ASPERN

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INDEPENDENT ON-CHAIN DUE-DILIGENCE REPORT · SAMPLE

The vault this report is about

Sentora RLUSD Main

ASPERN vault id: ethereum-sentora-rlusd-main-6dc58a

on Morpho Vaults V2 · Ethereum · curated by Sentora

vault contract `0x6dC58a0FdfC8D694e571DC59B9A52EEEa780E6bf`

Deployed 4 March 2026; our own record of it begins 19 September 2026.

AN ON-CHAIN EVIDENCE REPORT: NOT A SECURITY, CREDIT OR LEGAL AUDIT, AND NOT A RECOMMENDATION.

Verify this report: aspern.org/verify/1470c1899ae7 (document id 1470c1899ae7; the digest is of the readings, not of this PDF file)

Generated 9 November 2026, 12:36 UTC. Freshness: oldest model input the depositor list behind concentration, 4 h 21 min before issue; control checked 25 min before (within the 26 h target).

HIGHEST FINDING	WEIGHTED MODEL SCORE	SCORE INPUTS USABLE
MATERIAL RISK PRESENT **Severe** liquidity; the weighted result does not override this finding	**Low** risk score 21 of 100, higher is riskier; low is below 25. Low within the scope assessed; not a probability of loss or a finding of safety	**5 of 5** model inputs available (100% of their weight), not of the vault's risks.

Tracked-vault shared exposure: none observed. It reads 0 because no other vault ASPERN tracks supplies this market; this vault accounts for approximately 100% of the published market supply at the precision shown (100.00%, the vault's supply and the market's read at different moments); small or untracked suppliers cannot be ruled out. Not every supplier is assessed, so this is not a finding that competition for liquidity is absent, and it is not concentration. Counted as read since crowding-3 (2026-11-06 17:00 UTC); under crowding-2 this input was unread.

MOST IMPORTANT RISK	liquidity, severe
WITHDRAWAL EVIDENCE	venue reports $20,250,661 withdrawable at 9 Nov 2026, 12:09 UTC; simulated at issue for one holder, block 26377374, 12:36 UTC the same day: highest tested successful withdrawal $20,249,048, smallest tested failed $20,249,854; one holder at one block, not an exact maximum or a guarantee

LIQUIDITY	The model's liquidity input is 5.0% of the capital withdrawable, the venue's figure, giving 0.80. The simulation is a separate measure.
LARGEST MARKET	66% of what is allocated sits in the kBTC / RLUSD market; this says where the vault lends, not how good the collateral is. A vault can allocate nearly all its capital to one market while the shared exposure score stays low, because that score counts how much of the market other vaults we track also hold, and few may share it
CONTROL	owner signing risk moderate; the curator's 15 timelocked powers read, 3 sentinels read, 3 of 3 allocators the venue lists confirmed by the vault's contract (2 × a single key, Safe 1/1)
UNATTRIBUTED CAPITAL	not established: the markets we read and the $20,250,661 the vault holds as cash itself (the venue's idle figure, same reading) exceed the capital by $5,756, read at different moments, so the difference is not reconciled
KEY UNKNOWNS	the vault's maximum withdrawal not established; exit routes other than a direct withdrawal by one holder not tested; who controls the largest holder (45.9% of the vault, a single key, 0x2bf5d9a2326ad3c5ef8208f91af79c3ca1f0f67c) not established; who controls each role address, beyond its kind, not established
SINCE LAST REPORT	no compared figure changed materially since the issued report of 2026-11-09

CAPITAL HELD

$404.0M

exactly $403,980,621 · Ethereum · read 9 November 2026, 12:17 UTC

WITHDRAWABLE, AS THE VENUE REPORTS

$20.3M

exactly $20,250,661 · read 9 November 2026, 12:09 UTC · 5.0% of capital, approximate (readings 8 min apart)

REPORT SECTIONS POPULATED

5 of 8

3 partly · 0 empty

WITHDRAWAL EVIDENCE

Venue-reported liquidity: $20,250,661, read 9 November 2026, 12:09 UTC. The venue's figure; not a withdrawal tried.

Ordinary withdrawal, simulated at block 26377374: 9 November 2026, 12:36 UTC, as the largest depositor (position $185,483,468): $20,199,031 passed, $20,250,661 failed; highest tested successful withdrawal $20,249,048; the threshold lies between $20,249,048 and $20,249,854 for this holder at this block. Note: the simulation is 27 min newer than the venue's figure, so the two describe different states and are not compared amount for amount. Run when this report was issued.

Forced deallocation / in-kind route: Potential, not verified: not executed on this vault, and whether it works for its adapters was not established. To count as verified it needs, for each adapter: a forceDeallocate simulated by eth_call as a depositor at one block, passing, with the penalty the adapter charged read from the same call, and the assets it returns compared with the vault's book for that adapter.

Populated counts what this report could fill, not how complete a due diligence is. Partly: what depositors kept (1 not established); where the deployed capital rests (2 not established); what we could not read (4 not established).

What materially limits this vault today

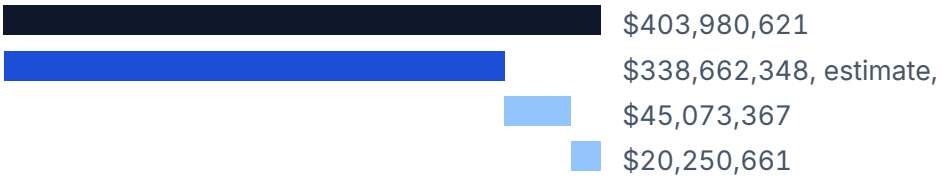
WEIGHTED MODEL RESULT	LIQUIDITY	DEPOSITOR CONCENTRATION	CONTROLLER
low	**severe**	**moderate**	**moderate**
1 severe finding: the overall result is an average and does not override it	the band weighs this with the rest	the band weighs this with the rest	the band does not weigh this
3 readings are worse			

- Market allocation concentration: the largest market, kBTC / RLUSD, takes 66% of what is supplied, about 63% of the vault. This is where the vault lends; the depositor concentration dimension measures the largest depositor instead.

This is an account of what we can and cannot establish about Sentora RLUSD Main. It contains model-based risk bands; they are not a credit rating, a probability of loss or an investment recommendation. Every section carries at least one reading.

A SAMPLE, fixed as it was read at 9 November 2026, 12:36 UTC. A report for a vault you choose is read fresh at the moment you ask for it. Nothing here is redacted: this is the whole document.

Capital and deployment



Unattributed	not established
Unreconciled excess	$5,756, the readings over the capital, read at different moments

Each bar is a share of what the vault holds. The bars below Held were read at different moments and come to $403,986,376, $5,756 more than Held: that difference lies between the readings and is not another amount of capital. Cash held by the vault is the venue's own figure. Lent and Supplied, not borrowed are allocated pro rata from market-level data, because each market pools many suppliers; they are not a direct observation of loans attributable to this vault. The markets we read and the venue's cash come to $5,756 (0.0014% of the vault) more than the vault's own capital reading, read at another time; Lent is capped, so it is an estimate, and the $5,756 stays unreconciled.

