

# Assure DeFi™

The Verification **Gold Standard**™



## Security Assessment **Zero Knowledge Network Token**

August 7, 2023

Audit Status: Pass

Audit Edition: Advance



ASSURE DEFI™  
THE VERIFICATION **Gold Standard**

# Risk Analysis

## Classifications of Manual Risk Results

Classification	Description
<span style="color: red;">●</span> Critical	Danger or Potential Problems.
<span style="color: orange;">●</span> High	Be Careful or Fail test.
<span style="color: yellow;">●</span> Low	Pass, Not-Detected or Safe Item.
<span style="color: lightblue;">●</span> Informational	Function Detected

## Manual Code Review Risk Results

Contract Privilege	Description
<span style="color: green;">●</span> Buy Tax	0
<span style="color: green;">●</span> Sale Tax	0
<span style="color: green;">●</span> Cannot Sale	Pass
<span style="color: green;">●</span> Cannot Sale	Pass
<span style="color: green;">●</span> Max Tax	10
<span style="color: lightblue;">●</span> Modify Tax	Detected
<span style="color: green;">●</span> Fee Check	Pass
<span style="color: green;">●</span> Is Honeypot?	Not detected
<span style="color: green;">●</span> Trading Cooldown	Not Detected
<span style="color: green;">●</span> Can Pause Trade?	Pass
<span style="color: green;">●</span> Pause Transfer?	Not-Detected
<span style="color: yellow;">●</span> Max Tx?	Pass
<span style="color: yellow;">●</span> Is Anti Whale?	Detected
<span style="color: green;">●</span> Is Anti Bot?	Not Detected

Contract Privilege	Description
● Is Blacklist?	Not Detected
● Blacklist Check	Pass
● is Whitelist?	Not Detected
● Can Mint?	Pass
● Is Proxy?	Not Detected
● Can Take Ownership?	Not detected
● Hidden Owner?	Not detected
● Owner	0xb24674244069BAeFee451B5D4783d0c68833bd43
● Self Destruct?	Not Detected
● External Call?	Not detected
● Other?	Not detected
● Holders	1
● Auditor Confidence	High

The following quick summary it's added to the project overview; however, there are more details about the audit and its results. Please read every detail.

# Project Overview

## Token Summary

Parameter	Result
Address	0x4594CFfbFc09BC5e7eCF1C2e1C1e24F0f7D29036
Name	Zero Knowledge Network
Token Tracker	Zero Knowledge Network (OKN)
Decimals	18
Supply	10,000,000,000
Platform	Ethereum
compiler	v0.8.18+commit.87f61d96
Contract Name	OKN
Optimization	Yes with 200 runs
LicenseType	MIT
Language	Solidity
Codebase	<a href="https://etherscan.io/address/0x4594cffbfc09bc5e7ecf1c2e1c1e24f0f7d29036#code">https://etherscan.io/ address/0x4594cffbfc09bc5e7ecf1c2e1c1e24f0f7d29036#code</a>
Payment Tx	0x6609419f83a53a3d1bd88e3582098af659fc55f43ccce1d8449d 9be97b61018a

## Main Contract Assessed Contract Name

Name	Contract	Live
Zero Knowledge Network	0x4594CFfbFc09BC5e7eCF1C2e1C1e24F0f7D29036	Yes

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## TestNet Contract Assessed Contract Name

Name	Contract	Live
Zero Knowledge Network	0xd494E83551A3d5A6CFf42fAeF757A05aa7E6DA30	Yes

