Cyberscope

Audit Report

DOGEBEER

July 2022

Type	BEP20
Network	BSC
Address	0x1fE00b36F6032C3420BF746264ce9f06feb9D8CE
Audited by	© cyberscope

Table of Contents

Contract Review

Contract Name	DOGEBEER
Compiler Version	v0.8.4+commit.c7e474f2
Optimization	200 runs
Licence	None
Explorer	https://bscscan.com/token/0x1fe00b36f6032c3420bf746264ce9f06feb9d8ce
Symbol	BEERS
Decimals	9
Total Supply	420,000,000
Domain	I

Source Files

Filename	**SHA256**
contract.sol	ab73d3aaf23fdb7bf28004dd4e7418e5c8d0f145394cab48db33d0105cfa79be

Audit Updates

Initial Audit	23rd July 2022
Corrected	

Contract Analysis

🔴 Critical 🟠 Medium ⚪ Minor 🔵 Pass

Severity	Code	Description
🔴	ST	Contract Owner is not able to stop or pause transactions
🔵	OCTD	Contract Owner is not able to transfer tokens from specific address
🔵	OTUT	Owner Transfer User's Tokens
🔴	ELFM	Contract Owner is not able to increase fees more than a reasonable percent (25%)
⚪	ULTW	Contract Owner is not able to increase the amount of liquidity taken by dev wallet more than a reasonable percent
🔵	MT	Contract Owner is not able to mint new tokens
🔵	BT	Contract Owner is not able to burn tokens from specific wallet
🔵	BC	Contract Owner is not able to blacklist wallets from selling

ST - Stop Transactions

Criticality	critical
Location	contract.sol#L718,762,1028

Description

The contract owner has the authority to stop the sales for all users excluding the owner. The owner may take advantage of it by setting the `_sellTaxFee` to high value. As a result the sender's balance will not be sufficient and the transaction will underflow.

```
if(to == uniswapV2Pair){
    removeAllFee();
    _taxFee = _sellTaxFee;
    _liquidityFee = _sellLiquidityFee;
}
```

The contract owner could also abuse the _buyBackTimeInterval and _buyBackMaxTimeForHistories variables by setting a high value. As a result the calculation will yield a negative number and the transaction will revert.

```
uint256 startTime = block.timestamp - _buyBackTimeInterval;
//
uint256 maxStartTimeForHistories = block.timestamp -
_buyBackMaxTimeForHistories;
```

Recommendation

The variables _buyBackTimeInterval and _buyBackMaxTimeForHistories should not be greater than the current timestamp.

Regarding the fees manipulation read the corresponding section.

The team should carefully manage the private keys of the owner's account. We strongly recommend a powerful security mechanism that will prevent a single user from accessing the contract admin functions. That risk can be prevented by temporarily locking the contract or renouncing ownership.

ELFM - Exceed Limit Fees Manipulation

Criticality	critical
Location	contract.sol#L1083,1088

Description

The contract owner has the authority to increase over the allowed limit of 25%. The owner may take advantage of it by calling the `setSellFee` function with a high percentage value.

```
function setSellFee(uint256 sellTaxFee, uint256 sellLiquidityFee) external
onlyOwner {
    _sellTaxFee = sellTaxFee;
    _sellLiquidityFee = sellLiquidityFee;
}
```

Recommendation

The contract could embody a check for the maximum acceptable value.

The team should carefully manage the private keys of the owner's account. We strongly recommend a powerful security mechanism that will prevent a single user from accessing the contract admin functions. That risk can be prevented by temporarily locking the contract or renouncing ownership.

ULTW - Unlimited Liquidity to Team Wallet

Criticality	minor
Location	contract.sol#L1175

Description

The contract owner has the authority to transfer funds without limit to the team wallet. These funds have been accumulated from fees collected from the contract. The owner may take advantage of it by calling the `Sweep` method.

```
function Sweep() external onlyOwner {
    uint256 balance = address(this).balance;
    payable(owner()).transfer(balance);
}
```

Recommendation

The contract could embody a check for the maximum amount of funds that can be swapped. Since a huge amount may volatile the token's price.