Withdrawable at the last reading, the venue's own figure: $20,250,661, read 9 November 2026, 12:09 UTC. A separate measure, not one of the bars above.

Supplied, not borrowed	$45,073,367	Supplied to markets we read and not borrowed now; it can count toward what could leave, under each market's own rules.
Cash held by the vault	$20,250,661	The venue's own idle figure (Morpho idleAssets), in the same reading as the markets; not read from the chain by us.
Unattributed capital	not established	The markets read and the venue's cash reading exceed the capital by $5,756, read at different moments; not reconciled, and not a verified zero.
Withdrawable (venue)	$20,250,661	The venue's own figure, read 9 November 2026, 12:09 UTC. It overlaps the two rows above: do not add it to them.

How the figures above reconcile

ITEM	VALUE	READ AT	HOW
A Capital held	$403,980,621	9 Nov, 12:17 UTC	On chain: the vault's own total assets
B Supplied to the markets we read	$383,735,715	9 Nov, 12:09 UTC	Venue-reported: sum of this vault's positions in each market
C Cash the vault holds itself	$20,250,661	9 Nov, 12:09 UTC	Venue-reported: Morpho idleAssets, the same reading as B
D In no market we read and beyond that cash	not established	computed	A less B less C is negative ($5,756): read at different moments, so D is not established; no amount is taken from it below
E Supplied and not borrowed, estimated	$45,073,367	computed	Estimated: pro-rata share of each market's unborrowed money, from B
F The vault's own not-lent figure	$65,318,273	9 Nov, 12:09 UTC	Venue-reported
G Not explained	$5,756	computed	Computed: C + E exceeds F by this; the inputs were read at different times, and D is not established, so it is not in this sum
H Withdrawable, the venue's figure	$20,250,661	9 Nov, 12:09 UTC	Venue-reported: a separate reading; not a step of A

Cash the vault holds itself: $20,250,661, 5.0% of the vault, as the venue reports it in the same reading (Morpho's idleAssets; not read from the chain by us).

Unattributed capital: not established. The markets read and the venue's cash reading exceed the capital by $5,756, read at different moments, so the account is not reconciled to the dollar.

Reconciliation unresolved: the readings differ by $5,756 (less than 0.01% of the vault); the difference may reflect timing, coverage or another cause.

Capital, $403,980,621: the vault's own figure for its total assets, read 9 November 2026, 12:17 UTC.

In the markets we read, $383,735,715: this vault's supply position in each market, as the venue reports it, read 9 November 2026, 12:09 UTC.

Not lent, $65,318,273: the vault's not-lent figure, read 9 November 2026, 12:09 UTC. What lies in no market we read is not established: the markets and the venue's cash exceed the capital by $5,756, read at different moments.

Capital and deployment (continued)

Value held, and the shaded part is how far it sat below its own running peak. Drawn over the whole record we hold: value held and share price from 5 March 2026 to 9 November 2026. A paid report carries the maximum we have rather than a window. The liquidity readings behind resilience are a separate daily series, of which we hold 25 days. The first reading, 5 March 2026 at $2, under 1% of the peak, is left off the drawing, so the line starts at 12 March 2026; it is kept in the record.

What depositors kept

Share price, read from the contract: how the value of one share moved. A holder's own result also depends on when they entered and left, and on what the transactions cost.

Over the last 30 days the share price grew at 3.21% a year (annualised linearly, a pace rather than an outcome). The venue quotes 2.99% today. The two cover different periods, so this is not a measure of the vault against its advertised rate. Over the whole 249-day record it grew 1.65% in total, 2.41% a year at that pace. The growth is read from the contract's share price.

Fees, as read 9 November 2026, 12:09 UTC from morpho-api:vaultV2: performance 10%, management 0%. The fee is taken from what depositors earn, so the figures above are after it where the share price is the source. Who can change it, and with what delay, is under who can act on it.

- Could not establish: how the fees have changed over time: we read the current fees, not their history.

How you get out

The contract imposes no notice period and no request step: a redeem that succeeds settles in the transaction that asks for it, and it succeeds only if the vault holds enough to pay at that moment, which is the liquidity reading and a separate question. There is no queue and no lock-up in the contract.

1,135 withdrawals settled in the last 30 days, totalling $297,150,478, and the largest single exit we have ever recorded here is $37,623,238. At its last reading the venue's figure for what could be taken out was $20,250,661; that is an amount at one instant, while the figures beside it are totals over a period, so one is not a share of the other. All time, since 2026-09-12, 3,176 withdrawals totalling $647,081,509. This is evidence about what has already been possible, never a promise about today.

Which liquidity figure the model takes: the venue-reported withdrawable over capital (5.0%), unless the vault's own accounting, withdrawable assets over total assets (5.0%, read 9 November 2026, 07:44 UTC), is lower by more than 0.5 percentage points. The vault's own figure is lower by less than 0.5 percentage points, which the rule counts as agreement, so the venue figure stands. The rule has been the same since 26 October 2026; the readings decide which figure it takes, so a report issued at another time can take the other one.

Observed configuration: no liquidity adapter is set on this vault, so an ordinary withdrawal pays only from the vault's idle balance. At block 26377247 (read 9 November 2026, 12:11 UTC) the vault's idle balance was 5.0% of its assets, a ratio of the two in the token's own units. Applied to the capital figure in this report that would be about $20,250,337, against the $20,250,661 the venue reports as idle cash: our own read at that block agrees with the venue's figure to within $325 (0.00%). The report uses the venue's figure. Money in its one adapter is subject to a penalty of 0.01% on a forced deallocation.

How you get out (continued)

Simulated withdrawal: Simulated at block 26377374 (9 November 2026, 12:36 UTC), by eth_call, which runs the vault's own withdraw and sends nothing, on behalf of its largest depositor, whose position was worth $185,483,468: $1,000,000 ($1M), $10,000 ($10,000), $100,000 ($100,000), $4,039,806 (1% of the vault), $20,199,031 (5% of the vault) would have gone through; $40,398,062 (a tenth of the vault), $20,250,661 (the venue's withdrawable figure as read 9 November 2026, 12:09 UTC, before this simulation), $185,297,984 (the holder's position, less 0.1% for rounding) would have reverted (TransferReverted (observed: the transfer of the asset out of the vault failed; likely, on a vault that pays from its idle balance, because the amount exceeded that balance; not established from a call trace, so another cause of a failed token transfer is not ruled out)). Searched at the same block by halving the interval between $20,199,031 (passed) and $20,250,661 (failed) 6 times: the threshold lies between $20,249,048 (passed) and $20,249,854 (failed), for this holder at this block; the exact maximum was not established. One holder at one block, before anybody else takes the same liquidity, and only up to what that holder owns; it says nothing about a later block.

