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AUDIT COMPANY

MarsDoge
Smart Contract Security Audit

TechRate

September, 2021

Disclaimer

This is a limited report on our findings based on our analysis, in accordance with good industry practice as at the date of this report, in relation to cybersecurity vulnerabilities and issues in the framework and algorithms based on smart contracts, the details of which are set out in this report. In order to get a full view of our analysis, it is crucial for you to read the full report. While we have done our best in conducting our analysis and producing this report, it is important to note that you should not rely on this report and cannot claim against us on the basis of what it says or doesn't say, or how we produced it, and it is important for you to conduct your own independent investigations before making any decisions. We go into more detail on this in the below disclaimer below – please make sure to read it in full.

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The analysis of the security is purely based on the smart contracts alone. No applications or operations were reviewed for security. No product code has been reviewed.

Background

TechRate was commissioned by MarsDoge to perform an audit of smart contracts:
https://github.com/marsdogedev/marsdoge/commit/db07e502ee0747bae646d4224a83425e43f4b23a

The purpose of the audit was to achieve the following:

- **Ensure that the smart contract functions as intended.**
- **Identify potential security issues with the smart contract.**

The information in this report should be used to understand the risk exposure of the smart contract, and as a guide to improve the security posture of the smart contract by remediating the issues that were identified.

Issues Checking Status

	Issue description	Checking status
1.	Compiler errors.	Passed
2.	Race conditions and Reentrancy. Cross-function race conditions.	Passed
3.	Possible delays in data delivery.	Passed
4.	Oracle calls.	Passed
5.	Front running.	Passed
6.	Timestamp dependence.	Passed
7.	Integer Overflow and Underflow.	Passed
8.	DoS with Revert.	Passed
9.	DoS with block gas limit.	Low issues
10.	Methods execution permissions.	Passed
11.	Economy model of the contract.	Passed
12.	The impact of the exchange rate on the logic.	Passed
13.	Private user data leaks.	Passed
14.	Malicious Event log.	Passed
15.	Scoping and Declarations.	Passed
16.	Uninitialized storage pointers.	Passed
17.	Arithmetic accuracy.	Passed
18.	Design Logic.	Low issues
19.	Cross-function race conditions.	Passed
20.	Safe Open Zeppelin contracts implementation and usage.	Passed
21.	Fallback function security.	Passed

Security Issues

High Severity Issues

No high severity issues found.

Medium Severity Issues

No medium severity issues found.

Low Severity Issues

1. Out of gas

Issue:

- The function `includeInReward()` uses the loop to find and remove addresses from the `_excluded` list. Function will be aborted with `OUT_OF_GAS` exception if there will be a long excluded addresses list.

- The function `_getCurrentSupply` also uses the loop for evaluating total supply. It also could be aborted with `OUT_OF_GAS` exception if there will be a long excluded addresses list.

Recommendation:
Check that the excluded array length is not too big.

2. Wrong farming amount transfer

Issue:

- FarmingAmount is distributed using _transferStandard function. That means only reflection transfer with no checking addresses to be excluded from reward. If them would be, this is the high issue.

Recommendation:
Check that the addresses excluded from reward or not and use proper functions to transfer farmingAmount.

3. Antibot issue

Issue:

- Antibot protection logic activates with condition *«_antiBotEnabled && _isExcludedFromAntiBot[sender]»*. That means only excluded from antibot addresses will take part in this code block

Recommendation:
Antibot protection need for addresses that is not excluded from anti bot.

Notes:

- Owner can change dividend tracker that could be not audited and some functions may work in different ways.
- addLiquidity() function is unused.

Owner privileges (In the period when the owner is not renounced)

- Owner can exclude from dividends.
- Owner can change fees.
- Owner can change fee receivers.
- Owner can change distribution criteria.
- Owner can change gas for processing.
- Owner can change auto burn amount and period.
- Owner can exclude from the fee.
- Owner can change the maximum transaction amount.
- Owner can change minimum number of tokens to add to liquidity.
- Owner can change marketing, charity and dev addresses.
- Owner can change antibot settings.
- Owner can withdraw contract BNBs and BEP20 tokens.
- Owner can blacklist addresses.

Conclusion

Smart contracts contain low severity issues! Liquidity pair contract's security is not checked due to out of scope. The further transfers and operations with the funds raise are not related to this particular contract.

Liquidity locking details NOT provided by the team.

TechRate note:

Please check the disclaimer above and note, the audit makes no statements or warranties on business model, investment attractiveness or code sustainability. The report is provided for the only contract mentioned in the report and does not include any other potential contracts deployed by Owner.