Smart Contract Security Audit

Audit details:

Audited project:	Barbecue
Deployer address	0x8dac695150cff66df2ddcc2727056e485828004f
Blockchain:	Binance Smart Chain
Project website:	https://app.barbecueswap.finance/ifo

May, 2021
TechRate

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 Barbecue to perform an audit of smart contracts:

- *https://bscscan.com/address/0xD9A88f9b7101046786490bAF433f0f6aB3D753E2#code*

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.

Contracts details

Token contract details for 04.05.2021.

Contract name:	Barbecue
Compiler version:	v0.6.12+commit.27d51765
Contract address:	0xD9A88f9b7101046786490bAF433f0f6aB3D753E2
Total supply:	250_000_000_000_000_000_000_000
Token ticker:	BBQ
Decimals:	18
Token holders:	2
Transactions count:	2
Top 100 holders dominance:	100 %
Contract deployer address:	0x8dac695150cff66df2ddcc2727056e485828004f
Contract's current owner address:	0x26b2081247222f44d010a1a7ec74fe9ecc1d89ec

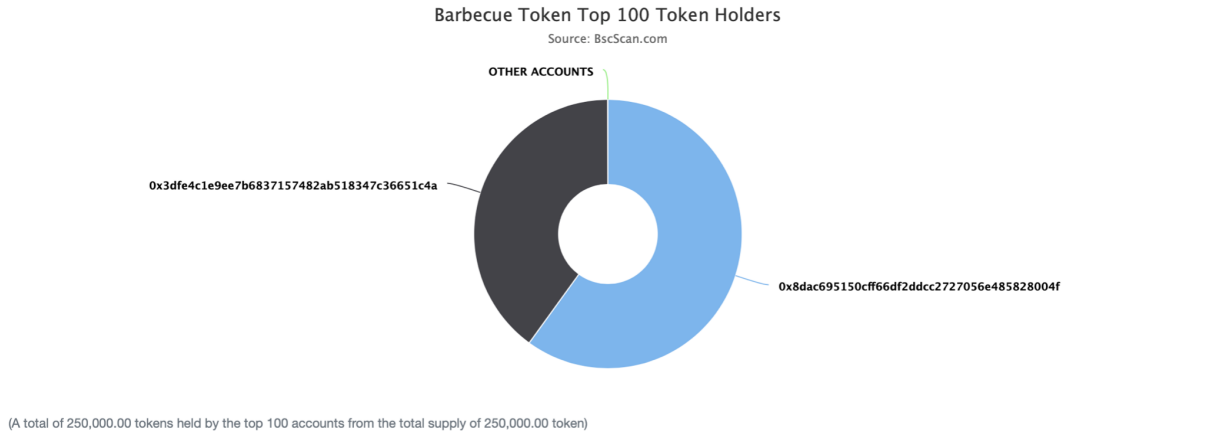
Barbecue top 5 token holders

Rank	Address	Quantity (Token)	Percentage
1	0x8dac695150cff66df2ddcc2727056e485828004f	150,000	60.0000%
2	0x3dfe4c1e9ee7b6837157482ab518347c36651c4a	100,000	40.0000%

Barbecue top 100 token distribution

The top 100 holders collectively own 100.00% (250,000.00 Tokens) of Barbecue Token

Token Total Supply: 250,000.00 Token | Total Token Holders: 2

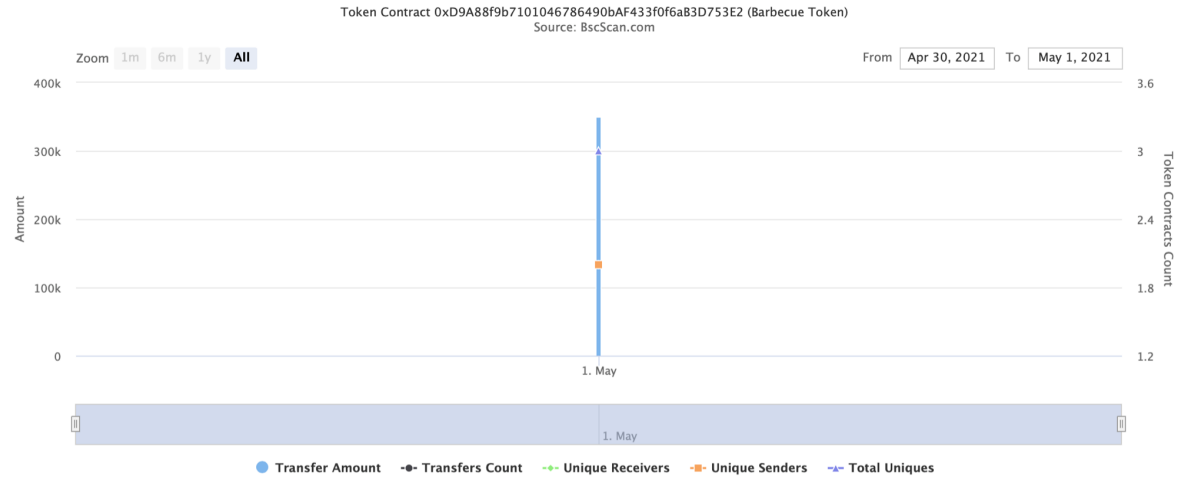


(A total of 250,000.00 tokens held by the top 100 accounts from the total supply of 250,000.00 token)

Barbecue contract interaction details

Time Series: Token Contract Overview

Sat 1, May 2021 - Sat 1, May 2021



Masterchef contract details for 04.05.2021.