Alternative routes, in general: a forced deallocation (anyone may call it) moves assets from an adapter back to the idle balance, and needs free liquidity in the market behind that adapter; where there is none, a potential route is an in-kind exit, in which the depositor first supplies to that market themselves (with their own funds or a flash loan) in the same transaction, then forces the deallocation and withdraws, and ends up holding a supply position in that market, in the vault's asset, which can be withdrawn only when that market has free liquidity, rather than the asset itself. Executed on this vault: neither. Both are potential routes; that they work for this vault's adapters, and what each adapter's own code allows, is not verified.

We hold 25 days of readings for this vault and publish nothing about resilience below 30. A worst day out of 25 reads as though it were the worst of a quarter, and it is not. 5 more days of collection and this answers by itself.

Withdrawals simulated at block 26377374, 9 November 2026, 12:36 UTC
Open block 26377374 on the explorer

SCENARIO REQUESTED	AMOUNT TESTED	RESULT	WHY THE TWO DIFFER
$1M	**$1,000,000**	Passed	—
a tenth of the vault	**$40,398,062**	**Reverted**	—
Reason: TransferReverted (observed: the transfer of the asset out of the vault failed; likely, on a vault that pays from its idle balance, because the amount exceeded that balance; not established from a call trace, so another cause of a failed token transfer is not ruled out)			
the venue's withdrawable figure as read 9 November 2026, 12:09 UTC, before this simulation	**$20,250,661**	**Reverted**	—
Reason: TransferReverted (observed: the transfer of the asset out of the vault failed; likely, on a vault that pays from its idle balance, because the amount exceeded that balance; not established from a call trace, so another cause of a failed token transfer is not ruled out)			

Withdrawals simulated at block 26377374, 9 November 2026, 12:36 UTC (continued)

SCENARIO REQUESTED	AMOUNT TESTED	RESULT	WHY THE TWO DIFFER
the holder's whole position	**$185,297,984**	**Reverted**	less 0.1% for rounding
Reason: TransferReverted (observed: the transfer of the asset out of the vault failed; likely, on a vault that pays from its idle balance, because the amount exceeded that balance; not established from a call trace, so another cause of a failed token transfer is not ruled out)			
$10,000	**$10,000**	Passed	—
$100,000	**$100,000**	Passed	—
1% of the vault	**$4,039,806**	Passed	—
5% of the vault	**$20,199,031**	Passed	—
threshold search, 6 steps by halving	**$20,249,048 / $20,249,854**	passed / reverted	the threshold lies between the two

To repeat: on ethereum, eth_call the vault 0x6dC58a0FdfC8D694e571DC59B9A52EEEa780E6bf with withdraw(assets, receiver, owner), receiver and owner both 0x2bf5d9a2326ad3c5ef8208f91af79c3ca1f0f67c, sent from 0x2bf5d9a2326ad3c5ef8208f91af79c3ca1f0f67c, at block 26377374; assets is each amount in RLUSD at its smallest unit. Amounts tried: $1,000,000 (passed); $40,398,062 (reverted: TransferReverted (observed: the transfer of the asset out of the vault failed; likely, on a vault that pays from its idle balance, because the amount exceeded that balance; not established from a call trace, so another cause of a failed token transfer is not ruled out)); $20,250,661 (reverted: TransferReverted (observed: the transfer of the asset out of the vault failed; likely, on a vault that pays from its idle balance, because the amount exceeded that balance; not established from a call trace, so another cause of a failed token transfer is not ruled out)); $185,297,984 (reverted: TransferReverted (observed: the transfer of the asset out of the vault failed; likely, on a vault that pays from its idle balance, because the amount exceeded that balance; not established from a call trace, so another cause of a failed token transfer is not ruled out)); $10,000 (passed); $100,000 (passed); $4,039,806 (passed); $20,199,031 (passed). The largest that would pass was searched by halving between $20,199,031 and $20,250,661, 6 steps. A call that returns is a withdrawal that would have gone through at that block for that holder; it says nothing of a later block or another account. Simulator exit-sim-3, run when this report was issued.

What a given size runs into

$1,000,000

below the figure

4.9% of the venue's withdrawable figure at its last reading; directly simulated: passed

$10,000,000

below the figure

49% of the venue's withdrawable figure at its last reading; inferred from the tested interval: smaller than $20,249,048, which passed for the same holder at the same block (assumes a smaller withdrawal by that holder passes too)

$50,000,000

smaller test failed

247% of the venue's withdrawable figure at its last reading, and larger than the largest single withdrawal recorded, $37,623,238; inferred from the tested interval: larger than $20,249,854, which failed for the same holder at the same block (assumes a larger withdrawal by that holder fails too)

Measured against $20,250,661, which the venue publishes as withdrawable at one instant, and against $37,623,238, the largest single withdrawal we have recorded (30 September 2026). It is not a queue position, not a promise, and nothing here is a view on whether to allocate.

Not observed as lent, as a share of the vault's book, one reading a day for 51 days from 19 September 2026: 16% at the last, 5.6% at its lowest on 8 November 2026. Each day is the vault's own figure for what it has not lent, over what it has lent plus that figure. It counts money supplied and not borrowed and money in no market we read alike. In the capital account, $45,073,367 was supplied to markets we read and not borrowed, and the venue reports $20,250,661 as cash the vault holds; what lies in no market we read is not established, because the markets and the venue's cash exceed the capital by $5,756, read at different moments. Not observed as lent is what we did not see lent, not a finding that no borrower holds it, and not what could be withdrawn, which is read separately. The vault page charts the same readings; resilience is measured on the withdrawable readings, a different series that began later.

What could go wrong

The overall band and material exceptions are summarized on page 1. By risk: market low; liquidity severe; depositor concentration moderate; operating low; controller moderate. Each is read on its own below.

Who can act on it

owner, curator and at least one sentinel are at different addresses; common control has not been ruled out; adding a new destination for the funds wait 3 days in a timelock.

Operator: Sentora, as matched to this vault by its curator or manager address.

Who can act on it (continued)

Observed execution pattern: consistent with automation (evidence: observed in execution timing; execution timing is consistent with automated activity in the transactions we read). What was recorded: Execution timing indicates automation (rules automated): Reallocations spaced with machine regularity (median gap 14400s).. This describes how transactions are executed, not who sets the strategy or answers for it; the operator is named separately. The classification is rule-based and records no observation period or count, so it is not a probability.

