Cyberscope

Audit Report

AndaGold

February 2023

Type	BEP20
Network	BSC
Address	0xFbbbab59A7EA75bB59BcB7a98e8f020d6De821E9
Audited by	© cyberscope

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Contract Review

Contract Name	AndaGold
Compiler Version	v0.8.17+commit.8df45f5f
Optimization	500 runs
Explorer	https://bscscan.com/address/0xfbbbab59a7ea75bb59bcb7a98e8f020d6de821e9
Address	0xfbbbab59a7ea75bb59bcb7a98e8f020d6de821e9
Network	BSC
Symbol	ADG
Decimals	18
Total Supply	1,000,000,000

Audit Updates

Initial Audit	22 Oct 2022 https://github.com/cyberscope-io/audits/blob/main/wkb/v1/audit.pdf
Corrected Phase 2	07 Nov 2022 https://github.com/cyberscope-io/audits/blob/main/wkb/v2/audit.pdf
Corrected Phase 3	01 Feb 2023 https://github.com/cyberscope-io/audits/blob/main/wkb/v3/audit.pdf
Corrected Phase 4	02 Feb 2023

Source Files

Filename	SHA256
AndaGold.sol	e39993868ec17088e82cc2f8deb16a1c925729e7f41771ab62be447c36a51d69

Analysis

● Critical   ● Medium   ● Minor / Informative   ● Pass

Severity	Code	Description	Status
●	ST	Stops Transactions	Passed
●	OCTD	Transfers Contract's Tokens	Passed
●	OTUT	Transfers User's Tokens	Passed
●	ELFM	Exceeds Fees Limit	Passed
●	ULTW	Transfers Liquidity to Team Wallet	Passed
●	MT	Mints Tokens	Passed
●	BT	Burns Tokens	Passed
●	BC	Blacklists Addresses	Passed

Diagnostics

● Critical   ● Medium   ● Minor / Informative

Severity	Code	Description	Status
●	L04	Conformance to Solidity Naming Conventions	Unresolved
●	L07	Missing Events Arithmetic	Unresolved
●	L12	Using Variables before Declaration	Unresolved
●	L13	Divide before Multiply Operation	Unresolved
●	L14	Uninitialized Variables in Local Scope	Unresolved
●	L16	Validate Variable Setters	Unresolved
●	L20	Succeeded Transfer Check	Unresolved

L04 - Conformance to Solidity Naming Conventions

Criticality	Minor / Informative
Location	AndaGold.sol#L33,115,116,117,118,135,141,149,150,151,163,179,423
Status	Unresolved

Description

The Solidity style guide is a set of guidelines for writing clean and consistent Solidity code. Adhering to a style guide can help improve the readability and maintainability of the Solidity code, making it easier for others to understand and work with.

The followings are a few key points from the Solidity style guide:

1. Use camelCase for function and variable names, with the first letter in lowercase (e.g., myVariable, updateCounter).
2. Use PascalCase for contract, struct, and enum names, with the first letter in uppercase (e.g., MyContract, UserStruct, ErrorEnum).
3. Use uppercase for constant variables and enums (e.g., MAX_VALUE, ERROR_CODE).
4. Use indentation to improve readability and structure.
5. Use spaces between operators and after commas.
6. Use comments to explain the purpose and behavior of the code.
7. Keep lines short (around 120 characters) to improve readability.

```
function WETH() external pure returns (address);
uint256 constant private startingSupply = 1_000_000_000
string constant private _name = "AndaGold"
string constant private _symbol = "ADG"
uint8 constant private _decimals = 18

Fees public _taxRates = Fees({
        buyFee: 800,
        sellFee: 800,
        transferFee: 800
    })

...
```

Recommendation

By following the Solidity naming convention guidelines, the codebase increased the readability, maintainability, and makes it easier to work with.

Find more information on the Solidity documentation
https://docs.soliditylang.org/en/v0.8.17/style-guide.html#naming-convention.

L07 - Missing Events Arithmetic

Criticality	Minor / Informative
Location	AndaGold.sol#L462,472
Status	Unresolved

Description

Events are a way to record and log information about changes or actions that occur within a contract. They are often used to notify external parties or clients about events that have occurred within the contract, such as the transfer of tokens or the completion of a task.