The team should carefully manage the private keys of the owner's account. We strongly recommend a powerful security mechanism that will prevent a single user from accessing the contract admin functions. That risk can be prevented by temporarily locking the contract or renouncing ownership.

Contract Diagnostics

● Critical ● Medium ● Minor

Severity	Code	Description
●	L01	Public Function could be Declared External
●	L02	State Variables could be Declared Constant
●	L04	Conformance to Solidity Naming Conventions
●	L07	Missing Events Arithmetic
●	L09	Dead Code Elimination
●	L14	Uninitialized Variables in Local Scope

L01 - Public Function could be Declared External

Criticality	minor
Location	contract.sol#L177,182,188,192,196,203,552,556,560,564,573,578,582,587,593,598,603,607,611,615,619,629,646,1002,1006,1010,1058,1071,1122,1127,1150,1169

Description

Public functions that are never called by the contract should be declared external to save gas.

```
transferForeignToken
changeRouterVersion
setAutoBuyBackEnabled
setBuyBackEnabled
GetSwapMinutes
GetBuyBackTimeInterval
includeInFee
excludeFromFee
isExcludedFromFee
...
```

Recommendation

Use the external attribute for functions never called from the contract.

L02 - State Variables could be Declared Constant

Criticality	minor
Location	contract.sol#L443,500,441,442,437

Description

Constant state variables should be declared constant to save gas.

```
_tTotal
_symbol
_name
_isEnabledBuyBackAndBurn
_decimals
```

Recommendation

Add the constant attribute to state variables that never change.

L04 - Conformance to Solidity Naming Conventions

Criticality	minor
Location	contract.sol#L248,249,265,286,975,981,1050,1054,1058,1062,1066,1071,1075,1109,1113,1117,1122,1127,1150,1169,1175,1180,1186,1192,425,460,463,466,467,469,470,472,473,475,478,480,482,487,488,489,490,491,500

Description

Solidity defines a naming convention that should be followed. Rule exceptions:

- Allow constant variable name/symbol/decimals to be lowercase.
- Allow _ at the beginning of the mixed_case match for private variables and unused parameters.

```
_isEnabledBuyBackAndBurn
_buyBackMaxTimeForHistories
_buyBackTimeInterval
_buyBackDivisor
_isAutoBuyBack
_sellHistories
_maxTxAmount
LPDivisor
_addressFees
...
```

Recommendation

Follow the Solidity naming convention.
https://docs.soliditylang.org/en/v0.4.25/style-guide.html#naming-conventions.

L07 - Missing Events Arithmetic

Criticality	minor
Location	contract.sol#L1050,1054,1062,1066,1075,1079,1083,1088,1093,1097,1101,1105,1109

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.

```
minimumTokensBeforeSwap = _minimumTokensBeforeSwap
LPDivisor = divisor
_maxTxAmount = maxTxAmount
buyBackSellLimit = buyBackSellSetLimit
_liquidityFee = liquidityFee
_sellTaxFee = sellTaxFee
_buyTaxFee = buyTaxFee
_taxFee = taxFee
_intervalMinutesForSwap = newMinutes * 60
...
```

Recommendation

Emit an event for critical parameter changes.

L09 - Dead Code Elimination

Criticality	minor
Location	contract.sol#L135,118,122,126,130,98,109,851

Description

Functions that are not used in the contract, and make the code's size bigger.

```
addLiquidity
sendValue
isContract
functionCallWithValue
functionCall
_functionCallWithValue
```

Recommendation

Remove unused functions.

L14 - Uninitialized Variables in Local Scope

Criticality	minor
Location	contract.sol#L693

Description

The are variables that are defined in the local scope and are not initialized.

```
sellHistory
```

Recommendation

All the local scoped variables should be initialized.

