



Candy P2E

# Smart Contract Audit Report

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## Disclaimer

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# AUDITED DETAILS

## Audited Project

Project name	Token ticker	Blockchain
Candy P2E	CAD	BSC

## Addresses

Contract address	0x4F59bb93b680d70EF750327c3A1193fa69eb6d54
Contract deployer address	0x9dACf80d90e92e88d553CDA00A7a53821307E87C

## Project Website

<https://candyp2e.com/>

## Codebase

<https://bscscan.com/address/0x4F59bb93b680d70EF750327c3A1193fa69eb6d54#code>

# SUMMARY

Candy P2E is a combination of traditional gaming and Blockchain technology to create a Play-to-Earn mechanism. They aim for real entertainment and rewards every time you play, making your entertainment no longer a waste of time.

## Contract Summary

### Documentation Quality

The amount of documentation in this project is GOOD.

- The technical description is provided.

### Code Quality

The Overall quality of the code is GOOD

- The official Solidity style guide is followed.

### Test Coverage

Test coverage of the project is 100% ( Through Codebase )

## Audit Findings Summary

- SWC-101 | Arithmetic operation Issues discovered on lines 194, 216, 241, 270, 271, 400, 431, 462, 472, 483, 511, 520, 521, 526, 527, 535, 542, 546, 566, 567, 568, 569, 575, 576, 577, 584, 633, 659.
- SWC-103 | A floating pragma is set on lines 7. The current pragma Solidity directive is `^0.8.17`. It is recommended to specify a fixed compiler version to ensure that the bytecode produced does not vary between builds. This is especially important if you rely on bytecode-level verification of the code.
- SWC-110 | Out of bounds array access on lines 595, 596. The index access expression can cause an exception in case an invalid array index value is used.
- SWC-120 | Potential use of "block.number" as a source of randomness on lines 511, 640.

# CONCLUSION

## CONCLUSION

We have audited the Candy P2E Coin which has released on January 2023 to discover issues and identifying potential security vulnerabilities in Candy P2E Project. This process is used to find bugs, technical issues, and security loopholes that finds some common issues in the code.

The security audit report produced satisfactory results with a low risk issue on contract project.

The most common issue found in writing code on contracts that do not pose a big risk, writing on contracts is close to the standard of writing contracts in general. Some of the low issues that were found were assert violation, a floating pragma is setn and weak sources of the randomness contained in the contract

# AUDIT RESULT

Article	Category	Description	Result
Default Visibility	SWC-100 SWC-108	Functions and state variables visibility should be set explicitly. Visibility levels should be specified consciously.	PASS
Integer Overflow and Underflow	SWC-101	If unchecked math is used, all math operations should be safe from overflows and underflows.	ISSUE FOUND
Outdated Compiler Version	SWC-102	It is recommended to use a recent version of the Solidity compiler.	PASS
Floating Pragma	SWC-103	Contracts should be deployed with the same compiler version and flags that they have been tested thoroughly.	ISSUE FOUND
Unchecked Call Return Value	SWC-104	The return value of a message call should be checked.	PASS
SELFDESTRUCT Instruction	SWC-106	The contract should not be self-destructible while it has funds belonging to users.	PASS
Check-Effect Interaction	SWC-107	Check-Effect-Interaction pattern should be followed if the code performs ANY external call.	PASS
Assert Violation	SWC-110	Properly functioning code should never reach a failing assert statement.	ISSUE FOUND
Deprecated Solidity Functions	SWC-111	Deprecated built-in functions should never be used.	PASS
Delegate call to Untrusted Caller	SWC-112	Delegatecalls should only be allowed to trusted addresses.	PASS
DoS (Denial of Service)	SWC-113 SWC-128	Execution of the code should never be blocked by a specific contract state unless required.	PASS
Race Conditions	SWC-114	Race Conditions and Transactions Order Dependency should not be possible.	PASS

