



Smart Contract Security Audit Report

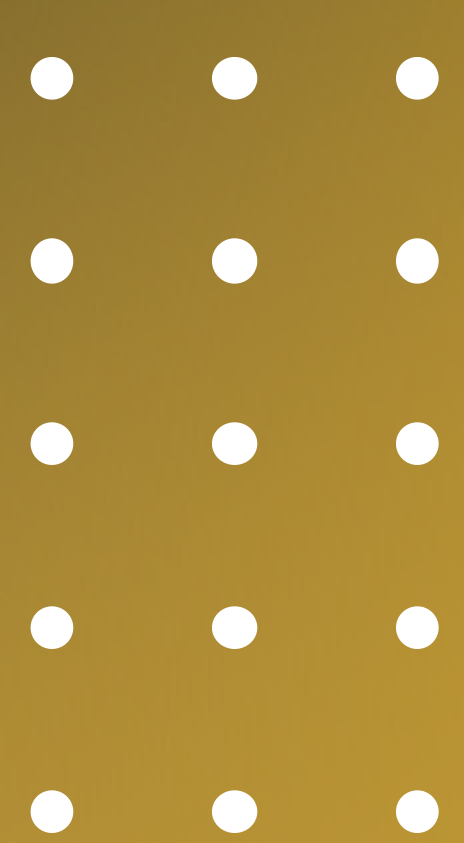
Pecora Network

July 2022

Security Status



www.hacksafe.io



Audit Details



Audited project

Pecora Network



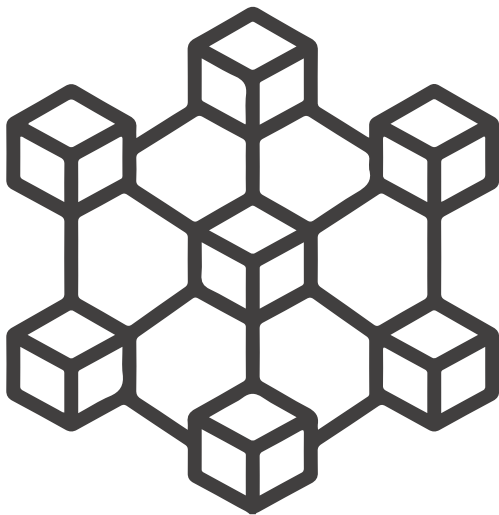
Deployer address

0xFcB2bD89e1Ab0620f1d0e7e684eC918B1b22D784



Client contacts

Pecora Network team



Blockchain

Binance Smart Chain



Website

<https://pecoranetwork.io/>

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.

Procedure

Step 1 - In-Depth Manual Review

Manual line-by-line code reviews to ensure the logic behind each function is sound and safe from various attack vectors. This is the most important and lengthy portion of the audit process (as automated tools often cannot find the nuances that lead to exploits such as flash loan attacks).

Step 2 - Automated Testing

Simulation of a variety of interactions with your Smart Contract on a test blockchain leveraging a combination of automated test tools and manual testing to determine if any security vulnerabilities exist.

Step 3 – Leadership Review

The engineers assigned to the audit will schedule meetings with our leadership team to review the contracts, any comments or findings, and ask questions to further apply adversarial thinking to discuss less common attack vectors.

Step 4 - Resolution of Issues

Consulting with the team to provide our recommendations to ensure the code's security and optimize its gas efficiency, if possible. We assist project team's in resolving any outstanding issues or implementing our recommendations.

Step 5 - Published Audit Report

Boiling down results and findings into an easy-to-read report tailored to the project. Our audit reports highlight resolved issues and any risks that exist to the project or its users, along with any remaining suggested remediation measures. Diagrams are included at the end of each report to help users understand the interactions which occur within the project.

Background

HackSafe was commissioned by Pecora Network to perform an audit of smart contracts:

- <https://bscscan.com/address/0x3a6b593fb353fd5a3bb68ea120f3ba4f78637c30#code>

The purpose of the audit was to achieve the

- Ensure that the smart contract functions as intended.
- Identify potential security issues with the smart contract.

