SPYWOLF

Security Audit Report

Audit prepared for

ShadowLoan

Completed on

October 28, 2024

OVERVIEW

This goal of this report is to review the main aspects of the project to help investors make an informative decision during their research process.

You will find a a summarized review of the following key points:

- ✔ Contract's source code
- ✔ Owners' wallets
- ✔ Tokenomics
- ✔ Team transparency and goals
- ✔ Website's age, code, security and UX
- ✔ Whitepaper and roadmap
- ✔ Social media & online presence

The results of this audit are purely based on the team’s evaluation and does not guarantee nor reflect the projects outcome and goal

- SPYWOLF Team -

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ShadowLoan

PROJECT DESCRIPTION:

According to their website:
Introducing ShadowGold (SDG) on Polygon PoS – the world's first dual-liquidity token backed by 50% real gold (PAXG) and 50% Matic, with an external pool that invests in real-world equity to replenish the ecosystem. Holders passively receive real gold (as PAXG) just for holding. Easy. Revolutionary. Golden.

Release Date: TBD

Launchpad: Self Launch

Category: DeFi

KEY RESULTS

Cannot mint new tokens	*
Cannot pause trading (honeypot)	PASSED
Cannot blacklist an address	PASSED
Cannot raise taxes over 25%?	PASSED
No proxy contract detected	PASSED
Not required to enable trading	PASSED
No hidden ownership	PASSED
Cannot change the router	PASSED
No cooldown feature found	PASSED
Bot protection delay is lower than 5 blocks	PASSED
Cannot set max tx amount below 0.05% of total supply	PASSED
The contract cannot be self-destructed by owner	PASSED

For a more detailed and thorough examination of the heightened risks, refer to the subsequent parts of the report.

N/A = Not applicable for this type of contract

*New tokens are minted on user deposits with the relevant value

CONTRACT INFO

Token Name
unavailable

Symbol
unavailable

Contract Address
unavailable

Network
unavailable

Language
Solidity

Deployment Date
unavailable

Contract Type
Pools and Borrowing

Total Supply
unavailable

Decimals
unavailable

TAXES

Buy Tax
0%

Sell Tax
0%

Our Contract Review Process

The contract review process pays special attention to the following:

- Testing the smart contracts against both common and uncommon vulnerabilities
- Assessing the codebase to ensure compliance with current best practices and industry standards.
- Ensuring contract logic meets the specifications and intentions of the client.
- Cross referencing contract structure and implementation against similar smart contracts produced by industry leaders.
- Thorough line-by-line manual review of the entire codebase by industry experts.

Blockchain security tools used:

- OpenZeppelin
- Mythril
- Solidity Compiler
- Hardhat

SMART CONTRACT STATS

Calls Count	unavailable
External calls	unavailable
Internal calls	unavailable
Transactions count	unavailable
Last transaction time	unavailable
Deployment Date	unavailable
Create TX	unavailable
Owner	unavailable
Deployer	unavailable

TOKEN TRANSFERS STATS

Transfer Count	unavailable
Total Amount	unavailable
Median Transfer Amount	unavailable
Average Transfer Amount	unavailable
First transfer date	unavailable
Last transfer date	unavailable
Days token transferred	unavailable

FEATURED WALLETS

Owner address	unavailable
Marketing fee receiver	unavailable
LP address	unavailable

TOP 3 UNLOCKED WALLETS

unavailable	
unavailable	
unavailable	

VULNERABILITY ANALYSIS

ID	Title	
SWC-100	Function Default Visibility	**Passed**
SWC-101	Integer Overflow and Underflow	**Passed**
SWC-102	Outdated Compiler Version	**Passed**
SWC-103	Floating Pragma	**Passed**
SWC-104	Unchecked Call Return Value	**Passed**
SWC-105	Unprotected Ether Withdrawal	**Passed**
SWC-106	Unprotected SELFDESTRUCT Instruction	**Passed**
SWC-107	Reentrancy	**Passed**
SWC-108	State Variable Default Visibility	**Passed**
SWC-109	Uninitialized Storage Pointer	**Passed**
SWC-110	Assert Violation	**Passed**
SWC-111	Use of Deprecated Solidity Functions	**Passed**
SWC-112	Delegatecall to Untrusted Callee	**Passed**
SWC-113	DoS with Failed Call	**Passed**
SWC-114	Transaction Order Dependence	**Passed**
SWC-115	Authorization through tx.origin	**Passed**
SWC-116	Block values as a proxy for time	**Passed**
SWC-117	Signature Malleability	**Passed**
SWC-118	Incorrect Constructor Name	**Passed**

