

# expelee

Building the Futuristic **Blockchain Ecosystem**

## Security Audit Report FOR



Pepe Inu

# OVERVIEW

The Expelee team has performed a line-by-line manual analysis and automated review of the smart contract. The smart contract was analysed mainly for common smart contract vulnerabilities, exploits, and manipulation hacks.

According to the smart contract audit:

 <b>Audit Result</b>	<b>Passed</b>
 <b>KYC Verification</b>	<b>Not Done</b>
 <b>Audit Date</b>	<b>13 march 2023</b>

# PROJECT DESCRIPTION

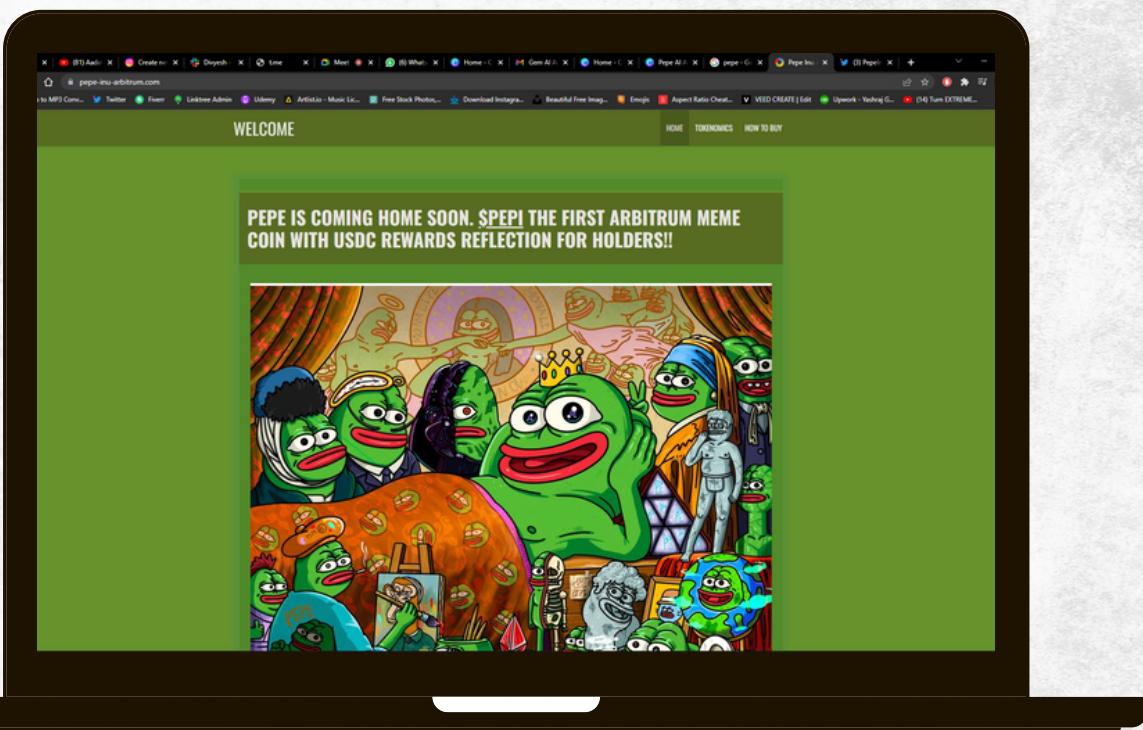
## Pepe Inu

The PEPE INU aims to introduce individuals to the Arbitrum ecosystem through its fun and friendly Pepe! The project is community owned and managed, with strict limits on individual holdings to promote decentralization and widespread adoption. By leveraging the power of memes and community-driven content creation, PEPE INU aims to increase awareness and understanding of the Arbitrum universe, serving as a guide and companion to all Arbinauts along the way!



# Social Media Profiles

## Pepe Inu



-  <https://www.pepe-inu-arbitrum.com/>
-  <https://t.me/PepelnuArbi>
-  [https://twitter.com/Pepe\\_Inu\\_Arbi](https://twitter.com/Pepe_Inu_Arbi)

**It's always good to check the social profiles of the project,  
before making your investment.**

**-Team Expelee**

# CONTRACT DETAILS

Token Name	Symbol
<b>Pepe Inu</b>	<b>Pepi</b>
Network	Language
<b>Arbitrum</b>	<b>Solidity</b>
Contract Address (Verified)	
<b>0x29585223035a8bF020567CD188834bA727a4B4a9</b>	
Token Type	Total Supply
<b>BEP20</b>	<b>1,000,000,000,000</b>
Contract SHA-256 Checksum:	
<b>900adda7e7785dba36e8506d52cbc16c27be1460</b>	
Owner's Wallet	
<b>0x179F1dd0379bA992799e23F5013A570e00f5e198</b>	
Deployer's Wallet	
<b>0x179F1dd0379bA992799e23F5013A570e00f5e198</b>	

# AUDIT METHODOLOGY



## Audit Details

Our comprehensive audit report provides a full overview of the audited system's architecture, smart contract codebase, and details on any vulnerabilities found within the system.