The information in this report should be understood 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.

Contract Details

Token contract details for 21.07.2022

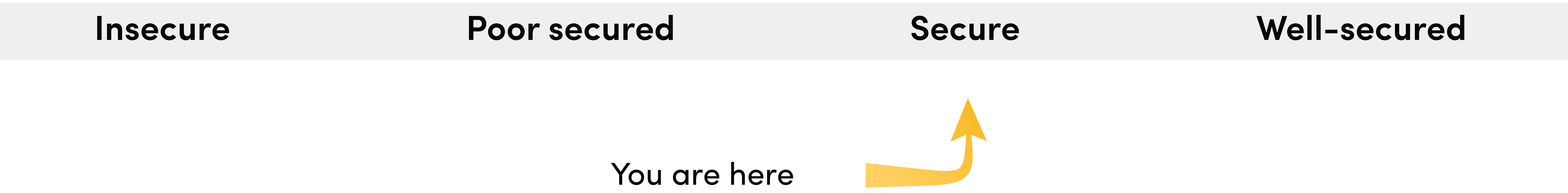
Token Type	: BEP20
Contract name	: PEN
Contract address	: 0x3a6b593fb353FD5a3BB68Ea120f3bA4f78637C30
Compiler version	: v0.8.15+commit.e14f2714
Total supply	: 10,000,000
Token Ticker	: PEN
Decimals	: 8
Token Holders	: 1,064
Top 100 token holder's dominance	: 90.48%
Transactions count	: 23,707
Contract deployer address	: 0xFcB2bD89e1Ab0620f1d0e7e684eC918B1b22D784
Owner address	: 0x69fcbd93c6b2997f448ff6a3eb205a4249283050

Social profiles

Coinmarketcap profile : <https://coinmarketcap.com/currencies/pecora-network/>

Audit Summary

According to the standard audit assessment, Customer`s solidity smart contracts are “Secure”. This token contract does contain owner control, which do not make it fully decentralized as owner does have control over smart contract.



We used various tools like Slither, Mythril and Remix IDE. At the same time this finding is based on critical analysis of the manual audit. All issues found during automated analysis were manually reviewed and applicable vulnerabilities are presented in the issues checking status.

We found 0 critical, 0 high, 0 medium and 1 low and some very low-level issues. These issues are not critical ones.