VULNERABILITY ANALYSIS

ID	Title	
SWC-119	Shadowing State Variables	Passed
SWC-120	Weak Sources of Randomness from Chain Attributes	Passed
SWC-121	Missing Protection against Signature Replay Attacks	Passed
SWC-122	Lack of Proper Signature Verification	Passed
SWC-123	Requirement Violation	Passed
SWC-124	Write to Arbitrary Storage Location	Passed
SWC-125	Incorrect Inheritance Order	Passed
SWC-126	Insufficient Gas Griefing	Passed
SWC-127	Arbitrary Jump with Function Type Variable	Passed
SWC-128	DoS With Block Gas Limit	Passed
SWC-129	Typographical Error	Passed
SWC-130	Right-To-Left-Override control character (U+202E)	Passed
SWC-131	Presence of unused variables	Passed
SWC-132	Unexpected Ether balance	Passed
SWC-133	Hash Collisions With Multiple Variable Length Arguments	Passed
SWC-134	Message call with hardcoded gas amount	Passed
SWC-135	Code With No Effects	Passed
SWC-136	Unencrypted Private Data On-Chain	Passed

VULNERABILITY ANALYSIS

NO ERRORS FOUND

MANUAL
CODE REVIEW

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 4 different threat levels.

THREAT LEVELS

High Risk

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

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

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

Informational

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

FOUND THREATS

⚠ High Risk: 0

No high risk-level threats found in this contract.

⚠ Medium Risk: 0

No medium risk-level threats found in this contract.

⚠ Low Risk: 1

1 low risk-level threats found in this contract.

FOUND THREATS

⚠ Low Risk (Collsurpluspool):

_checkOnGoldReceived() will return false, causing transaction to revert if Borroweroperations contract does not have onGoldReceived function. Currently Borroweroperations contract does not have onGoldReceived function.

```
function claimColl(address _account) external override {
    _requireCallerIsBorrowerOperations();
    uint claimableColl = balances[_account];
    require(claimableColl > 0, "CollSurplusPool: No collateral available to claim");

    balances[_account] = 0;
    emit CollBalanceUpdated(_account, 0);

    ETH = ETH.sub(claimableColl);
    emit EtherSent(_account, claimableColl);

    IERC20(goldTokenAddress).safeTransfer(_account, claimableColl);
    require(_checkOnGoldReceived(address(this), _account, claimableColl), "CollSurplusPool: transfer to non GoldReceiver");
}

bytes4 private constant _GOLD_RECEIVED = bytes4(keccak256("onGoldReceived(address,address,uint256)"));

function _checkOnGoldReceived(address from, address to, uint amount)
    internal returns (bool)
{
    if (!to.isContract()) {
        return true;
    }
    bytes memory returndata = to.functionCall(abi.encodeWithSelector(
        IGoldReceiver(to).onGoldReceived.selector,
        from,
        to,
        amount
    ), "GoldSender: transfer to non GoldReceiver implementer");
    bytes4 retval = abi.decode(returndata, (bytes4));
    return (retval == _GOLD_RECEIVED);
}
```

FOUND THREATS

Informational (Borrower)

Gold token _activePool receiver should be either EOA or contract that have onGoldReceived(address,address,uint256) function.

```
function openTrove(uint _maxFeePercentage, uint _LUSDAmount, address _upperHint,
address _lowerHint, uint256 _amount) external override {
.....................
    goldToken.safeTransferFrom(msg.sender, address(this), _amount);
    _activePoolAddColl(contractsCache.activePool, _amount);
.....................
}

function _activePoolAddColl(IActivePool _activePool, uint _amount) internal {
    goldToken.safeTransfer(address(_activePool), _amount);
    require(_checkOnGoldReceived(address(this), address(_activePool), _amount),
    "BorrowerOperations: transfer to non GoldReceiver");
}

function _checkOnGoldReceived(address from, address to, uint amount)
    internal returns (bool)
{
    if (!to.isContract()) {
        return true;
    }
    bytes memory returndata = to.functionCall(abi.encodeWithSelector(
        IGoldReceiver(to).onGoldReceived.selector,
        from,
        to,
        amount
    ), "GoldSender: transfer to non GoldReceiver implementer");
    bytes4 retval = abi.decode(returndata, (bytes4));
    return (retval == _GOLD_RECEIVED);
}

function onGoldReceived(address _from, address _to, uint _amount) public override returns (bytes4){
    _requireCallerIsActivePool();

    uint balance = IERC20(goldTokenAddress).balanceOf(address(this));
    require(ETH.add(_amount) <= balance, "CollSurplusPool: not received collateral");
    ETH = ETH.add(_amount);

    return super.onGoldReceived(_from, _to, _amount);
}
```

