Assure DeFi®

THE VERIFICATION **GOLD STANDARD**

Security Assessment

Norexa

Date: 19/07/2025

Audit Status: PASS

Audit Edition: Advanced+

Risk Analysis

Vulnerability summary

Classification	Description
🔴 High	High-level vulnerabilities can result in the loss of assets or manipulation of data.
🟠 Medium	Medium-level vulnerabilities can be challenging to exploit, but they still have a considerable impact on smart contract execution, such as allowing public access to critical functions.
🟡 Low	Low-level vulnerabilities are primarily associated with outdated or unused code snippets that generally do not significantly impact execution, sometimes they can be ignored.
🟢 Informational	Informational vulnerabilities, code style violations, and informational statements do not affect smart contract execution and can typically be disregarded.

Executive Summary

According to the Assure assessment, the Customer's smart contract is **Secured.**

Insecure	Poorly Secured	*Secured*	Well Secured

Scope

Target Code And Revision

For this audit, we performed research, investigation, and review of the Norexa contracts followed by issue reporting, along with mitigation and remediation instructions outlined in this report.

Target Code And Revision

Project	Assure
Language	Solidity
Codebase	https://etherscan.io/address/0xdE860ac02D0F22363da499577CA7894afD8C98b4#readContract
Audit Methodology	Static, Manual

Attacks made to the contract

In order to check for the security of the contract, we tested several attacks in order to make sure that the contract is secure and follows best practices.

Category	Item
Code review & Functional Review	- Compiler warnings. - Race conditions and Reentrancy. Cross-function race conditions. - Possible delays in data delivery. - Oracle calls. - Front running. - Timestamp dependence. - Integer Overflow and Underflow. - DoS with Revert. - DoS with block gas limit. - Methods execution permissions. - Economy model. - Private user data leaks. - Malicious Event log. - Scoping and Declarations. - Uninitialized storage pointers. - Arithmetic accuracy. - Design Logic. - Cross-function race conditions. - Safe Zeppelin module. - Fallback function security. - Overpowered functions / Owner privileges

AUDIT OVERVIEW

◆ ◆ ◆ **HIGH**

1. Privilege & Denial-of-Service via updateSwapThreshold [Fixed ✅]

Issue:

```
function updateSwapThreshold(uint256 newAmount) public {
    require(msg.sender == TreasuryAddress, "only TreasuryAddress can change
swapThreshold");
    swapTokensAtAmount = newAmount * 1e18;
}
```

Because only TreasuryAddress can call this, but Owner can call setTreasuryAddress() to point TreasuryAddress at themselves or any malicious EOA/contract, the owner effectively regains control over swapTokensAtAmount. By setting swapTokensAtAmount = 0, every transfer where swapEnabled == true and the contract holds any tokens will trigger swapBack(). If the pool has zero reserves or the router misbehaves, every transfer will revert, locking trading (DoS). Conversely, setting it extremely high can prevent all auto-swaps, starving the treasury of fees.

Recommendation: Restrict updateSwapThreshold to onlyOwner or renounce ownership.

Enforce a sensible minimum (for example

require(newAmount >= 1, "threshold too low"); and require(newAmount <= totalSupply()/100, "threshold too high");).

Emit an event SwapThresholdUpdated(uint256 old, uint256 neu) for transparency.

Fix: Ownership renounced
https://etherscan.io/tx/0xec92c2fb8c4ed624ce9cdfdff801961ed5ebbfd6ca08886890b6f38f3fc0e0ec

2. Token Rescue Function Drains Native Tokens [Fixed ✅]

Issue:

```
function transferForeignToken(address _token, address _to) public returns (bool) {
    require(msg.sender == TreasuryAddress, "only TreasuryAddress can withdraw");
    uint256 _contractBalance = IERC20(_token).balanceOf(address(this));
    return IERC20(_token).transfer(_to, _contractBalance);
}
```

There is no check preventing _token == address(this). A malicious or compromised TreasuryAddress can call: transferForeignToken(address(this), treasury);

and immediately withdraw all NRX tokens that have been accumulated in the contract—completely bypassing the normal swap-and-send process.

Recommendation: Add require(_token != address(this), "Cannot withdraw native tokens");

If rescuing is desired, split into two functions: one for foreign tokens, one for native (with distinct access control and events). Another option is to renounce ownership.

Fix: Ownership renounced
https://etherscan.io/tx/0xec92c2fb8c4ed624ce9cdfdff801961ed5ebbfd6ca08886890b6f38f3fc0e0ec

MEDIUM

No medium issues were found.

LOW

No low issues were found.

INFORMATIONAL

1. Broken Anti-Bot / Fee-Bypass in "Dead Blocks" Logic [Already deployed N/A]

Issue: The contract declares a deadBlocks parameter and a penaltyAmount variable intended to punish bot trades in the first few blocks after trading is enabled but never actually uses them. Instead, fee-taking only occurs when

```
if (takeFee && tradingActiveBlock > 0 && (block.number > tradingActiveBlock))
```

Because block.number > tradingActiveBlock is false in the very first block (where block.number == tradingActiveBlock), all trades in that block incur zero fees. Bots can:

Wait for enableTrading() to be called.

In that same block, submit a swap on Uniswap, paying 0% fees, sniping pre-launch liquidity.