---

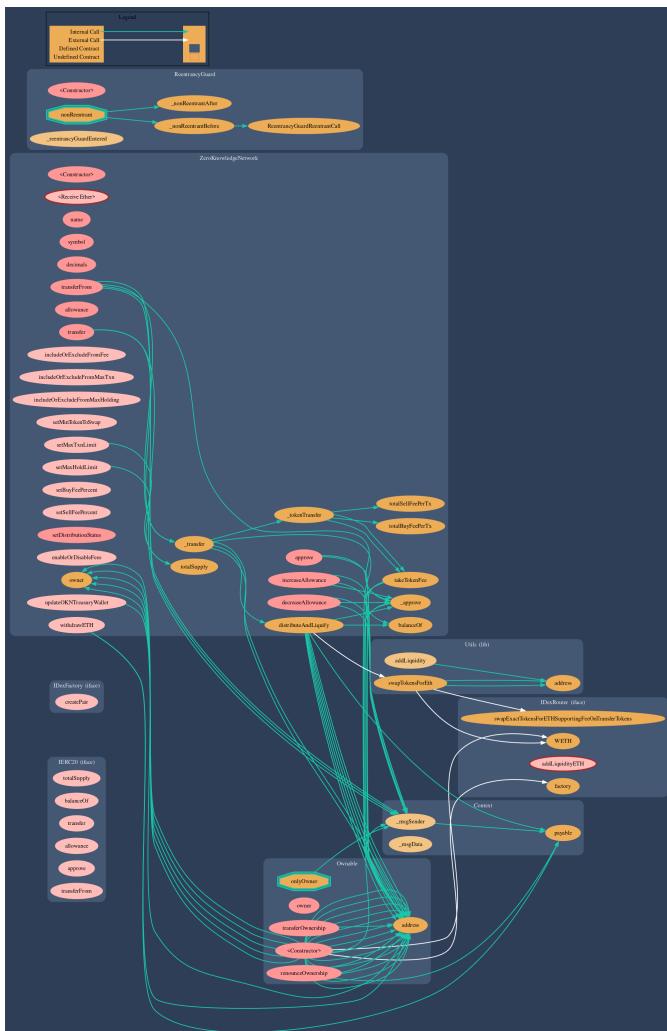
## Solidity Code Provided

SolidID	File Sha-1	FileName
OKN	bc97864ebdc69def6e9a23ecd7e1d1efac162434	OKN.sol
OKN		
OKN		
OKN		

---

# Call Graph

The contract for Zero Knowledge Network has the following call graph structure.



# Smart Contract Vulnerability Checks

The Smart Contract Weakness Classification Registry (SWC Registry) is an implementation of the weakness classification scheme proposed in EIP-1470. It is loosely aligned to the terminologies and structure used in the Common Weakness Enumeration (CWE) while overlaying a wide range of weakness variants that are specific to smart contracts.

ID	Severity	Name	File	location
SWC-100	Pass	Function Default Visibility	0KN.sol	L: 0 C: 0
SWC-101	Pass	Integer Overflow and Underflow.	0KN.sol	L: 0 C: 0
SWC-102	Pass	Outdated Compiler Version file.	0KN.sol	L: 0 C: 0
SWC-103	Low	A floating pragma is set.	0KN.sol	L: 13 C: 0
SWC-104	Pass	Unchecked Call Return Value.	0KN.sol	L: 0 C: 0
SWC-105	Pass	Unprotected Ether Withdrawal.	0KN.sol	L: 0 C: 0
SWC-106	Pass	Unprotected SELFDESTRUCT Instruction	0KN.sol	L: 0 C: 0
SWC-107	Pass	Read of persistent state following external call.	0KN.sol	L: 0 C: 0
SWC-108	Pass	State variable visibility is not set..	0KN.sol	L: 0 C: 0
SWC-109	Pass	Uninitialized Storage Pointer.	0KN.sol	L: 0 C: 0
SWC-110	Pass	Assert Violation.	0KN.sol	L: 0 C: 0
SWC-111	Pass	Use of Deprecated Solidity Functions.	0KN.sol	L: 0 C: 0
SWC-112	Pass	Delegate Call to Untrusted Callee.	0KN.sol	L: 0 C: 0
SWC-113	Pass	Multiple calls are executed in the same transaction.	0KN.sol	L: 0 C: 0

