | 0,84 | 0,80 | 0,93 | 0,98 | 0,85 |
| TIC-i | 0,02 | 0,08 | 0,84 | -0,56 | 0,69 | -0,26 | 0,66 | 0,82 | -0,36 | 0,01 | 0,24 | -0,11 | 0,46 | 0,65 | -0,09 | -0,26 | 0,67 | 0,16 | -0,13 | -0,05 | -0,22 | -0,29 | -0,07 | -0,15 | -0,24 | 0,29 | 0,51 | 0,65 | 0,96 | 0,78 | -0,50 | 0,73 | 0,42 | 0,31 | -0,33 | 0,63 | 0,71 | 0,84 | 0,87 | 0,69 |
| R21 | 0,06 | 0,34 | 0,55 | -0,41 | 0,49 | -0,09 | 0,47 | 0,57 | -0,28 | -0,12 | 0,10 | 0,06 | 0,39 | 0,34 | 0,09 | -0,20 | 0,36 | 0,19 | 0,10 | -0,11 | -0,32 | -0,22 | -0,20 | -0,08 | -0,27 | 0,03 | 0,69 | 0,63 | 0,66 | 0,79 | -0,66 | 0,67 | 0,53 | 0,60 | -0,58 | 0,70 | 0,80 | 0,85 | 0,81 | 0,63 |
| R21 | 0,06 | 0,26 | 0,73 | -0,51 | 0,62 | -0,16 | 0,59 | 0,72 | -0,35 | -0,06 | 0,19 | 0,02 | 0,41 | 0,51 | 0,03 | -0,19 | 0,52 | 0,20 | 0,04 | -0,07 | -0,29 | -0,25 | -0,22 | -0,08 | -0,32 | 0,16 | 0,73 | 0,70 | 0,82 | 0,91 | -0,59 | 0,79 | 0,57 | 0,55 | -0,54 | 0,75 | 0,84 | 0,93 | 0,90 | 0,72 |
| R21 | 0,04 | 0,34 | 0,76 | -0,55 | 0,66 | -0,18 | 0,65 | 0,77 | -0,40 | -0,07 | 0,19 | 0,01 | 0,51 | 0,56 | 0,03 | -0,18 | 0,58 | 0,24 | 0,02 | -0,06 | -0,36 | -0,36 | -0,17 | -0,04 | -0,36 | 0,25 | 0,71 | 0,76 | 0,84 | 0,87 | -0,67 | 0,79 | 0,54 | 0,55 | -0,57 | 0,79 | 0,82 | 0,97 | 0,93 | 0,76 |
| R100 | -0,04 | 0,32 | 0,56 | -0,52 | 0,50 | -0,14 | 0,45 | 0,57 | -0,31 | -0,11 | 0,13 | 0,07 | 0,54 | 0,37 | -0,08 | -0,13 | 0,38 | 0,29 | 0,09 | -0,08 | -0,37 | -0,28 | -0,17 | -0,04 | -0,35 | 0,15 | 0,66 | 0,60 | 0,69 | 0,80 | -0,65 | 0,64 | 0,52 | 0,54 | -0,55 | 0,72 | 0,80 | 0,93 | 0,81 | 0,62 |
| R100 | -0,02 | 0,24 | 0,72 | -0,58 | 0,60 | -0,20 | 0,57 | 0,71 | -0,36 | -0,06 | 0,20 | 0,01 | 0,50 | 0,52 | -0,06 | -0,15 | 0,53 | 0,26 | 0,03 | -0,07 | -0,32 | -0,28 | -0,21 | -0,08 | -0,34 | 0,20 | 0,71 | 0,68 | 0,85 | 0,92 | -0,58 | 0,78 | 0,57 | 0,53 | -0,53 | 0,77 | 0,84 | 0,98 | 0,90 | 0,72 |
| R100 | -0,08 | 0,29 | 0,72 | -0,62 | 0,61 | -0,22 | 0,58 | 0,71 | -0,38 | -0,06 | 0,20 | -0,01 | 0,60 | 0,55 | -0,09 | -0,09 | 0,56 | 0,31 | 19,10 | -0,06 | -0,41 | -0,39 | -0,16 | -0,02 | -0,39 | 0,31 | 0,63 | 0,68 | 0,82 | 0,85 | -0,62 | 0,72 | 0,50 | 0,47 | -0,51 | 0,77 | 0,78 | 0,96 | 0,88 | 0,71 |
| Pool 1 | 0,13 | 0,42 | 0,81 | -0,40 | 0,82 | 0,05 | 0,86 | 0,83 | -0,35 | -0,18 | 0,27 | -0,05 | 0,19 | 0,42 | -- | -0,16 | 0,46 | 0,14 | -0,03 | -0,06 | -0,23 | -0,11 | -0,20 | -0,19 | -0,17 | 0,01 | 0,66 | 0,71 | 0,70 | 0,79 | -0,63 | 0,65 | 0,34 | 0,39 | -0,43 | 0,67 | 0,76 | 0,89 | 0,83 | 0,68 |
| Pool 2 | -0,05 | 0,49 | 0,77 | -0,37 | 0,70 | 0,13 | 0,78 | 0,79 | -0,28 | -0,16 | 0,14 | -0,18 | 0,31 | 0,41 | -- | 0,06 | 0,46 | 0,01 | -0,22 | 0,16 | -0,50 | -0,42 | -0,26 | -0,22 | -0,13 | 0,05 | 0,51 | 0,67 | 0,75 | 0,59 | -0,55 | 0,54 | 0,26 | 0,35 | -0,39 | 0,62 | 0,67 | 0,81 | 0,76 | 0,64 |
| Pool 3 | 0,18 | -0,14 | -0,14 | 0,10 | -0,11 | 0,02 | -0,13 | -0,11 | 0,01 | 0,20 | 0,14 | 0,25 | 0,02 | -0,03 | -- | -0,21 | -0,02 | -0,03 | 0,10 | -0,01 | 0,18 | 0,00 | 0,15 | 0,30 | 0,01 | 0,02 | -0,08 | -0,08 | -0,07 | -0,10 | 0,12 | -0,17 | -0,16 | 0,05 | -0,02 | 0,10 | -0,10 | -0,02 | -0,02 | -0,04 |
| R-total | 0,09 | 0,46 | 0,82 | -0,39 | 0,79 | 0,10 | 0,85 | 0,85 | -0,33 | -0,12 | 0,26 | -0,05 | 0,28 | 0,44 | -- | -0,11 | 0,49 | 0,07 | -0,11 | 0,06 | -0,35 | -0,29 | -0,21 | -0,14 | -0,16 | 0,04 | 0,61 | 0,73 | 0,77 | 0,72 | -0,61 | 0,60 | 0,28 | 0,41 | -0,45 | 0,71 | 0,75 | 0,92 | 0,85 | 0,71 |
| R-total | 0,04 | 0,35 | 0,88 | -0,52 | 0,81 | -0,09 | 0,87 | 0,88 | -0,35 | -0,08 | 0,34 | -0,07 | 0,46 | 0,56 | -- | -0,03 | 0,61 | 0,18 | -0,17 | 0,06 | -0,39 | -0,45 | -0,18 | -0,04 | -0,29 | 0,24 | 0,57 | 0,77 | 0,85 | 0,72 | -0,58 | 0,60 | 0,24 | 0,34 | -0,40 | 0,70 | 0,68 | 0,91 | 0,88 | 0,76 |
| **G21** | -0,02 | 0,28 | 0,65 | -0,48 | 0,55 | -0,13 | 0,51 | 0,64 | -0,40 | -0,07 | 0,18 | 0,08 | 0,48 | 0,49 | -0,05 | -0,22 | 0,50 | 0,23 | 0,06 | -0,10 | -0,31 | -0,32 | -0,20 | 0,00 | -0,42 | 0,24 | 0,71 | 0,67 | 0,76 | 0,85 | -0,63 | 0,68 | 0,51 | 0,53 | -0,51 | 0,76 | 0,96 | 0,83 | 0,82 | 0,70 |
| **G21** | -0,01 | 0,18 | 0,76 | -0,56 | 0,61 | -0,22 | 0,58 | 0,74 | -0,38 | -0,04 | 0,21 | 0,00 | 0,46 | 0,59 | -0,04 | -0,21 | 0,60 | 0,21 | -0,02 | -0,06 | -0,28 | -0,31 | -0,22 | -0,07 | -0,37 | 0,24 | 0,71 | 0,68 | 0,88 | 0,92 | -0,59 | 0,79 | 0,55 | 0,50 | -0,48 | 0,78 | 0,92 | 0,93 | 0,90 | 0,73 |
| **G21** | -0,03 | 0,24 | 0,77 | -0,57 | 0,64 | -0,21 | 0,61 | 0,75 | -0,44 | -0,04 | 0,23 | 0,02 | 0,53 | 0,62 | -0,07 | -0,20 | 0,63 | 0,25 | -0,01 | -0,07 | -0,32 | -0,40 | -0,17 | 0,00 | -0,43 | 0,35 | 0,69 | 0,73 | 0,87 | 0,88 | -0,63 | 0,75 | 0,50 | 0,48 | -0,49 | 0,80 | 0,92 | 0,90 | 0,89 | 0,76 |
| **G100** | 0,04 | 0,25 | 0,68 | -0,52 | 0,58 | -0,19 | 0,54 | 0,68 | -0,39 | -0,10 | 0,22 | 0,07 | 0,49 | 0,50 | -0,03 | -0,24 | 0,52 | 0,23 | 0,04 | -0,08 | -0,28 | -0,29 | -0,14 | 0,00 | -0,40 | 0,25 | 0,66 | 0,66 | 0,78 | 0,86 | -0,60 | 0,68 | 0,48 | 0,46 | -0,46 | 0,76 | 0,91 | 0,85 | 0,80 | 0,69 |
| **G100** | 0,02 | 0,19 | 0,79 | -0,58 | 0,65 | -0,24 | 0,61 | 0,77 | -0,39 | -0,05 | 0,24 | 0,01 | 0,47 | 0,60 | -0,03 | -0,21 | 0,61 | 0,22 | -0,02 | -0,05 | -0,27 | -0,29 | -0,19 | -0,06 | -0,36 | 0,26 | 0,70 | 0,70 | 0,90 | 0,94 | -0,59 | 0,80 | 0,54 | 0,48 | -0,47 | 0,77 | 0,90 | 0,93 | 0,92 | 0,74 |
| **G100** | 0,01 | 0,23 | 0,81 | -0,60 | 0,68 | -0,26 | 0,66 | 0,80 | -0,45 | -0,05 | 0,27 | 0,01 | 0,55 | 0,65 | -0,05 | -0,21 | 0,66 | 0,25 | -0,03 | -0,04 | -0,31 | -0,38 | -0,11 | 0,01 | -0,42 | 0,39 | 0,65 | 0,73 | 0,88 | 0,88 | -0,61 | 0,75 | 0,47 | 0,42 | -0,46 | 0,80 | 0,87 | 0,91 | 0,89 | 0,76 |
| **Pool 2 gas** | 0,14 | 0,10 | 0,47 | -0,36 | 0,42 | -0,18 | 0,40 | 0,47 | -0,27 | -0,08 | 0,32 | 0,09 | 0,29 | 0,31 | -0,03 | -0,24 | 0,32 | 0,11 | 0,06 | -0,09 | -0,06 | -0,10 | 0,05 | 0,05 | -0,30 | 0,23 | 0,41 | 0,45 | 0,47 | 0,63 | -0,33 | 0,41 | 0,23 | 0,19 | -0,26 | 0,72 | 0,48 | 0,74 | 0,48 | 0,46 |
| **Pool 3 gas** | -0,14 | -0,17 | -0,15 | 0,06 | -0,26 | 0,01 | -0,16 | -0,20 | 0,00 | 0,15 | 0,03 | 0,19 | -0,08 | -0,09 | -0,20 | 0,15 | -0,10 | -0,12 | 0,17 | -0,27 | 0,03 | 0,05 | -0,21 | 0,03 | -0,01 | 0,06 | -0,09 | -0,15 | -0,20 | 0,08 | 0,11 | -0,16 | -0,09 | -0,10 | 0,12 | -0,24 | -0,06 | -0,28 | -0,18 | -0,18 |
| **G-total** | -0,02 | 0,06 | 0,52 | -0,40 | 0,36 | -0,16 | 0,40 | 0,48 | -0,35 | -0,01 | 0,29 | 0,21 | 0,34 | 0,37 | -0,18 | -0,16 | 0,38 | 0,10 | 0,18 | -0,27 | -0,14 | -0,14 | -0,22 | 0,02 | -0,35 | 0,25 | 0,56 | 0,50 | 0,55 | 0,86 | -0,46 | 0,51 | 0,38 | 0,35 | -0,36 | 0,64 | 0,78 | 0,70 | 0,61 | 0,50 |
| **G-total** | -0,06 | 0,11 | 0,70 | -0,55 | 0,51 | -0,25 | 0,56 | 0,65 | -0,42 | 0,00 | 0,32 | 0,10 | 0,44 | 0,56 | -0,17 | -0,12 | 0,56 | 0,16 | 0,07 | -0,20 | -0,24 | -0,30 | -0,20 | 0,03 | -0,39 | 0,39 | 0,57 | 0,62 | 0,71 | 0,91 | -0,50 | 0,63 | 0,40 | 0,35 | -0,39 | 0,75 | 0,76 | 0,77 | 0,75 | 0,63 |
| Water cor | -0,08 | -0,06 | 0,10 | -0,31 | -0,01 | -0,13 | -0,11 | 0,10 | -0,34 | -0,11 | 0,18 | 0,21 | 0,20 | 0,34 | 0,08 | -0,13 | 0,35 | 0,12 | 0,23 | -0,07 | -0,07 | -0,05 | -0,14 | 0,03 | -0,24 | 0,06 | 0,83 | 0,49 | 0,52 | 0,79 | -0,69 | 0,59 | 0,54 | 0,80 | -0,77 | 0,74 | 0,77 | 0,80 | 0,85 | 0,59 |
| Redox | -0,01 | -0,16 | -0,10 | -0,06 | -0,10 | -0,16 | -0,07 | -0,12 | 0,22 | -0,02 | -0,06 | -0,32 | -0,16 | 0,01 | 0,09 | 0,04 | 0,02 | -0,12 | -0,28 | 0,39 | 0,22 | 0,28 | -0,12 | -0,31 | 0,41 | -0,22 | -0,18 | -0,24 | -0,11 | -0,11 | 0,17 | -0,04 | -0,03 | -0,32 | 0,37 | -0,39 | -0,21 | 0,13 | -0,11 | -0,23 |
| pH | -0,34 | -0,35 | -0,49 | -0,22 | -0,43 | -0,21 | -0,37 | -0,46 | 0,16 | 0,31 | 0,13 | 0,59 | 0,30 | -0,28 | 0,59 | 0,29 | -0,27 | 0,28 | 0,48 | 0,20 | 0,43 | -0,21 | 0,50 | 0,57 | -0,33 | -0,07 | 0,44 | -0,27 | -0,19 | -- | 0,08 | 0,02 | 0,47 | -- | -- | -0,38 | -- | -- | -- | -0,16 |
| DOM-254 | 0,24 | 0,50 | 0,84 | -0,59 | 0,75 | 0,07 | 0,64 | 0,87 | -0,72 | 0,76 | 0,22 | 0,27 | 0,68 | 0,88 | 0,43 | 0,13 | 0,87 | 0,55 | 0,24 | -0,08 | -0,60 | -0,73 | 0,26 | 0,32 | -0,67 | 0,57 | 0,62 | 0,76 | 0,91 | 0,60 | -0,60 | 0,89 | 0,69 | 0,23 | -0,46 | 0,62 | 0,78 | -- | 0,82 | 0,81 |
| DOM-270 | 0,02 | 0,24 | 0,40 | -0,14 | 0,36 | 0,11 | 0,30 | 0,42 | -0,09 | 0,03 | 0,10 | 0,06 | 0,89 | 0,22 | 0,72 | 0,13 | 0,20 | 0,50 | 0,02 | 0,17 | -0,25 | -0,25 | 0,13 | 0,05 | -0,11 | 0,07 | 0,05 | 0,30 | 0,49 | 0,25 | -0,12 | 0,27 | 0,06 | 0,22 | -0,26 | 0,12 | 0,17 | 0,59 | 0,35 | 0,30 |
| DOM-350 | 0,07 | 0,43 | 0,19 | -0,19 | 0,21 | -0,03 | 0,13 | 0,25 | -0,25 | 0,00 | 0,00 | -0,10 | 0,25 | 0,27 | 0,33 | 0,30 | 0,27 | 0,48 | -0,11 | 0,29 | -0,43 | -0,41 | -0,02 | 0,32 | -0,43 | 0,31 | 0,26 | 0,29 | 0,26 | 0,15 | -0,40 | 0,22 | 0,12 | 0,21 | -0,23 | 0,40 | 0,08 | 0,60 | 0,26 | 0,33 |
| Fractiona | 0,13 | 0,04 | -0,22 | 0,36 | -0,06 | 0,17 | 0,09 | -0,20 | 0,34 | 0,17 | -0,26 | -0,14 | -0,18 | -0,42 | 0,00 | 0,19 | -0,43 | -0,20 | -0,13 | 0,13 | 0,16 | 0,31 | 0,05 | -0,06 | 0,24 | -0,38 | -0,68 | -0,58 | -0,63 | -0,76 | 0,58 | -0,62 | -0,52 | -0,64 | 0,71 | -1,00 | -0,72 | -0,78 | -0,85 | -0,70 |
| Silt | 0,12 | 0,31 | 0,25 | -0,12 | 0,38 | 0,09 | 0,39 | 0,31 | -0,49 | -0,25 | 0,24 | 0,22 | 0,23 | 0,28 | 0,02 | -0,02 | 0,27 | 0,15 | 0,26 | -0,13 | -0,09 | -0,26 | 0,16 | 0,24 | -0,31 | 0,35 | 0,52 | 0,64 | 0,26 | 0,32 | -0,58 | 0,19 | 0,09 | 0,47 | -0,76 | 0,67 | 0,28 | 0,45 | 0,48 | 0,61 |
| Silt-fine | 0,13 | 0,35 | 0,17 | -0,07 | 0,28 | 0,17 | 0,33 | 0,24 | -0,50 | -0,17 | 0,19 | 0,32 | 0,21 | 0,20 | 0,00 | -0,06 | 0,19 | 0,24 | 0,36 | -0,16 | -0,08 | -0,21 | 0,03 | 0,25 | -0,28 | 0,21 | 0,69 | 0,71 | 0,24 | 0,39 | -0,70 | 0,27 | 0,23 | 0,77 | -0,84 | 0,60 | 0,38 | 0,32 | 0,58 | 0,66 |
| Silt-coars | -0,18 | -0,06 | -0,31 | 0,07 | -0,26 | -0,06 | -0,28 | -0,32 | 0,18 | -0,06 | -0,11 | -0,16 | -0,05 | -0,21 | 0,07 | 0,17 | -0,22 | -0,11 | -0,13 | 0,09 | -0,09 | -0,04 | 0,09 | 0,02 | 0,07 | 0,03 | -0,57 | -0,48 | -0,44 | -0,42 | 0,41 | -0,46 | -0,39 | -0,58 | 0,32 | -0,51 | -0,45 | -0,43 | -0,50 | -0,47 |
| AT3h | 0,01 | 0,13 | 0,31 | -0,20 | 0,20 | -0,03 | 0,10 | 0,31 | -0,36 | -0,03 | 0,23 | 0,08 | 0,19 | 0,43 | 0,02 | -0,05 | 0,43 | 0,14 | 0,07 | -0,04 | -0,23 | -0,18 | -0,18 | -0,04 | -0,27 | 0,32 | 0,53 | 0,55 | 0,54 | 0,62 | -0,44 | 0,42 | 0,30 | 0,47 | -0,51 | 0,69 | 0,58 | 0,76 | 0,65 | 0,60 |
| S | 0,03 | 0,12 | 0,19 | -0,12 | 0,14 | 0,06 | 0,02 | 0,22 | -0,42 | -0,13 | 0,18 | 0,18 | 0,13 | 0,25 | 0,03 | -0,04 | 0,26 | 0,12 | 0,16 | -0,16 | -0,11 | -0,12 | 0,02 | 0,08 | -0,20 | 0,26 | 0,58 | 0,67 | 0,49 | 0,46 | -0,56 | 0,09 | -0,01 | 0,73 | -0,80 | 0,72 | 0,44 | 0,53 | 0,59 | 0,77 |
| Fe | -0,17 | -0,20 | -0,32 | -0,09 | -0,29 | -0,06 | -0,28 | -0,29 | -0,23 | -0,14 | 0,08 | 0,40 | 0,02 | -0,06 | 0,09 | 0,01 | -0,06 | 0,10 | 0,42 | -0,06 | 0,24 | 0,16 | 0,08 | 0,33 | -0,25 | 0,08 | 0,67 | 0,24 | -0,03 | 0,14 | -0,61 | -0,03 | 0,21 | 0,83 | -0,87 | 0,37 | 0,19 | 0,20 | 0,30 | 0,30 |
| Li | -0,18 | -0,22 | -0,43 | -0,01 | -0,35 | -0,02 | -0,30 | -0,39 | -0,11 | -0,15 | 0,01 | 0,43 | -0,02 | -0,24 | 0,06 | 0,00 | -0,25 | 0,07 | 0,45 | -0,02 | 0,32 | 0,26 | 0,06 | 0,32 | -0,16 | -0,03 | 0,56 | 0,08 | -0,19 | -0,04 | -0,51 | -0,18 | 0,16 | 0,76 | -0,76 | 0,15 | 0,05 | -0,01 | 0,09 | 0,12 |
| Al | -0,20 | -0,28 | -0,47 | -0,04 | -0,40 | -0,08 | -0,33 | -0,44 | -0,10 | -0,14 | 0,01 | 0,44 | -0,05 | -0,22 | 0,05 | 9,21 | -0,22 | 0,05 | 0,47 | -0,03 | 0,37 | 0,29 | 0,07 | 0,35 | -0,19 | -0,02 | 0,58 | 0,04 | -0,23 | -0,02 | -0,54 | -0,18 | 0,18 | 0,76 | -0,77 | 0,16 | 0,06 | 0,01 | 0,10 | 0,08 |
| Vn | -0,21 | -0,29 | -0,47 | -0,07 | -0,40 | -0,11 | -0,34 | -0,43 | -0,11 | -0,13 | 0,01 | 0,43 | -0,03 | -0,20 | 0,07 | -0,01 | -0,19 | 0,07 | 0,46 | -0,02 | 0,34 | 0,25 | 0,07 | 0,37 | -0,20 | -0,02 | 0,57 | 0,03 | -0,20 | 0,02 | -0,55 | -0,24 | 0,06 | 0,73 | -0,75 | 0,19 | 0,09 | 0,04 | 0,15 | 0,12 |
| Mg | -0,33 | -0,40 | -0,64 | -0,10 | -0,54 | -0,18 | -0,45 | -0,60 | 0,05 | -0,12 | -0,06 | 0,43 | -0,09 | -0,35 | 0,04 | -0,05 | -0,36 | 0,05 | 0,46 | 0,01 | 0,42 | 0,35 | 0,10 | 0,39 | -0,18 | -0,08 | 0,45 | -0,18 | -0,38 | -0,17 | -0,44 | -0,31 | 0,15 | 0,63 | -0,63 | 0,00 | -0,07 | -0,17 | -0,08 | -0,13 |
| Na | -0,23 | -0,37 | -0,43 | -0,20 | -0,41 | -0,26 | -0,35 | -0,41 | -0,04 | -0,10 | 0,02 | 0,43 | -0,03 | -0,10 | 0,01 | -0,06 | -0,10 | 0,06 | 0,47 | 0,03 | 0,39 | 0,36 | -0,10 | 0,24 | -0,13 | -0,06 | 0,67 | 0,01 | -0,10 | 0,32 | -0,60 | 0,02 | 0,38 | 0,77 | -0,71 | 0,24 | 0,38 | 0,26 | 0,35 | 0,07 |
| K | -0,25 | -0,34 | -0,55 | -0,08 | -0,46 | -0,14 | -0,38 | -0,51 | -0,04 | -0,14 | -0,02 | 0,45 | -0,07 | -0,26 | 0,04 | 0,00 | -0,27 | 0,06 | 0,48 | 0,02 | 0,39 | 0,33 | 0,06 | 0,36 | -0,20 | -0,04 | 0,55 | -0,07 | -0,31 | -0,06 | -0,53 | -0,22 | 0,19 | 0,73 | -0,74 | 0,09 | 0,03 | -0,05 | 0,05 | -0,02 |
| TOC-n-20 | 0,40 | 0,45 | 0,77 | 0,00 | 0,63 | 0,23 | 0,45 | 0,76 | -0,52 | 0,03 | 0,40 | -0,07 | 0,34 | 0,62 | -0,04 | -0,13 | 0,62 | 0,11 | -0,10 | -0,25 | -0,34 | -0,36 | 0,03 | -0,19 | -0,11 | 0,35 | 0,29 | 0,74 | 0,81 | 0,85 | -0,15 | 0,66 | 0,13 | 0,26 | -0,32 | 0,57 | 0,73 | 0,84 | 0,84 | 0,76 |
| LOI-n-20µ | 0,28 | 0,36 | 0,59 | -0,06 | 0,46 | 0,15 | 0,32 | 0,58 | -0,40 | -0,07 | 0,24 | -0,04 | 0,30 | 0,52 | 0,01 | -0,06 | 0,52 | 0,12 | -0,06 | -0,16 | -0,29 | -0,23 | -0,10 | -0,15 | -0,13 | 0,22 | 0,40 | 0,63 | 0,67 | 0,76 | -0,25 | 0,66 | 0,27 | 0,33 | -0,36 | 0,53 | 0,69 | 0,93 | 0,74 | 0,65 |
| As-20µm | 1,00 | 0,85 | 0,71 | 0,84 | 0,85 | 0,77 | 0,90 | 0,75 | -0,23 | 0,02 | 0,05 | -0,12 | -0,11 | 0,04 | -0,01 | 0,00 | 0,04 | -0,07 | -0,12 | -0,19 | -0,05 | -0,02 | 0,05 | -0,16 | 0,17 | 0,03 | -0,15 | 0,44 | 0,05 | 0,01 | 0,28 | 77,46 | -0,34 | 0,11 | -0,13 | -0,13 | -0,04 | 0,12 | 0,10 | 0,32 |
| Pb-20µm | 0,85 | 1,00 | 0,83 | 0,74 | 0,93 | 0,83 | 0,92 | 0,86 | -0,24 | -0,10 | -0,03 | -0,30 | 0,02 | 0,08 | 0,01 | 0,09 | 0,08 | 0,01 | -0,30 | -0,17 | -0,45 | -0,30 | -0,12 | -0,32 | 0,18 | 0,03 | -0,20 | 0,55 | 0,20 | 0,14 | 0,32 | 0,08 | -0,32 | 0,25 | -0,31 | -0,04 | 0,16 | 0,36 | 0,25 | 0,44 |
| Cd-20µm | 0,71 | 0,83 | 1,00 | 0,43 | 0,95 | 0,58 | 0,84 | 0,99 | -0,38 | -0,03 | 0,15 | -0,34 | 0,11 | 0,44 | -0,02 | 0,01 | 0,44 | 86,46 | -0,36 | -0,20 | -0,46 | -0,35 | -0,13 | -0,39 | 0,14 | 0,19 | -0,08 | 0,77 | 0,60 | 0,75 | 0,18 | 0,40 | -0,19 | 0,13 | -0,20 | 0,22 | 0,63 | 0,92 | 0,82 | 0,69 |
| Cr-20µm | 0,84 | 0,74 | 0,43 | 1,00 | 0,65 | 0,86 | 0,77 | 0,48 | 0,00 | -0,01 | -0,12 | -0,09 | -0,21 | -0,30 | -0,05 | 0,06 | -0,30 | -0,14 | -0,10 | -0,17 | 0,09 | 0,15 | 0,02 | -0,12 | 0,30 | -0,17 | -0,34 | 0,14 | -0,29 | -0,55 | 0,45 | -0,32 | -0,44 | -0,01 | 0,06 | -0,36 | -0,45 | -0,55 | -0,52 | 55,32 |
| Cu-20µm | 0,85 | 0,93 | 0,95 | 0,65 | 1,00 | 0,73 | 0,95 | 0,96 | -0,31 | -0,04 | 0,09 | -0,30 | 0,03 | 0,25 | -0,03 | 0,02 | 0,25 | -0,02 | -0,31 | -0,19 | -0,38 | -0,26 | -0,08 | -0,35 | 0,19 | 0,12 | -0,17 | 0,68 | 0,39 | 0,58 | 0,28 | 0,21 | -0,31 | 0,18 | -0,29 | 0,06 | 0,49 | 0,88 | 0,72 | 0,57 |
