

AUDIT REPORT

2023



**ANALYTIX
AUDIT**

Security Assessment **Mermaid Coin Token**

June 16, 2023

Audit Status: Pass

Audit Edition: Advance





Risk Analysis

Classifications of Manual Risk Results

| Classification | Description |
|---|----------------------------------|
|  Critical | Danger or Potential Problems. |
|  Major | Be Careful |
|  Minor | Pass, Not-Detected or Safe Item. |
|  Informational | Function Detected |

Manual Code Review Risk Results

| Contract Priviledge | Description |
|--|------------------------------|
|  Can mint? | Pass |
|  Edit taxes over 25%? | Pass |
|  Max Tx? | Pass |
|  Max Wallet? | Pass |
|  Has to enable trading? | Trading is already enabled. |
|  Modify Tax | Pass |
|  Can blacklist? | Pass |
|  Is Honeypot? | Liquidity has not been added |
|  Trading Cooldown | Not Detected |
|  Can Pause Trade? | Pass |
|  Pause Transfer? | Not Detected |





| Contract Priviledge | Description |
|-----------------------|--|
| ● Is Proxy?? | Not Detected |
| ● Is Anti Whale? | Not Detected |
| ● Is Anti Bot? | Not Detected |
| ● Is Blacklist? | Not Detected |
| ● Blacklist Check | Pass |
| ● is Whitelist? | Not Detected |
| ● Buy Tax | 5 |
| ● Sell Tax | 5 |
| ● Can Take Ownership? | Not Detected |
| ● Hidden Owner? | Not Detected |
| ● Owner | 0xafb13eafbea36cf8a53830c30a6c1adfb7dd31e6 |
| ● Self Destruct? | Not Detected |
| ● Other? | Not Detected |
| ● Other? | Not Detected |
| ● Holders | 1 |
| ● Auditor Confidence | Medium |

The following quick summary it's added to the project overview; however, there are more details about the audit and its results. Please read every detail.

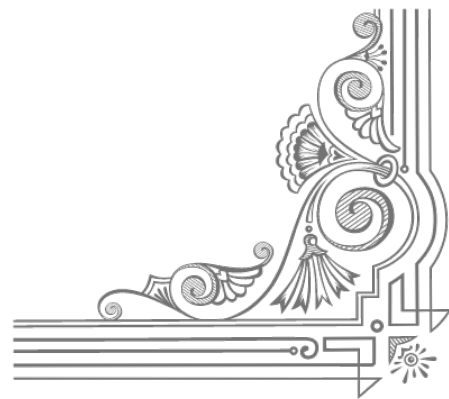




Table of Contents

1 Assessment Summary

2 Project Overview

- 2.1 Token Summary
- 2.2 Risk Analysis Summary
- 2.3 Main Contract Assessed

3 Smart Contract Risk Checks

- 3.1 Mint Check
- 3.2 Fees Check
- 3.3 Blacklist Check
- 3.4 MaxTx Check
- 3.5 Pause Trade Check
- 3.6 Contract Ownership
- 3.7 Liquidity Ownership
- 3.8 KYC Check

4 Smart Contract Vulnerability Checks

- 4.1 Smart Contract Vulnerability Details
- 4.2 Smart Contract Inheritance Details
- 4.3 Smart Contract Privileged Functions

5 Technical Findings Details

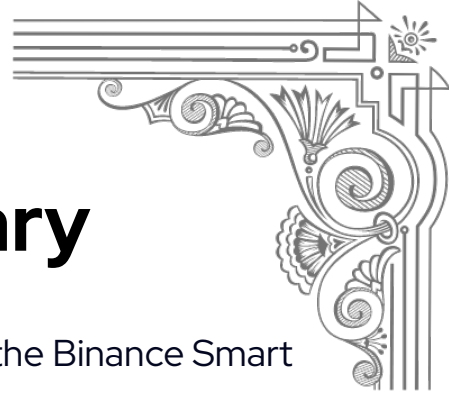
6 Social Media Check(Informational)

7 Assessment Results and Notes(Important)

7.1 Score Results

8 Disclaimer





Assessment Summary

This report has been prepared for Mermaid Coin Token on the Binance Smart Chain network. AnalytixAudit provides both client-centered and user-centered examination of the smart contracts and their current status when applicable. This report represents the security assessment made to find issues and vulnerabilities on the source code along with the current liquidity and token holder statistics of the protocol.

A comprehensive examination has been performed, utilizing Cross Referencing, Static Analysis, In-House Security Tools, and line-by-line Manual Review.

