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Analysis Report

Date of Analysis: 04.11.2020
Analysis No: DRJ_3
Date of Sampling: 19.10.2020 - 12:00

Customer: James McKinley
Customer ID: 3059
Tank: 144l reef tank

Main Parameters

Parameter	Measured Value	Ideal Value	Rating
Salinity	37,1 psu	35,0 psu	
Alkalinity (KH)	8,54 dKH	7,50 dKH	

Main Elements

Parameter	Measured Value	Ideal Value	Rating
Calcium	467 mg/l	466 mg/l	
Boron	5,9 mg/l	4,8 mg/l	
Bromide	78 mg/l	71,0 mg/l	
Chloride	19700 mg/l	20564 mg/l	
Potassium	437 mg/l	424 mg/l	
Magnesium	1443 mg/l	1484 mg/l	
Sodium	11308 mg/l	11448 mg/l	
Strontium	7,7 mg/l	8,5 mg/l	
Sulfate	2871 mg/l	2862 mg/l	

Trace Elements

Parameter	Measured Value	Ideal Value	Rating
Barium	4,9 µg/l	10-100 µg/l	
Chromium	n.n.	0,5 µg/l	
Cobalt	1,0 µg/l	0,5 µg/l	
Iron	n.n.	1-3 µg/l	
Fluoride	1,19 mg/l	1,3 mg/l	
Iodine	29 µg/l	50-70 µg/l	
Copper	0,9 µg/l	1-3 µg/l	
Lithium	155 µg/l	50-150 µg/l	
Manganese	0,3 µg/l	1,0 µg/l	
Molybdenum	9,6 µg/l	10-15 µg/l	

Nickel	0,6 µg/l	1,0 µg/l	
Rubidium	52 µg/l	90–150 µg/l	
Selenium	n.n.	0,5 µg/l	
Vanadium	3,1 µg/l	2–3 µg/l	
Zinc	1,4 µg/l	1,0 µg/l	
Tin	14,2 µg/l	< 1 µg/l	

Pollutants

Parameter	Measured Value	Ideal Value	Rating
Aluminium	7,2 µg/l	< 40 µg/l	
Bismuth	n.n.	< 3 µg/l	
Lead	n.n.	< 3 µg/l	
Mercury	n.n.	< 3 µg/l	
Antimony	n.n.	< 3 µg/l	
Titan	n.n.	< 1 µg/l	
Cadmium	n.n.	< 3 µg/l	
Uranium	n.n.	< 10 µg/l	
Beryllium	n.n.	< 1 µg/l	
Arsenic	n.n.	< 3 µg/l	
Lanthanum	n.n.	< 3 µg/l	
Thallium	n.n.	< 3 µg/l	

Nutrients

Parameter	Measured Value	Ideal Value	Rating
Phosphate photometric	0,011 mg/l	0,03–0,1 mg/l	
Total Phosphorous (ICP)	5 µg/l	10–50 µg/l	
Nitrate	26,92 mg/l	2–15 mg/l	
Nitrite	n.n.	< 0,1 mg/l	
Silicon	34 µg/l	20–200 µg/l	

RO-Check

Parameter	Measured Value	Ideal Value	Rating
Copper	n.b.	n.n. µg/l	
Zinc	n.b.	n.n. µg/l	
Silicon	n.b.	n.n. µg/l	

No action required

Need for action

Urgent need for action

n.n Not found

n.b Not measured

Interpretation

Dear Jim,

Salinity is elevated, we recommend keeping it between 33-35 psu. Salinity should gradually be lowered in the course of several days. We also recommend checking your measurement device, if it reads correctly (for example using Oceamo reference solutions).

Alkalinity is a little bit elevated, we generally recommend values between 7 and 8 dKH.

Main elements are close to optimum values, the slightly elevated boron is not critical.

Regarding trace elements barium is lower compared to natural seawater. Barium is chemically related to calcium and strontium and is also deposited within the coral skeleton. We have gotten reports of positive effects following barium dosing, so I would recommend keeping barium slightly above NSW levels.

The concentration of iodine is low, which can be a limiting factor for growth. We recommend dosing iodine twice weekly (10 µg/l), for example using our Single Element Iodine.

The metallic trace elements manganese (important for redox processes) and nickel (important for the metabolization of urea and thus a contributor to N-availability) are low, your tank might benefit from additional trace element dosing.

Rubidium is below the natural concentration. There is no known biological function of rubidium known yet, but a role can also not be ruled out. This is why we recommend dosing to NSW levels.

Tin is elevated: The measured concentration is unlikely to be acutely harmful, but the tin level should not rise.

Regarding phosphate/phosphorus measurements the results should be seen with some skepticism, since the samples were not filtered, which might have led to microbial assimilation of phosphate thus lowering the reading (usually we add a 0.2 µm filter to the sampling kit to avoid microbial contamination of the sample).

Nitrate is OK for a mixed tank, for optimum keeping of SPS we recommend lowering nitrate into the 10 mg/l range (water changes, wet skimming).

In case of any questions I am happy to help!

Best regards,

Christoph