| Ni-20µm | 0,77 | 0,83 | 0,58 | 0,86 | 0,73 | 1,00 | 0,73 | 0,63 | -0,15 | -0,05 | -0,04 | -0,09 | -0,06 | -0,19 | -0,04 | 0,10 | -0,19 | -0,09 | -0,09 | -0,22 | -0,18 | -0,08 | 0,02 | -0,20 | 0,22 | -0,13 | -0,21 | 0,35 | -0,01 | -0,22 | 0,38 | -0,08 | -0,34 | 0,18 | -0,17 | -0,17 | -0,12 | -0,08 | -0,16 | 0,25 |
| Hg-20µm | 0,90 | 0,92 | 0,84 | 0,77 | 0,95 | 0,73 | 1,00 | 0,86 | -0,20 | -0,05 | -0,01 | -0,27 | -0,04 | 0,11 | -0,07 | 0,04 | 0,11 | -0,04 | -0,27 | -0,16 | -0,25 | -0,13 | -0,13 | -0,33 | 0,23 | 0,05 | -0,23 | 0,50 | 0,14 | 0,59 | 0,36 | 0,05 | -0,34 | 0,18 | -0,30 | -0,09 | 0,49 | 0,93 | 0,73 | 0,37 |
| Zn-20µm | 0,75 | 0,86 | 0,99 | 0,48 | 0,96 | 0,63 | 0,86 | 1,00 | -0,39 | -0,03 | 0,15 | -0,32 | 0,11 | 0,41 | -0,01 | 0,01 | 0,42 | 0,01 | -0,34 | -0,21 | -0,45 | -0,34 | -0,09 | -0,36 | 0,13 | 0,21 | -0,08 | 0,78 | 0,59 | 0,71 | 0,18 | 0,37 | -0,21 | 0,19 | -0,27 | 0,20 | 0,60 | 0,93 | 0,82 | 0,69 |
| pH-value- | -0,23 | -0,24 | -0,38 | 0,00 | -0,31 | -0,15 | -0,20 | -0,39 | 1,00 | -0,13 | -0,54 | -0,29 | -0,23 | -0,56 | 0,09 | 0,09 | -0,55 | -0,08 | -0,25 | 0,33 | 0,17 | 0,36 | -0,30 | -0,29 | 0,30 | -0,51 | -0,35 | -0,55 | -0,45 | -0,41 | 0,28 | -0,38 | -0,06 | -0,34 | 0,46 | -0,34 | -0,38 | -0,41 | -0,50 | -0,57 |
| Electric cc | 0,02 | -0,10 | -0,03 | -0,01 | -0,04 | -0,05 | -0,05 | -0,03 | -0,13 | 1,00 | 0,11 | 0,12 | 0,06 | 0,09 | -0,03 | -0,07 | 0,09 | 0,01 | 0,04 | -0,11 | 0,07 | 22,39 | 0,15 | 0,21 | -0,12 | 0,13 | -0,08 | -0,08 | 0,00 | -0,04 | 0,12 | 0,02 | 0,01 | -0,20 | 0,25 | -0,17 | -0,08 | -0,12 | -0,07 | -0,08 |
| Fe-pw | 0,05 | -0,03 | 0,15 | -0,12 | 0,09 | -0,04 | -0,01 | 0,15 | -0,54 | 0,11 | 1,00 | 0,38 | 0,24 | 0,42 | -0,11 | -0,19 | 0,41 | 0,15 | 0,28 | -0,23 | 0,01 | -0,15 | 0,33 | 0,27 | -0,26 | 0,40 | 0,21 | 0,28 | 0,30 | 0,29 | -0,22 | 0,27 | 0,05 | 0,10 | -0,18 | 0,26 | 0,20 | 0,37 | 0,28 | 0,30 |
| Mn-pw | -0,12 | -0,30 | -0,34 | -0,09 | -0,30 | -0,09 | -0,27 | -0,32 | -0,29 | 0,12 | 0,38 | 1,00 | 0,23 | -0,15 | -0,11 | -0,13 | -0,16 | 0,15 | 0,95 | -0,24 | 0,42 | 0,19 | 0,48 | 0,70 | -0,42 | 0,17 | 0,39 | -0,10 | -0,14 | 0,09 | -0,26 | -0,03 | 0,20 | 0,33 | -0,33 | 0,14 | 0,14 | -29,47 | 0,06 | -0,06 |
| DOC-fpw | -0,11 | 0,02 | 0,11 | -0,21 | 0,03 | -0,06 | -0,04 | 0,11 | -0,23 | 0,06 | 0,24 | 0,23 | 1,00 | 0,29 | 0,33 | -0,01 | 0,27 | 0,37 | 0,19 | 0,00 | -0,20 | -0,28 | 0,22 | 0,24 | -0,25 | 0,23 | 0,14 | 0,16 | 0,39 | 0,40 | -0,18 | 0,34 | 0,21 | 0,16 | -0,22 | 0,18 | 0,41 | 0,33 | 0,42 | 0,22 |
| TN-fpw | 0,04 | 0,08 | 0,44 | -0,30 | 0,25 | -0,19 | 0,11 | 0,41 | -0,56 | 0,09 | 0,42 | -0,15 | 0,29 | 1,00 | 0,05 | -0,07 | 0,99 | 0,12 | -0,21 | -0,01 | -0,32 | -0,44 | -0,07 | -0,01 | -0,24 | 0,58 | 0,32 | 0,50 | 0,63 | 0,55 | -0,35 | 0,60 | 0,20 | 0,11 | -0,20 | 0,42 | 0,46 | 0,54 | 0,65 | 0,56 |
| NO2-fpw | -0,01 | 0,01 | -0,02 | -0,05 | -0,03 | -0,04 | -0,07 | -0,01 | 0,09 | -0,03 | -0,11 | -0,11 | 0,33 | 0,05 | 1,00 | 0,19 | 0,04 | 0,13 | -0,11 | 0,36 | -0,14 | -0,12 | -0,03 | -0,02 | -0,05 | -0,07 | 0,06 | 0,05 | 0,07 | -0,10 | -0,12 | 0,06 | -0,01 | 0,01 | -0,01 | 0,00 | -0,13 | -- | -0,03 | 0,07 |
| NO3-fpw | 0,00 | 0,09 | 0,01 | 0,06 | 0,02 | 0,10 | 0,04 | 0,01 | 0,09 | -0,07 | -0,19 | -0,13 | -0,01 | -0,07 | 0,19 | 1,00 | -0,09 | -0,09 | -0,11 | 0,09 | -0,11 | -0,07 | -0,16 | -0,09 | 0,16 | -0,11 | -0,07 | -0,02 | -0,07 | -0,16 | 0,06 | -0,05 | -0,02 | -0,08 | 0,07 | -0,19 | -0,20 | -0,10 | -0,21 | -0,04 |
| NH4-fpw | 0,04 | 0,08 | 0,44 | -0,30 | 0,25 | -0,19 | 0,11 | 0,42 | -0,55 | 0,09 | 0,41 | -0,16 | 0,27 | 0,99 | 0,04 | -0,09 | 1,00 | 0,10 | -0,23 | -0,01 | -0,31 | -0,44 | -0,08 | -0,01 | -0,22 | 0,56 | 0,32 | 0,51 | 0,63 | 0,56 | -0,35 | 0,60 | 0,20 | 0,11 | -0,20 | 0,43 | 0,47 | 0,58 | 0,67 | 0,56 |
| Fe-fpw | -0,07 | 0,01 | 86,46 | -0,14 | -0,02 | -0,09 | -0,04 | 0,01 | -0,08 | 0,01 | 0,15 | 0,15 | 0,37 | 0,12 | 0,13 | -0,09 | 0,10 | 1,00 | 0,15 | 0,17 | -0,07 | -0,08 | 0,13 | 0,20 | -0,21 | 0,20 | 0,14 | 0,07 | 0,12 | 0,16 | -0,13 | 0,12 | 0,12 | 0,13 | -0,16 | 0,20 | 0,19 | 0,22 | 0,21 | 0,11 |
| Mn-fpw | -0,12 | -0,30 | -0,36 | -0,10 | -0,31 | -0,09 | -0,27 | -0,34 | -0,25 | 0,04 | 0,28 | 0,95 | 0,19 | -0,21 | -0,11 | -0,11 | -0,23 | 0,15 | 1,00 | -0,22 | 0,43 | 0,25 | 0,46 | 0,62 | -0,35 | 0,13 | 0,39 | -0,12 | -0,17 | 0,08 | -0,26 | -0,04 | 0,21 | 0,35 | -0,37 | 0,13 | 0,12 | -0,06 | 0,05 | -0,08 |
| PO4-fpw | -0,19 | -0,17 | -0,20 | -0,17 | -0,19 | -0,22 | -0,16 | -0,21 | 0,33 | -0,11 | -0,23 | -0,24 | 0,00 | -0,01 | 0,36 | 0,09 | -0,01 | 0,17 | -0,22 | 1,00 | 0,03 | 0,14 | -0,26 | -0,11 | 0,09 | -0,04 | -0,04 | -0,24 | -0,15 | -0,16 | -0,03 | -0,06 | 0,06 | -0,17 | 0,18 | -0,13 | -0,16 | 0,03 | -0,09 | -0,21 |
| Na-fpw | -0,05 | -0,45 | -0,46 | 0,09 | -0,38 | -0,18 | -0,25 | -0,45 | 0,17 | 0,07 | 0,01 | 0,42 | -0,20 | -0,32 | -0,14 | -0,11 | -0,31 | -0,07 | 0,43 | 0,03 | 1,00 | 0,80 | 0,31 | 0,41 | 0,06 | -0,11 | 0,11 | -0,34 | -0,38 | -0,23 | -0,06 | -0,28 | 0,06 | 0,04 | 0,01 | -0,16 | -0,21 | -0,29 | -0,25 | -0,35 |
| Cl-fpw | -0,02 | -0,30 | -0,35 | 0,15 | -0,26 | -0,08 | -0,13 | -0,34 | 0,36 | 22,39 | -0,15 | 0,19 | -0,28 | -0,44 | -0,12 | -0,07 | -0,44 | -0,08 | 0,25 | 0,14 | 0,80 | 1,00 | 0,06 | 0,06 | 0,28 | -0,25 | -0,04 | -0,30 | -0,36 | -0,24 | 0,07 | -0,32 | 0,01 | 0,01 | 0,10 | -0,31 | -0,21 | -0,29 | -0,34 | -0,35 |
| Ca-fpw | 0,05 | -0,12 | -0,13 | 0,02 | -0,08 | 0,02 | -0,13 | -0,09 | -0,30 | 0,15 | 0,33 | 0,48 | 0,22 | -0,07 | -0,03 | -0,16 | -0,08 | 0,13 | 0,46 | -0,26 | 0,31 | 0,06 | 1,00 | 0,63 | -0,28 | 0,17 | -0,09 | -0,02 | -0,01 | -0,24 | 0,07 | -0,09 | -0,13 | -0,01 | -0,06 | -0,05 | -0,26 | -0,20 | -0,10 | 0,00 |
| Mg-fpw | -0,16 | -0,32 | -0,39 | -0,12 | -0,35 | -0,20 | -0,33 | -0,36 | -0,29 | 0,21 | 0,27 | 0,70 | 0,24 | -0,01 | -0,02 | -0,09 | -0,01 | 0,20 | 0,62 | -0,11 | 0,41 | 0,06 | 0,63 | 1,00 | -0,59 | 0,34 | 0,26 | -0,18 | -0,19 | -0,05 | -0,24 | -0,06 | 0,11 | 0,21 | -0,25 | 0,06 | -0,02 | -0,07 | 0,00 | -0,11 |
| SO42-fpw | 0,17 | 0,18 | 0,14 | 0,30 | 0,19 | 0,22 | 0,23 | 0,13 | 0,30 | -0,12 | -0,26 | -0,42 | -0,25 | -0,24 | -0,05 | 0,16 | -0,22 | -0,21 | -0,35 | 0,09 | 0,06 | 0,28 | -0,28 | -0,59 | 1,00 | -0,43 | -0,40 | -0,06 | -0,09 | -0,36 | 0,38 | -0,24 | -0,29 | -0,30 | 0,35 | -0,24 | -0,35 | -0,29 | -0,37 | -0,13 |
| SiO2-fpw | 0,03 | 0,03 | 0,19 | -0,17 | 0,12 | -0,13 | 0,05 | 0,21 | -0,51 | 0,13 | 0,40 | 0,17 | 0,23 | 0,58 | -0,07 | -0,11 | 0,56 | 0,20 | 0,13 | -0,04 | -0,11 | -0,25 | 0,17 | 0,34 | -0,43 | 1,00 | 0,20 | 0,30 | 0,29 | 0,25 | -0,26 | 0,22 | 0,04 | 0,08 | -0,20 | 0,38 | 0,19 | 0,17 | 0,33 | 0,33 |
| Mn | -0,15 | -0,20 | -0,08 | -0,34 | -0,17 | -0,21 | -0,23 | -0,08 | -0,35 | -0,08 | 0,21 | 0,39 | 0,14 | 0,32 | 0,06 | -0,07 | 0,32 | 0,14 | 0,39 | -0,04 | 0,11 | -0,04 | -0,09 | 0,26 | -0,40 | 0,20 | 1,00 | 0,36 | 0,32 | 0,72 | -0,73 | 0,52 | 0,57 | 0,80 | -0,81 | 0,68 | 0,70 | 0,75 | 0,78 | 0,46 |
| Cu | 0,44 | 0,55 | 0,77 | 0,14 | 0,68 | 0,35 | 0,50 | 0,78 | -0,55 | -0,08 | 0,28 | -0,10 | 0,16 | 0,50 | 0,05 | -0,02 | 0,51 | 0,07 | -0,12 | -0,24 | -0,34 | -0,30 | -0,02 | -0,18 | -0,06 | 0,30 | 0,36 | 1,00 | 0,78 | 0,69 | -0,28 | 0,48 | -0,01 | 0,69 | -0,78 | 0,58 | 0,62 | 0,83 | 0,87 | 0,96 |
| Ca | 0,05 | 0,20 | 0,60 | -0,29 | 0,39 | -0,01 | 0,14 | 0,59 | -0,45 | 0,00 | 0,30 | -0,14 | 0,39 | 0,63 | 0,07 | -0,07 | 0,63 | 0,12 | -0,17 | -0,15 | -0,38 | -0,36 | -0,01 | -0,19 | -0,09 | 0,29 | 0,32 | 0,78 | 1,00 | 0,82 | -0,30 | 0,68 | 0,21 | 0,36 | -0,37 | 0,63 | 0,73 | 0,88 | 0,90 | 0,81 |
| G-total | 0,01 | 0,14 | 0,75 | -0,55 | 0,58 | -0,22 | 0,59 | 0,71 | -0,41 | -0,04 | 0,29 | 0,09 | 0,40 | 0,55 | -0,10 | -0,16 | 0,56 | 0,16 | 0,08 | -0,16 | -0,23 | -0,24 | -0,24 | -0,05 | -0,36 | 0,25 | 0,72 | 0,69 | 0,82 | 1,00 | -0,58 | 0,76 | 0,53 | 0,49 | -0,49 | 0,76 | 0,88 | 0,90 | 0,88 | 0,72 |
| TOC/TN-r | 0,28 | 0,32 | 0,18 | 0,45 | 0,28 | 0,38 | 0,36 | 0,18 | 0,28 | 0,12 | -0,22 | -0,26 | -0,18 | -0,35 | -0,12 | 0,06 | -0,35 | -0,13 | -0,26 | -0,03 | -0,06 | 0,07 | 0,07 | -0,24 | 0,38 | -0,26 | -0,73 | -0,28 | -0,30 | -0,58 | 1,00 | -0,28 | -0,35 | -0,78 | 0,81 | -0,58 | -0,60 | -0,66 | -0,72 | -0,37 |
| TOC/S-n | 77,46 | 0,08 | 0,40 | -0,32 | 0,21 | -0,08 | 0,05 | 0,37 | -0,38 | 0,02 | 0,27 | -0,03 | 0,34 | 0,60 | 0,06 | -0,05 | 0,60 | 0,12 | -0,04 | -0,06 | -0,28 | -0,32 | -0,09 | -0,06 | -0,24 | 0,22 | 0,52 | 0,48 | 0,68 | 0,76 | -0,28 | 1,00 | 0,72 | 0,39 | -0,37 | 0,62 | 0,68 | 0,72 | 0,79 | 0,48 |
| TOC/P-n | -0,34 | -0,32 | -0,19 | -0,44 | -0,31 | -0,34 | -0,34 | -0,21 | -0,06 | 0,01 | 0,05 | 0,20 | 0,21 | 0,20 | -0,01 | -0,02 | 0,20 | 0,12 | 0,21 | 0,06 | 0,06 | 0,01 | -0,13 | 0,11 | -0,29 | 0,04 | 0,57 | -0,01 | 0,21 | 0,53 | -0,35 | 0,72 | 1,00 | 0,45 | -0,37 | 0,52 | 0,53 | 0,36 | 0,51 | -0,02 |
| Clay | 0,11 | 0,25 | 0,13 | -0,01 | 0,18 | 0,18 | 0,18 | 0,19 | -0,34 | -0,20 | 0,10 | 0,33 | 0,16 | 0,11 | 0,01 | -0,08 | 0,11 | 0,13 | 0,35 | -0,17 | 0,04 | 0,01 | -0,01 | 0,21 | -0,30 | 0,08 | 0,80 | 0,69 | 0,36 | 0,49 | -0,78 | 0,39 | 0,45 | 1,00 | -0,93 | 0,64 | 0,53 | 0,47 | 0,65 | 0,64 |
| Sand | -0,13 | -0,31 | -0,20 | 0,06 | -0,29 | -0,17 | -0,30 | -0,27 | 0,46 | 0,25 | -0,18 | -0,33 | -0,22 | -0,20 | -0,01 | 0,07 | -0,20 | -0,16 | -0,37 | 0,18 | 0,01 | 0,10 | -0,06 | -0,25 | 0,35 | -0,20 | -0,81 | -0,78 | -0,37 | -0,49 | 0,81 | -0,37 | -0,37 | -0,93 | 1,00 | -0,71 | -0,49 | -0,50 | -0,68 | -0,72 |
| Fractiona | -0,13 | -0,04 | 0,22 | -0,36 | 0,06 | -0,17 | -0,09 | 0,20 | -0,34 | -0,17 | 0,26 | 0,14 | 0,18 | 0,42 | 0,00 | -0,19 | 0,43 | 0,20 | 0,13 | -0,13 | -0,16 | -0,31 | -0,05 | 0,06 | -0,24 | 0,38 | 0,68 | 0,58 | 0,63 | 0,76 | -0,58 | 0,62 | 0,52 | 0,64 | -0,71 | 1,00 | 0,72 | 0,78 | 0,85 | 0,70 |
| **Pool 1 gas** | -0,04 | 0,16 | 0,63 | -0,45 | 0,49 | -0,12 | 0,49 | 0,60 | -0,38 | -0,08 | 0,20 | 0,14 | 0,41 | 0,46 | -0,13 | -0,20 | 0,47 | 0,19 | 0,12 | -0,16 | -0,21 | -0,21 | -0,26 | -0,02 | -0,35 | 0,19 | 0,70 | 0,62 | 0,73 | 0,88 | -0,60 | 0,68 | 0,53 | 0,53 | -0,49 | 0,72 | 1,00 | 0,82 | 0,80 | 0,64 |
| **R-total** | 0,12 | 0,36 | 0,92 | -0,55 | 0,88 | -0,08 | 0,93 | 0,93 | -0,41 | -0,12 | 0,37 | -29,47 | 0,33 | 0,54 | -- | -0,10 | 0,58 | 0,22 | -0,06 | 0,03 | -0,29 | -0,29 | -0,20 | -0,07 | -0,29 | 0,17 | 0,75 | 0,83 | 0,88 | 0,90 | -0,66 | 0,72 | 0,36 | 0,47 | -0,50 | 0,78 | 0,82 | 1,00 | 0,97 | 0,83 |
| TC-i | 0,10 | 0,25 | 0,82 | -0,52 | 0,72 | -0,16 | 0,73 | 0,82 | -0,50 | -0,07 | 0,28 | 0,06 | 0,42 | 0,65 | -0,03 | -0,21 | 0,67 | 0,21 | 0,05 | -0,09 | -0,25 | -0,34 | -0,10 | 0,00 | -0,37 | 0,33 | 0,78 | 0,87 | 0,90 | 0,88 | -0,72 | 0,79 | 0,51 | 0,65 | -0,68 | 0,85 | 0,80 | 0,97 | 1,00 | 0,88 |
| P | 0,32 | 0,44 | 0,69 | 55,32 | 0,57 | 0,25 | 0,37 | 0,69 | -0,57 | -0,08 | 0,30 | -0,06 | 0,22 | 0,56 | 0,07 | -0,04 | 0,56 | 0,11 | -0,08 | -0,21 | -0,35 | -0,35 | 0,00 | -0,11 | -0,13 | 0,33 | 0,46 | 0,96 | 0,81 | 0,72 | -0,37 | 0,48 | -0,02 | 0,64 | -0,72 | 0,70 | 0,64 | 0,83 | 0,88 | 1,00 |

Table 13: Raw Data

| General information | | | | | | NOWAK | | | | | IfB | | Avergaes | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **HPA** | **IfB** | **Location** | **Position** | **Layer** | **River-km** | **TN-n** | **TOC-n** | **TOC/TN-n** | **TOC/P-n** | **TOC/S-n** | **TC-i** | **TIC-i** | **R21** | **R21** | **R21** | **R100** | **R100** | **R100** | **Pool 1** | **Pool 2** | **Pool 3** | **R-total** | **R-total** | **R-total** |
| **No.** | **No.** | **-** | **paper** | **-** | **-** | **%DW** | **%DW** | **-** | **-** | **-** | **%DW** | **%DW** | **mg C/g TOC** | **mg C/g DM** | **mg C/g FM** | **mg C/g TOC** | **mg C/g DM** | **mg C/g FM** | **mg C/g TOC** | **mg C/g DM** | **mg C/g FM** | **mg C/g TOC** | **mg C/g DM** | **mg C/g FM** |
| **13** | 21171 | kh | P8 | ps | 629 | 0.43 | 3.61 | 8.38 | | | 4.93 | 1.21 | 45.78 | 1.65 | 0.46 | 105.46 | 3.81 | 1.06 | | | | | | |
| **41** | 21164 | kb | P5 | ps | 623 | 0.04 | 0.64 | 14.44 | | | 0.45 | 0.27 | 14.66 | 0.09 | 0.07 | 31.32 | 0.20 | 0.15 | | | | | | |
| **82** | 21165 | kb | P5 | ps | 623 | 0.33 | 3.02 | 9.28 | | | 4.04 | | 39.62 | 1.20 | 0.43 | 112.07 | 3.39 | 1.22 | | | | | | |
| **100** | 21175 | sw | P9 | ps | 643 | 0.18 | 2.05 | 11.42 | | | 2.57 | 1.00 | 25.86 | 0.53 | 0.26 | 63.93 | 1.31 | 0.65 | | | | | | |
| **111** | 21176 | sw | P9 | cs | 643 | 0.18 | 2.08 | 11.63 | | | 2.63 | 0.90 | 17.89 | 0.37 | 0.21 | 53.90 | 1.12 | 0.62 | | | | | | |
| **120** | 21172 | kh | P8 | cs | 629 | 0.34 | 3.18 | 9.44 | | | 4.27 | 1.20 | 30.26 | 0.96 | 0.36 | 84.92 | 2.70 | 1.01 | | | | | | |
| **1075** | 21467 | rt | P2 | ps | 619 | 0.57 | 4.50 | 7.89 | 2.66 | 0.86 | 6.14 | 1.08 | 69.68 | 3.14 | 0.68 | 166.11 | 7.47 | 1.63 | | | | | | |
| **1076** | 21468 | rt | P2 | cs | 619 | 0.62 | 4.80 | 7.74 | 2.74 | 0.91 | 6.64 | 1.38 | 66.86 | 3.21 | 0.78 | 192.01 | 9.22 | 2.25 | | | | | | |
| **1079** | 21471 | rv | P1 | ps | 616 | 0.91 | 7.10 | 7.80 | 3.90 | 1.59 | 10.75 | 3.46 | 122.21 | 8.68 | 1.53 | 305.25 | 21.67 | 3.81 | | | | | | |
| **1080** | 21472 | rv | P1 | cs | 616 | 0.67 | 5.50 | 8.21 | 2.56 | 1.34 | 7.65 | 2.05 | 50.92 | 2.80 | 0.78 | 102.82 | 5.66 | 1.57 | | | | | | |
| **1083** | 21475 | sh | P4 | ps | 621 | 0.48 | 4.00 | 8.33 | 2.63 | 0.87 | 5.35 | 1.06 | 79.91 | 3.20 | 0.76 | 175.43 | 7.02 | 1.66 | | | | | | |
| **1084** | 21476 | sh | P4 | cs | 621 | 0.47 | 3.80 | 8.09 | 2.68 | 0.94 | 5.34 | 1.35 | 78.68 | 2.99 | 0.94 | 164.09 | 6.24 | 1.95 | | | | | | |
| **1087** | 21479 | sc | P3 | ps | 620 | 0.56 | 4.50 | 8.04 | 2.80 | 0.93 | 5.96 | 1.19 | 79.42 | 3.57 | 0.77 | 198.08 | 8.91 | 1.93 | | | | | | |
| **1088** | 21480 | sc | P3 | cs | 620 | 0.60 | 4.70 | 7.83 | 2.97 | 0.96 | 6.52 | 1.57 | 81.70 | 3.84 | 0.94 | 184.72 | 8.68 | 2.12 | | | | | | |
| **1092** | 21484 | kb | P5 | ps | 623 | 0.42 | 3.60 | 8.57 | 2.75 | 0.81 | 4.86 | | 58.43 | 2.10 | 0.60 | 146.22 | 5.26 | 1.49 | | | | | | |
| **1093** | 21485 | kb | P5 | cs | 623 | 0.09 | 1.00 | 11.12 | | | 0.98 | | 30.53 | 0.30 | 0.21 | 82.24 | 0.82 | 0.55 | | | | | | |
| **1095** | 21489 | vh | P6 | ps/cs | 624 | 0.49 | 4.10 | 8.37 | 2.68 | 0.84 | 5.48 | 1.15 | 47.54 | 1.95 | 0.53 | 138.89 | 5.69 | 1.56 | | | | | | |
| **1097** | 21487 | vh | P6 | ps | 624 | 0.47 | 3.90 | 8.30 | 2.64 | 0.83 | 5.16 | | 67.10 | 2.62 | 0.61 | 158.78 | 6.19 | 1.44 | | | | | | |
| **1098** | 21488 | vh | P6 | ps/cs | 624 | 0.51 | 4.20 | 8.24 | 3.07 | 0.93 | 5.57 | | 53.20 | 2.23 | 0.57 | 144.35 | 6.06 | 1.55 | | | | | | |
| **1102** | 21494 | pk | P7 | ps | 627 | 0.47 | 3.90 | 8.30 | 2.47 | 0.80 | 5.22 | 1.10 | 67.27 | 2.62 | 0.62 | 150.49 | 5.87 | 1.38 | | | | | | |
| **1103** | 21495 | pk | P7 | ps/cs | 627 | 0.41 | 3.20 | 7.80 | 2.29 | 0.88 | 4.57 | | 56.30 | 1.80 | 0.61 | 159.57 | 5.11 | 1.72 | | | | | | |
