



Smart Contract Audit

FOR

Red PEPE

DATED : 08 May 23'



AUDIT SUMMARY

Project name – Red PEPE

Date: 08 May, 2023

Scope of Audit- Audit Ace was consulted to conduct the smart contract audit of the solidity source codes.

Audit Status: **Passed**

Issues Found

Status	Critical	High	Medium	Low	Suggestion
Open	0	1	0	1	0
Acknowledged	0	0	0	0	0
Resolved	0	1	0	0	0

USED TOOLS

Tools:

1- Manual Review:

a line by line code review has been performed by audit ace team.

2- BSC Test Network:

all tests were done on BSC Test network, each test has its transaction has attached to it.

3- Slither : Static Analysis

Testnet Link: all tests were done using this contract, tests are done on BSC Testnet

<https://testnet.bscscan.com/address/0x322dab6325de6f5bc2ba8efecc2bcbecac4f89f3>



Token Information

Token Name : Red PEPE

Token Symbol: RPEPE

Decimals: 9

Token Supply:420,690,000,000

Token Address:

0x03b7154C26988ED40E0569688c3746eED8B64caB

Checksum:

80b4b14b6f2ec91de8765d5ba8fe52cf73411863

Owner:

0x3Ff4CB55f1709dedC3393840C5bC5D01dAD55E4a

Deployer:

0x3Ff4CB55f1709dedC3393840C5bC5D01dAD55E4a



TOKEN OVERVIEW

Fees:

Buy Fees: 0 %

Sell Fees: 0 %

Transfer Fees: 0%

Fees Privilige: none

Ownership : Owned

Minting: No mint function

Max Tx Amount/ Max Wallet Amount: No

Blacklist: No

Other Privileges: enable trading



AUDIT METHODOLOGY

The auditing process will follow a routine as special considerations by Auditace:

- Review of the specifications, sources, and instructions provided to Auditace to make sure the contract logic meets the intentions of the client without exposing the user's funds to risk.
 - Manual review of the entire codebase by our experts, which is the process of reading source code line-by-line in an attempt to identify potential vulnerabilities.
 - Specification comparison is the process of checking whether the code does what the specifications, sources, and instructions provided to Auditace describe.
 - Test coverage analysis determines whether the test cases are covering the code and how much code is exercised when we run the test cases.
 - Symbolic execution is analysing a program to determine what inputs cause each part of a program to execute.
 - Reviewing the codebase to improve maintainability, security, and control based on the established industry and academic practices.
-

VULNERABILITY CHECKLIST

- | | |
|--|---|
|  Return values of low-level calls |  Gasless Send |
|  Private modifier |  Using block.timestamp |
|  Multiple Sends |  Re-entrancy |
|  Using Suicide |  Tautology or contradiction |
|  Gas Limitand Loops |  Timestamp Dependence |
|  Address hardcoded |  Revert/require functions |
|  Exception Disorder |  Use of tx.origin |
|  Using inline assembly |  Integer overflow/underflow |
|  Divide before multiply |  Dangerous strict equalities |
|  Missing Zero Address Validation |  Using SHA3 |
|  Compiler version not fixed |  Using throw |
-



CLASSIFICATION OF RISK

Severity

Description

◆ Critical	These vulnerabilities could be exploited easily and can lead to asset loss, data loss, asset, or data manipulation. They should be fixed right away.
◆ High-Risk	A vulnerability that affects the desired outcome when using a contract, or provides the opportunity to use a contract in an unintended way.
◆ Medium-Risk	A vulnerability that could affect the desired outcome of executing the contract in a specific scenario.
◆ Low-Risk	A vulnerability that does not have a significant impact on possible scenarios for the use of the contract and is probably subjective.
◆ Gas Optimization /Suggestion	A vulnerability that has an informational character but is not affecting any of the code.