Contract name:	MasterChefV2
Compiler version:	v0.6.12+commit.27d51765
Contract address:	0x26B2081247222f44D010A1a7eC74FE9Ecc1D89eC
Dev address:	0x8dac695150cff66df2ddcc2727056e485828004f
Fee address:	0x088c11d25848cbd24f742e4733589bb10745993b
BBQ contract address:	0xd9a88f9b7101046786490baf433f0f6ab3d753e2
BBQ per block:	1_000_000_000_000_000_000
Contract owner address:	0x8dac695150cff66df2ddcc2727056e485828004f
Pool length:	0
Start block:	7140965
Total alloc point:	0
Bonus multiplier:	1

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

MasterChefV2 functions outline

+ [Lib] SafeMath
  - [Int] add
  - [Int] sub
  - [Int] sub
  - [Int] mul
  - [Int] div
  - [Int] div
  - [Int] mod
  - [Int] mod

+ [Int] IBEP20
  - [Ext] totalSupply
  - [Ext] decimals
  - [Ext] symbol
  - [Ext] name
  - [Ext] getOwner
  - [Ext] balanceOf
  - [Ext] transfer #
  - [Ext] allowance
  - [Ext] approve #
  - [Ext] transferFrom #

+ [Lib] Address
  - [Int] isContract
  - [Int] sendValue #
  - [Int] functionCall #
  - [Int] functionCall #
  - [Int] functionCallWithValue #
  - [Int] functionCallWithValue #
  - [Int] functionStaticCall
  - [Int] functionStaticCall
  - [Prv] _verifyCallResult

+ [Lib] SafeBEP20
  - [Int] safeTransfer #
  - [Int] safeTransferFrom #
  - [Int] safeApprove #
  - [Int] safeIncreaseAllowance #
  - [Int] safeDecreaseAllowance #
  - [Prv] _callOptionalReturn #

+ Context
  - [Int] _msgSender
  - [Int] _msgData

+ Ownable (Context)
  - [Int] <Constructor> #
  - [Pub] owner
  - [Pub] renounceOwnership #
    - modifiers: onlyOwner
  - [Pub] transferOwnership #
    - modifiers: onlyOwner

+ ReentrancyGuard
  - [Int] <Constructor> #

+ BEP20 (Context, IBEP20, Ownable)
  - [Pub] <Constructor> #
  - [Ext] getOwner
  - [Pub] name
  - [Pub] symbol
  - [Pub] decimals
  - [Pub] totalSupply
  - [Pub] balanceOf
  - [Pub] transfer #
  - [Pub] allowance
  - [Pub] approve #
  - [Pub] transferFrom #
  - [Pub] increaseAllowance #
  - [Pub] decreaseAllowance #
  - [Pub] mint #
    - modifiers: onlyOwner
  - [Int] _transfer #
  - [Int] _mint #
  - [Int] _burn #
  - [Int] _approve #
  - [Int] _burnFrom #

+ BBQToken (BEP20)
  - [Pub] mint #
    - modifiers: onlyOwner
  - [Ext] delegates
  - [Ext] delegate #
  - [Ext] delegateBySig #
  - [Ext] getCurrentVotes
  - [Ext] getPriorVotes
  - [Int] _delegate #
  - [Int] _moveDelegates #
  - [Int] _writeCheckpoint #
  - [Int] safe32
  - [Int] getChainId

+ MasterChefV2 (Ownable, ReentrancyGuard)
  - [Pub] <Constructor> #
  - [Ext] poolLength
  - [Pub] add #
    - modifiers: onlyOwner,nonDuplicated
  - [Pub] set #
    - modifiers: onlyOwner,poolExists
  - [Pub] getMultiplier
  - [Ext] pendingBBQ
  - [Pub] massUpdatePools #
  - [Pub] updatePool #
  - [Pub] deposit #
    - modifiers: nonReentrant,poolExists
  - [Pub] withdraw #
    - modifiers: nonReentrant,poolExists
  - [Pub] emergencyWithdraw #
    - modifiers: nonReentrant,poolExists
  - [Int] safeBBQTransfer #
  - [Pub] dev #
  - [Pub] setFeeAddressBb #
  - [Pub] setFeeAddressSt #
  - [Pub] updateEmissionRate #
    - modifiers: onlyOwner

($) = payable function
= non-constant function

Security Issues

High Severity Issues

No high severity issues found.

Medium Severity Issues

No medium severity issues found.

Low Severity Issues

1. Block gas limit

Issue:

The updateEmissionRate function can fail due to block gas limit if the pool size is too big.

```
function updateEmissionRate(uint256 _bbqPerBlock⬆) public onlyOwner {
    massUpdatePools();
    bbqPerBlock = _bbqPerBlock⬆;
    // V2 Certik CTK-KOALA-7 remark - add emit for these data
    emit UpdateEmissionRate(msg.sender, _bbqPerBlock⬆);
}
```

Recommendations

- ❏ Comments with another project name could be removed.

Conclusion

Smart contracts do not contain any high severity issues!

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.