| **1105** | 21497 | sw | P9 | ps | 643 | 0.25 | 2.30 | 9.20 | 2.40 | 0.74 | 3.27 | 1.04 | 37.46 | 0.86 | 0.34 | 114.98 | 2.64 | 1.04 | | | | | | |
| **1106** | 21498 | sw | P9 | cs | 643 | 0.23 | 2.10 | 9.13 | 1.57 | 0.37 | 3.15 | 1.04 | 27.08 | 0.57 | 0.27 | 90.75 | 1.91 | 0.91 | | | | | | |
| **1109** | 21501 | kh | P8 | ps | 629 | 0.47 | 3.90 | 8.30 | 2.52 | 0.79 | 5.29 | 1.09 | 62.21 | 2.43 | 0.59 | 156.55 | 6.11 | 1.48 | | | | | | |
| **1110** | 21502 | kh | P8 | cs | 629 | 0.47 | 3.80 | 8.09 | 2.44 | 0.84 | 5.10 | 1.09 | 56.38 | 2.14 | 0.63 | 149.82 | 5.69 | 1.67 | | | | | | |
| **2207** | 21619 | rv | P1 | ps | 616 | 1.00 | 7.60 | 7.60 | 3.58 | 1.67 | 10.63 | 2.59 | 118.41 | 9.00 | 1.51 | 245.26 | 18.64 | 3.13 | | | | | | |
| **2208** | 21620 | rv | P1 | cs | 616 | 0.68 | 5.50 | 8.09 | 2.50 | 1.28 | 8.19 | 1.73 | 64.66 | 3.56 | 0.97 | 106.30 | 5.85 | 1.60 | | | | | | |
| **2210** | 21622 | kb | P5 | ps | 623 | 0.26 | 2.20 | 8.46 | 2.37 | 0.77 | 3.42 | 0.98 | 56.14 | 1.24 | 0.46 | 120.27 | 2.65 | 0.98 | | | | | | |
| **2211** | 21623 | kb | P5 | ps/cs | 623 | 0.35 | 3.00 | 8.57 | 2.54 | 0.81 | 4.05 | 1.02 | 44.56 | 1.34 | 0.48 | 114.63 | 3.44 | 1.22 | | | | | | |
| **2214** | 21626 | sh | P4 | ps | 621 | 0.58 | 4.30 | 7.41 | 2.67 | 0.95 | 5.83 | 1.17 | 83.25 | 3.58 | 0.81 | 106.44 | 4.58 | 1.04 | | | | | | |
| **2215** | 21627 | sh | P4 | cs | 621 | 0.58 | 4.20 | 7.24 | 2.63 | 0.92 | 5.67 | 1.17 | 57.76 | 2.43 | 0.66 | 164.52 | 6.91 | 1.89 | | | | | | |
| **2218** | 21630 | rt | P2 | ps | 619 | 0.58 | 4.40 | 7.59 | 2.67 | 0.93 | 6.00 | | 91.75 | 4.04 | 0.86 | 110.42 | 4.86 | 1.03 | | | | | | |
| **2219** | 21631 | rt | P2 | cs | 619 | 0.68 | 4.50 | 6.62 | 2.71 | 0.90 | 6.26 | 1.39 | 69.72 | 3.14 | 0.80 | 145.21 | 6.53 | 1.67 | | | | | | |
| **2222** | 21634 | vh | P6 | ps | 624 | 0.47 | 3.90 | 8.30 | 2.58 | 0.84 | 5.14 | 1.08 | 57.78 | 2.25 | 0.57 | 148.90 | 5.81 | 1.46 | | | | | | |
| **2223** | 21635 | vh | P6 | ps/cs | 624 | 0.47 | 3.90 | 8.30 | 2.53 | 0.82 | 5.18 | 1.11 | 43.16 | 1.68 | 0.47 | 120.89 | 4.71 | 1.31 | | | | | | |
| **2225** | 21637 | kh | P8 | ps | 629 | 0.45 | 3.80 | 8.44 | 2.52 | 0.83 | 5.07 | 1.17 | 66.78 | 2.54 | 0.54 | 140.28 | 5.33 | 1.14 | | | | | | |
| **2226** | 21638 | kh | P8 | ps/cs | 629 | 0.44 | 3.70 | 8.41 | 2.50 | 0.85 | 5.03 | 1.18 | 42.77 | 1.58 | 0.48 | 125.42 | 4.64 | 1.40 | | | | | | |
| **2229** | 21641 | sc | P3 | ps | 620 | 0.61 | 4.40 | 7.21 | 2.68 | 0.94 | 5.95 | | 86.82 | 3.82 | 0.83 | 198.80 | 8.75 | 1.91 | | | | | | |
| **2230** | 21642 | sc | P3 | ps/cs | 620 | 0.64 | 4.50 | 7.03 | 2.63 | 0.94 | 6.02 | 1.20 | 65.83 | 2.96 | 0.74 | 156.64 | 7.05 | 1.76 | | | | | | |
| **2232** | 21644 | pk | P7 | ps | 627 | 0.47 | 3.60 | 7.66 | 2.40 | 0.79 | 4.94 | 1.17 | 55.74 | 2.01 | 0.51 | 135.79 | 4.89 | 1.24 | | | | | | |
| **2233** | 21645 | pk | P7 | cs | 627 | 0.49 | 3.70 | 7.55 | 2.43 | 0.82 | 4.99 | 1.10 | 48.90 | 1.81 | 0.53 | 99.05 | 3.66 | 1.07 | | | | | | |
| **2236** | 21648 | sw | P9 | ps | 643 | 0.20 | 2.00 | 10.00 | 2.38 | 0.76 | 2.96 | 0.95 | 41.68 | 0.83 | 0.32 | 91.06 | 1.82 | 0.71 | | | | | | |
| **2237** | 21649 | sw | P9 | cs | 643 | 0.19 | 1.80 | 9.47 | 2.22 | 0.72 | 2.81 | 0.98 | 28.75 | 0.52 | 0.26 | 81.70 | 1.47 | 0.74 | | | | | | |
| **3205** | 21810 | kh | P8 | ps | 629 | 0.43 | 3.70 | 8.60 | 2.52 | 0.78 | 5.02 | 1.06 | 64.91 | 2.40 | 0.52 | 135.00 | 5.00 | 1.08 | 93.13 | 94.24 | 21.68 | 209.05 | 7.73 | 1.67 |
| **3207** | 21811 | kh | P8 | cs | 629 | 0.45 | 3.40 | 7.56 | 2.36 | 0.76 | 5.12 | 0.94 | 55.27 | 1.88 | 0.48 | 120.00 | 4.08 | 1.04 | 80.61 | 108.47 | 70.91 | 259.98 | 8.84 | 2.24 |
| **3208** | 21812 | kh | P8 | cs | 629 | 0.45 | 3.70 | 8.22 | 2.47 | 0.79 | 5.04 | 1.16 | 40.88 | 1.51 | 0.45 | 105.00 | 3.89 | 1.16 | 68.24 | 93.44 | 10.61 | 172.29 | 6.37 | 1.90 |
| **3211** | 21815 | sw | P9 | cs | 643 | 0.15 | 1.40 | 9.33 | 2.22 | 0.72 | 2.68 | 0.93 | 43.23 | 0.61 | 0.29 | 105.00 | 1.47 | 0.71 | 71.53 | 73.79 | 15.50 | 160.82 | 2.25 | 1.09 |
| **3212** | 21816 | sw | P9 | cs | 643 | 0.18 | 1.80 | 10.00 | 2.37 | 0.75 | 2.66 | 0.95 | 26.28 | 0.47 | 0.25 | 70.00 | 1.26 | 0.67 | 45.04 | 61.77 | 22.52 | 129.33 | 2.33 | 1.25 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **3214** | 21818 | pk | P7 | ps | 627 | 0.39 | 3.30 | 8.46 | 2.31 | 0.75 | 4.53 | 1.02 | 47.54 | 1.57 | 0.46 | 106.37 | 3.51 | 1.03 | 79.60 | 58.64 | 30.45 | 168.69 | 5.57 | 1.63 |
| **3215** | 21819 | pk | P7 | cs | 627 | 0.38 | 3.40 | 8.95 | 2.56 | 0.83 | 4.52 | 1.14 | 36.59 | 1.24 | 0.44 | 89.11 | 3.03 | 1.08 | 50.70 | 85.97 | 36.55 | 173.22 | 5.89 | 2.10 |
| **3217** | 21821 | rv | P1 | ps | 616 | 1.00 | 7.20 | 7.20 | 3.55 | 1.59 | 9.57 | 1.60 | 131.43 | 9.46 | 1.40 | 251.61 | 18.12 | 2.69 | 192.51 | 109.05 | 20.87 | 322.42 | 23.21 | 3.45 |
| **3218** | 21823 | rv | P1 | cs | 616 | 0.76 | 5.60 | 7.37 | 2.67 | 1.29 | 10.15 | 2.78 | 98.68 | 5.53 | 1.36 | 260.00 | 14.56 | 3.57 | 170.25 | 227.46 | 22.56 | 420.26 | 23.53 | 5.78 |
| **3219** | 21822 | rv | P1 | ps/cs | 616 | 0.99 | 6.80 | 6.87 | 3.27 | 1.44 | 8.74 | 2.44 | 65.95 | 4.48 | 0.83 | 170.00 | 11.56 | 2.14 | 105.87 | 132.40 | 22.18 | 260.45 | 17.71 | 3.28 |
| **3221** | 21825 | sh | P4 | ps/cs | 621 | 0.43 | 3.70 | 8.60 | 2.64 | 0.84 | | | 59.40 | 2.20 | 0.57 | 135.91 | 5.03 | 1.31 | 83.48 | 92.88 | 12.75 | 189.11 | 7.00 | 1.82 |
| **3222** | 21826 | sh | P4 | cs | 621 | 0.45 | 3.70 | 8.22 | 2.52 | 0.85 | | | 43.59 | 1.61 | 0.52 | 124.17 | 4.59 | 1.48 | 64.80 | 102.22 | 12.72 | 179.73 | 6.65 | 2.15 |
| **3223** | 21835 | kb | P5 | cs | 623 | 0.25 | 2.30 | 9.20 | 2.53 | 0.80 | 3.14 | 0.96 | 32.59 | 0.75 | 0.35 | 86.32 | 1.99 | 0.93 | 55.19 | 68.22 | 28.44 | 151.85 | 3.49 | 1.64 |
| **3225** | 21828 | rt | P2 | ps | 619 | 0.49 | 4.10 | 8.37 | 2.59 | 0.83 | | | 66.53 | 2.73 | 0.59 | 143.11 | 5.87 | 1.28 | 93.11 | 89.47 | 4.72 | 187.30 | 7.68 | 1.67 |
| **3226** | 21829 | rt | P2 | ps/cs | 619 | 0.50 | 4.20 | 8.40 | 2.64 | 0.85 | 5.57 | 1.12 | 53.69 | 2.25 | 0.56 | 134.91 | 5.67 | 1.42 | 76.82 | 101.50 | 11.26 | 189.58 | 7.96 | 1.99 |
| **3227** | 21830 | rt | P2 | cs | 619 | 0.54 | 4.30 | 7.96 | 2.69 | 0.89 | 5.82 | 1.26 | 53.29 | 2.29 | 0.64 | 122.41 | 5.26 | 1.46 | 75.72 | 105.78 | 39.84 | 221.33 | 9.52 | 2.64 |
| **3229** | 21832 | kb | P5 | ps | 623 | 0.35 | 3.10 | 8.86 | 3.01 | 0.93 | 4.33 | 1.05 | 54.09 | 1.68 | 0.41 | 119.31 | 3.70 | 0.90 | 72.21 | 95.06 | 24.53 | 191.81 | 5.95 | 1.44 |
| **3230** | 21833 | kb | P5 | ps | 623 | 0.36 | 3.20 | 8.89 | 2.54 | 0.80 | 4.25 | 1.02 | 48.39 | 1.55 | 0.44 | 114.00 | 3.65 | 1.03 | 65.88 | 92.62 | 64.15 | 222.65 | 7.12 | 2.01 |
| **3231** | 21834 | kb | P5 | ps/cs | 623 | 0.32 | 2.80 | 8.75 | 2.55 | 0.79 | 4.03 | 1.01 | 44.17 | 1.24 | 0.41 | 112.70 | 3.16 | 1.05 | 61.92 | 96.16 | 18.86 | 176.95 | 4.95 | 1.65 |
| **3233** | 21837 | vh | P6 | ps | 624 | 0.42 | 3.50 | 8.33 | 2.52 | 0.80 | 4.77 | 1.04 | 63.31 | 2.22 | 0.56 | 138.55 | 4.85 | 1.23 | 87.63 | 93.41 | 16.19 | 197.23 | 6.90 | 1.75 |
| **3234** | 21838 | vh | P6 | ps/cs | 624 | 0.43 | 3.60 | 8.37 | 2.52 | 0.80 | 4.92 | 1.07 | 51.16 | 1.84 | 0.51 | 124.51 | 4.48 | 1.25 | 73.82 | 98.29 | 21.93 | 194.04 | 6.99 | 1.94 |
| **3235** | 21839 | vh | P6 | cs | 624 | 0.42 | 3.50 | 8.33 | 2.48 | 0.81 | 4.74 | 1.04 | 41.31 | 1.45 | 0.45 | 105.89 | 3.71 | 1.17 | 62.43 | 90.09 | 28.44 | 180.97 | 6.33 | 1.99 |
| **3237** | 21841 | sc | P3 | ps | 620 | 0.51 | 4.10 | 8.04 | 2.63 | 0.87 | 5.37 | 0.98 | 71.55 | 2.93 | 0.69 | 136.87 | 5.61 | 1.31 | 90.87 | 79.22 | 18.02 | 188.11 | 7.71 | 1.80 |
| **3238** | 21842 | sc | P3 | ps/cs | 620 | 0.50 | 4.10 | 8.20 | 5.94 | 1.94 | 5.25 | 1.04 | 67.41 | 2.76 | 0.65 | 149.23 | 6.12 | 1.44 | 90.39 | 107.81 | 12.46 | 210.66 | 8.64 | 2.03 |
| **3239** | 21843 | sc | P3 | cs | 620 | 0.53 | 4.10 | 7.74 | 2.59 | 0.86 | 5.43 | 1.05 | 54.42 | 2.23 | 0.61 | 129.40 | 5.31 | 1.45 | 77.79 | 103.14 | 30.90 | 211.83 | 8.68 | 2.37 |
| **4202** | 21965 | sw | P9 | ps | 643 | 0.15 | 1.80 | 12.00 | 2.61 | 0.78 | 4.17 | 0.94 | 29.43 | 0.53 | 0.26 | 65.19 | 1.17 | 0.57 | 39.68 | 43.04 | 48.00 | 130.72 | 2.35 | 1.14 |
| **4204** | 21966 | sw | P9 | cs | 643 | 0.16 | 1.80 | 11.25 | 2.47 | 0.77 | 2.74 | 1.03 | 25.86 | 0.47 | 0.24 | 70.78 | 1.27 | 0.65 | 38.69 | 54.69 | 44.75 | 138.13 | 2.49 | 1.27 |
| **4206** | 21968 | pk | P7 | ps | 627 | 0.27 | 2.30 | 8.52 | 1.98 | 0.66 | 3.99 | 1.13 | 59.98 | 1.38 | 0.44 | 137.38 | 3.16 | 1.01 | 84.51 | 101.53 | 26.84 | 212.88 | 4.90 | 1.56 |
| **4207** | 21969 | pk | P7 | cs | 627 | 0.35 | 3.30 | 9.43 | 2.34 | 0.78 | 4.60 | 1.14 | 35.35 | 1.17 | 0.38 | 96.57 | 3.19 | 1.04 | 52.70 | 71.96 | 30.70 | 155.35 | 5.13 | 1.67 |
| **4211** | 21972 | kh | P8 | ps | 629 | 0.44 | 3.60 | 8.18 | 2.50 | 0.79 | 4.99 | 1.11 | 56.60 | 2.04 | 0.45 | 123.04 | 4.43 | 0.99 | 75.94 | 77.01 | 29.28 | 182.22 | 6.56 | 1.46 |
| **4212** | 21973 | kh | P8 | cs | 629 | 0.42 | 3.40 | 8.10 | 2.30 | 0.80 | 4.63 | 1.19 | 33.95 | 1.15 | 0.40 | 92.83 | 3.16 | 1.10 | 60.24 | 58.35 | 22.12 | 140.71 | 4.78 | 1.67 |
| **4214** | 21981 | rv | P1 | ps | 616 | 0.97 | 6.60 | 6.80 | 3.11 | 1.26 | 9.42 | 2.29 | 106.69 | 7.04 | 1.14 | 226.25 | 14.93 | 2.41 | 132.29 | 119.33 | 15.51 | 267.14 | 17.63 | 2.85 |
| **4215** | 21982 | rv | P1 | cs | 616 | 0.94 | 6.70 | 7.13 | 2.95 | 1.27 | 9.43 | 2.28 | 74.08 | 4.96 | 1.01 | 196.72 | 13.18 | 2.67 | 103.66 | 130.56 | 35.20 | 269.42 | 18.05 | 3.66 |
| **4218** | 21984 | sh | P4 | ps | 621 | 0.45 | 3.60 | 8.00 | 2.55 | 0.84 | 5.07 | 1.22 | 60.06 | 2.16 | 0.58 | 149.46 | 5.38 | 1.45 | 86.17 | 87.55 | 32.38 | 206.09 | 7.42 | 2.00 |
| **4219** | 21985 | sh | P4 | cs | 621 | 0.43 | 3.50 | 8.14 | 2.46 | 0.81 | 4.89 | 1.17 | 46.25 | 1.62 | 0.54 | 111.00 | 3.88 | 1.29 | 64.92 | 75.51 | 31.48 | 171.90 | 6.02 | 1.99 |
| **4223** | 21988 | rt | P2 | ps | 619 | 0.48 | 3.70 | 7.71 | 2.47 | 0.83 | 5.27 | 1.30 | 69.97 | 2.59 | 0.59 | 140.99 | 5.22 | 1.19 | 93.85 | 70.35 | 15.26 | 179.47 | 6.64 | 1.51 |
| **4224** | 21989 | rt | P2 | cs | 619 | 0.56 | 4.10 | 7.32 | 2.53 | 0.89 | 5.88 | 0.80 | 54.52 | 2.24 | 0.63 | 130.20 | 5.34 | 1.50 | 76.72 | 89.81 | 63.70 | 230.24 | 9.44 | 2.66 |
| **4226** | 21991 | sc | P3 | ps | 620 | 0.44 | 3.60 | 8.18 | 2.65 | 0.84 | | 1.18 | 71.28 | 2.57 | 0.61 | 135.68 | 4.88 | 1.17 | 92.13 | 69.99 | 43.24 | 205.36 | 7.39 | 1.76 |
| **4227** | 21992 | sc | P3 | cs | 620 | 0.48 | 3.80 | 7.92 | 2.75 | 0.90 | 6.57 | 1.20 | 50.59 | 1.92 | 0.55 | 115.65 | 4.39 | 1.26 | 69.53 | 80.76 | 54.74 | 205.03 | 7.79 | 2.23 |
| **4230** | 21994 | vh | P6 | ps | 624 | 0.38 | 3.10 | 8.16 | 2.52 | 0.80 | 4.31 | | 60.28 | 1.87 | 0.51 | 122.53 | 3.80 | 1.04 | 79.63 | 63.45 | 13.41 | 156.49 | 4.85 | 1.33 |
| **4231** | 21995 | vh | P6 | cs | 624 | 0.42 | 3.30 | 7.86 | 2.52 | 0.80 | 4.67 | 1.16 | 43.33 | 1.43 | 0.43 | 110.94 | 3.66 | 1.09 | 60.85 | 75.30 | 19.28 | 155.43 | 5.13 | 1.53 |
| **4232** | 21996 | vh | P6 | cs | 624 | 0.43 | 3.50 | 8.14 | 2.57 | 0.83 | 4.72 | 1.21 | 41.14 | 1.44 | 0.45 | 108.47 | 3.80 | 1.17 | 61.12 | 73.47 | 28.00 | 162.59 | 5.69 | 1.76 |
| **4234** | 21998 | kb | P5 | ps | 623 | 0.28 | 2.40 | 8.57 | 2.67 | 0.85 | 3.33 | 1.10 | 49.40 | 1.19 | 0.43 | 103.05 | 2.47 | 0.90 | 68.72 | 53.93 | 25.20 | 147.85 | 3.55 | 1.29 |
| **4235** | 21999 | kb | P5 | cs | 623 | 0.28 | 2.40 | 8.57 | 2.42 | 0.78 | 3.48 | 1.09 | 39.46 | 0.95 | 0.41 | 82.72 | 1.99 | 0.87 | 53.96 | 49.41 | 10.37 | 113.73 | 2.73 | 1.19 |
| **5202** | 22040 | rv | P1 | ps | 616 | 0.78 | 5.70 | 7.31 | 2.92 | 1.11 | 7.99 | 2.26 | 74.44 | 4.24 | 0.83 | 143.26 | 8.17 | 1.61 | | | | | | |
| **5203** | 22041 | rv | P1 | cs | 616 | 1.00 | 6.80 | 6.80 | 2.94 | 1.31 | 9.35 | 2.46 | 63.87 | 4.34 | 0.94 | 144.86 | 9.85 | 2.13 | | | | | | |
| **5206** | 22043 | sh | P4 | ps | 621 | 0.43 | 3.50 | 8.14 | 2.41 | 0.83 | 4.78 | 1.27 | 57.74 | 2.02 | 0.54 | 103.11 | 3.61 | 0.97 | | | | | | |
| **5207** | 22044 | sh | P4 | ps | 621 | 0.43 | 3.50 | 8.14 | 2.38 | 0.81 | 4.88 | 1.30 | 47.21 | 1.65 | 0.47 | 111.97 | 3.92 | 1.12 | | | | | | |
| **5208** | 22045 | sh | P4 | cs | 621 | 0.39 | 3.30 | 8.46 | 2.29 | 0.84 | 4.49 | 1.24 | 30.76 | 1.02 | 0.38 | 87.28 | 2.88 | 1.08 | | | | | | |
| **5211** | 22048 | rt | P2 | ps | 619 | 0.46 | 3.90 | 8.48 | 2.48 | 0.81 | 5.14 | 1.31 | 45.05 | 1.76 | 0.47 | 102.10 | 3.98 | 1.05 | | | | | | |
| **5212** | 22049 | rt | P2 | ps/cs | 619 | 0.48 | 3.90 | 8.13 | 2.48 | 0.81 | 5.27 | 1.29 | 40.50 | 1.58 | 0.46 | 104.08 | 4.06 | 1.19 | | | | | | |
| **5214** | 22052 | sw | P9 | ps | 643 | 0.16 | 1.80 | 11.25 | 2.34 | 0.73 | 2.68 | 0.98 | 23.40 | 0.42 | 0.20 | 55.08 | 0.99 | 0.46 | | | | | | |
| **5215** | 22053 | sw | P9 | cs | 643 | 0.17 | 1.80 | 10.59 | 2.31 | 0.73 | 2.64 | 0.99 | 21.54 | 0.39 | 0.19 | 58.22 | 1.05 | 0.52 | | | | | | |
| **5218** | 22055 | vh | P6 | ps | 624 | 0.36 | 3.10 | 8.61 | 2.35 | 0.74 | 4.35 | 1.14 | 45.25 | 1.40 | 0.41 | 94.70 | 2.94 | 0.86 | | | | | | |
| **5219** | 22056 | vh | P6 | cs | 624 | 0.39 | 3.30 | 8.46 | 2.44 | 0.81 | 4.43 | 1.16 | 32.37 | 1.07 | 0.37 | 107.68 | 3.55 | 1.22 | | | | | | |
| **5222** | 22058 | sc | P3 | ps | 620 | 0.35 | 3.00 | 8.57 | 2.34 | 0.78 | 4.30 | 1.25 | 52.93 | 1.59 | 0.47 | 108.27 | 3.25 | 0.97 | | | | | | |
| **5223** | 22059 | sc | P3 | cs | 620 | 0.44 | | 8.18 | 2.47 | 0.80 | 4.92 | 1.24 | 41.78 | 1.50 | 0.47 | 109.44 | 0.00 | 0.00 | | | | | | |
| **5227** | 22062 | kh | P8 | ps | 629 | 0.42 | 3.60 | 8.57 | 2.32 | 0.74 | 5.03 | 1.23 | 36.85 | 1.33 | 0.37 | 95.14 | 3.42 | 0.95 | | | | | | |
| **5228** | 22063 | kh | P8 | ps/cs | 629 | 0.44 | 3.60 | 8.18 | 2.32 | 0.77 | 4.93 | 1.18 | 40.26 | 1.45 | 0.45 | 95.64 | 3.44 | 1.07 | | | | | | |
| **5230** | 22065 | kb | P5 | cs | 623 | 0.24 | 2.40 | 10.00 | 2.38 | 0.76 | 3.32 | 1.11 | 29.50 | 0.71 | 0.30 | 75.70 | 1.82 | 0.77 | | | | | | |
| **5234** | 22067 | pk | P7 | ps | 627 | 0.33 | 2.90 | 8.79 | 2.21 | 0.76 | 4.07 | 1.10 | 45.18 | 1.31 | 0.37 | 93.01 | 2.70 | 0.76 | | | | | | |
| **5235** | 22068 | pk | P7 | ps | 627 | 0.38 | 3.30 | 8.68 | 2.36 | 0.78 | 4.53 | 1.14 | 44.76 | 1.48 | 0.43 | 103.28 | 3.41 | 1.00 | | | | | | |
| **5236** | 22069 | pk | P7 | ps/cs | 627 | 0.38 | 3.20 | 8.42 | 2.37 | 0.80 | 4.40 | 1.12 | 36.50 | 1.17 | 0.38 | 95.19 | 3.05 | 0.98 | | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **6202** | 22528 | rv | P1 | ps | 616 | 0.71 | 6.00 | 8.45 | 2.60 | 1.41 | | | | | | | | | | | | | | |
| **6203** | 22529 | rv | P1 | cs | 616 | 0.60 | 4.80 | 8.00 | 2.59 | 1.23 | | | | | | | | | | | | | | |
| **6206** | 22530 | rt | P2 | ps | 619 | 0.41 | 4.00 | 9.76 | 2.38 | 0.99 | | | | | | | | | | | | | | |
| **6207** | 22531 | rt | P2 | cs | 619 | 0.41 | 4.00 | 9.76 | 2.44 | 1.01 | | | | | | | | | | | | | | |
| **6211** | 22534 | kh | P8 | ps | 629 | 0.36 | 3.70 | 10.28 | 2.47 | 0.88 | | | | | | | | | | | | | | |