FOUND THREATS

Informational

If the sum of current goldTokens balance + added goldTokens is higher than contract's current balance, transaction will revert. This is valid for all contracts that utilize the onGoldReceived() functionality (ActivePool, DefaultPool, StabilityPool, Collsurpluspool).

```
function onGoldReceived(address _from, address _to, uint _amount) public override returns (bytes4){
    _requireCallerIsActivePool();

    uint balance = IERC20(goldTokenAddress).balanceOf(address(this));
    require(ETH.add(_amount) <= balance, "CollSurplusPool: not received collateral");
    ETH = ETH.add(_amount);

    return super.onGoldReceived(_from, _to, _amount);
}
```

WEBSITE

Website URL:
https://shadowfi.com/

Domain Registry
Private

Domain Expiration
Private

Technical SEO Test
Passed

Security Test
Passed. SSL certificate present

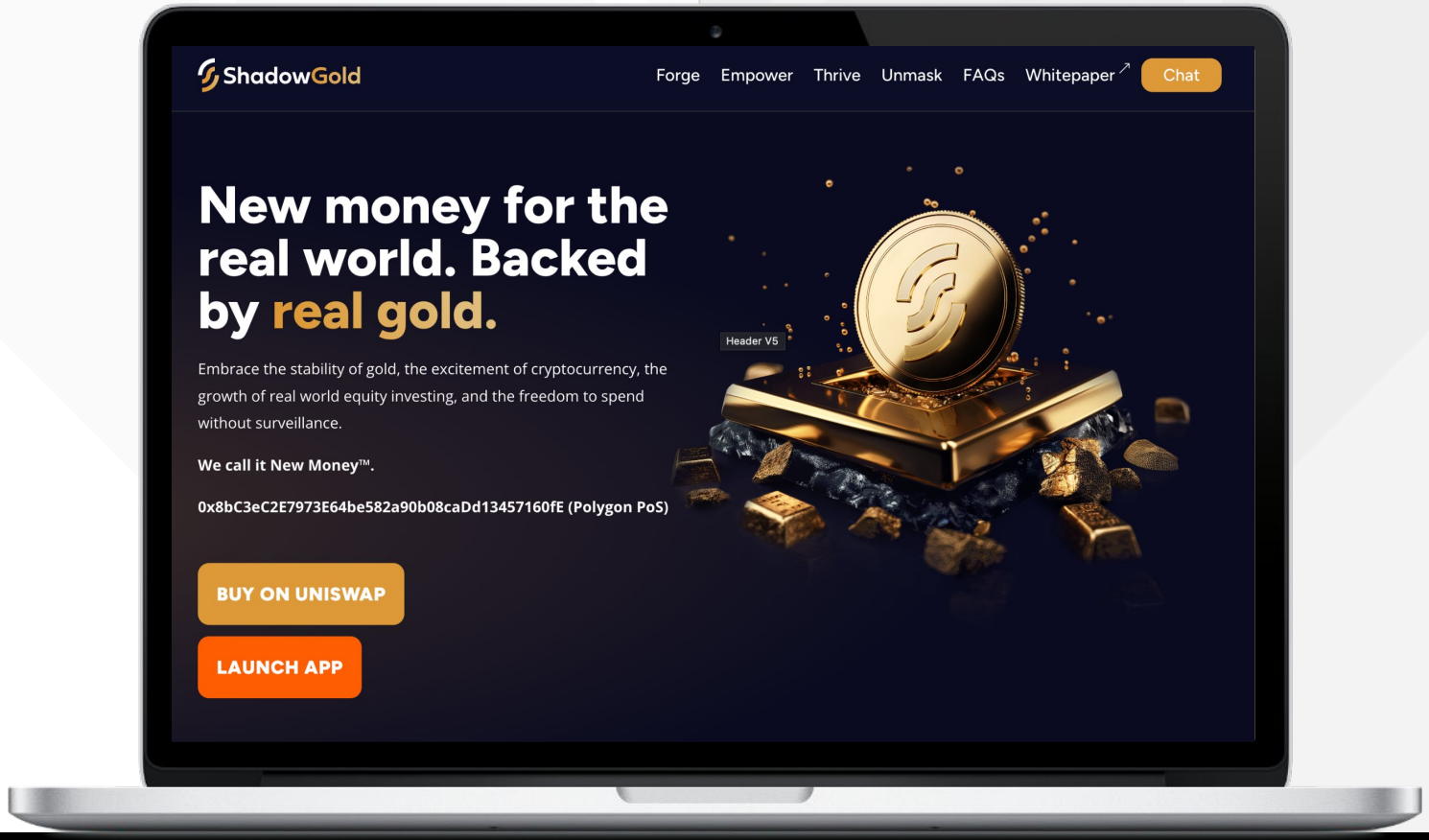
Design
Very nice design and use of elements. Easy to read.