This completely defeats the intended anti-sniping mechanism and allows arbitrage/sniping with no penalty.

Recommendation: Change the fee-condition to block.number >= tradingActiveBlock + deadBlocks.

Compute a dynamic penaltyAmount = amount * penaltyRate / 100 for block.number < tradingActiveBlock + deadBlocks.

Fully remove the unused penaltyAmount placeholder and wire in the above logic so that the first N blocks incur a high punitive tax (for example 99%) and only then settle to the normal buyFee/sellFee.

2. Dead code

Issue: Unsued deadblocks in enableTradign() and unused penaltyAmonunt in _transfer()

Recommendation: Implement the logic or delete the variable/parameter declarations.

Testing coverage

During the testing phase, custom use cases were written to cover all the logic of contracts. *Check "Annexes" to see the testing code.*

```
tests/test_norexa.py::test_update_max_buy_amount RUNNING
Transaction sent: 0x8e0e8887cb5d5f3f093fd75b02c2e4efb9134a508cd884cb40f1e2510849d4de
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 0
  UniswapV2Factory.constructor confirmed   Block: 1   Gas used: 2412730 (20.11%)
  UniswapV2Factory deployed at: 0x3194cBDC3dbcd3E11a07892e7bA5c3394048Cc87

Transaction sent: 0x8921b1e506ef8feecf0f0287e8391d1db3cb3ff012e9ed98debec7fe0c4eef69
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 1
  WETH9.constructor confirmed   Block: 2   Gas used: 476546 (3.97%)
  WETH9 deployed at: 0x602C71e4DAC47a042Ee7f46E0aee17F94A3bA0B6

Transaction sent: 0x52602bfe59986e1046577eda43ad43d25254def838bfc2c3a0eb06944291f23c
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 2
  UniswapV2Router02.constructor confirmed   Block: 3   Gas used: 3895430 (32.46%)
  UniswapV2Router02 deployed at: 0xE7eD6747FaC5360f88a2EFC03E00d25789F69291

Transaction sent: 0x83a67d2bc26905e8c6d97af5d4029761fc5446282c643e45913ba57f5b8846c5
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 3
  Norexa.constructor confirmed   Block: 4   Gas used: 4892163 (40.77%)
  Norexa deployed at: 0x6951b5Bd815043E3F842c1b026b0Fa888Cc2DD85

Transaction sent: 0x2e021d2a7e3a7f9c843a3fc3e5552504f113b2b3ebf03304f58a0b1569cfddb4
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 0
  Norexa.updateMaxBuyAmount confirmed (Ownable: caller is not the owner)   Block: 5   Gas used: 22562 (0.19%)

Transaction sent: 0x0b070d61935424fae8eaa67c4fa9c9621c12ef279f8ebd8f53f143b68fe6ef47
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 4
  Norexa.updateMaxBuyAmount confirmed (Cannot set max buy amount lower than 0.1%)   Block: 6   Gas used: 23590 (0.20%)

Transaction sent: 0x118b1da78dbf3ee2dbccfb5e6415d5cd5d9b35e1170ca11551b74e6ede54b1ea
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 5
  Norexa.updateMaxBuyAmount confirmed   Block: 7   Gas used: 29619 (0.25%)

tests/test_norexa.py::test_update_max_buy_amount PASSED
tests/test_norexa.py::test_update_max_sell_amount RUNNING
Transaction sent: 0xb407585473e3a7bb1172c7d8c764a9883cdc97e12f4798d657afd34c07d7a7e4
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 6
  UniswapV2Factory.constructor confirmed   Block: 8   Gas used: 2412730 (20.11%)
  UniswapV2Factory deployed at: 0x9E4c14403d7d9A8A782044E86a93CAE09D7B2ac9

Transaction sent: 0xd580a7c038bafa813be62226047d9a0bf05f9ceb1738cf3b53cffdcc79e146d8
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 7
  WETH9.constructor confirmed   Block: 9   Gas used: 476546 (3.97%)
  WETH9 deployed at: 0xcCB53c9429d32594F404d01fbe9E65ED1DCda8D9

Transaction sent: 0x7479d2743d0200d8f2b7a232c02484ac45ec2985af93d5e7f71d29d140658b62
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 8
  UniswapV2Router02.constructor confirmed   Block: 10   Gas used: 3895430 (32.46%)
  UniswapV2Router02 deployed at: 0x420b1099B9eF5baba6D92029594eF45E19A04A4A

Transaction sent: 0xf1f1cf97ca1e8d3017766344c72e9006c1b1dc8f4b4d6588b674e580041531f0
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 9
  Norexa.constructor confirmed   Block: 11   Gas used: 4892165 (40.77%)
  Norexa deployed at: 0xa3B53dDCd2E3fC28e8E130288F2aBD8d5EE37472

Transaction sent: 0x0898ef5e75c8ad121c9639ea855d5ea9bdad0262880167ba1d692c22f1376c03
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 1
  Norexa.updateMaxSellAmount confirmed (Ownable: caller is not the owner)   Block: 12   Gas used: 22605 (0.19%)

Transaction sent: 0x87f3fca6e7bcc4adc208248d67064a2b97be459341f46dd9160e3e60da44ffee
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 10
  Norexa.updateMaxSellAmount confirmed (Cannot set max sell amount lower than 0.1%)   Block: 13   Gas used: 23633 (0.20%)