Authorization through tx.origin	SWC-115	tx.origin should not be used for authorization.	PASS
Block values as a proxy for time	SWC-116	Block numbers should not be used for time calculations.	PASS
Signature Unique Id	SWC-117 SWC-121 SWC-122	Signed messages should always have a unique id. A transaction hash should not be used as a unique id.	PASS
Shadowing State Variable	SWC-119	State variables should not be shadowed.	PASS
Weak Sources of Randomness	SWC-120	Random values should never be generated from Chain Attributes or be predictable.	ISSUE FOUND
Incorrect Inheritance Order	SWC-125	When inheriting multiple contracts, especially if they have identical functions, a developer should carefully specify inheritance in the correct order. The rule of thumb is to inherit contracts from more /general/ to more /specific/.	PASS

# SMART CONTRACT ANALYSIS

Started	Sun Jan 22 2023 22:03:42 GMT+0000 (Coordinated Universal Time)
Finished	Mon Jan 23 2023 05:06:33 GMT+0000 (Coordinated Universal Time)
Mode	Quick
Main Source File	Candy2pe.Sol

## Detected Issues

ID	Title	Severity	Status
SWC-101	ARITHMETIC OPERATION "-" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "+" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "-" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "-" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "+=" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "*" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "*" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "-" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "+" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "-" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "+" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "+" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "+" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "/" DISCOVERED	low	acknowledged



SWC-101	ARITHMETIC OPERATION "-" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "/" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "*" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "*" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "/" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "-" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "-" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "/" DISCOVERED	low	acknowledged
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SWC-101	ARITHMETIC OPERATION "+" DISCOVERED	low	acknowledged
SWC-103	A FLOATING PRAGMA IS SET.	low	acknowledged
SWC-110	OUT OF BOUNDS ARRAY ACCESS	low	acknowledged
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SWC-110	OUT OF BOUNDS ARRAY ACCESS	low	acknowledged
SWC-120	POTENTIAL USE OF "BLOCK.NUMBER" AS SOURCE OF RANDOMNESS.	low	acknowledged
SWC-120	POTENTIAL USE OF "BLOCK.NUMBER" AS SOURCE OF RANDOMNESS.	low	acknowledged

## SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 194

### low SEVERITY

This plugin produces issues to support false positive discovery within Mythril.

### Source File

- candy2pe.sol

### Locations

```
193   require(currentAllowance >= amount, "BEP20: transfer amount exceeds allowance");
194   _approve(sender, _msgSender(), currentAllowance - amount);
195   return true;
196   |
```

## SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 216

### low SEVERITY

This plugin produces issues to support false positive discovery within Mythril.

### Source File

- candy2pe.sol

### Locations

```
215  {  
216  _approve(_msgSender(), spender, _allowances[_msgSender()][spender] + addedValue);  
217  return true;  
218  }
```

# SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 241

## low SEVERITY

This plugin produces issues to support false positive discovery within Mythril.

## Source File

- candy2pe.sol

## Locations

```
240   require(currentAllowance >= subtractedValue, "BEP20: decreased allowance below
zero");
241   _approve(_msgSender(), spender, currentAllowance - subtractedValue);
242   return true;
243   |
```

# SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 270

## low SEVERITY

This plugin produces issues to support false positive discovery within Mythril.

## Source File

- candy2pe.sol

## Locations

```
269     require(senderBalance >= amount, "BEP20: transfer amount exceeds balance");
270     _balances[sender] = senderBalance - amount;
271     _balances[recipient] += amount;
272     |
```

# SWC-101 | ARITHMETIC OPERATION "+=" DISCOVERED

LINE 271

## low SEVERITY

This plugin produces issues to support false positive discovery within Mythril.

## Source File

- candy2pe.sol

## Locations

```
270  _balances[sender] = senderBalance - amount;  
271  _balances[recipient] += amount;  
272  emit Transfer(sender, recipient, amount);  
273  |
```

## SWC-101 | ARITHMETIC OPERATION "\*" DISCOVERED

LINE 400

### low SEVERITY

This plugin produces issues to support false positive discovery within Mythril.