Contract Functions

Contract	**Type**	**Bases**		
	Function Name	**Visibility**	**Mutability**	**Modifiers**
Context	Implementation			
	_msgSender	Internal		
	_msgData	Internal		
IERC20	Interface			
	totalSupply	External		-
	balanceOf	External		-
	transfer	External	✓	-
	allowance	External		-
	approve	External	✓	-
	transferFrom	External	✓	-
SafeMath	Library			
	add	Internal		
	sub	Internal		
	sub	Internal		
	mul	Internal		
	div	Internal		
	div	Internal		
	mod	Internal		
	mod	Internal		
Address	Library			
	isContract	Internal		
	sendValue	Internal	✓	
	functionCall	Internal	✓	
	functionCall	Internal	✓	
	functionCallWithValue	Internal	✓	
	functionCallWithValue	Internal	✓	

	_functionCallWithValue	Private	✓	
Ownable	Implementation	Context		
	<Constructor>	Public	✓	-
	owner	Public		-
	renounceOwnership	Public	✓	onlyOwner
	transferOwnership	Public	✓	onlyOwner
	getUnlockTime	Public		-
	getTime	Public		-
	lock	Public	✓	onlyOwner
	unlock	Public	✓	-
IUniswapV2Factory	Interface			
	feeTo	External		-
	feeToSetter	External		-
	getPair	External		-
	allPairs	External		-
	allPairsLength	External		-
	createPair	External	✓	-
	setFeeTo	External	✓	-
	setFeeToSetter	External	✓	-
IUniswapV2Pair	Interface			
	name	External		-
	symbol	External		-
	decimals	External		-
	totalSupply	External		-
	balanceOf	External		-
	allowance	External		-
	approve	External	✓	-
	transfer	External	✓	-
	transferFrom	External	✓	-
	DOMAIN_SEPARATOR	External		-
	PERMIT_TYPEHASH	External		-

