PROJECT SHATTERSTAR

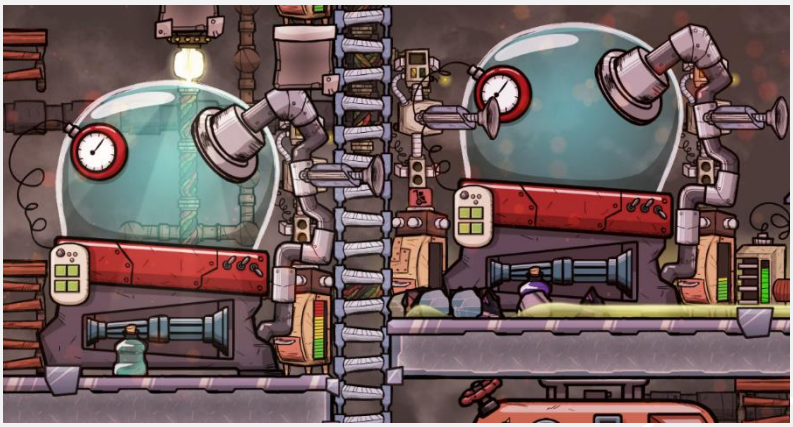
VOLUME 1 OF GUIDE TO THE **ONI**-VERSE

OXYGEN NOT INCLUDED

SPACED OUT!

By- the stormfather

CHAPTER 14 : Making Viscogel and Supercoolant



Making Viscogel and supercoolant always seemed like a very big deal in the base game but it's been pretty easy for me in spaced out

Highlights :

- We understand how to get materials for Viscogel and Supercoolant
- We import CO2 for our slicksters
- We work on some base upgrades on different planets

PROJECT SHATTERSTAR

CH 14: Making Viscogel and Supercoolant

Disclaimer-

Oxygen Not Included is a sandbox game limited only by the player's imagination. I can assure you that no player (including me) has figured out the 'right' way to play the game…. No matter how many hours they may have put into the game.

That's because there is no right way. What you do depends on what you want to achieve. Some love building ridiculous and elaborate builds, while others are more efficient and practical. Both are perfectly acceptable ways to play. What matters is that you enjoy what you do.

The following document is a guide and not a gospel. Like every other player, I have my unique style of play. What I intend to do is to share my playstyle and start a conversation with the community. This document will take you through a real and typical game, showcasing my approach to things. The playthrough will not be perfect. But it will be enlightening and entertaining. I hope my readers will use this series to modify their own unique style rather than copy mine.

Feel free to skip, ignore or modify any of the recommendations given in the series.

All Game art has been taken from the game files and is the property of Klei (if that wasn't obvious enough). I've used them only to make the document more engaging.

While this guide is quite simple, It's not meant to spoon-feed you. You may have to do a bit of additional research if you are a new player, and I'm happy to answer any specific questions.

The easiest way to find me is on Reddit. My handle u/Storm-Father. Please feel free to drop me a message or tag me in a post.

The series will use the following mods. These are quality-of-life mods and do not affect core gameplay

- Wounded go to Med bed
- Blueprints fixed
- Bigger Building Menu
- No 'Long Commutes'
- Suppress Notifications
- Geyser Calculated Average Output tooltip
- Critter Inventory
- Queue for Sinks
- FreeCamera
- MaterialColor
- Show industrial Machinery Tag