| **6212** | 22535 | kh | P8 | cs | 629 | 0.38 | 3.80 | 10.00 | 2.53 | 0.86 | | | | | | | | | | | | | | |
| **7203** | 22601 | kh | P8 | ps | 629 | 0.37 | 3.50 | 9.46 | 2.27 | 0.81 | | | | | | | | | | | | | | |
| **7204** | 22602 | kh | P8 | ps/cs | 629 | 0.36 | 3.50 | 9.72 | 2.24 | 0.78 | | | | | | | | | | | | | | |
| **7207** | 22605 | sw | P9 | cs | 643 | 0.13 | 1.50 | 11.54 | 2.21 | 0.78 | | | | | | | | | | | | | | |
| **7211** | 22608 | kb | P5 | ps | 623 | 0.38 | 3.40 | 8.95 | 2.62 | 0.92 | | | | | | | | | | | | | | |
| **7215** | 22612 | rt | P2 | ps | 619 | 0.37 | 3.40 | 9.19 | 2.28 | 1.03 | | | | | | | | | | | | | | |
| **7216** | 22613 | rt | P2 | ps/cs | 619 | 0.41 | 3.70 | 9.02 | 2.28 | 0.95 | | | | | | | | | | | | | | |
| **7219** | 22616 | rv | P1 | ps/cs | 616 | 0.62 | 4.80 | 7.74 | 2.44 | 1.14 | | | | | | | | | | | | | | |
| **8203** | 22652 | sw | P9 | ps/cs | 643 | 0.14 | 1.70 | 12.14 | 2.18 | 0.74 | | | | | | | | | | | | | | |
| **8204** | 22657 | kh | P8 | cs | 629 | 0.35 | 3.60 | 10.29 | 2.26 | 0.82 | | | | | | | | | | | | | | |
| **8208** | 22656 | kh | P8 | ps | 629 | | | | | | | | | | | | | | | | | | | |
| **8212** | 22660 | kb | P5 | ps | 623 | 0.36 | 4.10 | 11.39 | 2.85 | 0.88 | | | | | | | | | | | | | | |
| **8215** | 22664 | rt | P2 | ps | 619 | 0.56 | 4.60 | 8.21 | 2.56 | 0.83 | | | | | | | | | | | | | | |
| **8216** | 22665 | rt | P2 | cs | 619 | 0.39 | 3.80 | 9.74 | 2.32 | 0.95 | | | | | | | | | | | | | | |
| **8218** | 22667 | rv | P1 | ps | 616 | 0.86 | 6.20 | 7.21 | 3.05 | 1.38 | | | | | | | | | | | | | | |
| **8219** | 22668 | rv | P1 | ps/cs | 616 | 0.71 | 5.70 | 8.03 | 2.43 | 1.24 | | | | | | | | | | | | | | |
| **8220** | 22777 | WSV | P10 | ps | 640 | | | | | | | | | | | | | | | | | | | |
| **8221** | 22778 | WSV | P11 | ps | 643 | | | | | | | | | | | | | | | | | | | |
| **8222** | 22779 | WSV | P12 | ps | 649 | | | | | | | | | | | | | | | | | | | |
| **8223** | 22780 | WSV | P13 | ps | 652 | | | | | | | | | | | | | | | | | | | |
| **8224** | 22781 | WSV | P17 | ps | 679 | | | | | | | | | | | | | | | | | | | |
| **8225** | 22782 | WSV | P14 | ps | 670 | | | | | | | | | | | | | | | | | | | |
| **8226** | 22783 | WSV | P15 | ps | 670 | | | | | | | | | | | | | | | | | | | |
| **8227** | 22784 | WSV | P16 | ps | 671 | | | | | | | | | | | | | | | | | | | |
| **8250** | 22661 | kb | P5 | cs | 623 | 0.20 | 2.80 | 14.00 | 2.83 | 1.15 | | | | | | | | | | | | | | |
| **8402** | 22639 | de | P-1 | ps | 615 | 0.53 | 4.10 | 7.74 | 2.58 | 1.04 | | | | | | | | | | | | | | |
| **8403** | 22640 | de | P-1 | cs | 615 | 0.45 | 3.60 | 8.00 | 2.14 | 0.80 | | | | | | | | | | | | | | |
| **8406** | 22643 | ok | P-2 | ps | 607 | 0.74 | 6.80 | 9.19 | 2.49 | 1.38 | | | | | | | | | | | | | | |
| **8407** | 22644 | ok | P-2 | ps/cs | 607 | 0.79 | 6.40 | 8.10 | 2.32 | 1.01 | | | | | | | | | | | | | | |
| **8408** | 22645 | ok | P-2 | cs | 607 | 0.69 | 6.30 | 9.13 | 2.16 | 0.86 | | | | | | | | | | | | | | |
| **8410** | 22647 | zs | P-3 | ps | 598 | 0.43 | 4.60 | 10.70 | 1.45 | 0.85 | | | | | | | | | | | | | | |
| **8411** | 22648 | zs | P-3 | cs | 598 | 0.17 | 2.30 | 13.53 | 1.25 | 0.82 | | | | | | | | | | | | | | |
| **9202** | 22786 | rt | P2 | ps | 619 | | | | | | | | | | | | | | | | | | | |
| **9203** | 22787 | rt | P2 | cs | 619 | | | | | | | | | | | | | | | | | | | |
| **9207** | 22811 | kh | P8 | ps | 629 | | | | | | | | | | | | | | | | | | | |
| **9208** | 22812 | kh | P8 | cs | 629 | | | | | | | | | | | | | | | | | | | |
| **9211** | 22815 | sw | P9 | ps | 643 | | | | | | | | | | | | | | | | | | | |
| **9212** | 22816 | sw | P9 | cs | 643 | | | | | | | | | | | | | | | | | | | |
| **9215** | 22819 | kb | P4 | ps | 623 | | | | | | | | | | | | | | | | | | | |
| **9218** | 22821 | rv | P1 | ps | 616 | | | | | | | | | | | | | | | | | | | |
| **9219** | 22822 | rv | P1 | cs | 616 | | | | | | | | | | | | | | | | | | | |
| **10202** | 23040 | rv | P1 | ps | 616 | | | | | | | | | | | | | | | | | | | |
| **10203** | 23041 | rv | P1 | cs | 616 | | | | | | | | | | | | | | | | | | | |
| **10206** | 23043 | rt | P2 | ps | 619 | | | | | | | | | | | | | | | | | | | |
| **10207** | 23044 | rt | P2 | cs | 619 | | | | | | | | | | | | | | | | | | | |
| **10210** | 23047 | kh | P8 | ps | 629 | | | | | | | | | | | | | | | | | | | |
| **10211** | 23048 | kh | P8 | ps-cs | 629 | | | | | | | | | | | | | | | | | | | |

| TU - Averages - 36 ˚C | | | ***TU - Averages - 36 ˚C*** | | | | | | | | | | | | | | | | | | Normalized to 100 % | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **G21** | **G21** | **G21** | ***G100*** | ***G100*** | ***G100*** | **Pool 1 gas** | **Pool 2 gas** | **Pool 3 gas** | **G-total** | **G-total** | **G-total** | **Water content-tu** | **Redox** | **pH** | **DOM-254** | **DOM-270** | **DOM-350** | **NH4** | **Fractionation-light** | **Fractionation-heavy** | **Clay** | **Silt** | **Sand** | **Silt-fine** |
| **mg C/g TOC** | **mg C/g DM** | **mg C/g FM** | ***mg C/g TOC*** | mg C/g DM | mg C/g FM | **mg C/g TOC** | **mg C/g DM** | **mg C/g FM** | **mg C/g TOC** | **mg C/g DM** | **mg C/g FM** | **%DW** | **meV** | **-** | **Absorption** | **Absorption** | **Absorption** | **mg/l** | **% of total mass** | **% of total mass** | **%** | **%** | **%** | **%** |
| | | | | | | | | | | | | | **DIN 38404** | | **254 nm** | **270 nm** | **350nm** | **before incub** | **100%** | **100%** | **<2 µm** | **2-63 µm** | **63-2000 µm** | **2-16 µm** |
| 29.59 | 1.07 | 0.30 | *67.46* | *2.44* | *0.68* | 29.59 | 62.30 | 16.98 | 108.87 | 3.93 | 1.10 | 257.85 | | | | | | | | | 29.17 | 47.22 | 23.61 | 14.00 |
| | | | | | | | | | | | | 36.07 | | | | | | | | | | | | |
| 11.48 | 0.35 | 0.13 | *46.47* | *1.40* | *0.51* | | | | | | | 177.13 | | | | | | | | | 22.67 | 52.00 | 25.33 | 11.00 |
| | | | | | | | | | | | | 102.39 | | | | | | | | | 10.61 | 44.27 | 45.12 | 5.30 |
| | | | | | | | | | | | | 81.28 | | | | | | | | | 11.95 | 40.49 | 47.56 | 6.20 |
| 8.72 | 0.28 | 0.10 | *34.00* | *1.08* | *0.40* | 7.48 | 48.94 | 20.92 | 77.33 | 2.46 | 0.92 | 167.69 | | | | | | | | | 27.27 | 50.65 | 22.08 | 14.00 |
| 44.75 | 2.01 | 0.44 | *73.60* | *3.31* | *0.72* | 46.15 | 58.12 | 11.53 | 115.80 | 5.21 | 1.14 | 359.00 | | | | | | | | | 49.30 | 47.89 | 2.82 | 21.00 |
| 53.26 | 2.56 | 0.62 | *91.44* | *4.39* | *1.07* | 55.14 | 48.45 | 7.57 | 111.16 | 5.34 | 1.30 | 309.15 | | | | | | | | | 45.21 | 50.68 | 4.11 | 25.00 |
| 90.37 | 6.42 | 1.13 | *168.46* | *11.96* | *2.10* | 104.25 | 83.44 | 8.24 | 195.94 | 13.91 | 2.45 | 468.67 | | | | | | | | | 55.36 | 39.29 | 5.36 | 14.00 |
| 33.51 | 1.84 | 0.51 | *82.68* | *4.55* | *1.26* | 31.69 | 77.83 | 11.69 | 121.21 | 6.67 | 1.85 | 261.09 | | | | | | | | | 34.29 | 47.14 | 18.57 | 22.00 |
| 34.92 | 1.40 | 0.33 | *77.53* | *3.10* | *0.73* | 34.92 | 52.96 | 10.01 | 97.89 | 3.92 | 0.93 | 322.44 | | | | | | | | | 43.24 | 44.59 | 12.16 | 18.00 |
| 41.13 | 1.56 | 0.49 | *84.46* | *3.21* | *1.00* | 41.13 | 58.04 | 16.81 | 115.99 | 4.41 | 1.38 | 219.44 | | | | | | | | | 32.43 | 54.05 | 13.51 | 14.00 |
| 54.80 | 2.47 | 0.53 | *92.92* | *4.18* | *0.91* | 54.80 | 52.37 | 10.28 | 117.46 | 5.29 | 1.14 | 361.81 | | | | | | | | | 46.58 | 47.95 | 5.48 | 20.00 |
| 79.67 | 3.74 | 0.92 | *129.36* | *6.08* | *1.49* | 79.67 | 66.12 | 16.52 | 162.30 | 7.63 | 1.86 | 309.05 | | | | | | | | | 43.24 | 54.05 | 2.70 | 25.00 |
| 42.07 | 1.51 | 0.43 | *78.89* | *2.84* | *0.81* | 42.07 | 52.30 | 21.60 | 115.97 | 4.17 | 1.18 | 252.43 | | | | | | | | | 36.84 | 46.05 | 17.11 | 15.00 |
| 29.99 | 0.30 | 0.20 | *67.92* | *0.68* | *0.46* | 20.09 | 62.94 | 13.16 | 96.19 | 0.96 | 0.65 | 47.63 | | | | | | | | | 5.56 | 10.00 | 84.44 | 2.40 |
| 36.94 | 1.51 | 0.42 | *69.54* | *2.85* | *0.78* | 34.11 | 55.73 | 12.78 | 102.62 | 4.21 | 1.15 | 264.77 | | | | | | | | | 42.47 | 47.95 | 9.59 | 19.00 |
| 36.91 | 1.44 | 0.33 | *65.76* | *2.56* | *0.60* | 36.91 | 41.58 | 0.80 | 79.29 | 3.09 | 0.72 | 329.74 | | | | | | | | | 42.67 | 45.33 | 12.00 | 19.00 |
| 39.48 | 1.66 | 0.42 | *84.56* | *3.55* | *0.91* | 37.01 | 66.70 | 16.90 | 120.60 | 5.07 | 1.29 | 291.21 | | | | | | | | | 45.21 | 45.21 | 9.59 | 19.00 |
| 30.85 | 1.20 | 0.28 | *62.26* | *2.43* | *0.57* | 32.16 | 39.67 | 10.28 | 82.11 | 3.20 | 0.75 | 325.83 | | | | | | | | | 44.16 | 45.45 | 10.39 | 20.00 |
| 36.21 | 1.16 | 0.39 | *82.14* | *2.63* | *0.88* | 30.83 | 65.47 | 14.67 | 110.97 | 3.55 | 1.19 | 197.57 | | | | | | | | | 26.67 | 49.33 | 24.00 | 13.00 |
| 16.10 | 0.37 | 0.15 | *42.77* | *0.98* | *0.39* | 15.18 | 39.82 | 6.74 | 61.75 | 1.42 | 0.56 | 153.67 | | | | | | | | | 20.78 | 46.75 | 32.47 | 9.00 |
| 17.79 | 0.37 | 0.18 | *46.94* | *0.99* | *0.47* | 16.27 | 47.39 | 29.18 | 92.84 | 1.95 | 0.93 | 108.73 | | | | | | | | | 17.72 | 36.71 | 45.57 | 8.00 |
| 29.20 | 1.14 | 0.28 | *62.58* | *2.44* | *0.59* | 28.09 | 45.63 | 9.97 | 83.69 | 3.26 | 0.79 | 312.16 | | | | | | | | | 45.21 | 49.32 | 5.48 | 20.00 |
| 31.10 | 1.18 | 0.35 | *71.59* | *2.72* | *0.80* | 27.32 | 62.11 | 11.39 | 100.81 | 3.83 | 1.12 | 241.64 | | | | | | | | | 36.99 | 50.68 | 12.33 | 16.00 |
| 91.16 | 6.93 | 1.16 | *155.63* | *11.83* | *1.99* | 92.33 | 81.77 | 13.09 | 187.19 | 14.23 | 2.39 | 494.82 | -226.00 | | | 2.56 | 1.44 | | | | 50.00 | 44.23 | 5.77 | 14.00 |
| 36.40 | 2.00 | 0.55 | *79.42* | *4.37* | *1.20* | 34.68 | 51.56 | 4.15 | 90.38 | 4.97 | 1.36 | 265.31 | -214.00 | | | | | | 35.08 | 64.92 | 34.33 | 49.25 | 16.42 | 24.00 |
| 21.48 | 0.47 | 0.18 | *52.01* | *1.14* | *0.43* | 21.97 | 40.23 | 17.45 | 79.66 | 1.75 | 0.65 | 168.69 | -256.00 | | | 0.66 | 0.18 | | | | 23.08 | 44.87 | 32.05 | 9.00 |
| 22.99 | 0.69 | 0.25 | *46.44* | *1.39* | *0.50* | 24.15 | 31.81 | 5.28 | 61.24 | 1.84 | 0.65 | 181.38 | -266.00 | | | 3.71 | 2.17 | | | | 28.95 | 47.37 | 23.68 | 13.00 |
| 46.93 | 2.02 | 0.46 | *90.23* | *3.88* | *0.88* | 46.93 | 55.69 | 10.90 | 113.52 | 4.88 | 1.10 | 342.12 | -280.00 | | | 1.10 | 0.42 | | | | 55.74 | 36.07 | 8.20 | 19.00 |
| 34.52 | 1.45 | 0.40 | *70.50* | *2.96* | *0.81* | 35.25 | 46.26 | 5.50 | 87.01 | 3.65 | 1.00 | 265.37 | -260.00 | | | 3.86 | 2.70 | | | | 43.84 | 43.84 | 12.33 | 17.00 |
| 46.82 | 2.06 | 0.44 | *89.06* | *3.92* | *0.83* | 41.77 | 58.43 | 7.52 | 107.72 | 4.74 | 1.01 | 371.21 | -280.00 | | | 3.29 | 2.00 | | | | 50.70 | 46.48 | 2.82 | 20.00 |
| 38.77 | 1.74 | 0.44 | *77.24* | *3.48* | *0.89* | 30.49 | 52.29 | 2.45 | 85.24 | 3.84 | 0.98 | 292.33 | -315.00 | | | 5.36 | 3.63 | | | | 50.00 | 47.14 | 2.86 | 19.00 |
| 30.54 | 1.19 | 0.30 | *63.45* | *2.47* | *0.62* | 26.34 | 47.86 | 7.21 | 81.41 | 3.17 | 0.80 | 298.52 | -300.00 | | | 2.21 | 1.43 | | | | 46.67 | 45.33 | 8.00 | 19.00 |
| 25.31 | 0.99 | 0.27 | *55.31* | *2.16* | *0.60* | 24.02 | 41.28 | 9.33 | 74.64 | 2.91 | 0.81 | 258.97 | -242.00 | | | 3.41 | 2.05 | | | | 43.42 | 46.05 | 10.53 | 19.00 |
| 24.84 | 0.94 | 0.20 | *54.04* | *2.05* | *0.44* | 24.84 | 36.74 | 2.87 | 64.45 | 2.45 | 0.53 | 366.41 | -360.00 | | | 1.13 | 0.44 | | | | 45.95 | 47.30 | 6.76 | 20.00 |
| 28.80 | 1.07 | 0.32 | *61.73* | *2.28* | *0.69* | 28.31 | 43.74 | 8.92 | 80.97 | 3.00 | 0.91 | 230.36 | -232.00 | | | 4.33 | 2.83 | | | | 38.67 | 49.33 | 12.00 | 17.00 |
| 57.52 | 2.53 | 0.55 | *105.24* | *4.63* | *1.01* | 55.48 | 62.89 | 14.29 | 132.65 | 5.84 | 1.27 | 358.87 | -315.00 | | | 3.29 | 1.92 | | | | 48.00 | 48.00 | 4.00 | 19.00 |
| 36.70 | 1.65 | 0.41 | *72.25* | *3.25* | *0.81* | 30.93 | 58.79 | 11.41 | 101.13 | 4.55 | 1.14 | 300.00 | -238.00 | | | 4.48 | 2.88 | | | | 49.30 | 46.48 | 4.23 | 18.00 |
| 22.88 | 0.82 | 0.21 | *51.64* | *1.86* | *0.47* | 22.88 | 37.52 | 17.42 | 77.81 | 2.80 | 0.71 | 292.98 | -280.00 | | | 1.57 | 0.64 | | | | 42.67 | 45.33 | 12.00 | 17.00 |
| 26.95 | 1.00 | 0.29 | *54.46* | *2.02* | *0.59* | 21.28 | 51.46 | 7.79 | 80.53 | 2.98 | 0.87 | 243.33 | -236.00 | | | 3.25 | 2.26 | | | | 40.54 | 44.59 | 14.86 | 17.00 |
| 13.02 | 0.26 | 0.10 | *38.63* | *0.77* | *0.30* | 12.50 | 33.07 | 13.40 | 58.97 | 1.18 | 0.46 | 158.13 | -173.00 | | | 0.51 | 0.21 | | | | 20.25 | 26.58 | 53.16 | 9.00 |
| 14.18 | 0.26 | 0.13 | *34.99* | *0.63* | *0.32* | 13.91 | 29.34 | 15.41 | 58.67 | 1.06 | 0.53 | 98.93 | -270.00 | | | 1.25 | 0.43 | | | | 14.81 | 33.33 | 51.85 | 6.00 |
| 44.31 | 1.64 | 0.35 | *69.51* | *2.57* | *0.56* | 50.30 | 39.99 | 15.63 | 105.92 | 3.92 | 0.85 | 362.31 | -270.00 | | | 0.56 | 0.15 | | 24.22 | 75.78 | 47.30 | 45.95 | 6.76 | 21.00 |

| | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 40.14 | 1.36 | 0.35 | *69.27* | *2.36* | *0.60* | 45.08 | 49.36 | 18.94 | 113.39 | 3.86 | 0.98 | 293.83 | -310.00 | | | 1.54 | 0.59 | | 27.94 | 72.06 | 48.00 | 46.67 | 5.33 | 21.00 |
| 24.47 | 0.91 | 0.27 | *44.51* | *1.65* | *0.49* | 26.51 | 36.53 | 19.10 | 82.14 | 3.04 | 0.91 | 235.72 | -305.00 | | | 1.03 | 0.33 | | 26.25 | 73.75 | 45.21 | 47.95 | 6.85 | 19.00 |
| 11.34 | 0.16 | 0.08 | *27.27* | *0.38* | *0.18* | 18.45 | 26.04 | 18.96 | 63.45 | 0.89 | 0.43 | 106.62 | -240.00 | | | 0.59 | 0.15 | | 9.74 | 90.26 | 15.66 | 31.33 | 53.01 | 7.00 |
| 12.90 | 0.23 | 0.12 | *24.05* | *0.43* | *0.23* | 15.36 | 21.80 | 20.94 | 58.11 | 1.05 | 0.56 | 86.90 | -310.00 | | | 1.29 | 0.46 | | 4.32 | 95.68 | 14.46 | 28.92 | 56.63 | 7.00 |
| 22.71 | 0.75 | 0.22 | *44.25* | *1.46* | *0.43* | 29.81 | 41.92 | 45.40 | 117.13 | 3.87 | 1.13 | 241.51 | -280.00 | | | 0.66 | 0.18 | | | | 36.36 | 46.75 | 16.88 | 15.00 |
| 21.16 | 0.72 | 0.26 | *39.01* | *1.33* | *0.47* | 28.14 | 37.36 | 57.32 | 122.82 | 4.18 | 1.49 | 180.74 | -290.00 | | | 1.53 | 0.61 | | | | 37.33 | 44.00 | 18.67 | 16.00 |
| 73.58 | 5.30 | 0.79 | *135.34* | *9.74* | *1.45* | 86.90 | 90.96 | 18.67 | 196.52 | 14.15 | 2.10 | 573.81 | -270.00 | | | 1.89 | 0.78 | | 52.07 | 47.93 | 46.15 | 49.23 | 4.62 | 23.00 |
| 63.71 | 3.57 | 0.88 | *122.47* | *6.86* | *1.68* | 73.25 | 63.48 | 0.49 | 137.22 | 7.68 | 1.89 | 307.34 | -260.00 | | | 1.85 | 0.56 | | 42.32 | 57.68 | 33.85 | 50.77 | 15.38 | 12.00 |
| 80.28 | 5.46 | 1.01 | *142.37* | *9.68* | *1.79* | 101.49 | 53.95 | 7.86 | 163.30 | 11.10 | 2.05 | 440.39 | -250.00 | | | 1.67 | 0.81 | | 38.23 | 61.77 | 52.83 | 41.51 | 5.66 | 15.00 |
| 30.12 | 1.11 | 0.29 | *55.64* | *2.06* | *0.54* | 38.72 | 42.58 | 40.54 | 121.83 | 4.51 | 1.17 | 284.57 | -290.00 | | | 0.66 | 0.18 | | | | 41.10 | 49.32 | 9.59 | 19.00 |
| 29.72 | 1.10 | 0.35 | *54.55* | *2.02* | *0.65* | 38.26 | 41.67 | 45.65 | 125.57 | 4.65 | 1.50 | 209.99 | -270.00 | | | 1.23 | 0.45 | | | | 40.54 | 47.30 | 12.16 | 17.00 |
| 20.22 | 0.47 | 0.22 | *36.84* | *0.85* | *0.40* | 27.14 | 28.06 | 74.09 | 129.28 | 2.97 | 1.40 | 112.95 | -280.00 | | | 1.83 | 0.70 | | | | 20.25 | 32.91 | 46.84 | 10.00 |
| 39.10 | 1.60 | 0.35 | *67.26* | *2.76* | *0.60* | 46.35 | 44.91 | 21.86 | 113.11 | 4.64 | 1.01 | 360.06 | | | | 1.07 | 0.38 | | 34.42 | 65.58 | 49.30 | 46.48 | 4.23 | 19.00 |