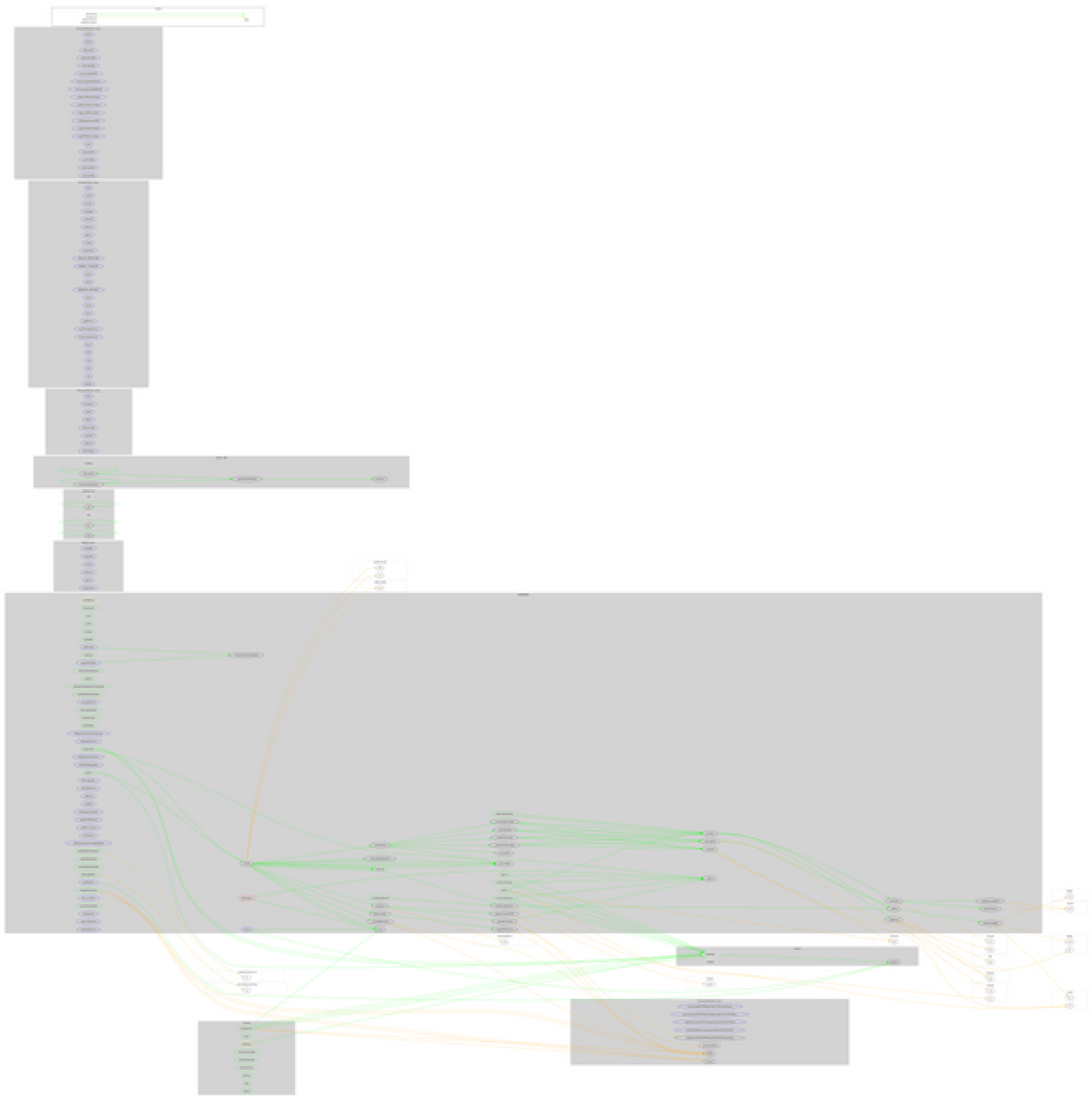
	nonces	External		-
	permit	External	✓	-
	MINIMUM_LIQUIDITY	External		-
	factory	External		-
	token0	External		-
	token1	External		-
	getReserves	External		-
	price0CumulativeLast	External		-
	price1CumulativeLast	External		-
	kLast	External		-
	burn	External	✓	-
	swap	External	✓	-
	skim	External	✓	-
	sync	External	✓	-
	initialize	External	✓	-
IUniswapV2Router01	Interface			
	factory	External		-
	WETH	External		-
	addLiquidity	External	✓	-
	addLiquidityETH	External	Payable	-
	removeLiquidity	External	✓	-
	removeLiquidityETH	External	✓	-
	removeLiquidityWithPermit	External	✓	-
	removeLiquidityETHWithPermit	External	✓	-
	swapExactTokensForTokens	External	✓	-
	swapTokensForExactTokens	External	✓	-
	swapExactETHForTokens	External	Payable	-
	swapTokensForExactETH	External	✓	-
	swapExactTokensForETH	External	✓	-
	swapETHForExactTokens	External	Payable	-
	quote	External		-
	getAmountOut	External		-
	getAmountIn	External		-
	getAmountsOut	External		-

	getAmountsIn	External		-
IUniswapV2Router02	Interface	IUniswapV2Router01		
	removeLiquidityETHSupportingFeeOnTransferTokens	External	✓	-
	removeLiquidityETHWithPermitSupportingFeeOnTransferTokens	External	✓	-
	swapExactTokensForTokensSupportingFeeOnTransferTokens	External	✓	-
	swapExactETHForTokensSupportingFeeOnTransferTokens	External	Payable	-
	swapExactTokensForETHSupportingFeeOnTransferTokens	External	✓	-
DOGEBEER	Implementation	Context, IERC20, Ownable		
	<Constructor>	Public	✓	-
	name	Public		-
	symbol	Public		-
	decimals	Public		-
	totalSupply	Public		-
	balanceOf	Public		-
	transfer	Public	✓	-
	allowance	Public		-
	approve	Public	✓	-
	transferFrom	Public	✓	-
	increaseAllowance	Public	✓	-
	decreaseAllowance	Public	✓	-
	isExcludedFromReward	Public		-
	totalFees	Public		-
	minimumTokensBeforeSwapAmount	Public		-
	buyBackSellLimitAmount	Public		-
	deliver	Public	✓	-
	reflectionFromToken	Public		-
	tokenFromReflection	Public		-
	excludeFromReward	Public	✓	onlyOwner