<b>ID</b>	<b>Severity</b>	<b>Name</b>	<b>File</b>	<b>location</b>
SWC-114	Pass	Transaction Order Dependence.	0KN.sol	L: 0 C: 0
SWC-115	Pass	Authorization through tx.origin.	0KN.sol	L: 0 C: 0
SWC-116	Pass	A control flow decision is made based on The block.timestamp environment variable.	0KN.sol	L: 0 C: 0
SWC-117	Pass	Signature Malleability.	0KN.sol	L: 0 C: 0
SWC-118	Pass	Incorrect Constructor Name.	0KN.sol	L: 0 C: 0
SWC-119	Pass	Shadowing State Variables.	0KN.sol	L: 0 C: 0
SWC-120	Pass	Potential use of block.number as source of randomness.	0KN.sol	L: 0 C: 0
SWC-121	Pass	Missing Protection against Signature Replay Attacks.	0KN.sol	L: 0 C: 0
SWC-122	Pass	Lack of Proper Signature Verification.	0KN.sol	L: 0 C: 0
SWC-123	Pass	Requirement Violation.	0KN.sol	L: 0 C: 0
SWC-124	Pass	Write to Arbitrary Storage Location.	0KN.sol	L: 0 C: 0
SWC-125	Pass	Incorrect Inheritance Order.	0KN.sol	L: 0 C: 0
SWC-126	Pass	Insufficient Gas Griefing.	0KN.sol	L: 0 C: 0
SWC-127	Pass	Arbitrary Jump with Function Type Variable.	0KN.sol	L: 0 C: 0
SWC-128	Pass	DoS With Block Gas Limit.	0KN.sol	L: 0 C: 0
SWC-129	Pass	Typographical Error.	0KN.sol	L: 0 C: 0
SWC-130	Pass	Right-To-Left-Override control character (U+202E).	0KN.sol	L: 0 C: 0
SWC-131	Pass	Presence of unused variables.	0KN.sol	L: 0 C: 0

<b>ID</b>	<b>Severity</b>	<b>Name</b>	<b>File</b>	<b>location</b>
SWC-132	Pass	Unexpected Ether balance.	0KN.sol	L: 0 C: 0
SWC-133	Pass	Hash Collisions with Multiple Variable Length Arguments.	0KN.sol	L: 0 C: 0
SWC-134	Pass	Message call with hardcoded gas amount.	0KN.sol	L: 0 C: 0
SWC-135	Pass	Code With No Effects (Irrelevant/Dead Code).	0KN.sol	L: 0 C: 0
SWC-136	Pass	Unencrypted Private Data On-Chain.	0KN.sol	L: 0 C: 0

We scan the contract for additional security issues using MYTHX and industry-standard security scanning tools.

# **Smart Contract Vulnerability Details**

## **SWC-103 - Floating Pragma.**

### **CWE-664: Improper Control of a Resource Through its Lifetime.**

#### **References:**

#### **Description:**

Contracts should be deployed with the same compiler version and flags that they have been tested with thoroughly. Locking the pragma helps to ensure that contracts do not accidentally get deployed using, for example, an outdated compiler version that might introduce bugs that affect the contract system negatively.

#### **Remediation:**

Lock the pragma version and also consider known bugs (<https://github.com/ethereum/solidity/releases>) for the compiler version that is chosen.

Pragma statements can be allowed to float when a contract is intended for consumption by other developers, as in the case with contracts in a library or EthPM package. Otherwise, the developer would need to manually update the pragma in order to compile locally.