### Source File

- candy2pe.sol

### Locations

```
399  bool public tradingEnabled = false;
400  uint256 public tokenLiquidityThreshold = 1e3 * 10**18;
401  uint256 public genesis_block;
402  |
```

## SWC-101 | ARITHMETIC OPERATION "\*" DISCOVERED

LINE 431

### low SEVERITY

This plugin produces issues to support false positive discovery within Mythril.

### Source File

- candy2pe.sol

### Locations

```
430     constructor() BEP20("Candy P2E", "CAD") {
431         _tokengeneration(msg.sender, 1e6 * 10**decimals());
432         IRouter _router = IRouter(0x10ED43C718714eb63d5aA57B78B54704E256024E);
433         |
```



## SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 462

### low SEVERITY

This plugin produces issues to support false positive discovery within Mythril.

### Source File

- candy2pe.sol

### Locations

```
461   require(currentAllowance >= amount, "BEP20: transfer amount exceeds allowance");
462   _approve(sender, _msgSender(), currentAllowance - amount);
463   return true;
464   |
```

## SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 472

### low SEVERITY

This plugin produces issues to support false positive discovery within Mythril.

### Source File

- candy2pe.sol

### Locations

```
471  {  
472  _approve(_msgSender(), spender, _allowances[_msgSender()][spender] + addedValue);  
473  return true;  
474  }
```

# SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 483

## low SEVERITY

This plugin produces issues to support false positive discovery within Mythril.

## Source File

- candy2pe.sol

## Locations

```
482   require(currentAllowance >= subtractedValue, "BEP20: decreased allowance below
zero");
483   _approve(_msgSender(), spender, currentAllowance - subtractedValue);
484   return true;
485   |
```

# SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 511

## low SEVERITY

This plugin produces issues to support false positive discovery within Mythril.

## Source File

- candy2pe.sol

## Locations

```
510     !exemptFee[recipient] &&  
511     block.number < genesis_block + deadline;  
512     //set fee to zero if fees in contract are handled or exempted  
513     |
```

## SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 520

### low SEVERITY

This plugin produces issues to support false positive discovery within Mythril.

### Source File

- candy2pe.sol

### Locations

```
519     feeswap =  
520     sellTaxes.liquidity +  
521     sellTaxes.marketing;  
522     feesum = feeswap;
```

## SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 526

### low SEVERITY

This plugin produces issues to support false positive discovery within Mythril.

### Source File

- candy2pe.sol

### Locations

```
525 feeswap =  
526 taxes.liquidity +  
527 taxes.marketing;  
528 feesum = feeswap;
```

## SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 535

### low SEVERITY

This plugin produces issues to support false positive discovery within Mythril.

### Source File

- candy2pe.sol

### Locations

```
534     }  
535     fee = (amount * feesum) / 100;  
536     //send fees if threshold has been reached  
537     |
```

## SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 542

### low SEVERITY

This plugin produces issues to support false positive discovery within Mythril.

### Source File

- candy2pe.sol

### Locations

```
541 //rest to recipient
542 super._transfer(sender, recipient, amount - fee);
543 if (fee > 0) {
```



## SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 546

### low SEVERITY

This plugin produces issues to support false positive discovery within Mythril.

### Source File

- candy2pe.sol

### Locations

```
545   if (feeswap > 0) {  
546       uint256 feeAmount = (amount * feeswap) / 100;  
547       super._transfer(sender, address(this), feeAmount);
```

## SWC-101 | ARITHMETIC OPERATION "\*" DISCOVERED

LINE 546

### low SEVERITY

This plugin produces issues to support false positive discovery within Mythril.

### Source File

- candy2pe.sol

### Locations

```
545     if (feeswap > 0) {  
546         uint256 feeAmount = (amount * feeswap) / 100;  
547         super._transfer(sender, address(this), feeAmount);  
548     }
```

## SWC-101 | ARITHMETIC OPERATION "\*" DISCOVERED

LINE 566

### low SEVERITY

This plugin produces issues to support false positive discovery within Mythril.