Content
The information provides a clear idea of what the project is about and their goals.

Whitepaper
Yes

Roadmap
Yes

Mobile-friendly?
Yes

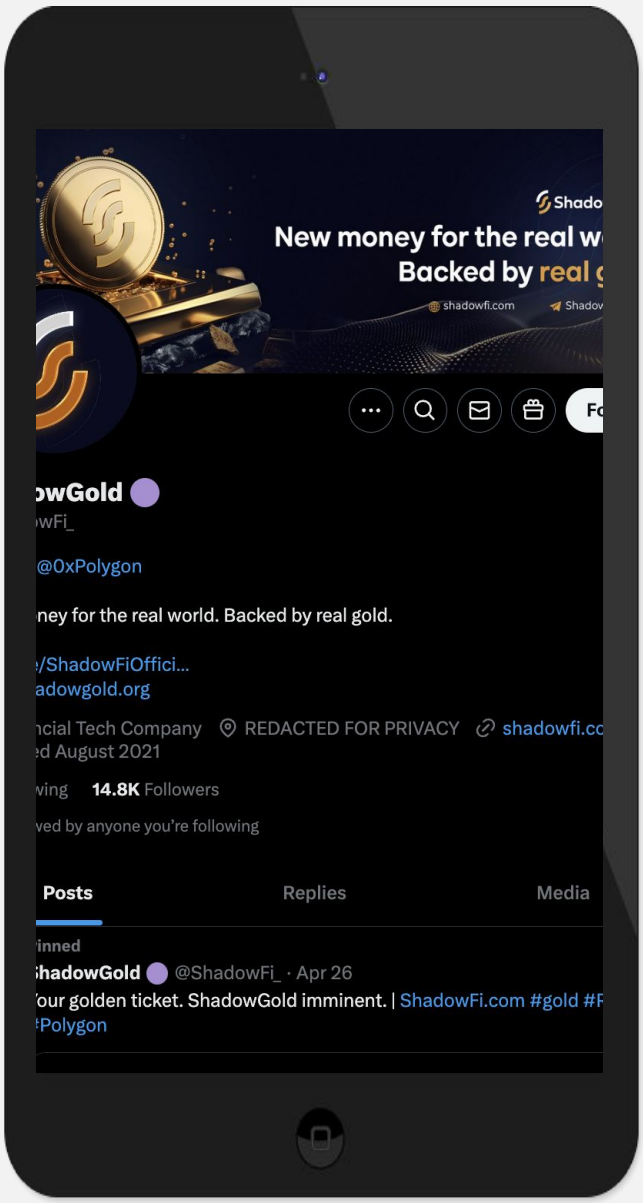


shadowfi.com

SOCIAL MEDIA

ANALYSIS

Social media pages are very active.



Twitter:

@shadowfi_

- 14.8K Followers
- Daily posts

Discord

unavailable

Telegram:

@ShadowFiOfficial

- 4 552 members
- Active community and mods

Medium

@shadowfi

- 8 posts
- Informative

SPYWOLF

CRYPTO SECURITY

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Contract Development

ABOUT US

We are a growing crypto security agency offering audits, KYCs and consulting services for some of the top names in the crypto industry.

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Disclaimer

This report shows findings based on our limited project analysis, following good industry practice from the date of this report, in relation to cybersecurity vulnerabilities and issues in the framework and algorithms based on smart contracts, overall social media and website presence and team transparency 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 disclaimer below – please make sure to read it in full.

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No applications were reviewed for security. No product code has been reviewed.

Final Score (hidden)

Final Score: 92

Risk Level: Low Risk

- **For "Final score" only put the number without the percentage**
- **Input the risk levels like this:**

Low Risk

High Risk

Medium Risk

SAFU