

# KISHIELD

Security Audit

## **RhinoApe Staking**

April 15, 2022





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# Audit Summary

This report has been prepared for RhinoApe Staking on the Binance Chain network. KISHIELD 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:

- Ensuring contract logic meets the specifications and intentions of the client without exposing the user's funds to risk.
- 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.
- Thorough line-by-line manual review of the entire codebase by industry experts.

# Project Overview

## Token Summary

Parameter	Result
Address	0xD14D429e753035C7D779f0c270e08C1f85ff4C9a
Name	RhinoApe
Token Tracker	RhinoApe (Rhino)
Decimals	5
Supply	516,095
Platform	Binance Chain
compiler	v0.7.6+commit.7338295f
Optimization	Yes with 200 runs
LicenseType	Unlicense
Language	Solidity
Codebase	<a href="https://bscscan.com/address/0xD14D429e753035C7D779f0c270e08C1f85ff4C9a">https://bscscan.com/ address/0xD14D429e753035C7D779f0c270e08C1f85ff4C9a</a>
Url	<a href="http://rhinoape.com">http://rhinoape.com</a>

## Main Contract Assessed

Name	Contract	Live
RhinoApe	0xD14D429e753035C7D779f0c270e08C1f85ff4C9a	Yes

# Smart Contract Vulnerability Checks

Vulnerability	Automatic Scan	Manual Scan	Result
Unencrypted Private Data On-Chain	Complete	Complete	✓ Low / No Risk
Code With No Effects	Complete	Complete	✓ Low / No Risk
Message call with hardcoded gas amount	Complete	Complete	✓ Low / No Risk
Hash Collisions With Multiple Variable Length Arguments	Complete	Complete	✓ Low / No Risk
Unexpected Ether balance	Complete	Complete	✓ Low / No Risk
Presence of unused variables	Complete	Complete	✓ Low / No Risk
Right-To-Left-Override control character (U+202E)	Complete	Complete	✓ Low / No Risk
Typographical Error	Complete	Complete	✓ Low / No Risk
DoS With Block Gas Limit	Complete	Complete	✓ Low / No Risk
Arbitrary Jump with Function Type Variable	Complete	Complete	✓ Low / No Risk
Insufficient Gas Griefing	Complete	Complete	✓ Low / No Risk
Incorrect Inheritance Order	Complete	Complete	✓ Low / No Risk
Write to Arbitrary Storage Location	Complete	Complete	✓ Low / No Risk
Requirement Violation	Complete	Complete	✓ Low / No Risk
Missing Protection against Signature Replay Attacks	Complete	Complete	✓ Low / No Risk
Weak Sources of Randomness from Chain Attributes	Complete	Complete	✓ Low / No Risk

Vulnerability	Automatic Scan	Manual Scan	Result
Authorization through tx.origin	Complete	Complete	✓ Low / No Risk
Delegatecall to Untrusted Callee	Complete	Complete	✓ Low / No Risk
Use of Deprecated Solidity Functions	Complete	Complete	✓ Low / No Risk
Assert Violation	Complete	Complete	✓ Low / No Risk
Reentrancy	Complete	Complete	✓ Low / No Risk
Unprotected SELFDESTRUCT Instruction	Complete	Complete	✓ Low / No Risk
Unprotected Ether Withdrawal	Complete	Complete	✓ Low / No Risk
Unchecked Call Return Value	Complete	Complete	✓ Low / No Risk
Outdated Compiler Version	Complete	Complete	✓ Low / No Risk
Integer Overflow and Underflow	Complete	Complete	✓ Low / No Risk
Function Default Visibility	Complete	Complete	✓ Low / No Risk

## Contract Ownership

The contract ownership of RhinoApe is not currently renounced. The ownership of the contract grants special powers to the protocol creators, making them the sole addresses that can call sensible ownable functions that may alter the state of the protocol.

The current owner is the address 0x4EB37C13449fEdde34477c9173A8480074B3FcBE which can be viewed from:  
[HERE](#)

The owner wallet has the power to call the functions displayed on the privileged functions chart below, if the owner wallet is compromised this privileges could be exploited.

We recommend the team to renounce ownership at the right timing if possible, or gradually migrate to a timelock with governing functionalities in respect of transparency and safety considerations.