| 33.96 | 1.43 | 0.36 | *62.89* | *2.64* | *0.66* | 44.33 | 45.11 | 28.97 | 118.41 | 4.97 | 1.24 | 300.25 | -300.00 | | | 1.23 | 0.41 | | 45.05 | 54.95 | 50.00 | 45.95 | 4.05 | 21.00 |
| 35.85 | 1.54 | 0.43 | *65.76* | *2.83* | *0.78* | 45.99 | 47.81 | 31.36 | 125.15 | 5.38 | 1.49 | 260.75 | -280.00 | | | 1.57 | 0.64 | | 45.26 | 54.74 | 52.17 | 44.93 | 2.90 | 17.00 |
| 32.68 | 1.01 | 0.25 | *60.17* | *1.87* | *0.45* | 42.37 | 37.05 | 20.93 | 100.35 | 3.11 | 0.75 | 312.63 | -130.00 | | | 0.35 | 0.10 | | | | 40.54 | 36.49 | 22.97 | 16.00 |
| 35.22 | 1.13 | 0.32 | *63.08* | *2.02* | *0.57* | 44.93 | 31.29 | 5.31 | 81.52 | 2.61 | 0.74 | 254.57 | -300.00 | | | 0.52 | 0.14 | | | | 37.66 | 42.86 | 19.48 | 16.00 |
| 23.56 | 0.66 | 0.22 | *45.46* | *1.27* | *0.42* | 31.30 | 36.44 | 33.14 | 100.88 | 2.82 | 0.94 | 201.05 | -290.00 | | | 0.72 | 0.18 | | | | 31.58 | 36.84 | 31.58 | 14.00 |
| 78.38 | 2.74 | 0.69 | *134.23* | *4.70* | *1.19* | 92.64 | 72.28 | 10.18 | 175.10 | 6.13 | 1.55 | 295.36 | -310.00 | | | 0.75 | 0.20 | | 34.71 | 65.29 | 43.24 | 47.30 | 9.46 | 18.00 |
| 31.80 | 1.14 | 0.32 | *55.05* | *1.98* | *0.55* | 41.23 | 39.88 | 50.88 | 132.00 | 4.75 | 1.32 | 259.85 | -300.00 | | | 0.86 | 0.23 | | 19.44 | 80.56 | 43.84 | 47.95 | 8.22 | 19.00 |
| 24.73 | 0.87 | 0.27 | *43.06* | *1.51* | *0.47* | 32.48 | 32.01 | 76.03 | 140.52 | 4.92 | 1.55 | 218.06 | -280.00 | | | 1.53 | 0.49 | | 12.65 | 87.35 | 40.00 | 44.00 | 16.00 | 17.00 |
| 33.38 | 1.37 | 0.32 | *59.58* | *2.44* | *0.57* | 35.22 | 62.53 | 41.98 | 139.73 | 5.73 | 1.34 | 328.09 | -310.00 | | | 0.59 | 0.15 | | | | 52.78 | 45.83 | 1.39 | 21.00 |
| 32.96 | 1.35 | 0.32 | *60.31* | *2.47* | *0.58* | 44.52 | 37.94 | 17.86 | 100.32 | 4.11 | 0.97 | 325.76 | -300.00 | | | 1.01 | 0.31 | | | | 55.22 | 41.79 | 2.99 | 16.00 |
| 31.87 | 1.31 | 0.36 | *57.07* | *2.34* | *0.64* | 41.90 | 41.55 | 47.35 | 130.80 | 5.36 | 1.46 | 266.57 | -300.00 | | | 1.46 | 0.57 | | | | 47.95 | 49.32 | 2.74 | 21.00 |
| 6.46 | 0.12 | 0.06 | 15.05 | 0.27 | 0.13 | 6.96 | 30.64 | 10.26 | 47.86 | 0.86 | 0.42 | 105.98 | -195.00 | | | 0.39 | 0.11 | | | | | | | |
| 13.15 | 0.24 | 0.12 | 25.36 | 0.46 | 0.23 | 12.92 | 26.93 | 44.47 | 84.32 | 1.52 | 0.78 | 95.21 | -265.00 | | | 1.28 | 0.45 | | 8.07 | 91.93 | 16.05 | 25.93 | 58.02 | 7.00 |
| 31.62 | 0.73 | 0.23 | 65.00 | 1.49 | 0.48 | 41.75 | 56.22 | 49.46 | 147.43 | 3.39 | 1.08 | 213.98 | -270.00 | | | 0.43 | 0.11 | | | | 30.77 | 38.46 | 30.77 | 12.00 |
| 25.40 | 0.84 | 0.27 | 51.05 | 1.68 | 0.55 | 32.67 | 42.66 | 31.97 | 107.30 | 3.54 | 1.15 | 207.51 | -270.00 | | | 0.94 | 0.24 | | | | 37.50 | 47.50 | 15.00 | 19.00 |
| 7.79 | 0.28 | 0.06 | 39.10 | 1.41 | 0.31 | 14.44 | 43.36 | 60.52 | 118.32 | 4.26 | 0.95 | 349.13 | -205.00 | | | 0.46 | 0.12 | | 26.34 | 73.66 | 46.75 | 46.75 | 6.49 | 23.00 |
| 21.72 | 0.74 | 0.26 | 46.85 | 1.59 | 0.56 | 21.51 | 47.92 | 42.36 | 111.79 | 3.80 | 1.33 | 186.31 | -270.00 | | | 1.60 | 0.44 | | 19.20 | 80.80 | 33.78 | 48.65 | 17.57 | 15.00 |
| 66.03 | 4.36 | 0.70 | 134.41 | 8.87 | 1.43 | 85.55 | 91.52 | 24.58 | 201.64 | 13.31 | 2.15 | 519.62 | -250.00 | | | 1.57 | 0.52 | | 39.85 | 60.15 | 45.16 | 46.77 | 8.06 | 18.00 |
| 61.08 | 4.09 | 0.83 | 120.19 | 8.05 | 1.63 | 76.53 | 80.55 | 25.42 | 182.49 | 12.23 | 2.48 | 393.30 | -220.00 | | | 2.23 | 0.80 | | 50.96 | 49.04 | 47.27 | 45.45 | 7.27 | 16.00 |
| 31.03 | 1.12 | 0.30 | 63.52 | 2.29 | 0.62 | 39.43 | 51.40 | 50.07 | 140.89 | 5.07 | 1.37 | 270.82 | -260.00 | | | 0.82 | 0.22 | | | | 40.68 | 47.46 | 11.86 | 14.00 |
| 28.02 | 0.98 | 0.32 | 61.96 | 2.17 | 0.72 | 36.16 | 56.07 | 71.98 | 164.22 | 5.75 | 1.90 | 202.05 | -280.00 | | | 1.27 | 0.36 | | | | 38.67 | 45.33 | 16.00 | 17.00 |
| 34.20 | 1.27 | 0.29 | 75.69 | 2.80 | 0.64 | 46.41 | 58.12 | 19.56 | 124.09 | 4.59 | 1.04 | 339.61 | -260.00 | | | 0.84 | 0.23 | | 18.85 | 81.15 | 43.06 | 48.61 | 8.33 | 18.00 |
| 38.74 | 1.59 | 0.45 | 77.53 | 3.18 | 0.89 | 49.69 | 56.81 | 27.67 | 134.18 | 5.50 | 1.55 | 255.21 | -260.00 | | | 1.67 | 0.54 | | 44.52 | 55.48 | 44.59 | 47.30 | 8.11 | 20.00 |
| 30.94 | 1.11 | 0.27 | 70.21 | 2.53 | 0.60 | 40.92 | 57.62 | 23.25 | 121.79 | 4.38 | 1.05 | 319.15 | -250.00 | | | 0.41 | 0.11 | | | | 46.97 | 43.94 | 9.09 | 16.00 |
| 32.27 | 1.23 | 0.35 | 67.33 | 2.56 | 0.73 | 41.42 | 51.13 | 19.13 | 111.69 | 4.24 | 1.22 | 249.23 | -280.00 | | | 0.66 | 0.16 | | | | 50.77 | 41.54 | 7.69 | 16.00 |
| 30.46 | 0.94 | 0.26 | 69.19 | 2.14 | 0.59 | 45.47 | 43.28 | 20.32 | 109.07 | 3.38 | 0.93 | 264.93 | -260.00 | | | 0.51 | 0.12 | | 17.67 | 82.33 | 38.03 | 36.62 | 25.35 | 15.00 |
| 24.86 | 0.82 | 0.25 | 57.98 | 1.91 | 0.57 | 25.55 | 56.66 | 15.29 | 97.50 | 3.22 | 0.96 | 234.77 | -290.00 | | | 0.65 | 0.16 | | 26.28 | 73.72 | 40.79 | 46.05 | 13.16 | 18.00 |
| 23.83 | 0.83 | 0.26 | 53.53 | 1.87 | 0.58 | 31.04 | 44.58 | 14.83 | 90.45 | 3.17 | 0.98 | 223.59 | -270.00 | | | 0.91 | 0.22 | | 24.08 | 75.92 | 39.47 | 48.68 | 11.84 | 21.00 |
| 19.50 | 0.47 | 0.17 | 52.24 | 1.25 | 0.45 | 26.73 | 45.17 | 12.87 | 84.77 | 2.03 | 0.74 | 175.94 | -300.00 | | | 0.43 | 0.11 | | | | 23.68 | 40.79 | 35.53 | 11.00 |
| 20.71 | 0.50 | 0.22 | 50.58 | 1.21 | 0.53 | 26.56 | 44.10 | 16.33 | 86.99 | 2.09 | 0.91 | 128.93 | -320.00 | | | 0.66 | 0.16 | | | | 26.58 | 40.51 | 32.91 | 11.00 |
| 64.01 | 3.65 | 0.72 | *94.74* | *5.40* | *1.06* | 62.65 | 40.17 | 1.74 | 104.55 | 5.96 | 1.17 | 408.33 | -280.00 | | 1.46 | 0.96 | 0.27 | | 43.34 | 56.66 | 48.15 | 48.15 | 3.70 | 17.00 |
| 61.41 | 4.18 | 0.90 | *96.05* | *6.53* | *1.41* | 61.41 | 52.17 | 6.31 | 119.89 | 8.15 | 1.76 | 361.90 | -240.00 | | 2.41 | 1.55 | 0.43 | | 53.10 | 46.90 | 37.70 | 55.74 | 6.56 | 25.00 |
| 29.01 | 1.02 | 0.27 | *56.00* | *1.96* | *0.52* | 38.60 | 40.97 | 15.60 | 95.17 | 3.33 | 0.89 | 273.46 | -225.00 | | 0.67 | 0.52 | 0.12 | | | | 41.18 | 38.24 | 20.59 | 14.00 |
| 26.35 | 0.92 | 0.26 | *55.56* | *1.94* | *0.55* | 27.41 | 48.08 | 5.28 | 80.78 | 2.83 | 0.81 | 250.95 | -220.00 | | 1.09 | 0.78 | 0.20 | | | | 38.67 | 49.33 | 12.00 | 17.00 |
| 22.53 | 0.74 | 0.28 | *47.44* | *1.57* | *0.59* | 23.40 | 36.79 | 4.09 | 64.28 | 2.12 | 0.80 | 165.47 | -280.00 | | 1.54 | 1.11 | 0.29 | | | | 30.67 | 48.00 | 21.33 | 16.00 |
| 27.01 | 1.05 | 0.28 | *55.61* | *2.17* | *0.57* | 29.21 | 41.32 | 4.48 | 75.02 | 2.93 | 0.77 | 277.63 | -260.00 | | 0.57 | 0.45 | 0.12 | | 23.64 | 76.36 | 45.90 | 47.54 | 6.56 | 18.00 |
| 30.01 | 1.17 | 0.34 | *57.20* | *2.23* | *0.65* | 29.21 | 43.39 | 4.65 | 77.26 | 3.01 | 0.88 | 242.31 | -300.00 | | 0.95 | 0.71 | 0.18 | | 24.67 | 75.33 | 50.82 | 39.34 | 9.84 | 13.00 |
| 4.05 | 0.07 | 0.03 | *18.97* | *0.34* | *0.16* | 7.79 | 25.91 | 14.87 | 48.57 | 0.87 | 0.41 | 115.26 | 30.00 | | 0.30 | 0.25 | 0.08 | | 6.74 | 93.26 | 15.00 | 28.75 | 56.25 | 8.00 |
| 5.62 | 0.10 | 0.05 | *24.34* | *0.44* | *0.22* | 9.97 | 28.90 | 14.76 | 53.63 | 0.97 | 0.47 | 103.46 | -60.00 | | 0.40 | 0.32 | 0.10 | | 8.10 | 91.90 | 16.25 | 33.75 | 50.00 | 8.00 |
| 15.10 | 0.47 | 0.14 | *39.92* | *1.24* | *0.36* | 15.95 | 38.26 | 4.92 | 59.12 | 1.83 | 0.54 | 241.94 | -140.00 | | 0.54 | 0.30 | 0.10 | | 23.52 | 76.48 | 37.84 | 44.59 | 17.57 | 15.00 |
| 25.25 | 0.83 | 0.29 | *50.86* | *1.68* | *0.58* | 22.52 | 42.73 | 4.68 | 69.93 | 2.31 | 0.79 | 191.51 | -280.00 | | 0.95 | 0.73 | 0.19 | | 27.45 | 72.55 | 34.33 | 44.78 | 20.90 | 17.00 |
| 29.82 | 0.89 | 0.27 | *60.63* | *1.82* | *0.54* | 30.43 | 43.75 | 4.31 | 78.49 | 2.35 | 0.70 | 234.34 | -260.00 | | 0.54 | 0.43 | 0.11 | | | | 36.51 | 50.79 | 12.70 | 12.00 |

| | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|34.47|1.24|0.38|*65.39*|*2.35*|*0.73*|35.32|44.98|3.69|83.99|0.00|0.00|222.35|-300.00||1.42|1.00|0.26||||40.30|47.76|11.94|18.00|
|15.88|0.57|0.16|*37.84*|*1.36*|*0.38*|16.55|34.86|5.27|56.68|2.04|0.57|259.01|-230.00||0.63|0.48|0.12||33.58|66.42|55.00|38.33|6.67|13.00|
|22.93|0.83|0.26|*45.05*|*1.62*|*0.50*|23.54|33.15|3.69|60.38|2.17|0.67|223.03|-240.00||0.77|0.58|0.14||18.21|81.79|47.06|47.06|5.88|19.00|
|20.07|0.48|0.20|*100.97*|*2.42*|*1.03*|18.36|146.05|15.25|179.66|4.31|1.83|135.65|-300.00||0.64|0.50|0.12||||23.68|47.37|28.95|10.00|
|18.25|0.53|0.15|*50.15*|*1.45*|*0.41*|15.53|77.84|15.66|109.03|3.16|0.90|252.60|-180.00||0.40|0.32|0.08||||32.86|45.71|21.43|14.00|
|23.48|0.77|0.23|*48.04*|*1.59*|*0.47*|24.24|37.97|5.08|67.29|2.22|0.65|240.00|-260.00||0.65|0.50|0.12||||46.15|38.46|15.38|14.00|
|24.91|0.80|0.26|*48.71*|*1.56*|*0.50*|25.31|37.45|4.43|67.19|2.15|0.69|210.74|-280.00||0.94|0.71|0.17||||37.68|47.83|14.49|15.00|
|||||||||||||399.63|-250.00||2.49|2.28|1.11||33.51|66.49|||||
|||||||||||||228.36|-240.00||1.92|1.52|0.60||30.49|69.51|||||
|||||||||||||245.74|-200.00||0.59|0.48|0.14||24.70|75.30|||||
|||||||||||||197.50|-280.00||0.86|0.69|0.18||43.65|56.35|||||
|||||||||||||214.76|-240.00||0.65|0.53|0.12||26.95|73.05|||||
|||||||||||||189.72|-280.00||0.62|0.49|0.12||27.18|72.82|||||
|||||||||||||228.03|-315.00|7.00|||||21.08|78.92|||||
|||||||||||||196.08|-290.00|7.10|||||28.62|71.38|||||
|||||||||||||82.15|-250.00|6.80|||||||||||
|||||||||||||208.65|-330.00|7.00|||||||||||
|||||||||||||171.70|-310.00|6.90|||||21.40|78.60|||||
|||||||||||||183.65|-305.00|6.90|||||24.61|75.39|||||
|||||||||||||217.46|-240.00|6.60|||||33.70|66.30|||||
|||||||||||||95.61|-260.00|6.80|0.61|0.52|0.14||||||||
|||||||||||||178.09|-270.00|7.10|||||25.58|74.42|||||
|||||||||||||257.86|-290.00|7.10|||||23.01|76.99|||||
|||||||||||||306.16|-290.00|7.40|||||||||||
|||||||||||||338.51|-320.00|7.40|||||34.64|65.36|||||
|||||||||||||236.39|-300.00|7.20|||||33.25|66.75|||||
|||||||||||||365.92|-290.00|7.00|3.00|2733.00|1.41||38.92|61.08|||||
|||||||||||||280.70|-270.00|7.20|2.81|2608.00|1.59||31.58|68.42|||||
|||||||||||||131.37|-205.00|7.00|||||8.06|91.94|||||
|||||||||||||198.39|-185.00|7.20|||||||||||
|||||||||||||192.16|-190.00|7.10|||||14.13|85.87|||||
|||||||||||||138.35|-145.00|7.40|||||||||||
|||||||||||||91.46|-250.00|7.30|||||5.43|94.57|||||
|||||||||||||93.95|-95.00|7.50|||||||||||
|||||||||||||113.44|-180.00|7.30|||||||||||
|||||||||||||99.17|35.00|7.60|||||3.46|96.54|||||
|||||||||||||103.76|-280.00|7.20|||||||||||
|||||||||||||266.71|-270.00|6.80|||||28.96|71.04|||||
|||||||||||||183.84|-240.00|6.80|||||25.72|74.28|||||
|||||||||||||365.73|-310.00|6.90|||||37.54|62.46|||||
|||||||||||||315.54|-280.00|6.80|||||46.13|53.87|||||
|||||||||||||267.43|-320.00|6.80|||||46.11|53.89|||||
|||||||||||||225.74|-350.00|6.90|||||31.63|68.37|||||
|||||||||||||80.37|-250.00|6.70|||||9.23|90.77|||||
|||||||||||||392.83|-320.00|7.40|0.79|0.67|0.18|18.30|35.02|64.98|||||
|||||||||||||278.52|-260.00|7.10|1.79|1.60|0.67|53.10|40.15|59.85|||||
|||||||||||||347.58|-305.00|7.30|0.96|0.81|0.21|20.10|41.70|58.30|||||
|||||||||||||182.65|-290.00|7.10|1.02|0.96|0.22|24.20|25.37|74.63|||||
|||||||||||||216.06|-200.00|7.30|0.58|0.49|0.12|0.28|||||||
|||||||||||||78.92|-280.00|7.20|0.88|0.75||12.00|||||||
|||||||||||||176.16|-310.00|7.30|0.90|0.76||26.40|||||||
|||||||||||||494.66|-270.00|6.90|6.61|6.32|4.73|152.00|45.73|54.27|||||
|||||||||||||280.83|-280.00|6.90|5.47|5.17|4.45|114.00|38.36|61.64|||||
|||||||||||||561.33|-240.00|6.90|4.83|4.32|3.32|99.80|49.97|46.54|||||
|||||||||||||366.36|-200.00|6.80|6.20|5.22|3.26|258.40|33.95|61.85|||||

| | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | 333.65 | -280.00 | 7.20 | 0.98 | 0.84 | 0.29 | 17.80 | 26.02 | 67.03 | | | | |
| | | | | | | | | | | | | 269.15 | -280.00 | 7.10 | 1.64 | 1.46 | 0.64 | 23.70 | 45.65 | 44.06 | | | | |
| | | | | | | | | | | | | 353.74 | -280.00 | 7.10 | 1.10 | 0.94 | 0.29 | 23.60 | 28.35 | 64.41 | | | | |
| | | | | | | | | | | | | 297.73 | -280.00 | 7.00 | 2.04 | 1.82 | 0.86 | 29.80 | 23.90 | 66.10 | | | | |

| | Oxygen consumption 3h | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | Fraction <20 µm | | | | | | | | | | Pore water | |
| **Silt-coarse** | **AT3h** | **P** | **S** | **Fe** | **Ca** | **Li** | **Al** | **Mn** | **Vn** | **Cu** | **Mg** | **Na** | **K** | **TOC-n-20µm** | **LOI-n-20µm** | **As-20µm** | **Pb-20µm** | **Cd-20µm** | **Cr-20µm** | **Cu-20µm** | **Ni-20µm** | **Hg-20µm** | **Zn-20µm** | **pH-value-pw** | **Electric conductivity-pw** |
| **%** | **g O2/kg DW** | **mg/kg DW** | **mg/kg DW** | **mg/kg DW** | **mg/kg DW** | **mg/kg DW** | **mg/kg DW** | **mg/kg DW** | **mg/kg DW** | **mg/kg DW** | **mg/kg DW** | **mg/kg DW** | **mg/kg DW** | **%DW** | **%DW** | **mg/kg DW** | **mg/kg DW** | **mg/kg DW** | **mg/kg DW** | **mg/kg DW** | **mg/kg DW** | **mg/kg DW** | **mg/kg DW** | **-** | **µS/cm** |
| 20.00 | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| 28.00 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 31.00 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 27.00 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 25.00 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13.00 | 1.60 | 1690.00 | 5230.00 | 39800.00 | 47800.00 | 45.00 | 43000.00 | 3470.00 | 81.00 | 43.00 | 9300.00 | 1100.00 | 11000.00 | 4.50 | 13.90 | 30.00 | 77.00 | 1.20 | 79.00 | 48.00 | 41.00 | 0.93 | 403.00 | 7.46 | 1656.00 |
| 12.00 | 1.90 | 1750.00 | 5290.00 | 38500.00 | 55000.00 | 42.00 | 39900.00 | 3330.00 | 78.00 | 45.00 | 8900.00 | 1000.00 | 10100.00 | 4.70 | 14.00 | 27.00 | 77.00 | 1.50 | 77.00 | 48.00 | 39.00 | 0.96 | 435.00 | 7.30 | 2680.00 |
| 8.00 | 2.70 | 1820.00 | 4470.00 | 26300.00 | 133000.00 | 26.00 | 23900.00 | 3810.00 | 48.00 | 47.00 | 5500.00 | 1000.00 | 6000.00 | 7.50 | 19.30 | 23.00 | 70.00 | 3.30 | 56.00 | 55.00 | 36.00 | 1.00 | 625.00 | 7.39 | 2000.00 |
| 11.00 | 0.96 | 2150.00 | 4090.00 | 30400.00 | 77100.00 | 28.00 | 27200.00 | 2690.00 | 51.00 | 62.00 | 5400.00 | 600.00 | 6400.00 | 5.80 | 15.60 | 30.00 | 82.00 | 4.40 | 66.00 | 72.00 | 39.00 | 1.50 | 794.00 | 7.05 | 2570.00 |
| 15.00 | 1.10 | 1520.00 | 4580.00 | 37100.00 | 41900.00 | 42.00 | 39700.00 | 2900.00 | 76.00 | 40.00 | 8800.00 | 1000.00 | 10500.00 | 4.20 | 12.80 | 28.00 | 75.00 | 1.20 | 76.00 | 49.00 | 39.00 | 0.94 | 389.00 | 7.75 | 1572.00 |
| 26.00 | 1.70 | 1420.00 | 4050.00 | 31300.00 | 49500.00 | 33.00 | 31300.00 | 2560.00 | 61.00 | 38.00 | 7400.00 | 800.00 | 9600.00 | 4.80 | 13.70 | 28.00 | 78.00 | 1.80 | 77.00 | 51.00 | 41.00 | 1.08 | 467.00 | 7.27 | 2380.00 |
| 15.00 | 1.40 | 1610.00 | 4860.00 | 37600.00 | 44600.00 | 41.00 | 39500.00 | 3790.00 | 78.00 | 43.00 | 8800.00 | 1000.00 | 10000.00 | 4.60 | 14.10 | 30.00 | 79.00 | 1.40 | 84.00 | 51.00 | 43.00 | 0.97 | 431.00 | 7.44 | 1776.00 |
| 15.00 | 1.60 | 1580.00 | 4900.00 | 36000.00 | 54300.00 | 40.00 | 38300.00 | 3420.00 | 73.00 | 43.00 | 8500.00 | 900.00 | 9800.00 | 4.50 | 13.10 | 27.00 | 70.00 | 1.50 | 68.00 | 46.00 | 36.00 | 0.94 | 400.00 | 7.32 | 2070.00 |
| 20.00 | 1.10 | 1310.00 | 4430.00 | 32200.00 | 42800.00 | 34.00 | 33800.00 | 2460.00 | 65.00 | 35.00 | 7800.00 | 900.00 | 8700.00 | 4.20 | 12.90 | 29.00 | 79.00 | 1.20 | 80.00 | 46.00 | 41.00 | 0.89 | 402.00 | 7.46 | 1877.00 |