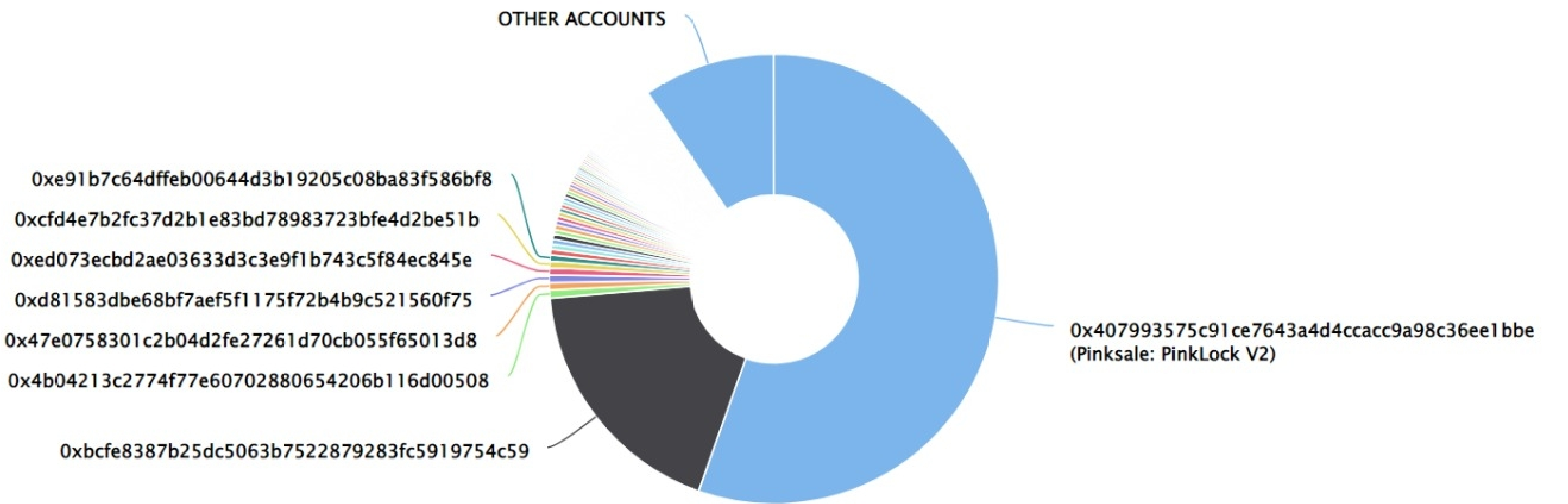
Pecora Network Token Distribution

💡 The top 100 holders collectively own 90.52% (9,052,281.28 Tokens) of Pecora



💡 Token Total Supply: 10,000,000.00 Token | Total Token Holders: 1,063

Pecora Top 100 Token Holders

Source: BscScan.com



Pecora Network Top 20 Token Holders

Rank	Address	Quantity (Token)	Percentage
1	 Pinksale: PinkLock V2	5,544,160	55.4416%
2	 0xbcf8387b25dc5063b7522879283fc5919754c59	1,820,817.86705907	18.2082%
3	0x4b04213c2774f77e60702880654206b116d00508	58,199.99999999	0.5820%
4	0x47e0758301c2b04d2fe27261d70cb055f65013d8	53,774.2305289	0.5377%
5	0xd81583dbe68bf7aef5f1175f72b4b9c521560f75	53,105.69944855	0.5311%
6	0xed073ecbd2ae03633d3c3e9f1b743c5f84ec845e	51,374.95620577	0.5137%
7	0xcfd4e7b2fc37d2b1e83bd78983723bfe4d2be51b	47,854.82337647	0.4785%
8	0xe91b7c64dffb00644d3b19205c08ba83f586bf8	43,537.17194903	0.4354%
9	0xadbc99849d5a4b7eb046a46a1333212216617cfb	39,823.49118008	0.3982%
10	0xa789a7fc031a51bae4e4164b2cc0e1da9d0b0d5	37,656.50603633	0.3766%
11	0xe3c4b4165e7e2fcf8184d4435591bec7e2685eb	35,983.00443969	0.3598%
12	0xacf729aa410479ba861fa30474b6d2201c21a9a2	35,834.94651689	0.3583%
13	0x6ea921808e6684e6bf3e299f9076630ea0761ac6	34,052.51410291	0.3405%
14	0x626815d938574bcd26369056c2be3d170539d5e7	33,774.29761565	0.3377%
15	0x637611e60f91dbf2d303d174037e26fff753b2c7	32,802.38336924	0.3280%
16	0x5583ed57e7e5cc86e2908e097bb0bd95812d6e23	31,050.10269693	0.3105%
17	0xaf316f114df3c90445888362515965e0b48423f8	30,563.76863749	0.3056%
18	0xe08f2a8318339ae4a60d869383ea56049e07eb55	28,698.41168181	0.2870%
19	0xcff15e438bec43364702ad7b50bf133edffe9be0	28,184.19452581	0.2818%
20	0xbb471b241483d71d92265baa52c3a26f92aa70a0	27,476.41061815	0.2748%

Pecora Network Token Distribution

Pecora Network Contract Overview



Contract functions details

+ [Int] IBEP20

- [Ext] totalSupply
- [Ext] balanceOf
- [Ext] transfer
- [Ext] allowance
- [Ext] approve
- [Ext] transferFrom

+ [Lib] SafeMath

- [Int] add
- [Int] sub
- [Int] sub
- [Int] mul
- [Int] div
- [Int] div

+ Context

- <constructor>
- [Int] _msgSender
- [Int] _msgData

+ Ownable (Context)