ROLE	ADDRESS	WHAT WE READ
Owner	0xe8c9c99e...1e938008	a 1-of-1 multisig: one signer, which acts as a single key
Curator	0x9e396de3...4b42aac0	Safe 1/1; a separate address
Sentinel	0x13de0cee...3c5090e1	a single key; can revoke a pending change
Sentinel	0x9e396de3...4b42aac0	Safe 1/1; can revoke a pending change; the same address as the curator, so not an independent check
Sentinel	0x74d1672d...ace61618	a single key; can revoke a pending change
Allocator	0x13DE0cEE...3c5090e1	a single key; listed by the venue and confirmed by the vault's contract; can allocate and deallocate among adapters already added, within their caps, set the liquidity adapter and the maximum rate (allocate, deallocate, setLiquidityAdapterAndData, setMaxRate), with no timelock; cannot add an adapter, raise a cap or move funds out of the vault, so not counted as control
Allocator	0x9e396dE3...4b42aac0	Safe 1/1; listed by the venue and confirmed by the vault's contract; can allocate and deallocate among adapters already added, within their caps, set the liquidity adapter and the maximum rate (allocate, deallocate, setLiquidityAdapterAndData, setMaxRate), with no timelock; cannot add an adapter, raise a cap or move funds out of the vault, so not counted as control
Allocator	0xC4Ba4e82...CcBd79D3	a single key; listed by the venue and confirmed by the vault's contract; can allocate and deallocate among adapters already added, within their caps, set the liquidity adapter and the maximum rate (allocate, deallocate, setLiquidityAdapterAndData, setMaxRate), with no timelock; cannot add an adapter, raise a cap or move funds out of the vault, so not counted as control

Control last checked 9 November 2026, 12:11 UTC, 25 min before this report was generated: within ASPERN's 26-hour refresh target. Changes since that check are not excluded.

Adding a new destination for the funds (an adapter) waits 3 days in the vault's timelock, so it is announced before it can happen. Different addresses are what can be read on chain; they do not establish that different people or organisations control them. One signature is enough to act as owner, but a change of where the funds can go is announced first. The delay may give depositors time to react; it does not guarantee they can leave, because what can be withdrawn can change and may not cover a position. Each of the curator's powers, with its own delay, is read below.

The curator's powers, one by one

POWER	WHAT IT DOES	WHEN IT ACTS
addAdapter	adds a new place the funds can be sent	waits 3 days
increaseAbsoluteCap	raises how much may go to one market or strategy	waits 3 days
increaseRelativeCap	raises the share that may go to one market or strategy	waits 3 days
setSendSharesGate	gates sending shares, which can lock depositors out of exiting	abdicated
setReceiveAssetsGate	gates withdrawing assets, which can lock depositors out of exiting	abdicated
setReceiveSharesGate	gates receiving shares, which can lock depositors out of shares held elsewhere	abdicated
setIsAllocator	names who may move funds between markets within the caps, and set the liquidity adapter, which can stop withdrawals other than in-kind	at once
setPerformanceFee	sets the performance fee, at most 50% of interest	at once
setManagementFee	sets the management fee, at most 5% a year	at once
setForceDeallocatePenalty	sets the penalty on an in-kind exit, at most 2%	at once
setSendAssetsGate	gates deposits; the contract says it cannot block funds already in	at once
setAdapterRegistry	sets the registry that limits which adapters may be added	abdicated
removeAdapter	removes a place the funds can be sent	waits 7 days
abdicate	gives up a power for good	waits 7 days
increaseTimelock	lengthens a delay	waits 7 days

Each of the curator's 15 timelocked functions was read from the contract at block 26,377,247: its delay, and whether it has been abdicated. The 3 gates that can lock depositors out (setSendSharesGate, setReceiveAssetsGate, setReceiveSharesGate) are abdicated: the contract records each as given up, and it has no function that reverses an abdication. That holds while this code is the vault's: the address carries the contract itself (21,808 bytes) with no proxy implementation, beacon or admin slot set, so we found no way to replace it. Pointing funds somewhere new, or raising a cap, waits its delay, during which a sentinel can revoke it. Fees can change at once, within the contract's ceilings: setPerformanceFee, setManagementFee, setForceDeallocatePenalty. Allocators move funds between destinations already added, within the caps, at once, as the contract intends; who they are was not checked. The owner names the curator and the sentinels, at once; this contract gives it no function that moves funds or sets a gate, a cap or a fee itself, and a new curator's changes wait the same delays.

How the controller level is set: The level would read high if any of these could be used without its delay: setSendSharesGate, setReceiveAssetsGate, setReceiveSharesGate, addAdapter, increaseAbsoluteCap, increaseRelativeCap, setAdapterRegistry, the gates that can lock depositors out and the ways to add a destination or raise a cap. Powers that act at once here do not move it: fees (setPerformanceFee, setManagementFee, setForceDeallocatePenalty), because the contract caps them; naming allocators (setIsAllocator), because an allocator moves funds only among destinations already added and within the caps. The ways out of an allocation, as read from this vault, are set out under how you get out; whether they work for each adapter was not verified.

Verified: who holds the owner role, and what kind of address it is; who holds the curator role; who the sentinels are; each of the curator's 15 timelocked functions: its delay, and whether it has been abdicated; that the address holds the contract itself, with no proxy slot set, so its code cannot be swapped by the standard routes; that each address the venue lists as an allocator holds the role, by the vault's own contract.

Not verified: whether the venue's list holds every address with allocator permission; an address it omits would not have been checked; whether a forced deallocation or an in-kind exit works for each adapter; what each adapter does with the funds once they are in it; the roles of the contracts behind each adapter, which this reading does not reach.

Not established: whether different addresses are controlled by different people or organisations.

Who else is in the same markets

On the venue's own figures this vault supplies 99% or more of each of its 5 largest markets, so by those figures other suppliers hold a small share of those markets, at the precision shown; the figures were not read at one moment, and small or untracked suppliers cannot be ruled out. That alone does not establish what can be withdrawn later, which depends on borrowing and on this vault's own allocations. This is the venue's supply figure for each market; the crowding component is a different measure, the share of a market held by vaults we track, and is not read here.

Where the deployed capital rests

Of the $403,980,621 this vault holds, $383,735,715 is supplied to 10 markets we read, the venue reports $20,250,661 as idle cash held by the vault in the same reading, and nothing is left unplaced: the markets and the cash together exceed the capital by $5,756, read at different moments, so the difference is not reconciled. Of what is supplied, $338,662,348 is this vault's share of what borrowers hold and $45,073,367 its share of what nobody borrows: calculated, not observed per vault, since a market pools its suppliers and no loan belongs to one of them; each market's borrowing and free money are split in proportion to this vault's part of its supply. The shares below are of what is supplied, not of the vault.