The auditing process pays special attention to the following considerations:

- Testing the smart contracts against both common and uncommon attack vectors.
- Inspecting liquidity and holders statistics to inform the current status to both users and client when applicable.
- Assessing the codebase to ensure compliance with current best practices and industry standards.
- Verifying contract functions that allow trusted and/or untrusted actors to mint, lock, pause, and transfer assets.
- Cross referencing contract structure and implementation against similar smart contracts produced by industry leaders
- Thorough line-by-line manual review of the entire codebase by industry experts.





Project Overview

Token Summary

| Parameter | Result |
|---------------|---|
| Address | 0x05fBD37c8DB541523f3615af5B3B0e94ee23e084 |
| Name | Mermaid Coin |
| Token Tracker | Mermaid Coin (MERMAID) |
| Decimals | 9 |
| Supply | 1,000,000,000,000 |
| Platform | Binance Smart Chain |
| compiler | v0.8.17+commit.8df45f5f |
| Contract Name | MERMAID |
| Optimization | No |
| LicenseType | MIT |
| Language | Solidity |
| Codebase | https://bscscan.com/address/0x05fBD37c8DB541523f3615af5B3B0e94ee23e084#code |
| Payment Tx | Corporate |





Project Overview

Simulation Summary

| Parameter | Result |
|-----------------------|----------|
| Transfer From Owner | Pass |
| Transfer From Holder | Pass |
| Add Liquidity | Pass |
| RemoveLiquidity | Pass |
| Buy from Owner | Pass |
| Buy from Holder | Pass |
| Sale from Owner | Pass |
| Sale from Holder | Pass |
| Remove Liquidity | Pass |
| SwapAndLiquify | Pass |
| SwapAndSale w/Fee | Pass |
| SwapAndSale TX | |
| SwapAndSaleNoFee | Pass |
| SwapAndSale No/Fee TX | |
| ExcludeFromFees | Pass |
| LaunchPad | PinkSale |





| Parameter | Result |
|------------------|--------|
| Pool Creation | Pass |
| Pool Creation TX | |
| Pool Finalize | Pass |
| Pool Finalize TX | |
| Enable | Pass |

The following quick summary it's added to the project overview; however, there are more details about the audit and its results. Please read every detail.





**Main Contract Assessed
Contract Name**

| Name | Contract | Live |
|--------------|--|------|
| Mermaid Coin | 0x05fBD37c8DB541523f3615af5B3B0e94ee23e084 | Yes |

TestNet Contract was Not Assessed

Solidity Code Provided

| SolidID | File Sha-1 | FileName |
|---------|---|-------------|
| MERMAID | 9eb45379dccf041954c13960d4e559933834c11 | MERMAID.sol |
| MERMAID | | |
| MERMAID | | |
| MERMAID | | |





KYC Information

The Project Owners of Mermaid Coin is not KYC.

KYC Information Notes:

Auditor Notes: No info founde

Project Owner Notes:





Smart Contract Vulnerability Checks

The Smart Contract Weakness Classification Registry (SWC Registry) is an implementation of the weakness classification scheme proposed in EIP-1470. It is loosely aligned to the terminologies and structure used in the Common Weakness Enumeration (CWE) while overlaying a wide range of weakness variants that are specific to smart contracts.

| ID | Severity | Name | File | location |
|---------|----------|---|-------------|-----------|
| SWC-100 | Pass | Function Default Visibility | MERMAID.sol | L: 0 C: 0 |
| SWC-101 | Pass | Integer Overflow and Underflow. | MERMAID.sol | L: 0 C: 0 |
| SWC-102 | Pass | Outdated Compiler Version file. | MERMAID.sol | L: 0 C: 0 |
| SWC-103 | Pass | A floating pragma is set. | MERMAID.sol | L: 0 C: 0 |
| SWC-104 | Pass | Unchecked Call Return Value. | MERMAID.sol | L: 0 C: 0 |
| SWC-105 | Pass | Unprotected Ether Withdrawal. | MERMAID.sol | L: 0 C: 0 |
| SWC-106 | Pass | Unprotected SELFDESTRUCT Instruction | MERMAID.sol | L: 0 C: 0 |
| SWC-107 | Pass | Read of persistent state following external call. | MERMAID.sol | L: 0 C: 0 |
| SWC-108 | Pass | State variable visibility is not set.. | MERMAID.sol | L: 0 C: 0 |
| SWC-109 | Pass | Uninitialized Storage Pointer. | MERMAID.sol | L: 0 C: 0 |
| SWC-110 | Pass | Assert Violation. | MERMAID.sol | L: 0 C: 0 |