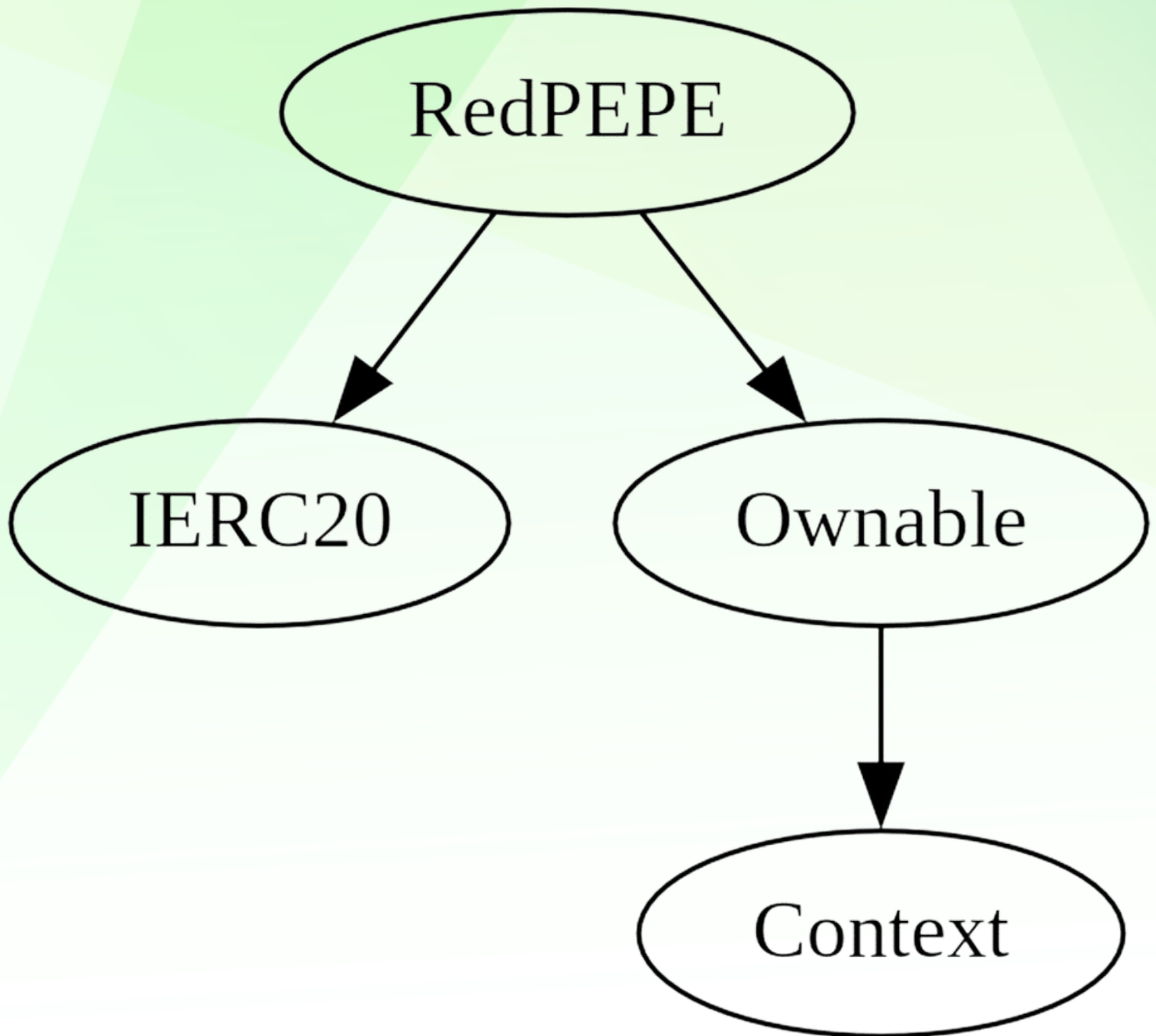
Findings

Severity

Found

◆ Critical	0
◆ High-Risk	1(Resolved)
◆ Medium-Risk	0
◆ Low-Risk	1
◆ Gas Optimization / Suggestions	0