### Source File

- candy2pe.sol

### Locations

```
565 // Split the contract balance into halves
566 uint256 denominator = feeswap * 2;
567 uint256 tokensToAddLiquidityWith = (contractBalance * swapTaxes.liquidity) /
568 denominator;
```

## SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 566

### low SEVERITY

This plugin produces issues to support false positive discovery within Mythril.

### Source File

- candy2pe.sol

### Locations

```
565 uint256 denominator = feeswap * 2;  
566 uint256 tokensToAddLiquidityWith = (contractBalance * swapTaxes.liquidity) /  
567 denominator;  
568 uint256 toSwap = contractBalance - tokensToAddLiquidityWith;
```

# SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 569

## low SEVERITY

This plugin produces issues to support false positive discovery within Mythril.

## Source File

- candy2pe.sol

## Locations

```
568 denominator;  
569 uint256 toSwap = contractBalance - tokensToAddLiquidityWith;  
570 uint256 initialBalance = address(this).balance;  
571 |
```

# SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 575

## low SEVERITY

This plugin produces issues to support false positive discovery within Mythril.

## Source File

- candy2pe.sol

## Locations

```
574 swapTokensForETH(toSwap);  
575 uint256 deltaBalance = address(this).balance - initialBalance;  
576 uint256 unitBalance = deltaBalance / (denominator - swapTaxes.liquidity);  
577 uint256 ethToAddLiquidityWith = unitBalance * swapTaxes.liquidity;
```

## SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 576

### low SEVERITY

This plugin produces issues to support false positive discovery within Mythril.

### Source File

- candy2pe.sol

### Locations

```
575 uint256 deltaBalance = address(this).balance - initialBalance;
576 uint256 unitBalance = deltaBalance / (denominator - swapTaxes.liquidity);
577 uint256 ethToAddLiquidityWith = unitBalance * swapTaxes.liquidity;
578 |
```

# SWC-101 | ARITHMETIC OPERATION "\*" DISCOVERED

LINE 577

## low SEVERITY

This plugin produces issues to support false positive discovery within Mythril.

## Source File

- candy2pe.sol

## Locations

```
576 uint256 unitBalance = deltaBalance / (denominator - swapTaxes.liquidity);
577 uint256 ethToAddLiquidityWith = unitBalance * swapTaxes.liquidity;
578 if (ethToAddLiquidityWith > 0) {
579 |
```



## SWC-101 | ARITHMETIC OPERATION "\*" DISCOVERED

LINE 584

### low SEVERITY

This plugin produces issues to support false positive discovery within Mythril.

### Source File

- candy2pe.sol

### Locations

```
583     }
584     uint256 marketingAmt = unitBalance * 2 * swapTaxes.marketing;
585     if (marketingAmt > 0) {
586         payable(marketingWallet).sendValue(marketingAmt);
```

## SWC-101 | ARITHMETIC OPERATION "\*" DISCOVERED

LINE 633

### low SEVERITY

This plugin produces issues to support false positive discovery within Mythril.

### Source File

- candy2pe.sol

### Locations

```
632 //update the treshhold
633 require(new_amount <= 1e4, "Swap threshold amount should be lower or equal to 1% of
tokens");
634 tokenLiquidityThreshold = new_amount * 10**decimals();
635 }
```

## SWC-101 | ARITHMETIC OPERATION "++" DISCOVERED

LINE 659

### low SEVERITY

This plugin produces issues to support false positive discovery within Mythril.