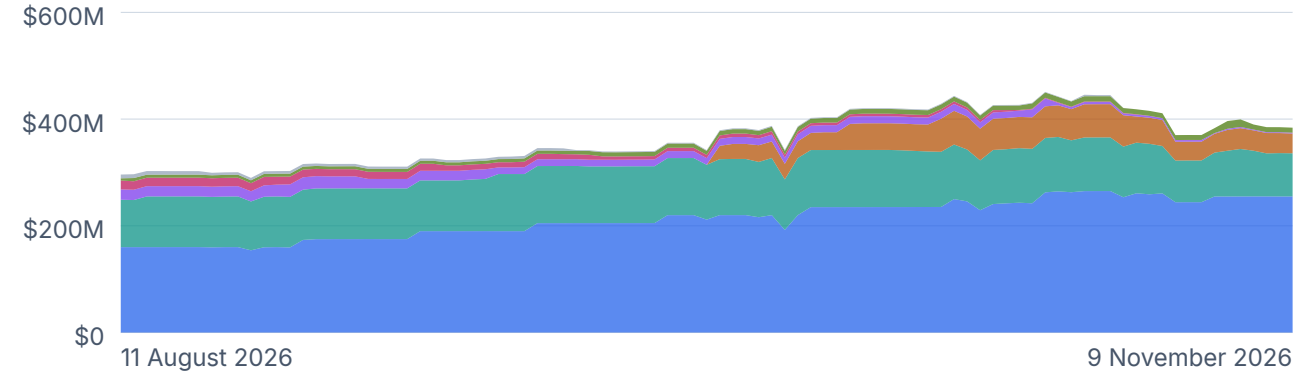
Where the deployed capital rests (continued)

MORPHO MARKET	OF ALLOCATION	OF MARKET SUPPLY	LIQUIDATES AT	FREE, WHOLE MKT
kBTC / RLUSD oracle ChainlinkOracleV2 · 87.8% borrowed	66.5%	100%	86%	$31,004,028
weETH / RLUSD oracle ChainlinkOracleV2 · 88.3% borrowed	21.1%	100%	86%	$9,423,166
USDe / RLUSD oracle ChainlinkOracleV2 · 90.3% borrowed	9.6%	100%	92%	$3,568,520
FXRP / RLUSD oracle ChainlinkOracleV2 · 90.2% borrowed	2.4%	100%	77%	$917,752
cbBTC / RLUSD oracle ChainlinkOracleV2 · 90.0% borrowed	0.4%	100%	86%	$134,829

Free, whole market: what nobody borrows in that market, all suppliers' money together. Other suppliers can claim it too, so it is not this vault's own; this vault's share of it is counted as not lent in the capital account.

Of market supply: this vault's supply as a share of everything supplied to that market, on the venue's own figure for the market.

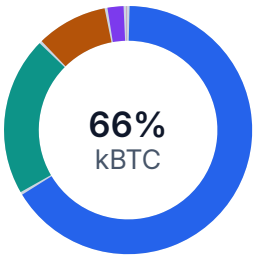
Allocation history



- kBTC / RLUSD: $255,080,861 on the last day
- weETH / RLUSD: $80,814,811 on the last day
- USDe / RLUSD: $37,023,666 on the last day
- cbBTC / RLUSD: $1,401,886 on the last day
- syrupUSDC / RLUSD: $210,457 on the last day
- FXRP / RLUSD (LLTV 77%): $9,388,901 on the last day
- 4 other destinations: $0 on the last day

Where the vault's allocated capital sat each day from 2026-08-11 to 2026-11-09, as the venue reports it, across 10 destinations, the 6 that held the most by name and the rest together. A day's total is what was allocated, not the vault's total assets: cash held idle is not in it.

Collateral, the withdrawal queue and borrower health

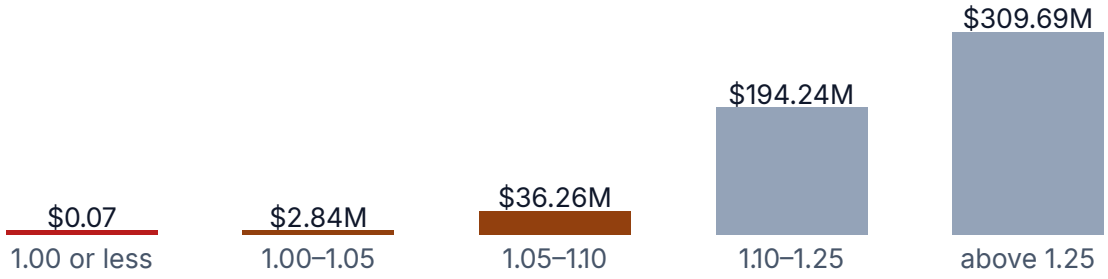


kBTC	$255.11M	66.5%	held by Kraken
weETH	$80.82M	21.1%	held by ether.fi
USDe	$36.85M	9.6%	held by Ethena
FXRP	$9.39M	2.4%	
cbBTC	$1.35M	0.4%	held by Coinbase
syrupUSDC	$210.2k	0.1%	held by Maple
WBTC	under	<0.05%	held by BitGo

MARKET	ALLOCATED	REDEEMABLE	OF TVL
kBTC / RLUSD	$255.11M	$31.00M	7.7%
weETH / RLUSD	$80.82M	$9.42M	2.3%
USDe / RLUSD	$36.85M	$3.57M	0.9%
FXRP / RLUSD	$9.39M	$917.8k	0.2%
cbBTC / RLUSD	$1.35M	$134.8k	<0.05%
syrupUSDC / RLUSD	$210.2k	$24.0k	<0.05%
WBTC / RLUSD	under $0.01	under $0.01	<0.05%
wstETH / RLUSD	under $0.01	under $0.01	<0.05%

Redeemable here is the smaller of this vault's supply and the market's free money, now; it is market liquidity, not a simulated withdrawal. 2 further markets not listed. Utilisation, weighted by allocation: 88.3%.

At-risk debt (health factor 1.10 or below), this vault's share: $33,698,508 (liquidatable $0, 1.00–1.05 $2,569,657, 1.05–1.10 $31,128,851); $33,698,553 in the whole markets, every supplier together. Read 2026-11-09 across 10 markets.



Collateral of every borrower in those markets, by health factor. At or below 1.00 can be liquidated now.