It's important to carefully design and implement the events in a contract, and to ensure that all required events are included. It's also a good idea to test the contract to ensure that all events are being properly triggered and logged.

```
swapThreshold = (_tTotal * thresholdPercent) / thresholdDivisor
piSwapPercent = priceImpactSwapPercent
```

Recommendation

By including all required events in the contract and thoroughly testing the contract's functionality, the contract ensures that it performs as intended and does not have any missing events that could cause issues with its arithmetic.

L12 - Using Variables before Declaration

Criticality	Minor / Informative
Location	AndaGold.sol#L670
Status	Unresolved

Description

The contract is using a variable before the declaration. This is usually happening either if it has not been declared yet or if the variable has been declared in a different scope. It is not a good practice to use a local variable before it has been declared.

```
bool check
```

Recommendation

By declaring local variables before using them, contract ensures that it operates correctly. It's important to be aware of this rule when working with local variables, as using a variable before it has been declared can lead to unexpected behavior and can be difficult to debug.

L13 - Divide before Multiply Operation

Criticality	Minor / Informative
Location	AndaGold.sol#L573,591,706,707
Status	Unresolved

Description

It is important to be aware of the order of operations when performing arithmetic calculations. This is especially important when working with large numbers, as the order of operations can affect the final result of the calculation. Performing divisions before multiplications may cause loss of prediction.

```
uint256 toLiquify = ((contractTokenBalance * ratios.liquidity) /
ratios.totalSwap) / 2
uint256 liquidityBalance = (amtBalance * toLiquify) / swapAmt
```

Recommendation

To avoid this issue, it is recommended to carefully consider the order of operations when performing arithmetic calculations in Solidity. It's generally a good idea to use parentheses to specify the order of operations. The basic rule is that the multiplications should be prior to the divisions.

L14 - Uninitialized Variables in Local Scope

Criticality	Minor / Informative
Location	AndaGold.sol#L669,670
Status	Unresolved

Description

Using an uninitialized local variable can lead to unpredictable behavior and potentially cause errors in the contract. It's important to always initialize local variables with appropriate values before using them.

```
bool checked
bool check
```

Recommendation

By initializing local variables before using them, the contract ensures that the functions behave as expected and avoid potential issues.

L16 - Validate Variable Setters

Criticality	Minor / Informative
Location	AndaGold.sol#L275
Status	Unresolved

Description

The contract performs operations on variables that have been configured on user-supplied input. These variables are missing of proper check for the case where a value is zero. This can lead to problems when the contract is executed, as certain actions may not be properly handled when the value is zero.

```
operator = newOperator
```

Recommendation

By adding the proper check, the contract will not allow the variables to be configured with zero value. This will ensure that the contract can handle all possible input values and avoid unexpected behavior or errors. Hence, it can help to prevent the contract from being exploited or operating unexpectedly.

L20 - Succeeded Transfer Check

Criticality	Minor / Informative
Location	AndaGold.sol#L657
Status	Unresolved

Description

According to the ERC20 specification, the transfer methods should be checked if the result is successful. Otherwise, the contract may wrongly assume that the transfer has been established.

```
TOKEN.transfer(_owner, TOKEN.balanceOf(address(this)))
```

Recommendation

The contract should check if the result of the transfer methods is successful. The team is advised to check the SafeERC20 library from the Openzeppelin library.

Contract Functions

Contract	Type	Bases			
	Function Name	Visibility	Mutability	Modifiers	
IERC20	Interface				
	totalSupply	External		-	
	decimals	External		-	
	symbol	External		-	
	name	External		-	
	getOwner	External		-	
	balanceOf	External		-	
	transfer	External	✓	-	
	allowance	External		-	
	approve	External	✓	-	
	transferFrom	External	✓	-	
IFactoryV2	Interface				
	getPair	External		-	
	createPair	External	✓	-	
IV2Pair	Interface				
	factory	External		-	
	getReserves	External		-	
	sync	External	✓	-	
IRouter01	Interface				
	factory	External		-	
	WETH	External		-	