- <constructor>
- [Pub] owner
- [Pub] renounceOwnership
 - modifiers: onlyOwner
- [Pub] transferOwnership
 - modifiers: onlyOwner

+BEP20 (Context, Ownable, IBEP20)

- <constructor> #
- [Pub] totalSupply
- [Pub] balanceOf
- [Pub] transfer #
- [Pub] allowance
- [Pub] approve #
- [Pub] transferFrom #
- [Pub] increaseAllowance
- [Pub] decreaseAllowance
- [Int] _transfer #
- [Int] _approve #

Contract functions details

+ BEP20Detailed (BEP20)

-<constructor>

-[Pub] name

-[Pub] symbol

-[Pub] decimals

+ [Lib] Address

-[Int] isContract

+ [Lib] SafeBEP20

-[Int] safeTransfer

-[Int] safeTransferFrom

-[Int] safeApprove

-[Pvt] callOptionalReturn

+ PEN(Ownable, BEP20, BEP20Detailed)

-<constructor>

(\$) = payable function

= non-constant function

Issues Checking Status

No.	Title	Status
1.	Unlocked Compiler Version	Low issue
2.	Missing Input Validation	Passed
3.	Race conditions and Reentrancy. Cross-function race conditions.	Passed
4.	Possible delays in data delivery	Passed
5.	Oracle calls.	Passed
6.	Timestamp dependence.	Passed
7.	Integer Overflow and Underflow	Passed
8.	DoS with Revert.	Passed
9.	DoS with block gas limit.	Passed
10.	Methods execution permissions.	Passed
11.	Economy model of the contract.	Passed
12.	Private use data leaks.	Passed
13.	Malicious Event log.	Passed
14.	Scoping and Declarations.	Passed
15.	Uninitialized storage pointers.	Passed
16.	Arithmetic accuracy.	Passed
17.	Design Logic.	Passed
18.	Safe Open Zeppelin contracts implementation and usage.	Passed
19.	Incorrect Naming State Variable	Passed
20.	Too old version	Passed

Severity Definitions

Risk Level	Description
Critical	Critical vulnerabilities are usually straightforward to exploit and can lead to assets loss or data manipulations.
High	High-level vulnerabilities are difficult to exploit; however, they also have a significant impact on smart contract execution, e.g., public access to crucial functions
Medium	Medium-level vulnerabilities are important to fix; however, they can't lead to assets loss or data manipulations.
Low	Low-level vulnerabilities are mostly related to outdated, unused, etc. code snippets that can't have a significant impact on execution.

Security Issues

✔ Critical Severity Issues

No critical severity issue found.

✔ High Severity Issues

No high severity issue found.

✔ Medium Severity Issues

No medium severity issues found.

✔ Low Severity Issues

One low severity issue found.

1. Unlocked Compiler Version.

- **Description**

The contract utilizes an unlocked compiler version. An unlocked compiler version in the contract's source code permits the user to compile it at or above a particular version. This, in turn, leads to differences in the generated bytecode between compilations due to differing compiler version numbers. This can lead to ambiguity when debugging as compiler-specific bugs may occur in the codebase that would be difficult to identify over a span of multiple compiler versions rather than a specific one.

- **Recommendation**

It is advisable that the compiler version is alternatively locked at the lowest version possible so that the contract can be compiled. For example, for version `^0.8.15` the contract should contain the following line:

```
pragma solidity 0.8.15;
```

Centralization

Owner privileges :

- Pecora Network Contract:
 - Owner can renounce and transfer ownership.

This smart contract has some functions which can be executed by the Admin (Owner) only. If the admin wallet private key would be compromised, then it would create trouble as smart contract ownership has not been renounced. Following are Admin functions:

- Transferownership
- Renounceownership

Conclusion

Smart contract contains low severity issues! The further transfer and operations with the fund raised are not related to this particular contract.

HackSafe 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.