| 6.60 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16.00 | 5.20 | 1530.00 | 4860.00 | 36100.00 | 43900.00 | 39.00 | 38500.00 | 3070.00 | 73.00 | 42.00 | 8600.00 | 900.00 | 9800.00 | 4.30 | 12.60 | 29.00 | 77.00 | 1.40 | 85.00 | 48.00 | 42.00 | 0.95 | 418.00 | 7.39 | 2180.00 |
| 15.00 | 1.10 | 1480.00 | 4710.00 | 36600.00 | 40100.00 | 40.00 | 38700.00 | 2990.00 | 77.00 | 39.00 | 8800.00 | 1000.00 | 9800.00 | 4.20 | 13.30 | 30.00 | 82.00 | 1.20 | 81.00 | 49.00 | 42.00 | 0.95 | 404.00 | 7.48 | 1786.00 |
| 14.00 | 1.30 | 1370.00 | 4520.00 | 32900.00 | 40300.00 | 36.00 | 34700.00 | 2750.00 | 69.00 | 36.00 | 7900.00 | 900.00 | 9100.00 | 4.20 | 12.70 | 28.00 | 74.00 | 1.20 | 79.00 | 45.00 | 40.00 | 0.92 | 391.00 | 7.70 | 1747.00 |
| 15.00 | 1.20 | 1580.00 | 4890.00 | 38100.00 | 39900.00 | 42.00 | 40900.00 | 2590.00 | 77.00 | 40.00 | 8800.00 | 1000.00 | 10100.00 | 4.50 | 12.20 | 29.00 | 75.00 | 1.10 | 88.00 | 52.00 | 39.00 | 0.92 | 386.00 | 7.46 | 1828.00 |
| 24.00 | 1.10 | 1400.00 | 3620.00 | 27500.00 | 41800.00 | 27.00 | 26300.00 | 1880.00 | 51.00 | 39.00 | 6600.00 | 600.00 | 6700.00 | 5.10 | 13.60 | 27.00 | 77.00 | 2.30 | 70.00 | 59.00 | 39.00 | 1.02 | 546.00 | 7.53 | 2060.00 |
| 27.00 | 0.73 | 960.00 | 3110.00 | 23600.00 | 35800.00 | 25.00 | 24300.00 | 1650.00 | 49.00 | 24.00 | 6300.00 | 600.00 | 6400.00 | 4.50 | 12.00 | 30.00 | 77.00 | 1.30 | 86.00 | 47.00 | 42.00 | 0.95 | 404.00 | 7.59 | 1564.00 |
| 21.00 | 0.34 | 1340.00 | 5700.00 | 21500.00 | 35800.00 | 22.00 | 21700.00 | 1500.00 | 41.00 | 23.00 | 5900.00 | 600.00 | 5800.00 | 4.60 | 12.50 | 28.00 | 77.00 | 1.60 | 77.00 | 48.00 | 41.00 | 0.94 | 432.00 | 7.63 | 1602.00 |
| 16.00 | 2.10 | 1550.00 | 4960.00 | 38900.00 | 43000.00 | 44.00 | 42200.00 | 3020.00 | 80.00 | 40.00 | 9300.00 | 1000.00 | 10700.00 | 4.20 | 12.60 | 31.00 | 78.00 | 1.10 | 78.00 | 45.00 | 41.00 | 0.97 | 387.00 | 7.42 | 1711.00 |
| 21.00 | 1.80 | 1560.00 | 4520.00 | 33900.00 | 43500.00 | 37.00 | 34500.00 | 2780.00 | 66.00 | 43.00 | 8100.00 | 800.00 | 8800.00 | 4.10 | 12.50 | 26.00 | 74.00 | 1.60 | 70.00 | 52.00 | 37.00 | 1.04 | 430.00 | 7.36 | 2240.00 |
| 9.00 | 2.00 | 2120.00 | 4540.00 | 27300.00 | 114000.00 | 24.00 | 23500.00 | 3970.00 | 49.00 | 52.00 | 5200.00 | 900.00 | 5700.00 | 6.40 | 17.80 | 30.00 | 71.00 | 4.10 | 64.00 | 61.00 | 37.00 | 1.09 | 777.00 | 7.52 | 2250.00 |
| 9.00 | 1.60 | 2200.00 | 4310.00 | 30600.00 | 82600.00 | 27.00 | 27700.00 | 2730.00 | 54.00 | 65.00 | 5500.00 | 600.00 | 6500.00 | 5.00 | 15.20 | 34.00 | 88.00 | 4.20 | 79.00 | 75.00 | 41.00 | 1.67 | 802.00 | 7.17 | 2440.00 |
| 26.00 | 0.70 | 930.00 | 2850.00 | 23200.00 | 34400.00 | 24.00 | 24100.00 | 1690.00 | 48.00 | 24.00 | 6200.00 | 700.00 | 6200.00 | 3.50 | 12.30 | 31.00 | 75.00 | 1.10 | 89.00 | 44.00 | 40.00 | 0.88 | 383.00 | 7.63 | 1768.00 |
| 23.00 | 0.89 | 1180.00 | 3720.00 | 29200.00 | 37500.00 | 30.00 | 30100.00 | 2260.00 | 60.00 | 32.00 | 7300.00 | 700.00 | 7500.00 | 3.80 | 13.10 | 33.00 | 83.00 | 1.20 | 96.00 | 47.00 | 43.00 | 0.97 | 424.00 | 7.35 | 2070.00 |
| 3.00 | 1.50 | 1610.00 | 4530.00 | 37400.00 | 46700.00 | 41.00 | 39000.00 | 3320.00 | 78.00 | 42.00 | 8700.00 | 1000.00 | 9700.00 | 3.70 | 11.50 | 32.00 | 82.00 | 1.10 | 94.00 | 46.00 | 43.00 | 0.90 | 408.00 | 7.57 | 2020.00 |

| | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 15.00 | 1.70 | 1600.00 | 4570.00 | 36300.00 | 46100.00 | 40.00 | 38800.00 | 3140.00 | 73.00 | 41.00 | 8500.00 | 900.00 | 9800.00 | 4.00 | 13.10 | 28.00 | 67.00 | 1.40 | 73.00 | 42.00 | 35.00 | 0.93 | 387.00 | 7.22 | 2440.00 |
| 13.00 | 1.60 | 1650.00 | 4750.00 | 38600.00 | 46300.00 | 42.00 | 40700.00 | 3400.00 | 82.00 | 43.00 | 9100.00 | 1000.00 | 10100.00 | 3.80 | 12.90 | 31.00 | 76.00 | 1.40 | 88.00 | 46.00 | 40.00 | 0.92 | 426.00 | 7.38 | 1945.00 |
| 14.00 | 1.50 | 1660.00 | 5020.00 | 38000.00 | 50600.00 | 41.00 | 38500.00 | 3280.00 | 78.00 | 43.00 | 8700.00 | 900.00 | 9400.00 | 4.10 | 12.50 | 31.00 | 80.00 | 1.50 | 88.00 | 46.00 | 40.00 | 0.99 | 438.00 | 7.27 | 2440.00 |
| 15.00 | 1.20 | 1510.00 | 4630.00 | 37400.00 | 40300.00 | 41.00 | 40900.00 | 3290.00 | 80.00 | 41.00 | 8900.00 | 1000.00 | 10200.00 | 3.50 | 12.00 | 31.00 | 76.00 | 1.10 | 90.00 | 44.00 | 41.00 | 0.96 | 373.00 | 7.50 | 1792.00 |
| 16.00 | 1.20 | 1540.00 | 4740.00 | 37300.00 | 39000.00 | 40.00 | 38900.00 | 3290.00 | 79.00 | 40.00 | 8800.00 | 900.00 | 9500.00 | 3.60 | 11.10 | 27.00 | 71.00 | 1.50 | 78.00 | 62.00 | 45.00 | 0.95 | 416.00 | 7.34 | 2230.00 |
| 15.00 | 1.10 | 1510.00 | 4590.00 | 37400.00 | 40500.00 | 40.00 | 39500.00 | 3010.00 | 80.00 | 37.00 | 8900.00 | 1000.00 | 9700.00 | 3.60 | 11.30 | 29.00 | 72.00 | 1.10 | 84.00 | 43.00 | 39.00 | 0.93 | 354.00 | 7.69 | 1627.00 |
| 20.00 | 0.84 | 1480.00 | 4330.00 | 32600.00 | 40200.00 | 35.00 | 33900.00 | 2610.00 | 64.00 | 39.00 | 4400.00 | 800.00 | 8800.00 | 3.80 | 12.90 | 32.00 | 81.00 | 1.20 | 94.00 | 48.00 | 44.00 | 0.98 | 397.00 | 7.34 | 2020.00 |
| 17.00 | 1.60 | 1640.00 | 4660.00 | 37000.00 | 47200.00 | 40.00 | 38800.00 | 3860.00 | 77.00 | 45.00 | 8800.00 | 1000.00 | 9700.00 | 4.20 | 12.90 | 32.00 | 80.00 | 1.40 | 90.00 | 48.00 | 42.00 | 0.96 | 432.00 | 7.50 | 1817.00 |
| 15.00 | 1.40 | 1710.00 | 4780.00 | 38300.00 | 46400.00 | 41.00 | 40300.00 | 4280.00 | 79.00 | 47.00 | 8700.00 | 900.00 | 9800.00 | 4.20 | 12.30 | 32.00 | 83.00 | 1.50 | 90.00 | 51.00 | 42.00 | 0.98 | 458.00 | 7.46 | 2090.00 |
| 17.00 | 0.34 | 1500.00 | 4560.00 | 35900.00 | 40700.00 | 40.00 | 38600.00 | 2320.00 | 75.00 | 39.00 | 8700.00 | 1100.00 | 9800.00 | 3.50 | 10.60 | 29.00 | 75.00 | 1.10 | 85.00 | 43.00 | 39.00 | 0.89 | 371.00 | 7.55 | 1680.00 |
| 16.00 | 1.10 | 1520.00 | 4530.00 | 34900.00 | 40300.00 | 38.00 | 35900.00 | 2420.00 | 71.00 | 39.00 | 8200.00 | 800.00 | 8900.00 | 3.70 | 11.90 | 30.00 | 80.00 | 1.30 | 88.00 | 46.00 | 40.00 | 0.91 | 412.00 | 7.54 | 1864.00 |
| 12.00 | 0.42 | 840.00 | 2620.00 | 21500.00 | 32800.00 | 23.00 | 22500.00 | 1430.00 | 45.00 | 22.00 | 5900.00 | 600.00 | 5900.00 | 3.40 | 11.90 | 32.00 | 77.00 | 1.20 | 89.00 | 43.00 | 40.00 | 0.92 | 375.00 | 8.00 | 1371.00 |
| 21.00 | 0.65 | 810.00 | 2500.00 | 19900.00 | 32600.00 | 19.00 | 20000.00 | 1330.00 | 40.00 | 21.00 | 5500.00 | 500.00 | 5200.00 | 2.70 | 7.40 | 22.00 | 57.00 | 1.10 | 66.00 | 33.00 | 29.00 | 0.69 | 296.00 | 7.75 | 1538.00 |
| 13.00 | 1.02 | 1470.00 | 4720.00 | 39100.00 | 40300.00 | 45.00 | 44000.00 | 2900.00 | 83.00 | 39.00 | 9400.00 | 1200.00 | 11000.00 | 3.60 | 11.40 | 28.00 | 74.00 | 1.10 | 94.00 | 42.00 | 45.00 | 0.91 | 379.00 | 6.68 | 1673.00 |
| 14.00 | 1.43 | 1440.00 | 4490.00 | 37300.00 | 38000.00 | 43.00 | 42200.00 | 3100.00 | 80.00 | 38.00 | 9000.00 | 1000.00 | 10700.00 | 3.50 | 11.90 | 28.00 | 75.00 | 1.20 | 91.00 | 42.00 | 45.00 | 0.95 | 379.00 | 7.52 | 2070.00 |
| 16.00 | 1.41 | 1500.00 | 4680.00 | 38700.00 | 41400.00 | 43.00 | 43100.00 | 3180.00 | 82.00 | 39.00 | 9200.00 | 1000.00 | 10800.00 | 3.70 | 12.10 | 29.00 | 76.00 | 1.20 | 96.00 | 44.00 | 45.00 | 0.92 | 392.00 | 7.57 | 1627.00 |
| 19.00 | 0.35 | 630.00 | 1950.00 | 17100.00 | 29300.00 | 19.00 | 18500.00 | 1120.00 | 37.00 | 16.00 | 5000.00 | 600.00 | 5000.00 | 3.10 | 11.10 | 24.00 | 63.00 | 1.20 | 83.00 | 37.00 | 38.00 | 0.77 | 319.00 | 7.90 | 1760.00 |
| 17.00 | 0.55 | 760.00 | 2390.00 | 19400.00 | 31800.00 | 20.00 | 20300.00 | 1290.00 | 41.00 | 19.00 | 5400.00 | 600.00 | 5400.00 | 3.50 | 11.30 | 27.00 | 69.00 | 1.40 | 87.00 | 44.00 | 41.00 | 0.89 | 370.00 | 7.67 | 1639.00 |
| 21.00 | 1.45 | 1430.00 | 4390.00 | 34000.00 | 40700.00 | 37.00 | 36200.00 | 2060.00 | 70.00 | 40.00 | 8100.00 | 100.00 | 9100.00 | 3.90 | 12.30 | 25.00 | 72.00 | 1.60 | 82.00 | 48.00 | 40.00 | 1.03 | 404.00 | 7.56 | 1642.00 |
| 17.00 | 1.37 | 1330.00 | 4120.00 | 31600.00 | 37100.00 | 33.00 | 33700.00 | 2030.00 | 66.00 | 37.00 | 7500.00 | 800.00 | 8600.00 | 3.70 | 11.90 | 28.00 | 74.00 | 1.50 | 91.00 | 49.00 | 43.00 | 0.97 | 409.00 | 7.40 | 1966.00 |
| 9.00 | 2.57 | 2030.00 | 4540.00 | 30000.00 | 57100.00 | 29.00 | 28300.00 | 5260.00 | 56.00 | 52.00 | 5700.00 | 1000.00 | 6800.00 | 7.00 | 18.40 | 32.00 | 79.00 | 3.60 | 76.00 | 69.00 | 42.00 | 1.42 | 652.00 | 7.28 | 2580.00 |
| 21.00 | 1.80 | 2100.00 | 4330.00 | 29600.00 | 88700.00 | 26.00 | 26700.00 | 3050.00 | 53.00 | 58.00 | 5400.00 | 700.00 | 6300.00 | 5.90 | 16.60 | 26.00 | 74.00 | 4.30 | 67.00 | 69.00 | 39.00 | 1.50 | 751.00 | 7.33 | 2880.00 |
| 7.00 | 2.79 | 2080.00 | 4720.00 | 28000.00 | 92200.00 | 25.00 | 25900.00 | 4180.00 | 53.00 | 52.00 | 5500.00 | 900.00 | 6400.00 | 6.30 | 17.10 | 22.00 | 63.00 | 3.30 | 60.00 | 58.00 | 33.00 | 1.18 | 591.00 | 7.26 | 1626.00 |
| 17.00 | 1.27 | 1400.00 | 4390.00 | 39800.00 | 44800.00 | 42.00 | 41700.00 | 2800.00 | 77.00 | 43.00 | 9100.00 | 1100.00 | 10400.00 | 3.80 | 12.50 | 24.00 | 72.00 | 1.40 | 90.00 | 45.00 | 42.00 | 0.93 | 390.00 | 7.70 | 1529.00 |
| 18.00 | 1.43 | 1470.00 | 4370.00 | 36100.00 | 42500.00 | 37.00 | 37200.00 | 2760.00 | 74.00 | 39.00 | 8200.00 | 900.00 | 9400.00 | 4.00 | 12.10 | 25.00 | 73.00 | 1.60 | 83.00 | 47.00 | 41.00 | 1.01 | 400.00 | 7.54 | 1500.00 |
| 16.00 | 0.66 | 910.00 | 2860.00 | 23800.00 | 33500.00 | 26.00 | 25100.00 | 1730.00 | 47.00 | 25.00 | 6000.00 | 600.00 | 6300.00 | 3.80 | 12.30 | 25.00 | 72.00 | 1.40 | 85.00 | 43.00 | 41.00 | 0.94 | 378.00 | 7.80 | 1646.00 |
| 14.00 | 1.83 | 1580.00 | 4950.00 | 39900.00 | 43600.00 | 43.00 | 43300.00 | 3290.00 | 84.00 | 44.00 | 9400.00 | 1200.00 | 10800.00 | 3.70 | 11.70 | 27.00 | 71.00 | 1.50 | 87.00 | 47.00 | 42.00 | 1.03 | 398.00 | 7.39 | 1965.00 |
| 13.00 | 1.52 | 1590.00 | 4920.00 | 39100.00 | 41600.00 | 44.00 | 42600.00 | 3250.00 | 81.00 | 43.00 | 9100.00 | 1100.00 | 10500.00 | 3.90 | 11.60 | 25.00 | 72.00 | 1.60 | 85.00 | 46.00 | 41.00 | 0.97 | 392.00 | 7.73 | 1709.00 |
| 14.00 | 1.77 | 1600.00 | 4850.00 | 40100.00 | 48100.00 | 45.00 | 43000.00 | 3310.00 | 82.00 | 44.00 | 9300.00 | 1000.00 | 10600.00 | 4.10 | 12.90 | 28.00 | 74.00 | 1.60 | 88.00 | 46.00 | 42.00 | 0.97 | 413.00 | 7.55 | 1994.00 |
| 11.00 | 0.67 | 1030.00 | 3330.00 | 27100.00 | 31400.00 | 33.00 | 30600.00 | 2420.00 | 57.00 | 27.00 | 6800.00 | 900.00 | 7700.00 | 3.50 | 11.70 | 27.00 | 72.00 | 1.10 | 85.00 | 40.00 | 43.00 | 0.92 | 359.00 | 7.73 | 1603.00 |
| 17.00 | 0.88 | 1260.00 | 4020.00 | 33100.00 | 38000.00 | 38.00 | 36100.00 | 2950.00 | 73.00 | 34.00 | 8300.00 | 1000.00 | 9000.00 | 3.50 | 11.60 | 27.00 | 71.00 | 1.20 | 89.00 | 41.00 | 43.00 | 0.90 | 362.00 | 7.61 | 1626.00 |
| 14.00 | 0.93 | 1100.00 | 3540.00 | 28600.00 | 35500.00 | 32.00 | 31300.00 | 2450.00 | 61.00 | 30.00 | 7300.00 | 800.00 | 8000.00 | 3.60 | 11.90 | 24.00 | 66.00 | 1.20 | 80.00 | 37.00 | 39.00 | 0.90 | 338.00 | 7.49 | 1972.00 |
| 17.00 | 1.51 | 1390.00 | 4360.00 | 36000.00 | 38600.00 | 42.00 | 40200.00 | 3210.00 | 77.00 | 37.00 | 8700.00 | 1000.00 | 10000.00 | 4.30 | 12.80 | 28.00 | 74.00 | 1.80 | 90.00 | 47.00 | 43.00 | 1.00 | 432.00 | 7.57 | 1633.00 |
| 16.00 | 1.18 | 1430.00 | 4480.00 | 37300.00 | 38900.00 | 42.00 | 41600.00 | 3410.00 | 79.00 | 38.00 | 8900.00 | 1000.00 | 10400.00 | 3.60 | 12.00 | 27.00 | 73.00 | 1.10 | 90.00 | 41.00 | 44.00 | 0.94 | 377.00 | 7.40 | 2070.00 |
| 16.00 | 1.18 | 1410.00 | 4320.00 | 35100.00 | 39300.00 | 41.00 | 37800.00 | 3070.00 | 74.00 | 37.00 | 8400.00 | 900.00 | 9400.00 | 3.60 | 12.20 | 27.00 | 74.00 | 1.20 | 90.00 | 42.00 | 42.00 | 0.89 | 382.00 | 7.29 | 2410.00 |
| 12.00 | 1.58 | 1560.00 | 4710.00 | 40400.00 | 40000.00 | 46.00 | 45300.00 | 4650.00 | 85.00 | 43.00 | 9500.00 | 1200.00 | 11400.00 | 3.90 | 12.60 | 24.00 | 65.00 | 1.10 | 75.00 | 37.00 | 37.00 | 0.91 | 336.00 | 7.60 | 1827.00 |
| 12.00 | 1.26 | 690.00 | 2110.00 | 35000.00 | 34400.00 | 39.00 | 39000.00 | 4080.00 | 37.00 | 38.00 | 8200.00 | 1000.00 | 9900.00 | 3.80 | 13.30 | 29.00 | 74.00 | 1.30 | 88.00 | 43.00 | 43.00 | 0.97 | 384.00 | 7.53 | 1699.00 |
| 15.00 | 1.70 | 1580.00 | 4740.00 | 39400.00 | 39600.00 | 44.00 | 43600.00 | 4260.00 | 80.00 | 43.00 | 9200.00 | 1000.00 | 10800.00 | 3.90 | 13.20 | 30.00 | 75.00 | 1.40 | 88.00 | 46.00 | 43.00 | 0.93 | 396.00 | 7.36 | 2180.00 |
|  | 0.67 | 690.00 | 2300.00 | 17700.00 | 29900.00 | 17.00 | 18600.00 | 1160.00 | 38.00 | 18.00 | 5000.00 | 600.00 | 4900.00 | 3.30 | 9.00 | 23.00 | 47.00 | 0.90 | 71.00 | 35.00 | 33.00 | 0.74 | 264.00 | 8.00 | 1866.00 |
| 14.00 | 0.67 | 730.00 | 2330.00 | 18600.00 | 30700.00 | 19.00 | 19200.00 | 1240.00 | 39.00 | 19.00 | 5200.00 | 500.00 | 4900.00 | 3.90 | 9.90 | 32.00 | 63.00 | 1.00 | 94.00 | 42.00 | 41.00 | 0.86 | 365.00 | 7.46 | 22902.00 |
| 13.00 | 1.06 | 1160.00 | 3510.00 | 28000.00 | 35700.00 | 30.00 | 30400.00 | 1920.00 | 59.00 | 31.00 | 6800.00 | 800.00 | 7600.00 | 4.40 | 11.50 | 38.00 | 73.00 | 1.30 | 103.00 | 53.00 | 46.00 | 0.98 | 445.00 | 7.43 | 2220.00 |
| 19.00 | 0.77 | 1410.00 | 4240.00 | 34000.00 | 38600.00 | 36.00 | 37000.00 | 2240.00 | 72.00 | 38.00 | 8200.00 | 900.00 | 9300.00 | 4.20 | 11.00 | 34.00 | 64.00 | 1.10 | 94.00 | 45.00 | 41.00 | 0.91 | 400.00 | 7.41 | 2020.00 |
| 13.00 | 1.25 | 1440.00 | 4540.00 | 40000.00 | 42500.00 | 46.00 | 45700.00 | 3170.00 | 83.00 | 40.00 | 9600.00 | 1300.00 | 11500.00 | 4.30 | 12.00 | 30.00 | 61.00 | 0.90 | 89.00 | 40.00 | 40.00 | 0.89 | 351.00 | 7.43 | 1929.00 |
| 21.00 | 1.60 | 1480.00 | 4240.00 | 34000.00 | 41900.00 | 34.00 | 35400.00 | 2430.00 | 65.00 | 42.00 | 7900.00 | 800.00 | 8900.00 | 4.70 | 12.20 | 28.00 | 60.00 | 1.50 | 73.00 | 43.00 | 33.00 | 1.00 | 391.00 | 6.97 | 3700.00 |
| 11.00 | 3.14 | 2120.00 | 5240.00 | 31000.00 | 81500.00 | 28.00 | 29500.00 | 4900.00 | 60.00 | 58.00 | 6100.00 | 1100.00 | 7200.00 | 7.60 | 17.40 | 38.00 | 70.00 | 3.30 | 72.00 | 62.00 | 39.00 | 1.33 | 641.00 | 7.00 | 2820.00 |
| 9.00 | 1.86 | 2270.00 | 5270.00 | 31800.00 | 82200.00 | 28.00 | 29600.00 | 5060.00 | 60.00 | 57.00 | 6100.00 | 900.00 | 7200.00 | 7.40 | 17.60 | 33.00 | 68.00 | 3.20 | 71.00 | 60.00 | 37.00 | 1.27 | 616.00 | 7.38 | 2260.00 |
| 14.00 | 0.37 | 1410.00 | 4270.00 | 35900.00 | 44200.00 | 38.00 | 38500.00 | 2870.00 | 73.00 | 38.00 | 8300.00 | 1100.00 | 9500.00 | 4.30 | 11.80 | 32.00 | 68.00 | 1.30 | 91.00 | 45.00 | 41.00 | 0.93 | 396.00 | 7.46 | 2280.00 |
| 17.00 | 0.33 | 1420.00 | 4320.00 | 35900.00 | 41600.00 | 36.00 | 37000.00 | 2590.00 | 70.00 | 40.00 | 7900.00 | 900.00 | 9100.00 | 4.60 | 12.00 | 33.00 | 68.00 | 1.30 | 90.00 | 45.00 | 40.00 | 0.94 | 404.00 | 7.31 | 2630.00 |
| 17.00 | 0.91 | 1500.00 | 4450.00 | 34100.00 | 43800.00 | 37.00 | 36400.00 | 2830.00 | 70.00 | 41.00 | 7900.00 | 1000.00 | 9000.00 | 4.70 | 12.20 | 31.00 | 68.00 | 1.40 | 89.00 | 47.00 | 40.00 | 0.98 | 420.00 | 7.30 | 2290.00 |
| 15.00 | 1.03 | 1620.00 | 4620.00 | 35200.00 | 50000.00 | 35.00 | 37300.00 | 3100.00 | 70.00 | 45.00 | 8100.00 | 900.00 | 9400.00 | 4.90 | 12.90 | 30.00 | 63.00 | 1.50 | 79.00 | 44.00 | 36.00 | 0.97 | 408.00 | 7.14 | 3180.00 |