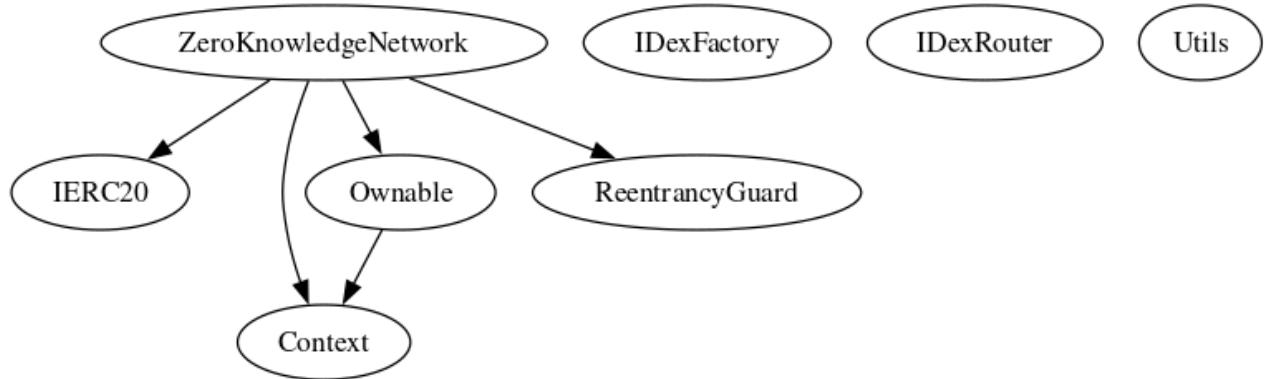
#### **References:**

Ethereum Smart Contract Best Practices - Lock pragmas to specific compiler version.

# Inheritance

The contract for Zero Knowledge Network has the following inheritance structure.

The Project has a Total Supply of 10,000,000,000



# Smart Contract Advance Checks

ID	Severity	Name	Result	Status
OKN-01	Minor	Potential Sandwich Attacks.	Pass	Not-Detected
OKN-02	Minor	Function Visibility Optimization	Pass	Not-Detected
OKN-03	Minor	Lack of Input Validation.	Fail	Detected
OKN-04	Major	Centralized Risk In addLiquidity.	Pass	Not-Detected
OKN-05	Minor	Missing Event Emission.	Fail	Detected
OKN-06	Minor	Conformance with Solidity Naming Conventions.	Pass	Not-Detected
OKN-07	Minor	State Variables could be Declared Constant.	Pass	Not-Found
OKN-08	Minor	Dead Code Elimination.	Pass	Not-Found
OKN-09	Major	Third Party Dependencies.	Pass	Not-Found
OKN-10	Major	Initial Token Distribution.	Pass	Not-Detected
OKN-11	Minor		Pass	Not-Detected
OKN-12	Major	Centralization Risks In The X Role	Pass	Not-Found
OKN-13	Informational	Extra Gas Cost For User..	Pass	Not-Detected
OKN-14	Medium	Unnecessary Use Of SafeMath	Pass	Not-Detected
OKN-15	Medium	Symbol Length Limitation due to Solidity Naming Standards.	Pass	Not-Found
OKN-16	Medium	Taxes can be up to 100%	Pass	Not-Found
OKN-17	Informational	Conformance to numeric notation best practice.	Pass	Not-Found
OKN-18	Critical	Stop Transactions by using Enable Trade.	Pass	Not-Detected

## 0KN-03 | Lack of Input Validation.

Category	Severity	Location	Status
Volatile Code	 Minor	0KN.sol: 125,14	 Detected

### Description

The given input is missing the check for the non-zero address.

The given input is missing the check for the unSetPair is missing required function.

### Remediation

We advise the client to add the check for the passed-in values to prevent unexpected errors as below:

```
...
require(receiver != address(0), "Receiver is the zero address");
...
...
require(value X limitation, "Your not able to do this function");
...
```

We also recommend customer to review the following function that is missing a required validation. unSetPair is missing required function.

## 0KN-05 | Missing Event Emission.

Category	Severity	Location	Status
Volatile Code	 Minor	0KN.sol: 125, 14	 Detected

### Description

Detected missing events for critical arithmetic parameters. There are functions that have no event emitted, so it is difficult to track off-chain changes. The linked code does not create an event for the transfer.

### Remediation

Emit an event for critical parameter changes. It is recommended emitting events for the sensitive functions that are controlled by centralization roles.

# Technical Findings Summary

## Classification of Risk

Severity	Description
<span style="color: red;">●</span> Critical	Risks are those that impact the safe functioning of a platform and must be addressed before launch. Users should not invest in any project with outstanding critical risks.
<span style="color: orange;">●</span> High	Risks can include centralization issues and logical errors. Under specific circumstances, these major risks can lead to loss of funds and/or control of the project.
<span style="color: yellow;">●</span> Medium	Risks may not pose a direct risk to users' funds, but they can affect the overall functioning of a platform
<span style="color: green;">◆</span> Low	Risks can be any of the above but on a smaller scale. They generally do not compromise the overall integrity of the Project, but they may be less efficient than other solutions.
<span style="color: blue;">ℹ</span> Informational	Errors are often recommended to improve the code's style or certain operations to fall within industry best practices. They usually do not affect the overall functioning of the code.