INHERITANCE TREE



POINTS TO NOTE

- Owner is not able to set buy/sell/transfer taxes (0% all)
 - Owner is not able to set a max buy/transfer/wallet/sell amount
 - Owner is not able to blacklist an arbitrary wallet
 - Owner is not able to disable trades
 - Owner is not able to mint new tokens
 - Owner must enable trades for holders to be able to trade
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CONTRACT ASSESMENT

Contract	Type	Bases			
-----	-----	-----	-----	-----	-----
L	**Function Name**	**Visibility**	**Mutability**	**Modifiers**	

RedPEPE	Implementation	IERC20, Ownable			
L	<Constructor>	Public	!	NO	!
L	<Receive Ether>	External	!	NO	!
L	totalSupply	External	!	NO	!
L	name	Public	!	NO	!
L	symbol	Public	!	NO	!
L	decimals	Public	!	NO	!
L	balanceOf	Public	!	NO	!
L	allowance	External	!	NO	!
L	approve	Public	!	NO	!
L	approveMax	External	!	NO	!
L	transfer	External	!	NO	!
L	transferFrom	External	!	NO	!
L	_transferFrom	Internal	!	NO	!
L	enableTrading	External	!	onlyOwner	
L	setAuthorizedWallets	External	!	onlyOwner	
L	rescueBNB	External	!	onlyOwner	
L	withdrawBep20Tokens	External	!	onlyOwner	

Ownable	Implementation	Context			
L	<Constructor>	Public	!	NO	!
L	owner	Public	!	NO	!
L	_checkOwner	Internal	!		
L	renounceOwnership	Public	!	onlyOwner	
L	transferOwnership	Public	!	onlyOwner	
L	_transferOwnership	Internal	!		

Context	Implementation				
L	_msgSender	Internal	!		
L	_msgData	Internal	!		

IERC20	Interface				
L	totalSupply	External	!	NO	!
L	balanceOf	External	!	NO	!
L	transfer	External	!	NO	!
L	allowance	External	!	NO	!
L	approve	External	!	NO	!
L	transferFrom	External	!	NO	!



CONTRACT ASSESMENT

Legend

| Symbol | Meaning |

|:-----:|-----|

|  | Function can modify state |

|  | Function is payable |



STATIC ANALYSIS

```
Different versions of Solidity are used:
- Version used: ['^0.8.0', '^0.8.14', '^0.8.17']
- ^0.8.0 (contracts/Token.sol#37)
- ^0.8.0 (contracts/Token.sol#131)
- ^0.8.14 (contracts/Token.sol#224)
- ^0.8.17 (contracts/Token.sol#8)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#different-pragma-directives-are-used

Context._msgData() (contracts/Token.sol#25-27) is never used and should be removed
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#dead-code

Pragma version^0.8.17 (contracts/Token.sol#8) necessitates a version too recent to be trusted. Consider deploying with 0.6.12/0.7.6/0.8.16
Pragma version^0.8.0 (contracts/Token.sol#37) allows old versions
Pragma version^0.8.0 (contracts/Token.sol#131) allows old versions
Pragma version^0.8.14 (contracts/Token.sol#224) allows old versions
solc-0.8.19 is not recommended for deployment
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#incorrect-versions-of-solidity

Parameter RedPEPE.setAuthorizedWallets(address,bool)._wallet (contracts/Token.sol#341) is not in mixedCase
Parameter RedPEPE.setAuthorizedWallets(address,bool)._status (contracts/Token.sol#342) is not in mixedCase
Parameter RedPEPE.withdrawBep20Tokens(address,uint256)._tokenAddress (contracts/Token.sol#355) is not in mixedCase
Parameter RedPEPE.withdrawBep20Tokens(address,uint256)._amount (contracts/Token.sol#356) is not in mixedCase
Constant RedPEPE._name (contracts/Token.sol#230) is not in UPPER_CASE_WITH_UNDERSCORES
Constant RedPEPE._symbol (contracts/Token.sol#231) is not in UPPER_CASE_WITH_UNDERSCORES
Constant RedPEPE._decimals (contracts/Token.sol#232) is not in UPPER_CASE_WITH_UNDERSCORES
Variable RedPEPE._totalSupply (contracts/Token.sol#234) is not in mixedCase
Variable RedPEPE._balances (contracts/Token.sol#236) is not in mixedCase
Variable RedPEPE._allowances (contracts/Token.sol#237) is not in mixedCase
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#conformance-to-solidity-naming-conventions

RedPEPE.slitherConstructorVariables() (contracts/Token.sol#229-370) uses literals with too many digits:
- _totalSupply = 4206900000000 * (10 ** _decimals) (contracts/Token.sol#234)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#too-many-digits

RedPEPE._totalSupply (contracts/Token.sol#234) should be constant
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#state-variables-that-could-be-declared-constant
```