ALLOCATIONS EXCEED THE VAULT

$5,756

two readings taken at different moments, not capital found

FURTHER MARKETS HELD

5

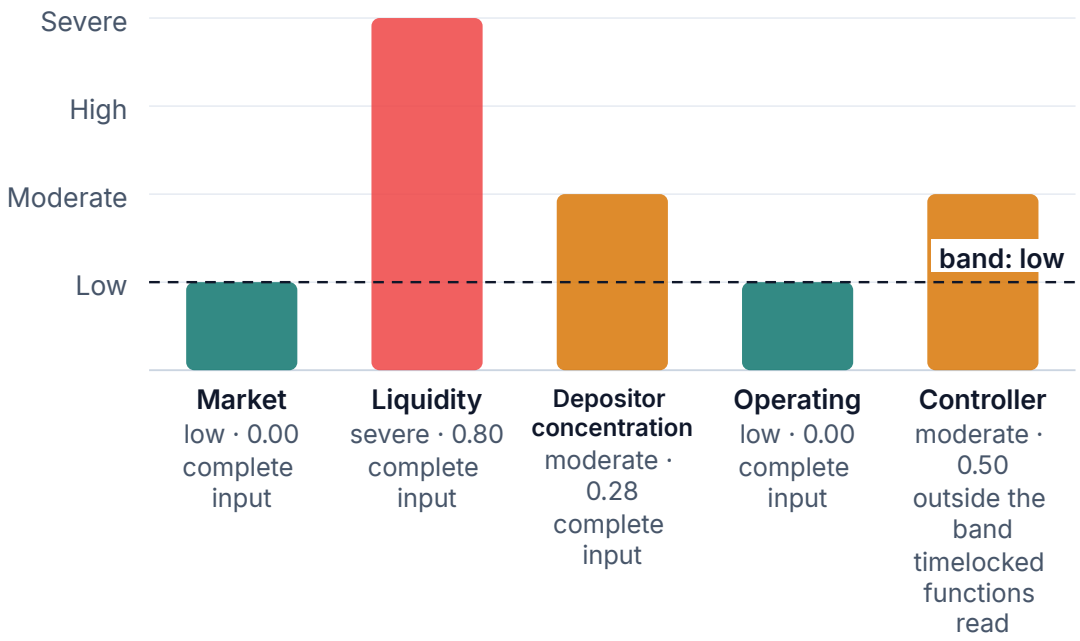
listed in full under Sources, at the end

What we could not read

- Could not establish: a withdrawal that was attempted and reverted.
- Could not establish: how long anybody actually waited to get out: the contract terms say what a queue or notice must be, and no record shows what a depositor met.
- Could not establish: a gate or limit that refused somebody before they submitted.
- Could not establish: anything on a venue whose flows we do not read.

Five risk dimensions, read separately

Each is read on its own components. A dimension marked as outside the band cannot move the band however badly it reads. The overall band weighs every component together instead, so it can read better than this and is not in conflict with it: a dimension says how bad its worst reading is, the band says what the whole weighs.



Model input availability: 100% of applicable weighted components (82.5 of 82.5 weight points have a value). Input quality: no input is marked as an anomaly. Neither measures source accuracy or report completeness; they are our coverage, not a risk the vault runs, so they are not a column.
Outside that percentage: control: assessed separately, moderate; whether the ways out work when used: not verified (nothing was executed); legal terms, custody and off-chain arrangements: outside this report's scope.

Height is an ordered level from low to severe, not a measured length. The figure beside each level is the component that set it, on a 0-1 scale where 0 is the best value it can take over the record we hold: low observed risk is not zero risk. The dashed line is the overall band. None of this is a probability of loss.

Five risk dimensions, read separately (continued)

How the overall band is calculated

The overall band is a weighted average of six components on a 0-100 scale (drawdown 25%, crowding 20%, liquidation 17.5%, exit 17.5%, concentration 12%, consistency 8%): below 25 reads low, 25-45 moderate, 45-70 high, 70 and above severe. One severe component raises the average without setting it, which is why each risk is also read on its own. The controller is not one of the six.

Each component that carried a reading counts at its weight, and the total is divided by the weight that was read, not by 100: worst fall suffered 0.00 × 25 + exposure shared with tracked vaults 0.00 × 20 + could you get out 0.80 × 17.5 + largest depositor 0.28 × 12 + stopped operating 0.00 × 8 = 17.3, over 82.5 points read, gives 21 of 100, which reads low (below 25). Every component that applies to this vault was read. Does not apply to this kind of vault: account margin cushion (17.5 points), so it is outside the denominator.

COMPONENT	INPUT	RISK VALUE	WEIGHT	POINTS	STATE
worst fall suffered	0.0000	0.0000	25	0.00	measured
exposure shared with tracked vaults	0.6648	0.0000	20	0.00	measured
could you get out	0.0501	0.7995	17.5	13.99	measured
largest depositor	0.4592	0.2789	12	3.35	measured
stopped operating	0.0000	0.0000	8	0.00	measured
account margin cushion	—	—	17.5	—	does not apply

Total 17.34 points over 82.5 read = risk score 21 of 100, higher is riskier

Risk values run from 0 to 1 (its worst). A contribution of 0 means the input added no points under the model's thresholds; it does not mean the risk is absent. The weight read is the denominator, so an unread component neither lowers nor raises the score; 82.5 points apply to this vault. Model risk-4 (in effect from 2026-11-07 11:30 UTC).

WHAT EACH INPUT IS, AS SCORED 9 NOVEMBER 2026, 12:33 UTC

worst fall suffered: 0.0% peak to trough, market share not measured. Does not measure: falls already suffered, not a forecast of the next one

exposure shared with tracked vaults: 66% of what it supplies sits in one market, and no other vault we track supplies it: the vault accounts for approximately 100% of the market's published supply at the precision shown (100.00%, the two read at different moments); no other tracked vault was found, but small or untracked suppliers cannot be ruled out. So the shared exposure we can see is 0: no tracked supplier was found, which is not a finding that no other supplier exists. Does not measure: only vaults ASPERN tracks, not every supplier

could you get out: 5.0% of it could be withdrawn at the last reading: declared withdrawable $20,250,661 over capital $403,986,376. Does not measure: one reading of what could leave, not what would leave under stress

largest depositor: largest wallet holds 46%. Does not measure: addresses, not owners: one owner can hold several

stopped operating: operating at its usual cadence. Does not measure: whether the vault keeps operating, not how well

Five risk dimensions, read separately (continued)

Why each risk reads this way

RISK	READS	WHAT IT RESTS ON
Market	low	**Limited scope: past share-price falls, markets shared with other vaults and, where the vault borrows, distance to liquidation; excludes collateral and borrower credit risk.** Market risk reads low, set by its worst component (worst fall suffered, exposure shared with tracked vaults) over the record we hold. Low observed risk is not zero risk. Market here is two observed readings: the worst fall in the vault's past share price and how much of its lending shares a market with other vaults we track. It does not assess the collateral, the borrowers' ability to repay, a concentration in one market (read under where the capital rests), or whether withdrawals hold under stress. set by drawdown: reading 0.00 of a worst possible 1.00
Liquidity	severe	Liquidity risk reads severe, set by its worst component (could you get out) over the record we hold. Input: 5.0% of it could be withdrawn at the last reading: declared withdrawable $20,250,661 over capital $403,986,376. The reading 0.80 is one less that share over 25%: a quarter or more free reads 0, nothing free reads 1. set by exit: reading 0.80 of a worst possible 1.00
Depositor concentration	moderate	Depositor concentration risk reads moderate, set by its worst component (largest depositor) over the record we hold. It measures how much of the vault its largest depositor holds, not how much the vault lends into one market; that is the allocation table. Input: largest wallet holds 46%, by the address's position; addresses are not merged by who owns them, and whether the largest is a person, another vault or a custodian is not established. The reading 0.28 is that share less 25%, over 75%: a quarter or less reads 0, the whole vault 1. set by concentration: reading 0.28 of a worst possible 1.00

