TechRate
March, 2022

SMART CONTRACTS SECURITY AUDIT REPORT

Audit Details

Audited project

Safuapedev

Deployer address

Not deployed

Client contacts:

Safuapedev team

Blockchain

Not provided

Project website:

https://safuape.finance

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 Safuapedev to perform an audit of smart contracts:
https://github.com/safuapedev/bsape_erc20_sc/blob/main/BSAPE.sol

on commit:
https://github.com/safuapedev/bsape_erc20_sc/commit/fb80be520dd73753bf2bb469364aa22f978fa8fb

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.**	Passed
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.
- The function `amnestySniper()` also uses the loop to iterate through _confirmedSnipers list. It also could be aborted with OUT_OF_GAS exception if there will be a long addresses list.

Recommendation:
Check that the arrays' length is not too big.

Notes:

- Contract balance should higher than balanceOf(uniswapV2Pair).mul(feeRate).div(100) to run swap tokens.
- Return value of low-level calls not used:
  - *treasuryWallet.call{value: amount}("");*
  - *_msgSender().call{value: rewardsSent}("");*
- Failure condition of 'send' ignored. Consider using 'transfer' instead:
  - payable(owner()).send(address(this).balance);

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

- Owner can initialize the contract.
- Owner can open trading.
- Owner can change _maxTxAmount and _maxWalletSize.
- Owner can exclude from the fee.
- Owner can change rewardsClaimTimeSeconds.
- Owner can change fees.
- Owner can change feeSellMultiplier.
- Owner can change treasuryWallet.
- Owner can enable/disable _isMaxBuyActivated.
- Owner can change buybackTokenAddress.
- Owner can change buybackReceiver address.
- Owner can add/remove pairs addresses.
- Owner can change boostRewardsPercent.
- Owner can change boostRewardsContract and feeExclusionContract addresses.
- Owner can add snipers (removeSniper() function).
- Owner can change feeRate.
- Owner can manually swap tokens.
- Owner can withdraw contract native tokens.

Conclusion

Smart contracts contain low severity issues! The further transfers and operations with the funds raise are not related to this particular contract. Smart contract contains interfaces that is not audited due to out of scope, some functions may work different way.

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.