Transaction sent: 0xece50c7ad4a75caebdd532c06b7fb0fcdc0f054dd698c432fdccf5467d8b65e9
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 11
  Norexa.updateMaxSellAmount confirmed   Block: 14   Gas used: 29673 (0.25%)

tests/test_norexa.py::test_update_max_sell_amount PASSED
```

```
tests/test_norexa.py::test_exclude_from_max_tx RUNNING
Transaction sent: 0x1fe5f68554a998873a4d37b0e235b6e88aa01d0019b1bad9bd1efd83e7c91452
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 12
  UniswapV2Factory.constructor confirmed   Block: 15   Gas used: 2412730 (20.11%)
  UniswapV2Factory deployed at: 0x2c15A315610Bfa5248E4CbCbd693320e9D8E03Cc

Transaction sent: 0x86ccaad7541d8fa6d70fa9cd5ddbf3e65798dfefa273572e714cdabe980c01ba
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 13
  WETH9.constructor confirmed   Block: 16   Gas used: 476546 (3.97%)
  WETH9 deployed at: 0xe692Cf21B12e0B2717C4bF647F9768Fa58861c8b

Transaction sent: 0xead3cccf4bb6bfe8eccdf36404ac96c6416660acd48a11876a53b17b3674d96e
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 14
  UniswapV2Router02.constructor confirmed   Block: 17   Gas used: 3895430 (32.46%)
  UniswapV2Router02 deployed at: 0xe65A7a341978d59d40d30FC23F5014FACB4f575A

Transaction sent: 0x62bea679f40320061bccc6e47925b753c24462ac2f1fe05238b7eb553672f4b7
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 15
  Norexa.constructor confirmed   Block: 18   Gas used: 4892165 (40.77%)
  Norexa deployed at: 0x30375B532345B01cB8c2AD12541b09E9Aa53A93d

Transaction sent: 0x11c8cd3761a152805b7104a2ddca305f85a3df4a8fff5e302deae2d04024b4b9
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 2
  Norexa.excludeFromMaxTransaction confirmed (Ownable: caller is not the owner)   Block: 19   Gas used: 23000 (0.19%)

Transaction sent: 0xcf853de559b8702d09f1be640bb0726cab86f2a097f878fae09ca62dfba0778c
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 16
  Norexa.excludeFromMaxTransaction confirmed (Cannot remove uniswap pair from max txn)   Block: 20   Gas used: 23081 (0.19%)

Transaction sent: 0xa6e86e820cb62d191ee38b14e772d0fb9cb4aa651bc6135f531337a3f8eec386
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 17
  Norexa.excludeFromMaxTransaction confirmed   Block: 21   Gas used: 43836 (0.37%)

tests/test_norexa.py::test_exclude_from_max_tx PASSED
tests/test_norexa.py::test_update_max_wallet_amount RUNNING
Transaction sent: 0x5114f2a3e633c54090f9a880727b6d66cc2a2fd94739dd146464821dc67f2c23
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 18
  UniswapV2Factory.constructor confirmed   Block: 22   Gas used: 2412730 (20.11%)
  UniswapV2Factory deployed at: 0xed00238F9A0F7b4d93842033cdF56cCB32C781c2

Transaction sent: 0x8eeef26a875d0b720aad785a8bdcd281321c69cc6670524944e71d22efdb675c
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 19
  WETH9.constructor confirmed   Block: 23   Gas used: 476546 (3.97%)
  WETH9 deployed at: 0xDae02e4fE488952cFB8c95177154D188647a0146

Transaction sent: 0x47897cfb02d82bb21af9dd785565f14323435f8e57176c017fbb587cc828bcd7
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 20
  UniswapV2Router02.constructor confirmed   Block: 24   Gas used: 3895418 (32.46%)
  UniswapV2Router02 deployed at: 0xdCF93F11ef216cEC9C07fd31dD801c9b2b39Afb4

Transaction sent: 0xb21515584c5dad5b07604a020b3de7139c0ad14535a8cc16dc36d85b7858043a
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 21
  Norexa.constructor confirmed   Block: 25   Gas used: 4892165 (40.77%)
  Norexa deployed at: 0xBcb61491F1859f53438918F1A5aFCA542Af9D397

Transaction sent: 0x1e1661cd11e7210bb3fa8618b550bdeb1949f9d21e15f2f22a9cbe98eb15f4bd
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 3
  Norexa.updateMaxWalletAmount confirmed (Ownable: caller is not the owner)   Block: 26   Gas used: 22539 (0.19%)

Transaction sent: 0xcc834649f6e8b7541f99e240f4803a94b89b11e82798d9d53c5faa1cefbae2d3
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 22
  Norexa.updateMaxWalletAmount confirmed (Cannot set max wallet amount lower than 0.3%)   Block: 27   Gas used: 23567 (0.20%)

Transaction sent: 0xc23b6db9313c40e45ec4774819e46617918e1549ed9a33263e983a7e360d3cb3
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 23
  Norexa.updateMaxWalletAmount confirmed   Block: 28   Gas used: 29607 (0.25%)

tests/test_norexa.py::test_update_max_wallet_amount PASSED
```

```
tests/test_norexa.py::test_update_swap_treshold RUNNING
 Transaction sent: 0x8ac8313cbcb0af2e067204154c6422e3b8baa1b71d0528800e5351bd467b97df
   Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 24