	includeInReward	External	✓	onlyOwner
	_approve	Private	✓	
	_transfer	Private	✓	
	swapTokens	Private	✓	lockTheSwap
	buyBackTokens	Private	✓	lockTheSwap
	swapTokensForEth	Private	✓	
	swapETHForTokens	Private	✓	
	addLiquidity	Private	✓	
	_tokenTransfer	Private	✓	
	_transferStandard	Private	✓	
	_transferToExcluded	Private	✓	
	_transferFromExcluded	Private	✓	
	_transferBothExcluded	Private	✓	
	_reflectFee	Private	✓	
	_getValues	Private		
	_getTValues	Private		
	_getRValues	Private		
	_getRate	Private		
	_getCurrentSupply	Private		
	_takeLiquidity	Private	✓	
	calculateTaxFee	Private		
	calculateLiquidityFee	Private		
	removeAllFee	Private	✓	
	restoreAllFee	Private	✓	
	isExcludedFromFee	Public		-
	excludeFromFee	Public	✓	onlyOwner
	includeInFee	Public	✓	onlyOwner
	_getSellBnBAmount	Private		
	_removeOldSellHistories	Private	✓	
	SetBuyBackMaxTimeForHistories	External	✓	onlyOwner
	SetBuyBackDivisor	External	✓	onlyOwner
	GetBuyBackTimeInterval	Public		-
	SetBuyBackTimeInterval	External	✓	onlyOwner
	SetBuyBackRangeRate	External	✓	onlyOwner
	GetSwapMinutes	Public		-

	SetSwapMinutes	External	✓	onlyOwner
	setTaxFeePercent	External	✓	onlyOwner
	setBuyFee	External	✓	onlyOwner
	setSellFee	External	✓	onlyOwner
	setLiquidityFeePercent	External	✓	onlyOwner
	setBuyBackSellLimit	External	✓	onlyOwner
	setMaxTxAmount	External	✓	onlyOwner
	setLPDivisor	External	✓	onlyOwner
	setNumTokensSellToAddToBuyBack	External	✓	onlyOwner
	setLPAddress	External	✓	onlyOwner
	setSwapAndLiquifyEnabled	Public	✓	onlyOwner
	setBuyBackEnabled	Public	✓	onlyOwner
	setAutoBuyBackEnabled	Public	✓	onlyOwner
	prepareForPreSale	External	✓	onlyOwner
	afterPreSale	External	✓	onlyOwner
	transferToAddressETH	Private	✓	
	changeRouterVersion	Public	✓	onlyOwner
	<Receive Ether>	External	Payable	-
	transferForeignToken	Public	✓	onlyOwner
	Sweep	External	✓	onlyOwner
	setAddressFee	External	✓	onlyOwner
	setBuyAddressFee	External	✓	onlyOwner
	setSellAddressFee	External	✓	onlyOwner

Contract Flow



Summary

There are some functions that can be abused by the owner like stopping transactions, manipulating fees and transferring funds to the team's wallet. The contract can be converted into a honeypot and prevent users from selling if the owner abuses the admin functions. A multi-wallet signing pattern will provide security against potential hacks. Temporarily locking the contract or renouncing ownership will eliminate all the contract threats.

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Coinscope audit and K.Y.C. service has been rebranded to Cyberscope.

Coinscope is the leading early coin listing, voting and auditing authority firm. The audit process is analyzing and monitoring many aspects of the project. That way, it gives the community a good sense of security using an informative report and a generic score.

Cyberscope and Coinscope are aiming to make crypto discoverable and efficient globally. They provide all the essential tools to assist users draw their own conclusions.

The Cyberscope team

https://www.cyberscope.io