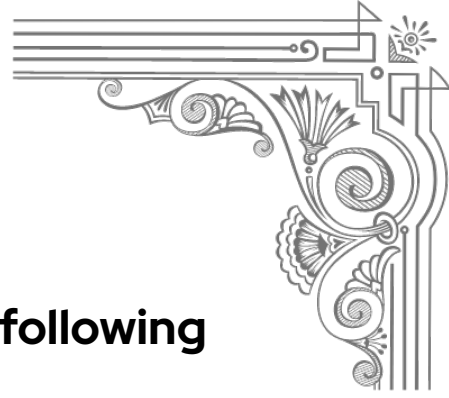


| ID | Severity | Name | File | location |
|---------|----------|--|-------------|-----------|
| SWC-111 | Pass | Use of Deprecated Solidity Functions. | MERMAID.sol | L: 0 C: 0 |
| SWC-112 | Pass | Delegate Call to Untrusted Callee. | MERMAID.sol | L: 0 C: 0 |
| SWC-113 | Pass | Multiple calls are executed in the same transaction. | MERMAID.sol | L: 0 C: 0 |
| SWC-114 | Pass | Transaction Order Dependence. | MERMAID.sol | L: 0 C: 0 |
| SWC-115 | Pass | Authorization through tx.origin. | MERMAID.sol | L: 0 C: 0 |
| SWC-116 | Pass | A control flow decision is made based on The block.timestamp environment variable. | MERMAID.sol | L: 0 C: 0 |
| SWC-117 | Pass | Signature Malleability. | MERMAID.sol | L: 0 C: 0 |
| SWC-118 | Pass | Incorrect Constructor Name. | MERMAID.sol | L: 0 C: 0 |
| SWC-119 | Pass | Shadowing State Variables. | MERMAID.sol | L: 0 C: 0 |
| SWC-120 | Pass | Potential use of block.number as source of randomness. | MERMAID.sol | L: 0 C: 0 |
| SWC-121 | Pass | Missing Protection against Signature Replay Attacks. | MERMAID.sol | L: 0 C: 0 |
| SWC-122 | Pass | Lack of Proper Signature Verification. | MERMAID.sol | L: 0 C: 0 |
| SWC-123 | Pass | Requirement Violation. | MERMAID.sol | L: 0 C: 0 |
| SWC-124 | Pass | Write to Arbitrary Storage Location. | MERMAID.sol | L: 0 C: 0 |
| SWC-125 | Pass | Incorrect Inheritance Order. | MERMAID.sol | L: 0 C: 0 |



| ID | Severity | Name | File | location |
|---------|----------|--|-------------|-----------|
| SWC-126 | Pass | Insufficient Gas Griefing. | MERMAID.sol | L: 0 C: 0 |
| SWC-127 | Pass | Arbitrary Jump with Function Type Variable. | MERMAID.sol | L: 0 C: 0 |
| SWC-128 | Pass | DoS With Block Gas Limit. | MERMAID.sol | L: 0 C: 0 |
| SWC-129 | Pass | Typographical Error. | MERMAID.sol | L: 0 C: 0 |
| SWC-130 | Pass | Right-To-Left-Override control character (U +202E). | MERMAID.sol | L: 0 C: 0 |
| SWC-131 | Pass | Presence of unused variables. | MERMAID.sol | L: 0 C: 0 |
| SWC-132 | Pass | Unexpected Ether balance. | MERMAID.sol | L: 0 C: 0 |
| SWC-133 | Pass | Hash Collisions with Multiple Variable Length Arguments. | MERMAID.sol | L: 0 C: 0 |
| SWC-134 | Pass | Message call with hardcoded gas amount. | MERMAID.sol | L: 0 C: 0 |
| SWC-135 | Pass | Code With No Effects (Irrelevant/Dead Code). | MERMAID.sol | L: 0 C: 0 |
| SWC-136 | Pass | Unencrypted Private Data On-Chain. | MERMAID.sol | L: 0 C: 0 |

We scan the contract for additional security issues using MYTHX and industry-standard security scanning tools.



Inheritance

The contract for Mermaid Coin has the following inheritance structure.