   UniswapV2Factory.constructor confirmed   Block: 29   Gas used: 2412730 (20.11%)
   UniswapV2Factory deployed at: 0xf9C8Cf55f2E520B08d869df7bc76aa3d3ddDF913

 Transaction sent: 0xb4f0eb925f6414d222fc71632977401ba96cb12dfe72f3ba33392f201d77f49d
   Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 25
   WETH9.constructor confirmed   Block: 30   Gas used: 476546 (3.97%)
   WETH9 deployed at: 0x654f70d8442EA18904FA1AD79114f7250F7E9336

 Transaction sent: 0xb3095a42ec0a89a14dc9cca44fe7419d7865e723e841572e67507e2937cf7542
   Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 26
   UniswapV2Router02.constructor confirmed   Block: 31   Gas used: 3895430 (32.46%)
   UniswapV2Router02 deployed at: 0xADeD61D42dE86f9058386D1D0d739d20C7eAfC43

 Transaction sent: 0xd1507a7a3ccfe93e62f2bda6e5380debd76ea4ab6ca00ab07ddcb33c96483425
   Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 27
   Norexa.constructor confirmed   Block: 32   Gas used: 4892175 (40.77%)
   Norexa deployed at: 0x832698Daec363C9A7aB036C224Af5B21280b3AC6

 Transaction sent: 0x439a963d1343a87ff415c7bdc1aac2ba142e7f84192f4c9076aba1f7b540a9ab
   Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 4
   Norexa.updateSwapThreshold confirmed (only TreasuryAddress can change swapThreshold)   Block: 33   Gas used: 22507 (0.19%)

 Transaction sent: 0xd70564e591668644b485baf2344da32d9b3914ad037efcbaca5c1e5cd24c3d79
   Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 0
   Norexa.updateSwapThreshold confirmed   Block: 34   Gas used: 27484 (0.23%)

 tests/test_norexa.py::test_update_swap_treshold PASSED
```

```
tests/test_norexa.py::test_transfer_foreign RUNNING
 Transaction sent: 0x87435c43bd8873d6e952a0cd565f887ed8d5fdb8b52ea07c4ea91e59008b5728
   Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 28
   UniswapV2Factory.constructor confirmed   Block: 35   Gas used: 2412730 (20.11%)
   UniswapV2Factory deployed at: 0xA95916C3D979400C7443961330b3092510a229Ba

 Transaction sent: 0x1ca3026bb912b5bd4eb030660d58490ea5fa5604501aa14cfd23cd08a31da789
   Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 29
   WETH9.constructor confirmed   Block: 36   Gas used: 476546 (3.97%)
   WETH9 deployed at: 0x42E8D004c84E6B5Bad559D3b5CE7947AADb9E0bc

 Transaction sent: 0x7e060473562ea39a556739317b76c5b10fd5e9f75eda8d453bcbe0c4af7a19fc
   Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 30
   UniswapV2Router02.constructor confirmed   Block: 37   Gas used: 3895430 (32.46%)
   UniswapV2Router02 deployed at: 0xF06D5f5BfFFCB6a52c84cfebc03AD35637728E73

 Transaction sent: 0xa980e9afea2821f65abeeff822a11ac703dbc9fb03f3b325082a2acd8fc4ccea
   Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 31
   Norexa.constructor confirmed   Block: 38   Gas used: 4892175 (40.77%)
   Norexa deployed at: 0x82c83b7f88aef2eD99d4869D547b6ED28e69C8df

 Transaction sent: 0xd4ca104db67b4725bebdc8134ecdd63638d350fd40ccb37e671fbaff37b16133
   Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 5
   Norexa.transferForeignToken confirmed (_token address cannot be 0)   Block: 39   Gas used: 22214 (0.19%)

 Transaction sent: 0xf14f8a4b03cb11e9b67fc428d97bba7614e0fc862208efb64365e59f88336736
   Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 6
   Norexa.transferForeignToken confirmed (only TreasuryAddress can withdraw)   Block: 40   Gas used: 23339 (0.19%)

 Transaction sent: 0x275a9e002d165ad44a3037e71965052ad5bd62049e318ff1fc5af9f7ceb2fb6a
   Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 1
   Norexa.transferForeignToken confirmed (amount must be greater than 0)   Block: 41   Gas used: 29529 (0.25%)

 Transaction sent: 0x0252522b6a51205d9769eb14a95f0b566853a6d188a5e25cbaaea1ffc7f9f821
   Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 32
   Norexa.removeLimits confirmed   Block: 42   Gas used: 14351 (0.12%)

 Transaction sent: 0x820d8ae8393f50f2038a210bc8003a2b1b9ed0309f546c30ca8368658092da17
   Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 33
   Norexa.transfer confirmed   Block: 43   Gas used: 57335 (0.48%)

 Transaction sent: 0x764f59701848bd4015cc6e64f2a5d01178d96137a129614124711d17b2b0b772
   Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 2
   Norexa.transferForeignToken confirmed   Block: 44   Gas used: 48738 (0.41%)

 tests/test_norexa.py::test_transfer_foreign PASSED
```

```
tests/test_norexa.py::test_update_buy_fee RUNNING
Transaction sent: 0x09f7f9d51a4997d080bf2b663c3467a671601dff7088659c2a1d8cda00179c1d
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 34