Five risk dimensions, read separately (continued)

RISK	READS	WHAT IT RESTS ON
Operating	low	**Limited scope: continuity of the observed record; not a review of operations.** Operating risk reads low, set by its worst component (stopped operating) over the record we hold. Low observed risk is not zero risk. set by consistency: reading 0.00 of a worst possible 1.00
Controller *	moderate	Observed: the owner needs 1 signature; adding a new destination for the funds (an adapter) waits 72 hours in the vault's timelock; a party at another address can revoke that change. Coverage of the curator's timelocked functions is complete, which is not a review of everything that controls the vault. Each power, its delay and what it rests on are set out under who can act on it. ASPERN rule, since 2026-10-31: a delay of a day or more on that change and a veto at another address read moderate rather than high. The rule that sets this level from those powers is printed with them. It is a rule of ours, not a change in the vault. Not known: whether different addresses are controlled by different people, who the allocators are, and what each adapter's own code allows. This is not part of the overall band. set by control.actsAlone, delayed and vetoed: reading 0.50 of a worst possible 1.00
Evidence *	not scored	5 of the 5 risk components that apply to this vault carried a reading (account margin cushion does not apply to this kind of vault). By weight, 82.5 of the 82.5 points that apply were read, which is 100% of the component weight the band could draw on (a different denominator: components are not equally weighted); the rest of the 100 is the weight of what does not apply. This is a statement about our coverage and carries no level of its own, because how much we could read is not a risk the vault runs.

* not part of the overall band.

What this report will carry later

How well this vault's way out has held up over time needs 5 more daily readings: about 14 November 2026, if collection is not interrupted. Drift in its yield and in its liquidity is measured on the same daily readings and needs them too. Drift in control needs control read on many days, and this report reads it once, at the time given under Sources. Nothing is withheld here; the readings do not exist yet, and this note goes when they do.

What this report does not look at

The words "due diligence" promise more than this document delivers, so the edge is stated rather than left to be discovered.

- the smart contracts themselves: we read what they expose, and we do not audit them for exploitable code
- the legal structure, the jurisdiction and whatever regulation applies to it
- the team, beyond what their own contracts and venues say about them
- sanctions, KYC and anti-money-laundering standing of anybody involved
- custody and off-chain operational security, including how keys are held
- withdrawals that were attempted and reverted, or requests prevented before submission: this report does not establish them, because it reads the vault's state and not the receipts of transactions that failed
- exposure on chains or venues we do not read, which an allocator should assume exists
- anything about price, and any view on whether the return is worth the risk

Sources and method

When each figure was read:

- Capital: 9 November 2026, 12:17 UTC
- Withdrawable (the venue's figure): 9 November 2026, 12:09 UTC
- Control and its roles: 9 November 2026, 12:11 UTC
- The report as a whole: 9 November 2026, 12:36 UTC

Addresses read, in full:

- Owner: 0xe8c9c99ecad0686a14a00d8521c572281e938008
- Curator: 0x9e396de3312d373b87f9bd8763fb48184b42aac0
- Sentinel: 0x13de0cee0b83562cbfd46682e10ffa4e3c5090e1
- Sentinel: 0x9e396de3312d373b87f9bd8763fb48184b42aac0
- Sentinel: 0x74d1672d0b90f6e7c322dec9d5396ff6ace61618
- Allocator: 0x13DE0cEE0B83562CBfD46682e10FfA4E3c5090e1
- Allocator: 0x9e396dE3312D373b87F9BD8763fb48184b42aac0
- Allocator: 0xC4Ba4e822C420452fe2BAB93211208D3CcBd79D3

How the score is computed: model risk-4, in effect from 2026-11-07 11:30 UTC.

- Shared exposure, crowding-3, in effect from 2026-11-06 17:00 UTC: the share in a crowded market times the share the other tracked vaults hold, in full from half the market (crowding-1 scored the share alone). crowding-3: a vault alone in a market whose size is published reads the others' share it can see, which is none, so 0; crowding-2 declined to vote there and left the weight unread.
- Liquidity input, exit-2, in effect from 2026-11-07 11:30 UTC: the withdrawable share takes its denominator from the capital the venue reported in the same reading as the withdrawable figure, so the two are of one moment (exit-1 divided by the contract's capital, read up to an hour apart).
- Anomalous inputs, anomaly-1, in effect from 2026-11-01 00:00 UTC: an input marked as an unresolved data anomaly is withheld from the score and its effect printed as a sensitivity (before, it was counted as read).
- A score from before 2026-11-07 11:30 UTC was computed by risk-3, so a change across that moment is partly the model's and not the vault's. The changelog at aspern.org/changelog says what each version changed.

Every further market this vault supplies, past the 5 in the table above; 4 more hold under $1 and are not listed:

- syrupUSDC / RLUSD on morpho: $210,184, 0.055% of what is supplied

When each reading was taken

READING	SOURCE	OBSERVED AT	STATUS
Capital held	the vault's own totalAssets() read on chain and priced by us	9 November 2026, 12:17 UTC	fresh: 19m
Withdrawable	the venue's own figure	9 November 2026, 12:09 UTC	fresh: 27m
Control	roles and powers read from the contracts	9 November 2026, 12:11 UTC	checked 25m before issue, within the 26-hour refresh target; later changes not excluded
Withdrawal simulation	eth_call at one block, run at issue	9 November 2026, 12:36 UTC	run at issue
Depositor list	the vault's positions list from Morpho's API	9 November 2026, 08:15 UTC	older snapshot: 4h 21m old
Value series	Morpho's own daily record of the vault	9 November 2026, 12:04 UTC	fresh: 32m

Which figures can be acted on now

FIGURE	STATE	INPUTS APART	IN THE MODEL
Liquidity input (withdrawable over capital)	**current**	0 min (limit 30)	used by the model
Control roles and powers	**current**	—	not used
Depositor list	**indicative**	—	used by the model; its limit carries into the result
Value series	**current**	—	used by the model
Withdrawal simulation	**current**	—	not used

Indicative: the figure combines readings taken further apart than its own limit, or its input is older than its refresh target; it describes the vault near that time, not now. The same state is in the API and MCP answer as metricStatus.

Data coverage

AREA	STATE	WHAT IT MEANS	EFFECT ON THE SCORE
Model input: Market	**available**	read for this report	in the weighted score
Model input: Liquidity	**available**	read for this report	in the weighted score
Model input: Depositor concentration	**available**	read for this report	in the weighted score
Model input: Operating	**available**	read for this report	in the weighted score
Model input: Controller	**available**	read for this report	in the weighted score
Withdrawal execution	**available**	simulated for one holder at one block	shown beside the score, not inside it

Data coverage (continued)

AREA	STATE	WHAT IT MEANS	EFFECT ON THE SCORE
Oracle	**partial**	its type is read; its feeds and how stale they may be are not	outside the score
Collateral	**partial**	which collateral and its LLTV; what it would realise in a liquidation is not	outside the score
Sanctions screening	**partial**	exact match of the addresses screened, holders covering 99.6% of balances; owners, intermediaries and counterparties not screened	outside the score
Smart-contract code, legal structure, off-chain custody	**out of scope**	not audited or read by this report	outside the score; no finding either way

How to read this result

- The weighted model score summarises the inputs this model applies to this vault; it is not a probability of loss and not a finding of safety.
- The highest finding is the most severe single finding; the weighted score never overrides it.
- Model inputs available counts the inputs the model could read; it is not a share of the vault's risks. Areas outside the model are listed under it and in the data coverage table.
- A missing area is an unknown, never low risk.