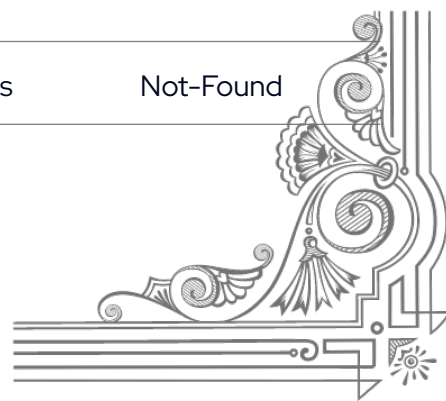
The Project has a Total Supply of 1,000,000,000,000





Smart Contract Advance Checks

| ID | Severity | Name | Result | Status |
|------------|---------------|---|--------|-----------|
| MERMAID-01 | Minor | Potential Sandwich Attacks. | Pass | Not-Found |
| MERMAID-02 | Minor | Function Visibility Optimization | Pass | Not-Found |
| MERMAID-03 | Minor | Lack of Input Validation. | Pass | Not-Found |
| MERMAID-04 | Major | Centralized Risk In addLiquidity. | Pass | Not-Found |
| MERMAID-05 | Minor | Missing Event Emission. | Pass | Not-Found |
| MERMAID-06 | Minor | Conformance with Solidity Naming Conventions. | Pass | Not-Found |
| MERMAID-07 | Minor | State Variables could be Declared Constant. | Pass | Not-Found |
| MERMAID-08 | Minor | Dead Code Elimination. | Pass | Not-Found |
| MERMAID-09 | Major | Third Party Dependencies. | Pass | Not-Found |
| MERMAID-10 | Major | Initial Token Distribution. | Pass | Not-Found |
| MERMAID-11 | Major | Complexity on the tax calculations. | Pass | Not-Found |
| MERMAID-12 | Major | Centralization Risks In The X Role | Pass | Not-Found |
| MERMAID-13 | Informational | Extra Gas Cost For User.. | Pass | Not-Found |










| ID | Severity | Name | Result | Status |
|----------------|---------------|--|--------|-----------|
| MERMAID-1 4 | Medium | Unnecessary Use Of SafeMath | Pass | Not-Found |
| MERMAID-15 | Medium | Symbol Length Limitation due to Solidity Naming Standards. | Pass | Not-Found |
| MERMAID-1 6 | Medium | Invalid collection of Taxes during Transfer. | Pass | Not-Found |
| MERMAID-17 | Informational | Conformance to numeric notation best practice. | Pass | Not-Found |
| MERMAID-1 8 | Informational | Enable Trade and Exclude Exist to create a whitelist. | Pass | Not-found |








Technical Findings Summary

Classification of Risk

| Severity | Description |
|---|--|
|  Critical | Risks are those that impact the safe functioning of a platform and must be addressed before launch. Users should not invest in any project with outstanding critical risks. |
|  Major | Risks can include centralization issues and logical errors. Under specific circumstances, these major risks can lead to loss of funds and/or control of the project. |
|  Medium | Risks may not pose a direct risk to users' funds, but they can affect the overall functioning of a platform |
|  Minor | Risks can be any of the above but on a smaller scale. They generally do not compromise the overall integrity of the Project, but they may be less efficient than other solutions. |
|  Informational | Errors are often recommended to improve the code's style or certain operations to fall within industry best practices. They usually do not affect the overall functioning of the code. |

Findings

| Severity | Found | Pending | Resolved |
|---|-------|---------|----------|
|  Critical | 0 | 0 | 0 |
|  Major | 0 | 0 | 0 |
|  Medium | 0 | 0 | 0 |
|  Minor | 0 | 0 | 0 |
|  Informational | 0 | 0 | 0 |
| Total | 0 | 0 | 0 |





Social Media Checks

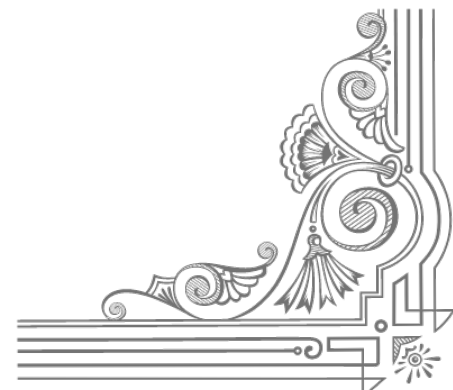
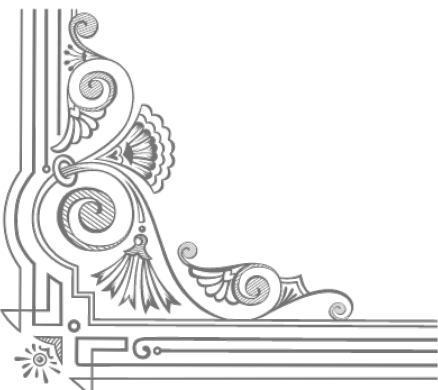
| Social Media | URL | Result |
|--------------|---|--------|
| Twitter | https://twitter.com/Mermaid_Coin | Pass |
| Other | | Fail |
| Website | https://mermaidcoin.io | Pass |
| Telegram | https://t.me/MermaidCoin | Pass |

We recommend to have 3 or more social media sources including a completed working websites.