  UniswapV2Factory.constructor confirmed   Block: 45   Gas used: 2412730 (20.11%)
  UniswapV2Factory deployed at: 0xc830Ad2FDfCC2f368fE5DeC93b1Dc72ecABb3691

Transaction sent: 0xb9732aa656b1c3322b2a682a19ee661aecb239f2153e7305b575abd58f954007
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 35
  WETH9.constructor confirmed   Block: 46   Gas used: 476546 (3.97%)
  WETH9 deployed at: 0xbc8eCccb89650c3E796e803CB009BF9b898CB359

Transaction sent: 0x4ac0eacfc81f4d932b25d33283e93b5f6d5c5c3ea3dc089abc03a99da5758f7d
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 36
  UniswapV2Router02.constructor confirmed   Block: 47   Gas used: 3895430 (32.46%)
  UniswapV2Router02 deployed at: 0x741e3E1f81041c62C2A97d0b6E567AcaB09A6232

Transaction sent: 0x16e77810358f3ad7d64dc1b77e71a140790ae3ed7cbf7c4829a12b5f73c56527
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 37
  Norexa.constructor confirmed   Block: 48   Gas used: 4892165 (40.77%)
  Norexa deployed at: 0x4B0FccF53589c1F185B35db88bB315a0bBF9a3e0

Transaction sent: 0x888daac788141e0b91cd7328fed456928d91b31d600725d8c2cc3c2877923335
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 7
  Norexa.updateBuyFee confirmed (Ownable: caller is not the owner)   Block: 49   Gas used: 22436 (0.19%)

Transaction sent: 0x676c589a9ad184dd34a0ed5ba3a7a138b0911aee03fa107be647a89b4f8872aa
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 38
  Norexa.updateBuyFee confirmed (Fees must be 30%  or less)   Block: 50   Gas used: 27459 (0.23%)

Transaction sent: 0xc44aaece16cf0e20c8fddf306347bff7bf139fc6879478479d2266494722cf65
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 39
  Norexa.updateBuyFee confirmed   Block: 51   Gas used: 27348 (0.23%)

tests/test_norexa.py::test_update_buy_fee PASSED
tests/test_norexa.py::test_update_sell_fee RUNNING
Transaction sent: 0xcb1027b556e71c33c328aeb4c52f308a1cde35156df023942baefff42ec3b33f
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 40
  UniswapV2Factory.constructor confirmed   Block: 52   Gas used: 2412730 (20.11%)
  UniswapV2Factory deployed at: 0x0AC45e945A008D3fc19da8f591be8601C1F63130

Transaction sent: 0x71fd93e382cba92052666bd0a575ed79571528690d5d24870dc8467962f0b3ef
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 41
  WETH9.constructor confirmed   Block: 53   Gas used: 476546 (3.97%)
  WETH9 deployed at: 0x5847798CE8c89e3Fff59AE5fA30BEC0d406b5687

Transaction sent: 0x31b4fb1c0f3361325310e0e319dca65b0ac971f06fcf72c405084ff0efc11d8f
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 42
  UniswapV2Router02.constructor confirmed   Block: 54   Gas used: 3895418 (32.46%)
  UniswapV2Router02 deployed at: 0x0C60536783db9ED5A2B216970B10FF2243d317dD

Transaction sent: 0x4309ea62085cb6ad8f350b81d9080f8ac0a71b4126157fba0493f871995b3daa
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 43
  Norexa.constructor confirmed   Block: 55   Gas used: 4892165 (40.77%)
  Norexa deployed at: 0x0e19E87b363DD7a3af5c45C95ab6885367251B94

Transaction sent: 0x2516e1a23d8ee9260bafb6c51c802b6634ae3ae43c06a07bc5e75ef5534c1429
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 8
  Norexa.updateSellFee confirmed (Ownable: caller is not the owner)   Block: 56   Gas used: 22547 (0.19%)

Transaction sent: 0x5c7deb9764fa3ccecc58cf0f63caf8ea04a5e36328fadd22466c4de284cd7f30
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 44
  Norexa.updateSellFee confirmed (Fees must be 30%  or less)   Block: 57   Gas used: 27570 (0.23%)

Transaction sent: 0xe826afe068a5af67c4a73679d651f765816f925a87711cf29b37c9feb39415eb
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 45
  Norexa.updateSellFee confirmed   Block: 58   Gas used: 27459 (0.23%)

tests/test_norexa.py::test_update_sell_fee PASSED
```

```
tests/test_norexa.py::test_transfer RUNNING
Transaction sent: 0x00df4e56c09bc2a82599e092dbeeb3a057c7debeedd65cffa87b130f2aec9c8a
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 46
  UniswapV2Factory.constructor confirmed   Block: 59   Gas used: 2412730 (20.11%)
  UniswapV2Factory deployed at: 0x8BE16B874F47371C42498b499837Ed8707661E86

Transaction sent: 0x39007b89beb035bc53cb7d83203af03d39e3f6cb7fabbcb3df8fdd457e2208bc
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 47
  WETH9.constructor confirmed   Block: 60   Gas used: 476546 (3.97%)
  WETH9 deployed at: 0x1aa96efd2B002541E830CB7f60e473AA24e31F9A

Transaction sent: 0xa94c015ac60e9fa519efb0855f9b7165181a253602b4b49280995141907cc48c
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 48
  UniswapV2Router02.constructor confirmed   Block: 61   Gas used: 3895418 (32.46%)