| 13.00 | 0.55 | 1360.00 | 4280.00 | 35400.00 | 41500.00 | 40.00 | 39200.00 | 3370.00 | 74.00 | 40.00 | 8500.00 | 1100.00 | 9800.00 | 4.40 | 12.80 | 35.00 | 70.00 | 1.10 | 98.00 | 45.00 | 44.00 | 0.92 | 390.00 | 7.67 | 1994.00 |
| 11.00 | 0.51 | 1380.00 | 4240.00 | 35300.00 | 38800.00 | 41.00 | 38900.00 | 3560.00 | 76.00 | 40.00 | 8300.00 | 1000.00 | 9600.00 | 4.40 | 12.70 | 36.00 | 66.00 | 1.10 | 90.00 | 45.00 | 40.00 | 0.93 | 379.00 | 7.35 | 2560.00 |
| 11.00 | 0.96 | 1230.00 | 3870.00 | 31700.00 | 37200.00 | 36.00 | 35200.00 | 2620.00 | 67.00 | 34.00 | 7800.00 | 1000.00 | 8900.00 | 4.10 | 11.80 | 31.00 | 67.00 | 1.10 | 90.00 | 45.00 | 40.00 | 0.86 | 367.00 | 7.45 | 2170.00 |
| 17.00 | 0.78 | 1310.00 | 4150.00 | 34700.00 | 38800.00 | 41.00 | 39100.00 | 3050.00 | 73.00 | 37.00 | 8500.00 | 1000.00 | 10000.00 | 4.00 | 12.10 | 35.00 | 67.00 | 1.00 | 92.00 | 42.00 | 41.00 | 0.87 | 370.00 | 7.56 | 2330.00 |
| 16.00 | 0.62 | 1360.00 | 4200.00 | 35100.00 | 37500.00 | 39.00 | 39000.00 | 3200.00 | 74.00 | 37.00 | 8500.00 | 900.00 | 9800.00 | 4.20 | 12.20 | 35.00 | 67.00 | 1.10 | 91.00 | 44.00 | 41.00 | 0.90 | 377.00 | 7.34 | 2660.00 |

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| 20.00 | 0.60 | 900.00 | 2830.00 | 23000.00 | 32600.00 | 26.00 | 24800.00 | 1900.00 | 49.00 | 25.00 | 6100.00 | 700.00 | 6500.00 | 3.90 | 11.00 | 29.00 | 62.00 | 1.00 | 88.00 | 42.00 | 39.00 | 0.83 | 345.00 | 7.77 | 2050.00 |
| 21.00 | 0.45 | 990.00 | 3060.00 | 24900.00 | 32900.00 | 26.00 | 26700.00 | 2050.00 | 54.00 | 27.00 | 6400.00 | 700.00 | 6800.00 | 4.00 | 11.20 | 27.00 | 57.00 | 0.90 | 79.00 | 36.00 | 35.00 | 0.81 | 320.00 | 7.54 | 2180.00 |
| 9.00 | 2.35 | 1950.00 | 5140.00 | 34500.00 | 77000.00 | 36.00 | 35300.00 | 3980.00 | 69.00 | 54.00 | 7400.00 | 900.00 | 8600.00 | 5.70 | 13.90 | 34.00 | 73.00 | 2.50 | 85.00 | 61.00 | 41.00 | 1.23 | 573.00 | 7.39 | 2470.00 |
| 9.00 | 2.37 | 2310.00 | 5200.00 | 31800.00 | 83200.00 | 30.00 | 29900.00 | 4840.00 | 61.00 | 58.00 | 6200.00 | 800.00 | 7100.00 | 6.30 | 11.90 | 31.00 | 67.00 | 3.20 | 69.00 | 60.00 | 38.00 | 1.26 | 628.00 | 7.08 | 3330.00 |
| 12.00 | 1.13 | 1450.00 | 4240.00 | 36600.00 | 44800.00 | 38.00 | 38200.00 | 2640.00 | 71.00 | 39.00 | 8500.00 | 800.00 | 9600.00 | 4.20 | 18.20 | 30.00 | 71.00 | 1.40 | 96.00 | 49.00 | 43.00 | 0.94 | 436.00 | 7.47 | 2430.00 |
| 20.00 | 1.29 | 1470.00 | 4300.00 | 39000.00 | 46800.00 | 41.00 | 41000.00 | 2790.00 | 75.00 | 42.00 | 9000.00 | 900.00 | 10100.00 | 4.40 | 16.90 | 33.00 | 73.00 | 1.50 | 100.00 | 51.00 | 44.00 | 1.01 | 450.00 | 7.30 | 2460.00 |
| 20.00 | 0.93 | 1440.00 | 3930.00 | 32400.00 | 41700.00 | 32.00 | 32700.00 | 2300.00 | 62.00 | 37.00 | 7400.00 | 600.00 | 8000.00 | 4.50 | 10.50 | 33.00 | 76.00 | 1.80 | 100.00 | 56.00 | 46.00 | 1.07 | 501.00 | 7.28 | 2630.00 |
| 11.00 | 1.44 | 1570.00 | 4840.00 | 38600.00 | 46200.00 | 45.00 | 42800.00 | 2990.00 | 81.00 | 43.00 | 9200.00 | 1000.00 | 10500.00 | 4.40 | 12.30 | 34.00 | 73.00 | 1.40 | 101.00 | 51.00 | 45.00 | 1.02 | 437.00 | 7.54 | 2150.00 |
| 11.00 | 1.29 | 1570.00 | 4820.00 | 38500.00 | 45800.00 | 44.00 | 42200.00 | 2850.00 | 78.00 | 43.00 | 9000.00 | 900.00 | 10400.00 | 4.10 | 11.70 | 32.00 | 71.00 | 1.40 | 96.00 | 50.00 | 43.00 | 1.00 | 429.00 | 7.32 | 2510.00 |
| 15.00 | 0.42 | 770.00 | 2470.00 | 20800.00 | 34400.00 | 24.00 | 22700.00 | 1280.00 | 42.00 | 19.00 | 6000.00 | 600.00 | 5900.00 | 3.50 | 10.70 | 29.00 | 58.00 | 1.00 | 81.00 | 39.00 | 36.00 | 0.87 | 294.00 | 7.78 | 1649.00 |
| 19.00 | 0.42 | 780.00 | 2460.00 | 20200.00 | 31800.00 | 22.00 | 22000.00 | 1290.00 | 42.00 | 18.00 | 5600.00 | 500.00 | 5600.00 | 3.80 | 11.60 | 31.00 | 66.00 | 1.00 | 93.00 | 42.00 | 42.00 | 0.85 | 352.00 | 7.85 | 1958.00 |
| 18.00 | 0.72 | 1320.00 | 4170.00 | 33900.00 | 40000.00 | 39.00 | 37500.00 | 2640.00 | 71.00 | 36.00 | 8400.00 | 800.00 | 9200.00 | 3.90 | 12.00 | 31.00 | 69.00 | 1.10 | 99.00 | 46.00 | 43.00 | 0.89 | 389.00 | 7.71 | 1727.00 |
| 13.00 | 0.70 | 1350.00 | 4060.00 | 34700.00 | 39900.00 | 40.00 | 37800.00 | 2790.00 | 71.00 | 37.00 | 8500.00 | 800.00 | 9200.00 | 4.20 | 10.20 | 31.00 | 69.00 | 1.20 | 98.00 | 47.00 | 44.00 | 0.92 | 400.00 | 7.38 | 2470.00 |
| 20.00 | 0.73 | 1280.00 | 3860.00 | 31500.00 | 41200.00 | 36.00 | 35000.00 | 2660.00 | 65.00 | 36.00 | 8000.00 | 800.00 | 8700.00 | 3.90 | 13.40 | 30.00 | 63.00 | 1.20 | 86.00 | 46.00 | 39.00 | 0.93 | 362.00 | 7.88 | 1799.00 |
| 14.00 | 1.02 | 1460.00 | 4500.00 | 36000.00 | 42600.00 | 41.00 | 39500.00 | 3460.00 | 74.00 | 40.00 | 8700.00 | 900.00 | 9700.00 | 4.20 | 12.20 | 33.00 | 69.00 | 1.30 | 98.00 | 50.00 | 43.00 | 0.96 | 410.00 | 7.30 | 2630.00 |
| 10.00 | 1.09 | 1550.00 | 4840.00 | 39900.00 | 43000.00 | 46.00 | 44400.00 | 2770.00 | 84.00 | 41.00 | 9600.00 | 1000.00 | 10900.00 | 3.90 | 11.70 | 32.00 | 71.00 | 1.20 | 97.00 | 46.00 | 44.00 | 0.93 | 399.00 | 7.51 | 2060.00 |
| 13.00 | 0.68 | 1550.00 | 4700.00 | 39500.00 | 42000.00 | 46.00 | 44500.00 | 2910.00 | 83.00 | 41.00 | 9500.00 | 1000.00 | 10900.00 | 3.80 | 12.80 | 29.00 | 63.00 | 1.20 | 88.00 | 43.00 | 40.00 | 0.97 | 358.00 | 7.47 | 2230.00 |
| 26.00 | 0.85 | 1010.00 | 3140.00 | 24500.00 | 36100.00 | 28.00 | 26400.00 | 1780.00 | 50.00 | 26.00 | 6500.00 | 600.00 | 6600.00 | 3.70 | 12.90 | 29.00 | 61.00 | 1.20 | 83.00 | 42.00 | 37.00 | 0.89 | 346.00 | 7.58 | 2250.00 |
| 18.00 | 0.95 | 1310.00 | 3840.00 | 33100.00 | 40700.00 | 38.00 | 36000.00 | 2120.00 | 66.00 | 37.00 | 8200.00 | 1000.00 | 8900.00 | 4.10 | 12.10 | 31.00 | 69.00 | 1.30 | 99.00 | 48.00 | 44.00 | 0.98 | 413.00 | 7.55 | 1756.00 |
| 11.00 | 1.04 | 1400.00 | 4250.00 | 35100.00 | 39500.00 | 41.00 | 39100.00 | 2570.00 | 74.00 | 37.00 | 8500.00 | 900.00 | 9600.00 | 4.00 | 8.90 | 31.00 | 68.00 | 1.10 | 100.00 | 46.00 | 44.00 | 0.88 | 390.00 | 7.58 | 2100.00 |
| 18.00 | 1.35 | 1350.00 | 4000.00 | 32800.00 | 38900.00 | 37.00 | 36000.00 | 2340.00 | 69.00 | 35.00 | 8000.00 | 700.00 | 8800.00 | 4.10 | 10.40 | 31.00 | 72.00 | 1.30 | 101.00 | 49.00 | 45.00 | 1.00 | 424.00 | 7.41 | 2420.00 |
| | 0.98 | 2310.00 | 4250.00 | 31300.00 | 90100.00 | 28.00 | 28300.00 | 3330.00 | 55.00 | 67.00 | 5700.00 | 700.00 | 6500.00 | 6.40 | 17.60 | 35.00 | 87.00 | 4.40 | 79.00 | 82.00 | 45.00 | 1.60 | 742.00 | 7.09 | 2700.00 |
| | 1.05 | 1850.00 | 3900.00 | 27900.00 | 72600.00 | 27.00 | 27200.00 | 2850.00 | 50.00 | 53.00 | 5400.00 | 500.00 | 6300.00 | 6.10 | 16.70 | 31.00 | 81.00 | 4.10 | 77.00 | 73.00 | 40.00 | 1.70 | 683.00 | 6.96 | 2320.00 |
| | 0.56 | 1680.00 | 4040.00 | 28800.00 | 54800.00 | 29.00 | 28200.00 | 2190.00 | 54.00 | 50.00 | 6700.00 | 600.00 | 6700.00 | 5.00 | 14.80 | 33.00 | 87.00 | 3.00 | 88.00 | 71.00 | 44.00 | 1.67 | 582.00 | 7.59 | 1532.00 |
| | 0.63 | 1640.00 | 3960.00 | 30500.00 | 57000.00 | 32.00 | 31000.00 | 2540.00 | 59.00 | 45.00 | 7200.00 | 700.00 | 7500.00 | 4.80 | 14.90 | 30.00 | 80.00 | 2.50 | 86.00 | 60.00 | 43.00 | 1.19 | 510.00 | 7.46 | 2270.00 |
| | 0.11 | 1500.00 | 4200.00 | 34000.00 | 47600.00 | 37.00 | 35800.00 | 2530.00 | 67.00 | 43.00 | 8200.00 | 800.00 | 8700.00 | 4.50 | 13.60 | 30.00 | 77.00 | 1.80 | 90.00 | 50.00 | 43.00 | 1.02 | 434.00 | 7.49 | 2110.00 |
| | 0.21 | 1500.00 | 4410.00 | 34600.00 | 43300.00 | 38.00 | 38000.00 | 2620.00 | 73.00 | 38.00 | 8500.00 | 900.00 | 9300.00 | 4.40 | 14.00 | 30.00 | 75.00 | 1.60 | 90.00 | 48.00 | 43.00 | 0.99 | 396.00 | 7.50 | 2450.00 |
| | 0.79 | 1540.00 | 4300.00 | 29200.00 | 50800.00 | 32.00 | 29000.00 | 2370.00 | 56.00 | 42.00 | 7000.00 | 500.00 | 6900.00 | 4.30 | 10.00 | 28.00 | 80.00 | 2.10 | 87.00 | 57.00 | 44.00 | 1.16 | 493.00 | 7.42 | 1862.00 |
| | 0.94 | 1560.00 | 4470.00 | 32100.00 | 49400.00 | 34.00 | 32400.00 | 2460.00 | 62.00 | 42.00 | 7700.00 | 600.00 | 7700.00 | 4.20 | 11.00 | 29.00 | 81.00 | 1.90 | 89.00 | 56.00 | 44.00 | 1.13 | 472.00 | 7.37 | 2010.00 |
| | 0.34 | 680.00 | 1920.00 | 15300.00 | 30100.00 | 15.00 | 15100.00 | 1080.00 | 29.00 | 15.00 | 4400.00 | 200.00 | 3700.00 | 4.10 | 10.00 | 29.00 | 77.00 | 1.60 | 89.00 | 47.00 | 42.00 | 1.05 | 414.00 | 7.70 | 1528.00 |
| | 1.10 | 1300.00 | 3700.00 | 27400.00 | 49800.00 | 30.00 | 27800.00 | 2330.00 | 50.00 | 35.00 | 6800.00 | 600.00 | 6800.00 | 4.80 | | 27.00 | 79.00 | 2.10 | 85.00 | 52.00 | 43.00 | 1.09 | 500.00 | 7.59 | 1899.00 |
| | 0.78 | 1490.00 | 3290.00 | 23800.00 | 59100.00 | 25.00 | 23000.00 | 1970.00 | 44.00 | 41.00 | 5700.00 | 400.00 | 5500.00 | 5.20 | 12.00 | 32.00 | 86.00 | 3.30 | 86.00 | 73.00 | 46.00 | 1.32 | 643.00 | 7.35 | 2400.00 |
| | 0.96 | 1620.00 | 3890.00 | 28200.00 | 56000.00 | 29.00 | 27800.00 | 2170.00 | 53.00 | 46.00 | 6500.00 | 500.00 | 6600.00 | 4.80 | | 31.00 | 85.00 | 2.90 | 92.00 | 71.00 | 45.00 | 1.47 | 591.00 | 7.38 | 2430.00 |
| | 1.40 | 1970.00 | 4220.00 | 28000.00 | 78100.00 | 29.00 | 27300.00 | 2860.00 | 50.00 | 58.00 | 5300.00 | 500.00 | 6300.00 | 6.00 | 13.00 | 33.00 | 87.00 | 4.40 | 81.00 | 77.00 | 43.00 | 1.81 | 750.00 | 7.10 | 2200.00 |
| | 0.31 | 780.00 | 2300.00 | 17300.00 | 30600.00 | 20.00 | 16600.00 | 1170.00 | 34.00 | 17.00 | 4600.00 | 300.00 | 4300.00 | 3.90 | 11.00 | 27.00 | 77.00 | 1.50 | 93.00 | 49.00 | 44.00 | 1.00 | 418.00 | 7.48 | 1755.00 |
| | 0.80 | 1590.00 | 4370.00 | 31500.00 | 48200.00 | 34.00 | 30600.00 | 2430.00 | 60.00 | 41.00 | 7200.00 | 500.00 | 7300.00 | 4.30 | 11.80 | 30.00 | 82.00 | 1.90 | 93.00 | 57.00 | 44.00 | 1.09 | 494.00 | 7.40 | 2030.00 |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 1.08 | 1440.00 | 4640.00 | 34200.00 | 41200.00 | 39.00 | 35400.00 | 2490.00 | 71.00 | 35.00 | 7900.00 | 700.00 | 8500.00 | 4.30 | 12.10 | 30.00 | 82.00 | 1.10 | 97.00 | 45.00 | 46.00 | 0.94 | 400.00 | 7.49 | 1838.00 |
| | 1.73 | 1800.00 | 5540.00 | 41400.00 | 50500.00 | 49.00 | 43700.00 | 3200.00 | 87.00 | 43.00 | 9100.00 | 900.00 | 10500.00 | 4.50 | | 27.00 | 78.00 | 1.20 | 93.00 | 45.00 | 44.00 | 0.96 | 405.00 | 7.33 | 2230.00 |
| | 0.97 | 1640.00 | 4020.00 | 30100.00 | 57200.00 | 32.00 | 29300.00 | 2480.00 | 56.00 | 42.00 | 6800.00 | 500.00 | 6900.00 | 5.00 | 12.60 | 29.00 | 82.00 | 2.40 | 87.00 | 58.00 | 45.00 | 1.10 | 567.00 | 7.24 | 2630.00 |
| | 1.48 | 2030.00 | 4490.00 | 29300.00 | 109000.00 | 31.00 | 28800.00 | 2950.00 | 58.00 | 52.00 | 5900.00 | 700.00 | 6600.00 | 6.90 | 16.50 | 27.00 | 74.00 | 3.40 | 73.00 | 59.00 | 41.00 | 1.19 | 655.00 | 7.16 | 3070.00 |
| | 1.59 | 2350.00 | 4600.00 | 32400.00 | 98600.00 | 32.00 | 28800.00 | 3260.00 | 54.00 | 68.00 | 5700.00 | 600.00 | 6800.00 | 6.10 | 14.90 | 34.00 | 92.00 | 4.60 | 84.00 | 83.00 | 46.00 | 1.55 | 819.00 | 7.51 | 2430.00 |
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| | 0.52 | 990.00 | 2430.00 | 20100.00 | 39200.00 | 20.00 | 18700.00 | 1490.00 | 36.00 | 24.00 | 5100.00 | 300.00 | 4500.00 | 4.90 | 12.80 | 28.00 | 80.00 | 2.30 | 89.00 | 57.00 | 45.00 | 1.06 | 545.00 | 7.32 | 2500.00 |
| | 1.53 | 1590.00 | 3950.00 | 25500.00 | 71100.00 | 27.00 | 24200.00 | 2450.00 | 48.00 | 41.00 | 5400.00 | 500.00 | 5700.00 | 6.00 | 14.40 | 28.00 | 82.00 | 3.10 | 80.00 | 63.00 | 43.00 | 1.37 | 644.00 | 7.56 | 1553.00 |
| | 1.25 | 1680.00 | 4520.00 | 26800.00 | 57800.00 | 30.00 | 26400.00 | 2370.00 | 52.00 | 49.00 | 5700.00 | 500.00 | 6300.00 | 5.10 | 12.60 | 32.00 | 91.00 | 3.40 | 92.00 | 73.00 | 45.00 | 1.86 | 687.00 | 7.42 | 1528.00 |
| | 2.28 | 2730.00 | 4920.00 | 29100.00 | 131600.00 | 29.00 | 25400.00 | 2600.00 | 48.00 | 86.00 | 4900.00 | 600.00 | 5500.00 | 6.80 | 15.60 | 36.00 | 100.00 | 6.20 | 86.00 | 108.00 | 48.00 | 2.35 | 1040.00 | 7.05 | 2230.00 |
| | 2.26 | 2760.00 | 6350.00 | 27400.00 | 137100.00 | 28.00 | 23400.00 | 2350.00 | 46.00 | 88.00 | 4800.00 | 600.00 | 5100.00 | 6.70 | 14.60 | 32.00 | 89.00 | 5.90 | 78.00 | 103.00 | 40.00 | 2.57 | 995.00 | 7.02 | 2360.00 |

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| | 2.74 | 2910.00 | 7330.00 | 31000.00 | 122300.00 | 29.00 | 26200.00 | 1790.00 | 49.00 | 91.00 | 5000.00 | 600.00 | 5600.00 | 6.60 | 15.90 | 34.00 | 106.00 | 7.10 | 89.00 | 111.00 | 47.00 | 2.72 | 1178.00 | 7.46 | 2350.00 |
| | 2.16 | 3170.00 | 5410.00 | 25000.00 | 85800.00 | 24.00 | 21500.00 | 1480.00 | 40.00 | 103.00 | 3800.00 | 400.00 | 4500.00 | 6.90 | 15.90 | 60.00 | 150.00 | 9.90 | 147.00 | 182.00 | 58.00 | 8.40 | 1520.00 | 7.45 | 1400.00 |
| | 0.86 | 1840.00 | 2820.00 | 14600.00 | 22600.00 | 15.00 | 12600.00 | 670.00 | 24.00 | 68.00 | 2000.00 | 200.00 | 2700.00 | 7.30 | 17.00 | 90.00 | 220.00 | 13.00 | 219.00 | 266.00 | 72.00 | 14.50 | 1990.00 | 7.17 | 1544.00 |

| | | Filtrate of pore water | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Fe-pw** | **Mn-pw** | **DOC-fpw** | **TN-fpw** | **NO2-fpw** | **NO3-fpw** | **NH4-fpw** | **Fe-fpw** | **Mn-fpw** | **PO4-fpw** | **Na-fpw** | **Cl-fpw** | **Ca-fpw** | **Mg-fpw** | **SO42-fpw** | **SiO2-fpw** |
| **mg/l** | **mg/l** | **mg/l** | **mg/l** | **mg/l** | **mg/l** | **mg/l** | **mg/l** | **mg/l** | **mg/l** | **mg/l** | **mg/l** | **mg/l** | **mg/l** | **mg/l** | **mg/l** |
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| 13.00 | 21.00 | 21.00 | 14.00 | 0.25 | 1.60 | 13.00 | 0.01 | 20.00 | 0.07 | 97.00 | 190.00 | 167.00 | 36.00 | 13.00 | 24.00 |
| 44.00 | 39.00 | 140.00 | 54.00 | 0.25 | 1.00 | 57.00 | 5.70 | 35.00 | 0.11 | 114.00 | 190.00 | 290.00 | 60.00 | 3.80 | 38.00 |
| 22.00 | 20.00 | 140.00 | 86.00 | 0.25 | 0.50 | 95.00 | 1.30 | 18.00 | 0.11 | 101.00 | 190.00 | 126.00 | 32.00 | 8.60 | 33.00 |
| 46.00 | 15.00 | 49.00 | 130.00 | 0.25 | 0.50 | 150.00 | 0.48 | 13.00 | 0.14 | 78.00 | 130.00 | 216.00 | 33.00 | 34.00 | 44.00 |
| 4.80 | 19.00 | 31.00 | 7.80 | 0.25 | 1.30 | 6.70 | 1.20 | 18.00 | 0.38 | 99.00 | 190.00 | 161.00 | 33.00 | 73.00 | 20.00 |
| 32.00 | 28.00 | 99.00 | 52.00 | 0.25 | 0.50 | 61.00 | 0.57 | 25.00 | 0.12 | 107.00 | 170.00 | 240.00 | 51.00 | 9.30 | 37.00 |
| 15.00 | 26.00 | 46.00 | 17.00 | 0.25 | 1.20 | 17.00 | 0.22 | 24.00 | 0.03 | 99.00 | 190.00 | 181.00 | 38.00 | 5.00 | 28.00 |
| 17.00 | 25.00 | 70.00 | 35.00 | 0.25 | 0.50 | 39.00 | 0.13 | 22.00 | 0.10 | 106.00 | 190.00 | 197.00 | 43.00 | 38.00 | 35.00 |
| 13.00 | 21.00 | 34.00 | 17.00 | 0.25 | 0.50 | 19.00 | 0.25 | 20.00 | 0.11 | 98.00 | 170.00 | 204.00 | 42.00 | 5.00 | 27.00 |
| | | | | | | | | | | | | | | | |
| 24.00 | 30.00 | 49.00 | 26.00 | 0.25 | 0.50 | 29.00 | 0.15 | 27.00 | 0.10 | 105.00 | 180.00 | 244.00 | 49.00 | 5.00 | 38.00 |
| 11.00 | 25.00 | 39.00 | 11.00 | 0.25 | 0.50 | 11.00 | 0.24 | 23.00 | 0.15 | 100.00 | 190.00 | 191.00 | 39.00 | 21.00 | 23.00 |
| 10.00 | 17.00 | 48.00 | 21.00 | 0.25 | 0.50 | 23.00 | 0.59 | 11.00 | 0.14 | 100.00 | 180.00 | 161.00 | 36.00 | 5.00 | 31.00 |
| 8.80 | 23.00 | 32.00 | 8.30 | 0.25 | 0.50 | 7.10 | 0.15 | 22.00 | 0.14 | 105.00 | 190.00 | 209.00 | 41.00 | 93.00 | 23.00 |