## Findings

Severity	Found	Pending	Resolved
<span style="color: red;">●</span> Critical	0	0	0
<span style="color: orange;">●</span> High	NaN	undefined	undefined
<span style="color: yellow;">●</span> Medium	0	0	0
<span style="color: green;">◆</span> Low	NaN	undefined	undefined
<span style="color: blue;">ℹ</span> Informational	0	0	0
Total	NaN	0	0

# Social Media Checks

Social Media	URL	Result
Twitter	<a href="https://twitter.com/OKnowledge_net">https://twitter.com/OKnowledge_net</a>	Pass
Other	<a href="https://t.me/announcement0KN">https://t.me/announcement0KN</a> , <a href="https://0101010011.xyz/OKN-Litepaper.pdf">https://0101010011.xyz/OKN-Litepaper.pdf</a> , <a href="https://000z.gitbook.io/0/">https://000z.gitbook.io/0/</a>	Pass
Website	<a href="https://0101010011.xyz/">https://0101010011.xyz/</a>	Pass
Telegram	<a href="https://t.me/Entry_Portal_0KN">https://t.me/Entry_Portal_0KN</a>	Pass

We recommend to have 3 or more social media sources including a completed working websites.

**Social Media Information Notes:**

**Auditor Notes:** undefined

**Project Owner Notes:**



# Assessment Results

## Score Results

Review	Score
Overall Score	88/100
Auditor Score	86/100
Review by Section	Score
Manual Scan Score	19/53
SWC Scan Score	35 /37
Advance Check Score	34 /19

The Following Score System Has been Added to this page to help understand the value of the audit, the maximum score is 100, however to attain that value the project must pass and provide all the data needed for the assessment. Our Passing Score has been changed to 80 Points, if a project does not attain 80% is an automatic failure. Read our notes and final assessment below.

## Audit Passed



# **Assessment Results**

## **Important Notes:**

- Contract has no taxes.
- There is a max wallet defined for holders.

**Auditor Score =86  
Audit Passed**



# Appendix

## Finding Categories

### Centralization / Privilege

Centralization / Privilege findings refer to either feature logic or implementation of components that act against the nature of decentralization, such as explicit ownership or specialized access roles in combination with a mechanism to relocate funds.

### Gas Optimization

Gas Optimization findings do not affect the functionality of the code but generate different, more optimal EVM opcodes resulting in a reduction on the total gas cost of a transaction.

### Logical Issue

Logical Issue findings detail a fault in the logic of the linked code, such as an incorrect notion on how `block.timestamp` works.

### Control Flow

Control Flow findings concern the access control imposed on functions, such as owner-only functions being invoke-able by anyone under certain circumstances.

### Volatile Code

Volatile Code findings refer to segments of code that behave unexpectedly on certain edge cases that may result in a vulnerability.

### Coding Style

Coding Style findings usually do not affect the generated byte-code but rather comment on how to make the codebase more legible and, as a result, easily maintainable.

### Inconsistency

Inconsistency findings refer to functions that should seemingly behave similarly yet contain different code, such as a constructor assignment imposing different require statements on the input variables than a setter function.

### Coding Best Practices

ERC 20 Coding Standards are a set of rules that each developer should follow to ensure the code meets a set of criteria and is readable by all the developers.

# Disclaimer

Assure Defi has conducted an independent security assessment to verify the integrity of and highlight any vulnerabilities or errors, intentional or unintentional, that may be present in the reviewed code for the scope of this assessment. This report does not constitute agreement, acceptance, or advocacy for the Project, and users relying on this 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 the Project in question may pursue, and 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 entirely free of exploits, bugs, vulnerabilities or depreciation of technologies.

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