  UniswapV2Router02 deployed at: 0x8b1B4407240Ce2EE9779B58af841Ec59F545838B

Transaction sent: 0x1a830369ab0a5434625ca80a4e1b2cb93f53bc48146b56743df1a6ebe1b35621
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 49
  Norexa.constructor confirmed   Block: 62   Gas used: 4892175 (40.77%)
  Norexa deployed at: 0xC6D563d5c2243b27e7294511063f563ED701EA2C

Transaction sent: 0xe576602e8d12da85272ab071cc734908c8bf2473f71bc2298bb84cc55bff03dc
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 0
  Norexa.transfer confirmed (ERC20: transfer from the zero address)   Block: 63   Gas used: 24716 (0.21%)

Transaction sent: 0x5bb3daebfbfe5ec47bbec81f959ffcedf7f0bc6ded8be2b22b88a206b1575bb1
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 9
  Norexa.transfer confirmed (ERC20: transfer to the zero address)   Block: 64   Gas used: 24511 (0.20%)

Transaction sent: 0xb6ed767559b181bd1b1a2b50f44e6bb073e44b428600e0e1b6caf7ea48855ab3
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 10
  Norexa.transfer confirmed (amount must be greater than 0)   Block: 65   Gas used: 24645 (0.21%)

Transaction sent: 0x3ba80c0b9cb33bdcf8d30fe6fe09d0151bf3d88a8fdddd486746caae799bb629
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 11
  Norexa.transfer confirmed (Trading is not active.)   Block: 66   Gas used: 30023 (0.25%)

Transaction sent: 0xfc3826c7e6e3a9872f5aaeaa3272b2b14e3e06a0502e6614a60a69f1baedde3
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 12
  Norexa.enableTrading confirmed (Ownable: caller is not the owner)   Block: 67   Gas used: 22669 (0.19%)

Transaction sent: 0x64cbab3aea004237d17cc352393fe19b4bd9f6ebf00c0321519b4e87e0ccd793
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 50
  Norexa.enableTrading confirmed   Block: 68   Gas used: 42328 (0.35%)

Transaction sent: 0xa03d84a1ddbd810c34d42c483564be97752b7d6fc544bbb4e22fdb622d1e4963
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 51
  Norexa.enableTrading confirmed (Cannot re enable trading)   Block: 69   Gas used: 23488 (0.20%)

Transaction sent: 0xcf9be19f5a91ba411ebdeb179d13c9748a03ac4c5a6b59a29f3fe9c5ecaee119
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 13
  Norexa.transfer confirmed (ERC20: transfer amount exceeds balance)   Block: 70   Gas used: 42094 (0.35%)

Transaction sent: 0x19614dbb08048cb6ab25d9555ef5bedd486619e54079acbeb315ba6bc00ebdb1
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 52
  Norexa.updateBuyFee confirmed   Block: 71   Gas used: 27348 (0.23%)

Transaction sent: 0x23b637fa8880d1c01dce036558ccb20fc66577083215fa56f7152195dbf69f08
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 53
  Norexa.updateSellFee confirmed   Block: 72   Gas used: 27459 (0.23%)

Transaction sent: 0x1cec1e2859165011b689f40b8397fc13c93a52dda898fa41e3adae1cd9f33586
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 54
  Norexa.transfer confirmed   Block: 73   Gas used: 58250 (0.49%)

Transaction sent: 0xbd9f13cd9ae5b66a8523a2fa03dce7312c4674b5c9371577c072222d12a33e7b
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 55
  Norexa.transfer confirmed   Block: 74   Gas used: 58238 (0.49%)

Transaction sent: 0x6ab0e54cbecc3cf1bd0a55523e3c97601ee9b79c163032b49b65713d87524cce
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 14
  Norexa.transfer confirmed (Cannot Exceed max wallet)   Block: 75   Gas used: 33716 (0.28%)

Transaction sent: 0x94ffea8b2f4c21e9dc36fdc26ba44e4c22e49a56185ab55511e962638a9fb8c7
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 15
  Norexa.transfer confirmed (Sell transfer amount exceeds the max sell.)   Block: 76   Gas used: 31845 (0.27%)
```

```
Transaction sent: 0x5229765ae5e0e3d6f69031df1a697560b1c0a0d0d682f8a2e67fa48b868efa98
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 1
  Norexa.transfer confirmed (Buy transfer amount exceeds the max buy.)   Block: 77   Gas used: 30912 (0.26%)

Transaction sent: 0x10e863b4775946c1fb29871e516c773715a9cfd6babaee380a4e20edc8315767
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 16
  Norexa.transfer confirmed   Block: 78   Gas used: 55021 (0.46%)

Transaction sent: 0x4956cd851f58fe704b88c6a298b014bfc0a72d3da5ac1a97b41646c17aecccb1
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 17
  Norexa.transfer confirmed   Block: 79   Gas used: 114666 (0.96%)

Transaction sent: 0xfd30e96fdda47ede8a03f0c874c70bd20e3efe668723944b8e5d139e49223af6
  Gas price: 0.0 gwei   Gas limit: 12000000   Nonce: 2
  Norexa.transfer confirmed   Block: 80   Gas used: 71431 (0.60%)

tests/test_norexa.py::test_transfer PASSED
```