| 9.70 | 13.00 | 43.00 | 50.00 | 0.85 | 15.00 | 51.00 | 0.35 | 11.00 | 0.14 | 91.00 | 150.00 | 219.00 | 40.00 | 41.00 | 47.00 |
| 4.20 | 15.00 | 33.00 | 8.40 | 0.84 | 1.00 | 6.90 | 0.10 | 14.00 | 0.24 | 91.00 | 160.00 | 179.00 | 33.00 | 87.00 | 31.00 |
| 8.20 | 14.00 | 41.00 | 17.00 | 0.25 | 3.40 | 15.00 | 0.06 | 11.00 | 0.12 | 81.00 | 140.00 | 177.00 | 31.00 | 28.00 | 41.00 |
| 5.80 | 21.00 | 30.00 | 12.00 | 1.60 | 13.00 | 7.30 | 0.04 | 19.00 | 0.11 | 102.00 | 190.00 | 181.00 | 37.00 | 92.00 | 24.00 |
| 23.00 | 26.00 | 51.00 | 43.00 | 0.25 | 0.50 | 47.00 | 0.38 | 24.00 | 0.11 | 95.00 | 150.00 | 251.00 | 50.00 | 5.00 | 43.00 |
| 7.80 | 5.70 | 41.00 | 160.00 | 0.76 | 3.60 | 200.00 | 0.28 | 4.70 | 0.15 | 87.00 | 160.00 | 109.00 | 27.00 | 23.00 | 28.00 |
| 10.00 | 3.50 | 33.00 | 180.00 | 0.78 | 4.00 | 230.00 | 0.22 | 3.10 | 0.17 | 78.00 | 140.00 | 137.00 | 25.00 | 150.00 | 45.00 |
| 1.90 | 19.00 | 21.00 | 9.80 | 0.95 | 5.10 | 9.10 | 0.14 | 18.00 | 0.09 | 107.00 | 170.00 | 194.00 | 45.00 | 100.00 | 18.00 |
| 13.00 | 29.00 | 29.00 | 21.00 | 0.82 | 13.00 | 19.00 | 0.19 | 23.00 | 0.12 | 113.00 | 180.00 | 231.00 | 54.00 | 25.00 | 25.00 |
| 15.00 | 29.00 | 37.00 | 22.00 | 0.25 | 0.50 | 29.00 | 0.22 | 27.00 | 0.12 | 110.00 | 180.00 | 217.00 | 51.00 | 5.00 | 23.00 |
| 26.00 | 36.00 | 32.00 | 46.00 | 0.96 | 9.30 | 55.00 | 0.31 | 34.00 | 0.19 | 113.00 | 170.00 | 259.00 | 59.00 | 19.00 | 45.00 |
| 15.00 | 27.00 | 27.00 | 21.00 | 5.40 | 1.90 | 23.00 | 0.34 | 25.00 | 0.10 | 108.00 | 180.00 | 205.00 | 48.00 | 8.90 | 24.00 |
| 13.00 | 9.30 | 39.00 | 78.00 | 0.25 | 11.00 | 97.00 | 0.27 | 7.60 | 0.19 | 116.00 | 170.00 | 204.00 | 66.00 | 13.00 | 39.00 |
| 5.80 | 26.00 | 23.00 | 11.00 | 0.78 | 7.10 | 9.50 | 0.17 | 25.00 | 0.15 | 109.00 | 170.00 | 198.00 | 47.00 | 19.00 | 22.00 |
| 18.00 | 37.00 | 30.00 | 24.00 | 0.82 | 12.00 | 26.00 | 0.24 | 34.00 | 0.18 | 112.00 | 170.00 | 252.00 | 56.00 | 17.00 | 27.00 |
| 1.50 | 18.00 | 17.00 | 8.30 | 0.95 | 9.80 | 6.40 | 0.07 | 17.00 | 0.10 | 102.00 | 170.00 | 174.00 | 41.00 | 100.00 | 18.00 |
| 15.00 | 23.00 | 34.00 | 40.00 | 0.86 | 19.00 | 44.00 | 0.27 | 22.00 | 0.20 | 98.00 | 140.00 | 221.00 | 47.00 | 16.00 | 31.00 |
| 5.00 | 14.00 | 56.00 | 31.00 | 0.25 | 1.00 | 39.00 | 0.51 | 5.70 | 0.12 | 106.00 | 170.00 | 155.00 | 52.00 | 5.00 | 31.00 |
| 7.10 | 6.30 | 38.00 | 62.00 | 0.25 | 2.50 | 79.00 | 0.72 | 5.10 | 0.15 | 108.00 | 170.00 | 166.00 | 54.00 | 12.00 | 43.00 |
| 2.90 | 15.00 | 15.00 | 6.30 | 0.78 | 3.60 | 5.50 | 0.04 | 13.00 | 0.08 | 102.00 | 190.00 | 179.00 | 39.00 | 100.00 | 21.00 |
| 4.60 | 6.20 | 36.00 | 37.00 | 2.00 | 8.00 | 45.00 | 0.31 | 5.20 | 0.16 | 104.00 | 160.00 | 169.00 | 48.00 | 18.00 | 33.00 |
| 0.16 | 5.60 | 20.00 | 7.40 | 1.10 | 13.00 | 2.90 | 0.02 | 2.80 | 0.07 | 95.00 | 160.00 | 126.00 | 29.00 | 120.00 | 1.00 |
| 1.90 | 5.80 | 20.00 | 16.00 | 1.20 | 7.30 | 15.00 | 0.26 | 3.80 | 0.12 | 93.00 | 140.00 | 155.00 | 38.00 | 40.00 | 31.00 |
| 1.80 | 19.00 | 15.00 | 2.10 | 0.25 | 3.80 | 0.98 | 0.03 | 19.00 | 0.10 | 120.00 | 230.00 | 165.00 | 35.00 | 170.00 | 18.00 |
| 19.00 | 33.00 | 25.00 | 12.00 | 0.25 | 3.70 | 9.90 | 0.07 | 28.00 | 0.05 | 117.00 | 210.00 | 204.00 | 45.00 | 21.00 | 23.00 |

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| 6.50 | 19.00 | 33.00 | 19.00 | 0.25 | 14.00 | 15.00 | 0.08 | 17.00 | 0.06 | 108.00 | 170.00 | 154.00 | 37.00 | 58.00 | 26.00 |
| 17.00 | 14.00 | 26.00 | 5.30 | 0.25 | 1.80 | 3.70 | 0.08 | 12.00 | 0.12 | 121.00 | 280.00 | 156.00 | 34.00 | 130.00 | 24.00 |
| 3.20 | 15.00 | 21.00 | 7.40 | 0.25 | 5.00 | 5.80 | 0.05 | 13.00 | 0.08 | 90.00 | 140.00 | 158.00 | 33.00 | 80.00 | 24.00 |
| 5.70 | 9.80 | 19.00 | 8.40 | 0.25 | 4.50 | 7.30 | 0.13 | 9.80 | 0.06 | 122.00 | 220.00 | 155.00 | 34.00 | 21.00 | 24.00 |
| 11.00 | 23.00 | 19.00 | 12.00 | 0.25 | 2.10 | 9.90 | 0.07 | 20.00 | 0.07 | 113.00 | 180.00 | 197.00 | 41.00 | 78.00 | 29.00 |
| 35.00 | 28.00 | 28.00 | 94.00 | 0.25 | 1.60 | 110.00 | 0.19 | 24.00 | 0.10 | 117.00 | 200.00 | 43.00 | 43.00 | 7.10 | 29.00 |
| 24.00 | 5.60 | 48.00 | 170.00 | 0.25 | 1.60 | 240.00 | 0.08 | 4.10 | 0.11 | 78.00 | 140.00 | 145.00 | 29.00 | 57.00 | 32.00 |
| 33.00 | 12.00 | 46.00 | 220.00 | 0.25 | 1.60 | 280.00 | 0.20 | 0.70 | 0.17 | 100.00 | 160.00 | 69.00 | 41.00 | 7.90 | 39.00 |
| 1.30 | 13.00 | 17.00 | 3.90 | 0.25 | 3.80 | 2.50 | 0.07 | 12.00 | 0.08 | 119.00 | 230.00 | 140.00 | 31.00 | 95.00 | 20.00 |
| 4.90 | 12.00 | 19.00 | 19.00 | 0.25 | 36.00 | 9.70 | 0.06 | 11.00 | 0.07 | 105.00 | 190.00 | 126.00 | 27.00 | 110.00 | 23.00 |
| 16.00 | 19.60 | 39.00 | 23.00 | 0.25 | 3.30 | 21.00 | 0.42 | 15.00 | 0.19 | 98.00 | 180.00 | 32.00 | 32.00 | 74.00 | 37.00 |
| 8.20 | 30.00 | 22.00 | 8.70 | 0.25 | 3.70 | 7.20 | 0.15 | 28.00 | 0.06 | 126.00 | 210.00 | 210.00 | 47.00 | 37.00 | 24.00 |
| 12.00 | 21.00 | 30.00 | 8.10 | 0.25 | 2.10 | 6.40 | 0.21 | 20.00 | 0.17 | 119.00 | 210.00 | 35.00 | 35.00 | 87.00 | 35.00 |
| 20.00 | 21.00 | 37.00 | 45.00 | 0.25 | 3.50 | 45.00 | 0.36 | 20.00 | 0.18 | 112.00 | 180.00 | 39.00 | 39.00 | 48.00 | 44.00 |
| 1.90 | 19.00 | 16.00 | 4.10 | 0.25 | 6.90 | 2.30 | 0.04 | 19.00 | 0.22 | 118.00 | 230.00 | 145.00 | 31.00 | 170.00 | 18.00 |
| 2.60 | 21.00 | 18.00 | 4.50 | 0.25 | 2.50 | 3.30 | 0.05 | 18.00 | 0.13 | 114.00 | 200.00 | 33.00 | 33.00 | 150.00 | 18.00 |
| 13.00 | 27.00 | 31.00 | 12.00 | 0.25 | 4.50 | 11.00 | 0.02 | 24.00 | 0.31 | 124.00 | 210.00 | 202.00 | 46.00 | 56.00 | 24.00 |
| 5.90 | 20.00 | 18.00 | 7.80 | 0.25 | 1.80 | 7.40 | 0.07 | 17.00 | 0.09 | 110.00 | 190.00 | 31.00 | 31.00 | 50.00 | 24.00 |
| 15.00 | 31.00 | 26.00 | 19.00 | 0.25 | 9.50 | 17.00 | 0.05 | 27.00 | 0.08 | 118.00 | 200.00 | 205.00 | 47.00 | 21.00 | 29.00 |
| 22.00 | 37.00 | 28.00 | 32.00 | 0.25 | 7.50 | 33.00 | 0.08 | 30.00 | 0.11 | 108.00 | 160.00 | 55.00 | 55.00 | 34.00 | 32.00 |
| 7.00 | 31.00 | 28.00 | 12.00 | 0.25 | 4.30 | 11.00 | 0.14 | 28.00 | 0.08 | 121.00 | 220.00 | 176.00 | 40.00 | 50.00 | 22.00 |
| 7.70 | 24.00 | 32.00 | 15.00 | 0.25 | 9.80 | 12.00 | 0.20 | 23.00 | 0.09 | 122.00 | 220.00 | 148.00 | 37.00 | 19.00 | 26.00 |
| 9.50 | 37.00 | 28.00 | 27.00 | 0.25 | 17.00 | 25.00 | 0.18 | 34.00 | 0.07 | 126.00 | 210.00 | 51.00 | 51.00 | 39.00 | 32.00 |
| 3.20 | 15.00 | 16.00 | 7.20 | 0.25 | 3.50 | 7.30 | 0.04 | 15.00 | 0.21 | 153.00 | 280.00 | 177.00 | 34.00 | 130.00 | 21.00 |
| 14.00 | 24.00 | 30.00 | 18.00 | 0.25 | 3.10 | 20.00 | 0.04 | 14.00 | 0.04 | 119.00 | 200.00 | 224.00 | 52.00 | 40.00 | 30.00 |
| 18.00 | 26.00 | 26.00 | 19.00 | 0.25 | 3.00 | 21.00 | 0.04 | 24.00 | 0.02 | 136.00 | 220.00 | 239.00 | 45.00 | 45.00 | 28.00 |
| 22.00 | 20.00 | 30.00 | 16.00 | 0.25 | 3.00 | 16.00 | 0.19 | 28.00 | 0.12 | 139.00 | 240.00 | 282.00 | 58.00 | 36.00 | 39.00 |
| 5.10 | 26.00 | 24.00 | 13.00 | 0.25 | 2.80 | 14.00 | 0.04 | 25.00 | 0.02 | 137.00 | 220.00 | 187.00 | 36.00 | 100.00 | 24.00 |
| 66.00 | 27.00 | 50.00 | 240.00 | 0.25 | 3.10 | 270.00 | 0.08 | 24.00 | 0.05 | 111.00 | 200.00 | 222.00 | 50.00 | 15.00 | 58.00 |
| 67.00 | 43.00 | 30.00 | 98.00 | 0.25 | 2.70 | 130.00 | 0.32 | 41.00 | 0.07 | 130.00 | 230.00 | 231.00 | 42.00 | 5.00 | 40.00 |
| 21.00 | 28.00 | 25.00 | 19.00 | 0.25 | 2.70 | 22.00 | 0.23 | 26.00 | 0.05 | 139.00 | 230.00 | 245.00 | 47.00 | 46.00 | 26.00 |
| 12.00 | 28.00 | 29.00 | 33.00 | 0.25 | 3.00 | 38.00 | 0.04 | 26.00 | 0.04 | 137.00 | 210.00 | 235.00 | 45.00 | 77.00 | 28.00 |
| 37.00 | 36.00 | 34.00 | 37.00 | 0.25 | 3.10 | 44.00 | 0.16 | 27.00 | 0.05 | 143.00 | 210.00 | 292.00 | 61.00 | 11.00 | 34.00 |
| 28.00 | 21.00 | 26.00 | 45.00 | 0.25 | 3.20 | 56.00 | 0.31 | 19.00 | 0.06 | 134.00 | 230.00 | 223.00 | 45.00 | 64.00 | 33.00 |
| 62.00 | 38.00 | 41.00 | 99.00 | 0.25 | 2.90 | 130.00 | 0.30 | 26.00 | 0.06 | 140.00 | 190.00 | 322.00 | 72.00 | 5.00 | 42.00 |
| 8.60 | 27.00 | 26.00 | 8.60 | 0.25 | 2.80 | 9.30 | 0.13 | 29.00 | 0.05 | 146.00 | 250.00 | 218.00 | 38.00 | 130.00 | 22.00 |
| 33.00 | 48.00 | 34.00 | 27.00 | 0.25 | 3.00 | 31.00 | 0.12 | 32.00 | 0.04 | 156.00 | 210.00 | 279.00 | 65.00 | 5.00 | 32.00 |
| 17.00 | 31.00 | 25.00 | 13.00 | 0.25 | 2.80 | 15.00 | 0.15 | 30.00 | 0.02 | 148.00 | 240.00 | 242.00 | 46.00 | 70.00 | 26.00 |
| 20.00 | 35.00 | 30.00 | 20.00 | 0.25 | 2.70 | 22.00 | 0.16 | 32.00 | 0.04 | 154.00 | 230.00 | 260.00 | 56.00 | 5.00 | 31.00 |
| 33.00 | 42.00 | 33.00 | 37.00 | 0.25 | 3.00 | 39.00 | 0.42 | 31.00 | 0.04 | 147.00 | 180.00 | 293.00 | 72.00 | 5.00 | 36.00 |
| 6.60 | 27.00 | 24.00 | 8.50 | 0.25 | 2.90 | 8.30 | 0.14 | 26.00 | 0.07 | 153.00 | 250.00 | 229.00 | 42.00 | 130.00 | 22.00 |
| 14.00 | 27.00 | 32.00 | 23.00 | 0.25 | 4.50 | 26.00 | 0.20 | 26.00 | 0.02 | 147.00 | 210.00 | 232.00 | 50.00 | 20.00 | 32.00 |
| 20.00 | 36.00 | 21.00 | 46.00 | 0.25 | 1.30 | 44.00 | 0.15 | 32.00 | 0.08 | 130.00 | 220.00 | 268.00 | 42.00 | 8.20 | 32.00 |
| 24.00 | 13.00 | 39.00 | 200.00 | 0.25 | 1.40 | 250.00 | 0.35 | 12.00 | 0.10 | 124.00 | 10.00 | 194.00 | 43.00 | 33.00 | 44.00 |
| 2.50 | 22.00 | 21.00 | 43.00 | 0.25 | 1.90 | 41.00 | 0.10 | 17.00 | 0.05 | 128.00 | 220.00 | 252.00 | 51.00 | 39.00 | 32.00 |
| 13.00 | 22.00 | 24.00 | 40.00 | 0.25 | 2.00 | 38.00 | 0.16 | 20.00 | 0.07 | 135.00 | 210.00 | 259.00 | 50.00 | 30.00 | 30.00 |
| 30.00 | 21.00 | 32.00 | 53.00 | 0.25 | 1.60 | 47.00 | 0.23 | 18.00 | 0.09 | 128.00 | 200.00 | 286.00 | 53.00 | 12.00 | 37.00 |
| 76.00 | 25.00 | 15.00 | 6.40 | 0.25 | 3.80 | 6.30 | 0.03 | 21.00 | 0.07 | 142.00 | 240.00 | 249.00 | 40.00 | 110.00 | 25.00 |
| 27.00 | 24.00 | 22.00 | 29.00 | 0.25 | 1.40 | 28.00 | 0.34 | 21.00 | 0.13 | 148.00 | 250.00 | 283.00 | 50.00 | 12.00 | 37.00 |
| 1.00 | 0.77 | 8.00 | 1.50 | 0.25 | 4.70 | 0.25 | 0.01 | 0.71 | 0.25 | 152.00 | 300.00 | 139.00 | 22.00 | 170.00 | 13.00 |
| 1.30 | 10.00 | 11.00 | 4.50 | 0.25 | 12.00 | 1.60 | 0.02 | 10.00 | 0.33 | 176.00 | 310.00 | 177.00 | 32.00 | 180.00 | 19.00 |
| 9.30 | 15.00 | 12.00 | 4.10 | 3.40 | 3.50 | 1.60 | 0.02 | 14.00 | 0.24 | 128.00 | 240.00 | 172.00 | 27.00 | 140.00 | 19.00 |
| 22.00 | 33.00 | 30.00 | 24.00 | 0.25 | 1.20 | 30.00 | 0.17 | 23.00 | 0.12 | 156.00 | 240.00 | 267.00 | 55.00 | 8.40 | 37.00 |
| 2.30 | 17.00 | 14.00 | 3.60 | 0.25 | 4.30 | 2.80 | 0.02 | 15.00 | 0.20 | 131.00 | 240.00 | 196.00 | 32.00 | 140.00 | 18.00 |
| 23.00 | 38.00 | 32.00 | 29.00 | 0.25 | 1.10 | 34.00 | 0.21 | 29.00 | 0.17 | 159.00 | 230.00 | 287.00 | 58.00 | 8.90 | 41.00 |

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| 3.80 | 21.00 | 18.00 | 5.20 | 0.25 | 3.50 | 3.40 | 0.10 | 20.00 | 0.12 | 154.00 | 260.00 | 233.00 | 38.00 | 160.00 | 24.00 |
| 11.00 | 25.00 | 26.00 | 10.00 | 0.25 | 1.00 | 12.00 | 0.36 | 22.00 | 0.08 | 160.00 | 250.00 | 247.00 | 46.00 | 56.00 | 28.00 |
| 8.40 | 23.00 | 24.00 | 9.90 | 0.25 | 1.30 | 11.00 | 0.18 | 17.00 | 0.16 | 157.00 | 250.00 | 259.00 | 47.00 | 78.00 | 26.00 |
| 100.00 | 21.00 | 12.00 | 6.60 | 0.25 | 2.70 | 7.20 | 0.04 | 13.00 | 0.10 | 134.00 | 240.00 | 177.00 | 29.00 | 130.00 | 22.00 |
| 5.10 | 23.00 | 15.00 | 9.30 | 0.25 | 1.90 | 10.00 | 0.05 | 20.00 | 0.10 | 145.00 | 240.00 | 224.00 | 39.00 | 93.00 | 23.00 |
| 16.00 | 27.00 | 30.00 | 20.00 | 0.25 | 1.20 | 26.00 | 0.20 | 23.00 | 0.10 | 155.00 | 240.00 | 269.00 | 53.00 | 25.00 | 33.00 |
| 34.00 | 24.00 | 39.00 | 110.00 | 0.25 | 3.10 | 130.00 | 0.11 | 23.00 | 0.02 | 85.00 | 130.00 | 267.00 | 45.00 | 28.00 | 32.00 |
| 58.00 | 16.00 | 33.00 | 100.00 | 0.25 | 3.20 | 130.00 | 0.07 | 12.00 | 0.02 | 74.00 | 5.70 | 173.00 | 27.00 | 3.00 | 22.00 |
| 1.30 | 13.00 | 22.00 | 6.90 | 0.25 | 3.30 | 5.10 | 0.08 | 12.00 | 0.02 | 86.00 | 130.00 | 194.00 | 32.00 | 160.00 | 25.00 |
| 21.00 | 23.00 | 30.00 | 14.00 | 0.25 | 3.20 | 12.00 | 0.09 | 20.00 | 0.02 | 125.00 | 180.00 | 272.00 | 46.00 | 74.00 | 30.00 |
| 7.10 | 20.00 | 30.00 | 7.20 | 0.25 | 5.10 | 5.00 | 0.19 | 19.00 | 0.02 | 131.00 | 230.00 | 251.00 | 40.00 | 150.00 | 27.00 |
| 12.00 | 23.00 | 30.00 | 10.00 | 0.25 | 6.80 | 3.40 | 0.18 | 23.00 | 0.02 | 168.00 | 300.00 | 278.00 | 46.00 | 120.00 | 26.00 |
| 20.00 | 22.00 | 27.00 | 10.00 | 0.08 | 1.00 | 7.90 | 0.05 | 20.00 | 0.07 | 83.00 | 130.00 | 247.00 | 41.00 | 25.00 | 27.00 |
| 15.00 | 20.00 | 25.00 | 8.40 | 0.07 | 1.00 | 5.50 | 0.08 | 16.00 | 0.05 | 87.00 | 150.00 | 221.00 | 36.00 | 68.00 | 24.00 |
| 4.60 | 16.00 | 23.00 | 11.00 | 0.07 | 1.20 | 7.60 | 0.82 | 15.00 | 0.12 | 85.00 | 140.00 | 191.00 | 31.00 | 130.00 | 23.00 |
| 16.00 | 21.00 | 56.00 | 17.00 | 0.07 | 1.30 | 13.00 | 0.14 | 19.00 | 0.08 | 92.00 | 140.00 | 251.00 | 45.00 | 5.00 | 28.00 |
| 39.00 | 24.00 | 39.00 | 25.00 | 0.10 | 1.40 | 24.00 | 0.21 | 20.00 | 0.06 | 92.00 | 130.00 | 323.00 | 59.00 | 5.00 | 33.00 |
| 24.00 | 20.00 | 37.00 | 20.00 | 0.03 | 1.10 | 19.00 | 0.25 | 16.00 | 0.06 | 114.00 | 170.00 | 315.00 | 54.00 | 13.00 | 2.00 |
| 38.00 | 11.00 | 26.00 | 110.00 | 0.07 | 1.00 | 110.00 | 0.08 | 9.70 | 0.05 | 71.00 | 120.00 | 157.00 | 25.00 | 22.00 | 33.00 |
| 9.70 | 19.00 | 28.00 | 8.10 | 0.03 | 6.80 | 8.40 | 0.08 | 18.00 | 0.10 | 96.00 | 150.00 | 231.00 | 38.00 | 110.00 | 22.00 |
| 24.00 | 22.00 | 38.00 | 14.00 | <0.5 | 6.20 | 16.00 | 0.15 | 18.00 | 0.04 | 90.00 | 140.00 | 266.00 | 43.00 | 12.00 | 33.00 |
| | | | | | | | | | | | | | | | 18.00 |
| 13.00 | 23.00 | 39.00 | 14.00 | <0.5 | 6.40 | 16.00 | 0.08 | 15.00 | 0.05 | 98.00 | 150.00 | 215.00 | 40.00 | 22.00 | 21.00 |
| 34.00 | 32.00 | 110.00 | 20.00 | <0.5 | 6.30 | 24.00 | 0.16 | 27.00 | 0.03 | 103.00 | 150.00 | 265.00 | 49.00 | 150.00 | 23.00 |
| 36.00 | 29.00 | 91.00 | 54.00 | <0.5 | 6.40 | 57.00 | 1.13 | 26.00 | 0.10 | 104.00 | 150.00 | 314.00 | 61.00 | 13.00 | 38.00 |
| 42.00 | 41.00 | 390.00 | 100.00 | <0.5 | 6.40 | 120.00 | 0.18 | 34.00 | 0.03 | 98.00 | 120.00 | 312.00 | 59.00 | 14.00 | 33.00 |
| 15.00 | 12.00 | 160.00 | 110.00 | 7.10 | 12.00 | 120.00 | 1.40 | 7.30 | 0.34 | 76.00 | 120.00 | 199.00 | 35.00 | 35.00 | 31.00 |
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| 25.00 | 27.00 | 49.00 | 43.00 | <0.5 | 6.30 | 47.00 | 0.15 | 20.00 | 0.03 | 93.00 | 120.00 | 313.00 | 58.00 | 8.00 | 43.00 |
| 3.00 | 16.00 | 25.00 | 53.00 | 0.03 | 6.40 | 61.00 | 0.14 | 15.00 | 0.02 | 72.00 | 140.00 | 136.00 | 22.00 | 30.00 | 34.00 |
| 28.00 | 9.50 | 20.00 | 57.00 | 0.03 | 6.30 | 70.00 | 0.04 | 4.60 | 0.06 | 73.00 | 130.00 | 100.00 | 15.00 | 260.00 | 27.00 |
| 45.00 | 20.00 | 34.00 | 58.00 | 0.03 | 6.40 | 64.00 | 0.15 | 18.00 | 0.02 | 84.00 | 160.00 | 255.00 | 35.00 | 150.00 | 35.00 |
| 35.00 | 16.00 | 29.00 | 87.00 | 0.03 | 6.30 | 110.00 | 0.07 | 14.00 | 0.04 | 102.00 | 190.00 | 214.00 | 29.00 | 120.00 | 43.00 |
| 0.85 | 10.00 | 23.00 | 95.00 | 0.03 | 6.50 | 120.00 | 0.06 | 3.10 | 0.02 | 83.00 | 170.00 | 150.00 | 28.00 | 140.00 | 30.00 |
| 10.00 | 6.20 | 17.00 | 30.00 | 0.03 | 6.20 | 37.00 | 0.10 | 5.00 | 0.03 | 80.00 | 160.00 | 130.00 | 18.00 | 26.00 | 30.00 |
| 7.30 | 3.60 | 20.00 | 43.00 | 0.03 | 6.10 | 51.00 | 0.07 | 3.20 | 0.05 | 85.00 | 180.00 | 124.00 | 16.00 | 220.00 | 29.00 |