If the largest holder left

The largest holder's position, about $185,500,080 (45.9% of the vault), against $20,250,661 the venue reports withdrawable now: 11% of it could leave now, and the rest waits on borrowers repaying or new deposits. A reading at one moment, not a forecast of what that holder will do.

Changes since the previous report

- [vault] Capital: $403.94M → $403.98M (up $39,059, 0.01%; below the 1% materiality threshold)
- [vault] Venue-reported withdrawable: $20.20M → $20.25M (up $54,838, 0.27%; below the 1% materiality threshold)
- [vault] Weighted model score: 21 (low) → 21 (low) (unchanged)
- [vault] Highest finding: liquidity, severe → liquidity, severe (unchanged)
- [vault] Control roles: 8 read → the same holders (unchanged)

Against the previous issued report (2026-11-09 08:51 UTC, f6933271ffb3): no compared figure changed materially; moved below the 1% materiality threshold: capital, venue-reported withdrawable. Each row is marked as a change in the vault, in what could be read, or in the method; a vault row compares two readings taken at different moments, and is not by itself a change in the vault's risk.

What the loans depend on: kBTC

• Dependence: 66.5% of what the vault lends is against kBTC, lent as RLUSD: its value is what stands behind the loans.

• A price move: at an LLTV of 86.0% a borrower is liquidated when the debt reaches 86.0% of the collateral's value; a borrower at that line owes more than the collateral is worth after a further fall of about 14.0% in kBTC against RLUSD, as the oracle reports it, if liquidation has not completed.

• The oracle: ChainlinkOracleV2, by the venue's type for it; its feeds and how stale they may be were not read.

• Whether the terms can change: fixed: a Morpho market's LLTV, oracle and rate model are set when it is created and cannot be changed; the vault's curator can still move the money to another market.

• Liquidation capacity: not established: the depth to sell the collateral in a fall was not read.

Sanctions list exposure screening

NO EXACT MATCH AMONG THE ADDRESSES SCREENED

OFAC SDN of 2026-11-06, file SHA-256 bbf4658b7803ed6aa25712670bd6dfea56b6f9f93001d99e5d8ea221b237a597. Scope: roles and direct holders; 108 screened.

No exact match among the 108 addresses screened (roles and direct holders; the holders screened cover 99.6% of the vault's balances), against the digital currency addresses on OFAC SDN of 2026-11-06, at this block. Not a finding that no sanctioned party is involved.

Not screened: beneficial owners behind any address; the users of custody accounts, contracts and other vaults among the holders; intermediaries the funds passed through, and where they came from; borrowers and other suppliers in the markets the vault lends to.

An exact match of addresses against the digital currency addresses the list publishes, at one block and one list version. The list’s published addresses are not exhaustive: no exact match does not rule out sanctioned persons, unlisted addresses or beneficial owners, and says nothing about where funds came from. A match is a match of an identifier, not a finding about who controls it. A holder can be a custody account, a contract or another vault, whose own users are not screened here. Not a legal opinion; obligations depend on jurisdiction.

Every figure here is a reading this platform publishes per vault; the report adds only the arithmetic it labels as such.

Every reading here is published per vault at aspern.org/vault/ethereum-sentora-rlusd-main-6dc58a

Methodology aspern-0.5 · score model risk-4 from 2026-11-07 11:30 UTC (parts: shared exposure crowding-3 from 2026-11-06 17:00 UTC; liquidity input exit-2 from 2026-11-07 11:30 UTC; anomalous inputs anomaly-1 from 2026-11-01 00:00 UTC) · readings taken 9 November 2026, 12:36 UTC · an assessment document has not been published on-chain for this vault

Terms used

On chain: read from the vault or market contract at a stated time or block

Venue-reported: as the venue (Morpho, Euler, Hyperliquid) publishes it; not re-derived here

Simulated: a call run by eth_call at one block as one account; nothing sent, and true only for that block and account

Estimated: calculated from other readings, such as a pro-rata share of a market's free money; not measured

Not established: the evidence needed for a figure was not available; never a zero

Reading difference: two readings taken at different moments that do not reconcile; not money placed anywhere

Book value: what the vault records its assets as, including interest it has booked; not what has been shown recoverable

Weighted model score: the six risks combined by fixed weights; a model result, not a probability of loss

Highest finding: the worst single risk read; the weighted score never cancels it

Model inputs available: how many of the model's own inputs carried a usable reading, and their share of its weight; not a share of the vault's risks

Venue-reported withdrawable: the venue's own figure for what could be withdrawn now; not a withdrawal that was made

Idle cash: the vault's own balance of the asset, outside every market

Not observed as lent: idle cash, plus money supplied to markets and not borrowed, plus money in no market read; the sum of those parts, and not what could be withdrawn

Deployment not verified: capital the report could not place in any market it read

Materiality threshold: a change of 1% or less of the earlier figure is reported as below it, with its size

Illustrative scenario: arithmetic on the positions as read under a stated move; not a forecast and not a maximum loss

No exact match: none of the addresses screened is on the named list; not a finding that no sanctioned party is involved

Tracked-vault shared exposure: how much of a market other vaults ASPERN tracks also supply; not all suppliers, and not concentration

LLTV: the loan-to-value at which a borrower in a market can be liquidated

Utilisation: the share of what is supplied to a market that is borrowed; what is not borrowed is its free money

Curator, allocator, guardian, timelock: who chooses markets, who moves money between them, who can veto a pending change, and how long a change waits

Checking this report

The document id is the start of a SHA-256 digest of this report's readings in canonical JSON (keys sorted, no whitespace), not of the bytes of this file: the same readings give the same id however the file is produced.

1. Download the readings as JSON: aspern.org/sample-readings/1470c1899ae7.json, kept under this document's id and never rewritten.
2. Run shasum -a 256 readings.json. Full digest: 1470c1899ae7a39c3b39c5d144793beff90de89d1ad26669414619eb2ac6feec. Its first 12 characters are this document's id, 1470c1899ae7.
3. Compare any figure in this PDF with the same field in that file.
4. Whether we issued this digest, and when: aspern.org/verify/1470c1899ae7 (the same record as JSON at aspern.org/api/v1/reports/1470c1899ae7). That rests on our own record, not on the file.

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