Annexes

Testing code:

```python
from brownie import (
    reverts,
)

from scripts.helpful_scripts import (
    ZERO_ADDRESS,
    DAY_TIMESTAMP,
    get_account,
    get_timestamp,
    get_chain_number,
    increase_timestamp
)

from scripts.deploy import (
    deploy_weth,
    deploy_factory,
    deploy_router,
    deploy_erc,
    deploy_norexa
)

def test_update_max_buy_amount(only_local):
    # Arrange
    owner = get_account(0)
    other = get_account(1)
    extra = get_account(2)

    factory = deploy_factory(owner, owner)
    weth = deploy_weth(owner)
    router = deploy_router(owner, factory.address, weth.address)
```

```python
    token = deploy_norexa(owner, router.address)


    with reverts("Ownable: caller is not the owner"):
        token.updateMaxBuyAmount(10e18, {"from": other})
    with reverts("Cannot set max buy amount lower than 0.1%"):
        token.updateMaxBuyAmount(90000, {"from": owner})


    tx = token.updateMaxBuyAmount(150000, {"from": owner})
    assert tx.events['UpdatedMaxBuyAmount'][0]['newAmount'] == 150000e18


def test_update_max_sell_amount(only_local):
    # Arrange
    owner = get_account(0)
    other = get_account(1)
    extra = get_account(2)


    factory = deploy_factory(owner, owner)
    weth = deploy_weth(owner)
    router = deploy_router(owner, factory.address, weth.address)
    token = deploy_norexa(owner, router.address)


    with reverts("Ownable: caller is not the owner"):
        token.updateMaxSellAmount(10e18, {"from": other})
    with reverts("Cannot set max sell amount lower than 0.1%"):
        token.updateMaxSellAmount(90000, {"from": owner})


    tx = token.updateMaxSellAmount(150000, {"from": owner})
    assert tx.events['UpdatedMaxSellAmount'][0]['newAmount'] == 150000e18


def test_exclude_from_max_tx(only_local):
    # Arrange
    owner = get_account(0)
    other = get_account(1)
    extra = get_account(2)
```

```python
    factory = deploy_factory(owner, owner)

    weth = deploy_weth(owner)

    router = deploy_router(owner, factory.address, weth.address)

    token = deploy_norexa(owner, router.address)


    with reverts("Ownable: caller is not the owner"):

        token.excludeFromMaxTransaction(router.address, False, {"from": other})

    pair = token.uniswapV2Pair()

    with reverts("Cannot remove uniswap pair from max txn"):

        token.excludeFromMaxTransaction(pair, False, {"from": owner})


    tx = token.excludeFromMaxTransaction(other, True, {"from": owner})

    assert token._isExcludedMaxTransactionAmount(other) == True


def test_update_max_wallet_amount(only_local):

    # Arrange

    owner = get_account(0)

    other = get_account(1)

    extra = get_account(2)


    factory = deploy_factory(owner, owner)

    weth = deploy_weth(owner)

    router = deploy_router(owner, factory.address, weth.address)

    token = deploy_norexa(owner, router.address)


    with reverts("Ownable: caller is not the owner"):

        token.updateMaxWalletAmount(10e18, {"from": other})

    with reverts("Cannot set max wallet amount lower than 0.3%"):

        token.updateMaxWalletAmount(90000, {"from": owner})


    tx = token.updateMaxWalletAmount(350000, {"from": owner})

    assert tx.events['UpdatedMaxWalletAmount'][0]['newAmount'] == 350000e18
```

```python
def test_update_swap_treshold(only_local):
    # Arrange
    owner = get_account(0)

    other = get_account(1)

    extra = get_account(2)


    factory = deploy_factory(owner, owner)

    weth = deploy_weth(owner)

    router = deploy_router(owner, factory.address, weth.address)

    token = deploy_norexa(owner, router.address)


    with reverts("only TreasuryAddress can change swapThreshold"):
        token.updateSwapThreshold(100, {"from": other})


    tx = token.updateSwapThreshold(350, {"from":
"0x60c6C46Ee0180144099e40FA05eF855Ca2C04B75"})

    assert token.swapTokensAtAmount() == 350e18


def test_transfer_foreign(only_local):
    # Arrange
    owner = get_account(0)

    other = get_account(1)

    extra = get_account(2)

    treasury = "0x60c6C46Ee0180144099e40FA05eF855Ca2C04B75"


    factory = deploy_factory(owner, owner)

    weth = deploy_weth(owner)

    router = deploy_router(owner, factory.address, weth.address)

    token = deploy_norexa(owner, router.address)


    with reverts("_token address cannot be 0"):
        token.transferForeignToken(ZERO_ADDRESS, other, {"from": other})
    with reverts("only TreasuryAddress can withdraw"):
        token.transferForeignToken(token.address, other, {"from": other})
```

```python
    with reverts("amount must be greater than 0"):
        token.transferForeignToken(token.address, other, {"from": treasury})


    token.removeLimits({"from": owner})

    token.transfer(token.address, 1e18, {"from": owner})


    tx = token.transferForeignToken(token.address, other, {"from": treasury})

    assert tx.events['TransferForeignToken'][0]['token'] == token.address

    assert tx.events['TransferForeignToken'][0]['amount'] == 1e18


def test_update_buy_fee(only_local):
    # Arrange
    owner = get_account(0)

    other = get_account(1)

    extra = get_account(2)


    factory = deploy_factory(owner, owner)