Result => A static analysis of contract's source code has been performed using slither,

No major issues were found in the output



FUNCTIONAL TESTING

Router (PCS V2):

0xD99D1c33F9fC3444f8101754aBC46c52416550D1

All the functionalities have been tested, no issues were found

1- Adding liquidity (passed):

<https://testnet.bscscan.com/tx/0x66de733f79bb63997e729f98a75e2ec54c73a7fdd7e493c41e8cdcf2c3bbefba>

2- Buying when excluded (0% tax) (passed):

<https://testnet.bscscan.com/tx/0x29f4408b70e7e3b9fe3a9c85481dc19320dc4df3a66b627c7c9baa5567e2a130>

3- Selling when excluded (0% tax) (passed):

<https://testnet.bscscan.com/tx/0xa35583c3cffffb3638ec3161a69f65bdd568040ff3c726c4b0f7042e93cc94270>

4- Transferring when excluded (0% tax) (passed):

<https://testnet.bscscan.com/tx/0x27434843a67fcc3c1c360d0f17fd5fc3f64670714f9ca2865fe1fd84391f8def>

5- Buying when not excluded (0% tax) (passed):

<https://testnet.bscscan.com/tx/0x9478a4f71fe977388295f1008d9fa52b03216af3f5bb686a456d12cdbe66c4a3>

6- Selling when not excluded (0% tax) (passed):

<https://testnet.bscscan.com/tx/0x56434ecbaf9302d68c17285bd95d257483305979bd7b8a6b9c558a7cbfb94bb5>



FUNCTIONAL TESTING

7- Transferring when not excluded (0% tax) (passed):

<https://testnet.bscscan.com/tx/0x8b50aebdc31d92512327f5f724d235da2da432b47220dc6e7552429dff661ff8>

MANUAL TESTING

Centralization – Trades must be enabled

Severity: **High**

function: enableTrading

Status: **Resolved (Contract is owned by Pinksale safu developer)**

Overview:

The smart contract owner must enable trades for holders. If trading remain disabled, no one would be able to buy/sell/transfer tokens.

```
function enableTrading() external onlyOwner {  
    require(!isTradeEnabled, "Trading already enabled");  
    isTradeEnabled = true;  
}
```

Suggestion

To mitigate this centralization issue, we propose the following options:

1. Renounce Ownership: Consider relinquishing control of the smart contract by renouncing ownership. This would remove the ability for a single entity to manipulate the router, reducing centralization risks.
2. Multi-signature Wallet: Transfer ownership to a multi-signature wallet. This would require multiple approvals for any changes to the mainRouter, adding an additional layer of security and reducing the centralization risk.
3. Transfer ownership to a trusted and valid 3rd party in order to guarantee enabling of the trades **(applied)**

MANUAL TESTING

Informational – Trades must be enabled

function: _transferFrom

Status: Not Resolved

Overview:

Authorized wallets are not able to buy tokens before enabling of the trades

```
function _transferFrom(
    address sender,
    address recipient,
    uint256 amount
) internal returns (bool) {
    if (!isTradeEnabled) require(isAuthorized[sender], "Trading disabled");

    require( balances[sender] >= amount, "Insufficient Balance");
    _balances[sender] = _balances[sender] - amount;

    _balances[recipient] = _balances[recipient] + amount;

    emit Transfer(sender, recipient, amount);
    return true;
}
```

Suggestion

To mitigate this logical issue, check if sender or recipient is Authorized or not, if one of them is Authorized, allow transfer.



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