Social Media Information Notes:

Auditor Notes: undefined

Project Owner Notes:





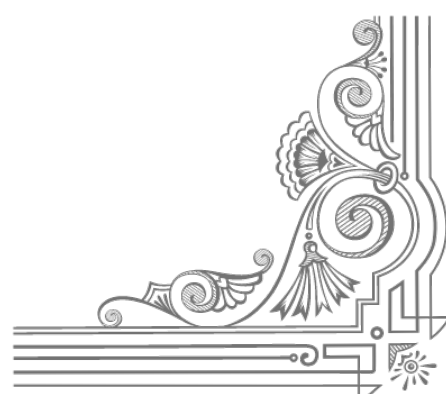
Assessment Results

Score Results

| Review | Score |
|---------------------|--------|
| Overall Score | 92/100 |
| Auditor Score | 90/100 |
| Review by Section | Score |
| Manual Scan Score | 38/53 |
| SWC Scan Score | 37 /37 |
| Advance Check Score | 17 /19 |

The Following Score System Has been Added to this page to help understand the value of the audit, the maximum score is 100, however to attain that value the project must pass and provide all the data needed for the assessment. Our Passing Score has been changed to 80 Points, if a project does not attain 80% is an automatic failure. Read our notes and final assessment below.

Audit Passed





Assessment Results

Important Notes:

- No High-Risk Issues or vulnerabilities were found.
- Always DYOR on the project itself.

Auditor Score =90
Audit Passed

Audit Passed

Current project reviewed successfully passed audit, meeting all requirements for approval per Analytix Audit guidelines.



@FreddyCryptos
Founder & CEO

Today's Date
Dubai - United Arab Emirates



Appendix

Finding Categories

Centralization / Privilege

Centralization / Privilege findings refer to either feature logic or implementation of components that act against the nature of decentralization, such as explicit ownership or specialized access roles in combination with a mechanism to relocate funds.

Gas Optimization

Gas Optimization findings do not affect the functionality of the code but generate different, more optimal EVM opcodes resulting in a reduction on the total gas cost of a transaction.

Logical Issue

Logical Issue findings detail a fault in the logic of the linked code, such as an incorrect notion on how block.timestamp works.

Control Flow

Control Flow findings concern the access control imposed on functions, such as owner-only functions being invoke-able by anyone under certain circumstances.

Volatile Code

Volatile Code findings refer to segments of code that behave unexpectedly on certain edge cases that may result in a vulnerability.

Coding Style

Coding Style findings usually do not affect the generated byte-code but rather comment on how to make the codebase more legible and, as a result, easily maintainable.

Inconsistency

Inconsistency findings refer to functions that should seemingly behave similarly yet contain different code, such as a constructor assignment imposing different requirements on the input variables than a setter function.

Coding Best Practices

ERC 20 Coding Standards are a set of rules that each developer should follow to ensure the code meets a set of criteria and is readable by all the developers.





Disclaimer

AnalytixAudit has conducted an independent security assessment to verify the integrity of and highlight any vulnerabilities or errors, intentional or unintentional, that may be present in the reviewed code for the scope of this assessment. This report does not constitute agreement, acceptance, or advocacy for the Project, and users relying on this report should not consider this as having any merit for financial advice in any shape, form, or nature. The contracts audited do not account for any economic developments that the Project in question may pursue, and the veracity of the findings thus presented in this report relate solely to the proficiency, competence, aptitude, and discretion of our independent auditors, who make no guarantees nor assurance that the contracts are entirely free of exploits, bugs, vulnerabilities or deprecation of technologies.

All information provided in this report does not constitute financial or investment advice, nor should it be used to signal that any persons reading this report should invest their funds without sufficient individual due diligence, regardless of the findings presented. Information is provided 'as is, and AnalytixAudit is under no covenant to audited completeness, accuracy, or solidity of the contracts. In no event will AnalytixAudit or its partners, employees, agents, or parties related to the provision of this audit report be liable to any parties for, or lack thereof, decisions or actions with regards to the information provided in this audit report.

The assessment services provided by AnalytixAudit are subject to dependencies and are under continuing development. You agree that your access or use, including but not limited to any services, reports, and materials, will be at your sole risk on an as-is, where-is, and as-available basis. Cryptographic tokens are emergent technologies with high levels of technical risk and uncertainty. The assessment reports could include false positives, negatives, and unpredictable results. The services may access, and depend upon, multiple layers of third parties.