    weth = deploy_weth(owner)

    router = deploy_router(owner, factory.address, weth.address)

    token = deploy_norexa(owner, router.address)


    with reverts("Ownable: caller is not the owner"):
        token.updateBuyFee(25, {"from": other})
    with reverts("Fees must be 30%  or less"):
        token.updateBuyFee(35, {"from": owner})


    tx = token.updateBuyFee(10, {"from": owner})

    assert token.buyFee() == 10


def test_update_sell_fee(only_local):
    # Arrange
    owner = get_account(0)

    other = get_account(1)

    extra = get_account(2)
```

```python
    factory = deploy_factory(owner, owner)

    weth = deploy_weth(owner)

    router = deploy_router(owner, factory.address, weth.address)

    token = deploy_norexa(owner, router.address)


    with reverts("Ownable: caller is not the owner"):

        token.updateSellFee(25, {"from": other})

    with reverts("Fees must be 30%  or less"):

        token.updateSellFee(35, {"from": owner})


    tx = token.updateSellFee(10, {"from": owner})

    assert token.sellFee() == 10


def test_transfer(only_local):

    # Arrange

    owner = get_account(0)

    other = get_account(1)

    extra = get_account(2)

    another = get_account(3)


    factory = deploy_factory(owner, owner)

    weth = deploy_weth(owner)

    router = deploy_router(owner, factory.address, weth.address)

    token = deploy_norexa(owner, router.address)

    pair = token.uniswapV2Pair()


    with reverts("ERC20: transfer from the zero address"):

        token.transfer(other, 1e18, {"from": ZERO_ADDRESS})

    with reverts("ERC20: transfer to the zero address"):

        token.transfer(ZERO_ADDRESS, 1e18, {"from": other})

    with reverts("amount must be greater than 0"):

        token.transfer(extra, 0, {"from": other})

    with reverts("Trading is not active."):
```

```python
        token.transfer(extra, 1e18, {"from": other})


    # enable trading
    with reverts("Ownable: caller is not the owner"):
        token.enableTrading(True, 0, {"from": other})
    tx = token.enableTrading(True, 0, {"from": owner})
    assert tx.events['EnabledTrading'][0]['tradingActive'] == True
    assert tx.events['EnabledTrading'][0]['deadBlocks'] == 0
    with reverts("Cannot re enable trading"):
        token.enableTrading(True, 0, {"from": owner})


    with reverts("ERC20: transfer amount exceeds balance"):
        token.transfer(extra, 1e18, {"from": other})


    # set fee
    token.updateBuyFee(10, {"from": owner})
    token.updateSellFee(20, {"from": owner})


    # some transfers
    tx = token.transfer(other, 10e18, {"from": owner})
    token.transfer(extra, 10e18, {"from": owner})


    with reverts("Cannot Exceed max wallet"):
        token.transfer(extra, 50_000_000e18, {"from": other})
    with reverts("Sell transfer amount exceeds the max sell."):
        token.transfer(pair, 50_000_000e18, {"from": other})
    with reverts("Buy transfer amount exceeds the max buy."):
        token.transfer(other, 50_000_000e18, {"from": pair})


    # normal transfer
    tx = token.transfer(extra, 1e18, {"from": other})
    assert tx.events['Transfer'][0]['from'] == other
    assert tx.events['Transfer'][0]['to'] == extra
    assert tx.events['Transfer'][0]['value'] == 1e18
```

```python
# sell fee check (20%)
tx = token.transfer(pair, 2e18, {"from": other})
assert tx.events['Transfer'][0]['from'] == other
assert tx.events['Transfer'][0]['to'] == token.address
assert tx.events['Transfer'][0]['value'] == 0.4e18
assert tx.events['Transfer'][1]['from'] == other
assert tx.events['Transfer'][1]['to'] == pair
assert tx.events['Transfer'][1]['value'] == 1.6e18


# buy fee check (10%)
tx = token.transfer(extra, 1e18, {"from": pair})
assert tx.events['Transfer'][0]['from'] == pair
assert tx.events['Transfer'][0]['to'] == token.address
assert tx.events['Transfer'][0]['value'] == 0.1e18
assert tx.events['Transfer'][1]['from'] == pair
assert tx.events['Transfer'][1]['to'] == extra
assert tx.events['Transfer'][1]['value'] == 0.9e18


assert token.tokensForTreasury() == 0.5e18
```

Technical Findings Summary

Findings

Vulnerability Level	Total	Pending	Not Apply	Acknowledged	Partially Fixed	Fixed
🔴 High	2					2
🟠 Medium	0					
🟡 Low	0					
🟢 Informational	2		1			

Assessment Results

Score Results

Review	Score
Global Score	**85/100**
Assure KYC	Not completed
Audit Score	85/100

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 84 Points for a higher standard, if a project does not attain 85% is an automatic failure. Read our notes and final assessment below. The Global Score is a combination of the evaluations obtained between having or not having KYC and the type of contract audited together with its manual audit.

Audit PASS

Following our comprehensive security audit of the token contract for the Norexa project, we inform you that the project has met the necessary security standards.

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 advocating for the Project, and users relying on this report should not consider this as having any merit for financial Norexa 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 deprecation of technologies.

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