## Audit Goals

The audit goal is to ensure that the project is built to protect investors and users, preventing potentially catastrophic vulnerabilities after launch, that lead to scams and rugpulls.



## Code Quality

Our analysis includes both automatic tests and manual code analysis for the following aspects:

- Exploits
- Back-doors
- Vulnerability
- Accuracy
- Readability



## Tools

- DE
- Open Zeppelin
- Code Analyzer
- Solidity Code
- Complier
- Hardhat

# FUNCTION OVERVIEW

Can Take Back Ownership	Not Detected
Owner Change Balance	Not Detected
Blacklist	Not Detected
Modify Fees	Detected
Proxy	Not Detected
Whitelisted	Not Detected
Anti Whale	Not Detected
Trading Cooldown	Not Detected
Transfer Pausable	Not Detected
Cannot Sell All	Not Detected
Hidden Owner	Not Detected
Mint	Not Detected

# VULNERABILITY CHECKLIST

Design Logic	Passed
Compiler warnings.	Passed
Private user data leaks	Passed
Timestamp dependence	Passed
Integer overflow and underflow	Passed
Race conditions & reentrancy. Cross-function race conditions	Passed
Possible delays in data delivery	Passed
Oracle calls	Passed
Front running	Passed
DoS with Revert	Passed
DoS with block gas limit	Passed
Methods execution permissions	Passed
Economy model	Passed
Impact of the exchange rate on the logic	Passed
Malicious Event log	Passed
Scoping and declarations	Passed
Uninitialized storage pointers	Passed
Arithmetic accuracy	Passed
Cross-function race conditions	Passed
Safe Zeppelin module	Passed
Fallback function security	Passed

# RISK CLASSIFICATION

When performing smart contract audits, our specialists look for known vulnerabilities as well as logical and access control issues within the code. The exploitation of these issues by malicious actors may cause serious financial damage to projects that failed to get an audit in time. We categorize these vulnerabilities by the following levels:

## High Risk

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Issues on this level are critical to the smart contract's performance/functionality and should be fixed before moving to a live environment.

## Medium Risk

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Issues on this level are critical to the smart contract's performance/functionality and should be fixed before moving to a live environment.

## Low Risk

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Issues on this level are minor details and warning that can remain unfixed.

## Informational

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Information level is to offer suggestions for improvement of efficacy or security for features with a risk free factor.

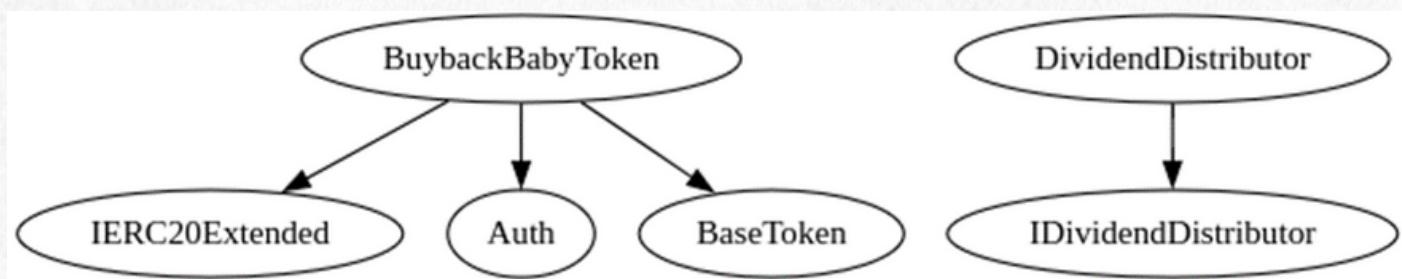
# AUDIT SUMMARY

## Used Tools:

- 1. Manual Review:** The code has undergone a line-by-line review by the Expelee team.
- 2. BSC Test Network:** All tests were conducted on the BSC Test network, and each test has a corresponding transaction attached to it. These tests can be found in the "Functional Tests" section of the report.
- 3. Slither:** The code has undergone static analysis using Slither.