## Important Notes To The Users:

- Once the owner renounces ownership of the contract, none of the following are applicable.
- The owner cannot mint tokens after initial deployment.
- The owner cannot change the fees after initial deployment.
- The owner cannot stop Trading.
- The transfer function is implemented correctly.
- Owner can swap all the tokens on the contract for WETH and send them to treasuryReceiver
- Owner can set wallets for fee exempt in function setWhitelist.
- Owner can add and remove contracts addresses from the blacklist.
- Owner can change the pair address and pair contract.
- No high-risk Exploits/Vulnerabilities Were Found in token Source Code.

## Audit Passed



# Findings Summary

## Classification of Issues

Severity	Description
● High	Exploits, vulnerabilities or errors that will certainly or probabilistically lead towards loss of funds, control, or impairment of the contract and its functions. Issues under this classification are recommended to be fixed with utmost urgency
● Medium	Bugs or issues with that may be subject to exploit, though their impact is somewhat limited. Issues under this classification are recommended to be fixed as soon as possible.
● Low	Effects are minimal in isolation and do not pose a significant danger to the project or its users. Issues under this classification are recommended to be fixed nonetheless.
● Info	Consistency, syntax or style best practices. Generally pose a negligible level of risk, if any.

## Findings

Severity	Found
● High	0
● Medium	0
● Low	1
● Info	2
Total	3



# Findings

## Public function that could be declared external

ID	Severity	Contract	Function
01	Informational	RhinoApe	Functions renounceOwnership, transferOwnership, setPairAddress, getLiquidityBacking

### Description

Gas Optimization. Public function that could be declared external

### Recommendation

Public functions that are never called by the contract should be declared external to save gas.

## Variables could be declared as constant

ID	Severity	Contract	Function
02	Informational	RhinoApe	variables _name, _symbol, _decimals, dividendFundFee, feeDenominator, firePitFee, liquidityFee, sellFee, swapEnabled, treasuryFee

### Description

Gas Optimization. Variables that are never changed could be declared as constant.

### Recommendation

We recommend declaring those variables as constant.

## Division before Multiplication

ID	Severity	Contract	Function
03	● Low	RhinoApe	function rebase()

### Description

Precision Loss. 'times = deltaTime.div(900) => epoch = times.mul(15)' Division before multiplication can result in truncation and less accurate results

### Recommendation

Multiplication should be performed before division to not lose precision.

## Privileged Functions (onlyOwner)

Function Name	Parameters	Visibility
renounceOwnership	none	public
transferOwnership	address newOwner	public
withdrawAllToTreasury	none	external
setAutoRebase	bool _flag	external
setAutoAddLiquidity	bool _flag	external
setFeeReceivers	address _autoLiquidityReceiver, address _treasuryReceiver, address _dividendFundReceiver, address _firePit	external
setWhitelist	address _addr	external
setBotBlacklist	address _botAddress, bool _flag	external
setPairAddress	address _pairAddress	public
setLP	address _address	external

# Statistics

## Liquidity Info

Parameter	Result
Pair Address	0x1E6bABd1e9E14e5d0D940e8674c1f2f52ebf1D25
Rhino Reserves	0.00 Rhino
BNB Reserves	0.00 BNB
Liquidity Value	\$0 USD

## Token (Rhino) Holders Info

Parameter	Result
Rhino Percentage Burnt	0.00%
Rhino Amount Burnt	0 Rhino
Top 10 Percentage Own	100.00%
Top 10 Amount Owned	516,095 Rhino
Top 10 Aprox Value	\$NaN USD

## LP (Rhino/BNB) Holders Info

Parameter	Result
Rhino/BNB % Burnt	0.00%
Rhino/BNB Amount Burnt	0 Rhino
Top 10 Percentage Owned	0.00%
Top 10 Amount Owned	0 Rhino
Locked Tokens Percentage	0.00%
Locked Tokens Amount	0 Rhino

\* All the data displayed above was taken on-chain at block 16974166

\* The tokens on industry-standard burn wallets are not included on the top 10 wallets calculations

## Liquidity Ownership

The token does not have liquidity at the moment of the audit, block 16974166

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## Disclaimer

KISHIELD has conducted an independent audit to verify the integrity of and highlight any vulnerabilities or errors, intentional or unintentional, that may be present in the codes that were provided for the scope of this audit. This audit report does not constitute agreement, acceptance or advocacy for the Project that was audited, and users relying on this audit 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 may be pursued by the Project in question, and that 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 completely free of exploits, bugs, vulnerabilities or deprecation of technologies.

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