	addLiquidityETH	External	Payable	-
	addLiquidity	External	✓	-
	swapExactETHForTokens	External	Payable	-
	getAmountsOut	External		-
	getAmountsIn	External		-
IRouter02	Interface	IRouter01		
	swapExactTokensForETHSupporting FeeOnTransferTokens	External	✓	-
	swapExactETHForTokensSupporting FeeOnTransferTokens	External	Payable	-
	swapExactTokensForTokensSupporti ngFeeOnTransferTokens	External	✓	-
	swapExactTokensForTokens	External	✓	-
Protections	Interface			
	checkUser	External	✓	-
	setLaunch	External	✓	-
	setLpPair	External	✓	-
	setProtections	External	✓	-
	removeSniper	External	✓	-
	isBlacklisted	External		-
	removeBlacklisted	External	✓	-
	setBlacklistEnabled	External	✓	-
	setBlacklistEnabledMultiple	External	✓	-
AndaGold	Implementation	IERC20		
		Public	Payable	-
		External	Payable	-
	transferOwner	External	✓	onlyOwner
	renounceOwnership	External	✓	onlyOwner

	setOperator	Public	✓	-
	renounceOriginalDeployer	External	✓	-
	totalSupply	External		-
	decimals	External		-
	symbol	External		-
	name	External		-
	getOwner	External		-
	allowance	External		-
	balanceOf	Public		-
	transfer	Public	✓	-
	approve	External	✓	-
	_approve	Internal	✓	
	approveContractContingency	External	✓	onlyOwner
	transferFrom	External	✓	-
	setNewRouter	External	✓	onlyOwner
	setLpPair	External	✓	onlyOwner
	setInitializer	External	✓	onlyOwner
	isExcludedFromLimits	External		-
	setExcludedFromLimits	External	✓	onlyOwner
	isExcludedFromFees	External		-
	setExcludedFromFees	Public	✓	onlyOwner
	isExcludedFromProtection	External		-
	setExcludedFromProtection	External	✓	onlyOwner
	getCirculatingSupply	Public		-
	setBlacklistEnabled	External	✓	-
	setBlacklistEnabledMultiple	External	✓	-
	isBlacklisted	External		-
	removeBlacklisted	External	✓	onlyOwner
	removeSniper	External	✓	onlyOwner

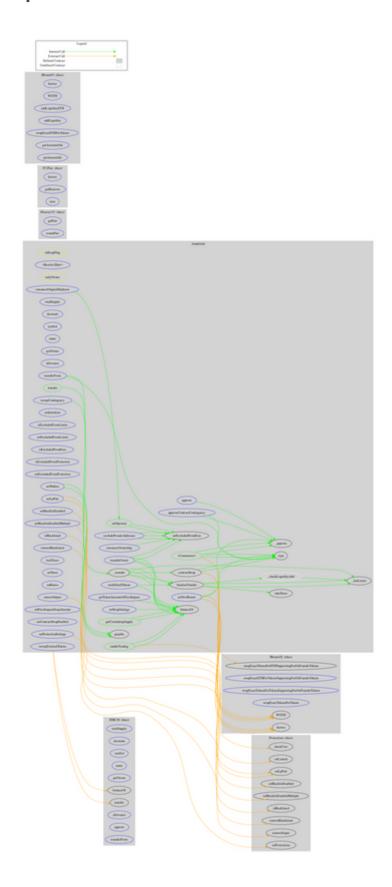|				
setProtectionSettings	External	✓	onlyOwner
lockTaxes	External	✓	onlyOwner
setTaxes	External	✓	onlyOwner
setRatios	External	✓	onlyOwner
setWallets	External	✓	onlyOwner
getTokenAmountAtPriceImpact	External		-
setSwapSettings	External	✓	onlyOwner
setPriceImpactSwapAmount	External	✓	onlyOwner
setContractSwapEnabled	External	✓	onlyOwner
excludePresaleAddresses	External	✓	onlyOwner
_hasLimits	Internal		
_transfer	Internal	✓	
contractSwap	Internal	✓	inSwapFlag
_checkLiquidityAdd	Internal	✓	
enableTrading	Public	✓	onlyOwner
sweepContingency	External	✓	onlyOwner
sweepExternalTokens	External	✓	onlyOwner
multiSendTokens	External	✓	onlyOwner
finalizeTransfer	Internal	✓	
takeTaxes	Internal	✓	

Inheritance Graph

Flow Graph

Summary

AndaGold is an interesting project that has a friendly and growing community. The Smart Contract analysis reported no compiler errors or critical issues. The contract Owner can access some admin functions that can not be used in a malicious way to disturb the users' transactions. There is also a limit of max 16% buy/sell fees and 8% transfer fees.

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The Cyberscope team

https://www.cyberscope.io