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## Inheritance Trees:



## Summary:

- Owner is not able to set fees over 25% (buy/sell/transfers)
- Owner is not able to set max buy/sell/transfer amounts
- Owner is not able to blacklist an arbitrary wallet
- Owner is not able to disable trades
- Owner is not able to mint new tokens

# Functional Tests

**Router (PCS V2):**

**0xD99D1c33F9fC3444f8101754aBC46c52416550D1**

**1- Adding liquidity (passed):**

<https://testnet.bscscan.com/tx/0xec74129b54ad3b9322128177b3d79e1e7152038115227edc9013ef1bd6f65aab>

**2- Buying when excluded from fees (up to 25% tax) (passed):**

<https://testnet.bscscan.com/tx/0xa7d9a808ec36d721fefbb1eb207064353dd18de5d0562d457b26d1e32277bf89>

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

<https://testnet.bscscan.com/tx/0xa4aa4056e0a0018fd116ae81d4c62dba71498ecec678039647ac8cebf3191f8a>

**4- Transferring when not excluded from fees (0% tax) (passed):**

<https://testnet.bscscan.com/tx/0x6728dd2859344677a8bc973ab626fd0843988fa96d2c886e6638031bcc28cdea>

**5- Buying when not excluded from fees (up to 25% tax) (passed):**

<https://testnet.bscscan.com/tx/0x351fadd6c404549e385ff92ce7c6a134a9266cc64a089da62ef81d3eb36085c0>

**6- Selling when not excluded from fees (up to 25% tax) (passed):**

<https://testnet.bscscan.com/tx/0xe939b193281192ba970970634e85d44ebd93ec22f2db701108bae6fd45eede93>

# Functional Tests

## 7- Transferring when not excluded from fees (up to 25% tax)

(passed):

<https://testnet.bscscan.com/tx/0x76b706ef4b8bb7fe8f40def8b4ff3ac8c0693521771b923a0c716126250517e0>

## 8- Internal swap (passed):

marketing wallet received ETH

<https://testnet.bscscan.com/address/0x9d54c86d4b34ef6a2dc6352235f4e0f67f501ecf#internaltx>

## 9- Auto buybacks (passed):

auto-buybacks happened after reaching the buyback threshold,  
auto-buyback can be seen here (dead wallet received tokens)

<https://testnet.bscscan.com/tx/0x76b706ef4b8bb7fe8f40def8b4ff3ac8c0693521771b923a0c716126250517e0>

## 10- Reflections (passed):

as seen in this transaction reward token is distributed to all holders

<https://testnet.bscscan.com/tx/0x22306ea00f9f87f27903714b53b03aeecc0e8d1203cb5aac75a2b8a52d7f1f1>

## 11- Zeus buyback (passed):

<https://testnet.bscscan.com/tx/0x969e0383303febc6c2bb4b7d0fe2f284542c27ab8e65a2bdc4fcfc4d8fce1fcb>

# MANUAL AUDIT

## Severity Criteria

Expelee assesses the severity of disclosed vulnerabilities according to a methodology based on OWASP standards.

Vulnerabilities are divided into three primary risk categories: **high**, **medium**, and **low**.

High-level considerations for vulnerabilities span the following key areas when conducting assessments:

- Malicious Input Handling
- Escalation of privileges
- Arithmetic
- Gas use

Overall Risk Severity				
Impact	HIGH	Medium	High	Critical
	MEDIUM	Low	Medium	High
	LOW	Note	Low	Medium
		LOW	MEDIUM	HIGH
Likelihood				

# FINDINGS

- **High Risk Findings:** 0
  - **Medium Risk Findings:** 1
  - **Low Risk Findings:** 1
  - **Suggestions & discussion:** 1
  - **Gas Optimizations :** 1
-

# Medium Risk Findings

**Issues:**

Owners ability to change fee

**Type:**

Centralization

**Function:**

\_setFees

**Line:**

1653-1667

**Overview:**

Owner is able to set up to 25% fee on buy/sell/transfers:

```
function _setFees(
    uint256 _liquidityFee,
    uint256 _buybackFee,
    uint256 _reflectionFee,
    uint256 _marketingFee,
    uint256 _feeDenominator
) internal {
    liquidityFee = _liquidityFee;
    buybackFee = _buybackFee;
    reflectionFee = _reflectionFee;
    marketingFee = _marketingFee;
    totalFee = _liquidityFee.add(_buybackFee).add(_reflectionFee).add(
        _marketingFee
);
    feeDenominator = _feeDenominator;
    require(
        totalFee <= feeDenominator / 4,
        "Total fee should not be greater than 1/4 of fee denominator"
);
}
```

**Recommendation**

- Set proper safeguards to prevent high fees
- Increase transparency and give proper information about tax structure to community

# Suggestions

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**Issue:**

redundant code

**Type:**

code smell

**Function:**

onlyBuybacker

**Line:**

1237-1240

**Severity:**

Informational

**Overview:**

onlyBuybacker modifier never been used in the contract

```
modifier onlyBuybacker() {
    require(buyBacker[msg.sender] == true, "Not a buybacker");
}
```

# ABOUT EXPELEE

Expelee is a product-based aspirational Web3 Start-up. Coping up with numerous solutions for blockchain Security and constructing a Web3 Ecosystem from Deal making platform to developer hosting open platform, while also developing our own commercial and sustainable blockchain.



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