### Source File

- candy2pe.sol

### Locations

```
658 function bulkExemptFee(address[] memory accounts, bool state) external onlyOwner {  
659     for (uint256 i = 0; i < accounts.length; i++) {  
660         exemptFee[accounts[i]] = state;  
661     }
```

## SWC-103 | A FLOATING PRAGMA IS SET.

LINE 7

### low SEVERITY

The current pragma Solidity directive is ""^0.8.17"". It is recommended to specify a fixed compiler version to ensure that the bytecode produced does not vary between builds. This is especially important if you rely on bytecode-level verification of the code.

### Source File

- candy2pe.sol

### Locations

```
6 //SPDX-License-Identifier: UNLICENSED
7 pragma solidity ^0.8.17;
8 abstract contract Context {
9 |
```

## SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 595

### low SEVERITY

The current pragma Solidity directive is `""^0.8.17`". It is recommended to specify a fixed compiler version to ensure that the bytecode produced does not vary between builds. This is especially important if you rely on bytecode-level verification of the code.

### Source File

- candy2pe.sol

### Locations

```
594 address[] memory path = new address[](2);
595 path[0] = address(this);
596 path[1] = router.WETH();
597 |
```

## SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 596

### low SEVERITY

The current pragma Solidity directive is `""^0.8.17`". It is recommended to specify a fixed compiler version to ensure that the bytecode produced does not vary between builds. This is especially important if you rely on bytecode-level verification of the code.

### Source File

- candy2pe.sol

### Locations

```
595 path[0] = address(this);
596 path[1] = router.WETH();
597 _approve(address(this), address(router), tokenAmount);
598 |
```

## SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 660

### low SEVERITY

The current pragma Solidity directive is `""^0.8.17`". It is recommended to specify a fixed compiler version to ensure that the bytecode produced does not vary between builds. This is especially important if you rely on bytecode-level verification of the code.

### Source File

- candy2pe.sol

### Locations

```
659   for (uint256 i = 0; i < accounts.length; i++) {
660     exemptFee[accounts[i]] = state;
661   }
662 }
```

# SWC-120 | POTENTIAL USE OF "BLOCK.NUMBER" AS SOURCE OF RANDOMNESS.

LINE 660

## low SEVERITY

The environment variable "block.number" looks like it might be used as a source of randomness. Note that the values of variables like coinbase, gaslimit, block number and timestamp are predictable and can be manipulated by a malicious miner. Also keep in mind that attackers know hashes of earlier blocks. Don't use any of those environment variables as sources of randomness and be aware that use of these variables introduces a certain level of trust into miners.

## Source File

- candy2pe.sol

## Locations

```
659     !exemptFee[recipient] &&  
660     block.number < genesis_block + deadline;  
661     //set fee to zero if fees in contract are handled or exempted  
662     |
```



## SWC-120 | POTENTIAL USE OF "BLOCK.NUMBER" AS SOURCE OF RANDOMNESS.

LINE 640

### low SEVERITY

The environment variable "block.number" looks like it might be used as a source of randomness. Note that the values of variables like coinbase, gaslimit, block number and timestamp are predictable and can be manipulated by a malicious miner. Also keep in mind that attackers know hashes of earlier blocks. Don't use any of those environment variables as sources of randomness and be aware that use of these variables introduces a certain level of trust into miners.

### Source File

- candy2pe.sol

### Locations

```
639 providingLiquidity = true;
640 genesis_block = block.number;
641 }
642 |
```

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This is a limited report on our findings based on our analysis, in accordance with good industry practice as of 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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## ABOUT US

Sysfixed is a blockchain security certification organization established in 2021 with the objective to provide smart contract security services and verify their correctness in blockchain-based protocols. Sysfixed automatically scans for security vulnerabilities in Ethereum and other EVM-based blockchain smart contracts. Sysfixed a comprehensive range of analysis techniques—including static analysis, dynamic analysis, and symbolic execution—can accurately detect security vulnerabilities to provide an in-depth analysis report. With a vibrant ecosystem of world-class integration partners that amplify developer productivity, Sysfixed can be utilized in all phases of your project's lifecycle. Our team of security experts is dedicated to the research and improvement of our tools and techniques used to fortify your code.