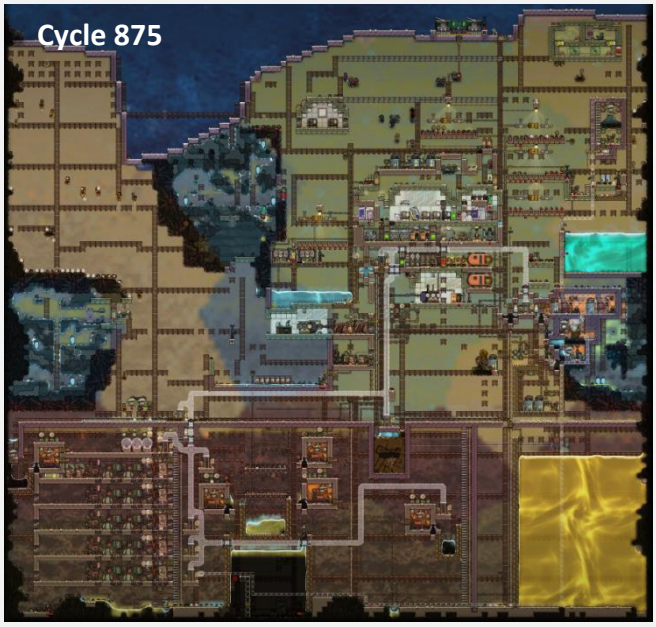
Game Coordinates – 'SNDST-C-360860549-0'

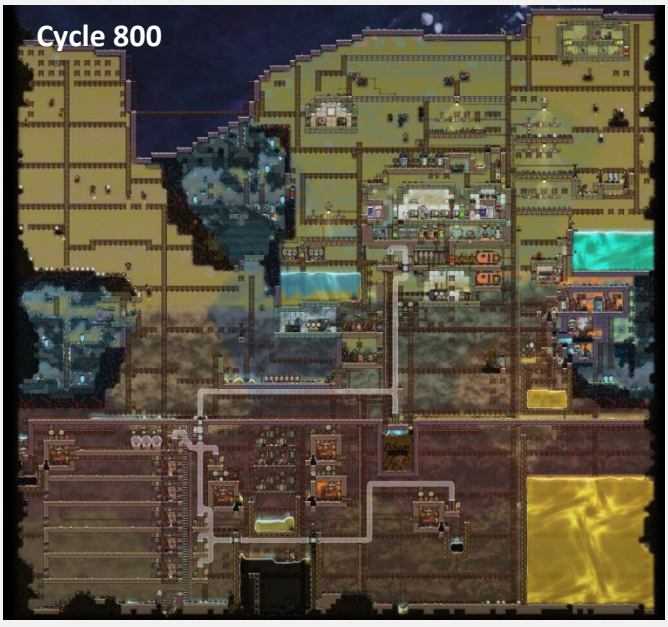
The Starmap

The layout of the introduction has been changed to accommodate the increase in information that comes from having multiple planets. If you have any suggestions on alternate layouts or additional information, feel free to let me know on Reddit.

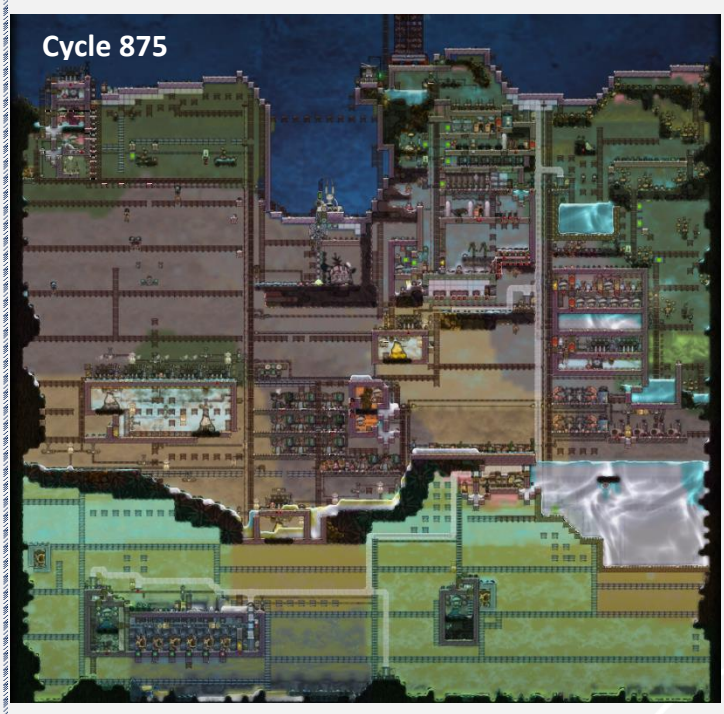
Neo Terra

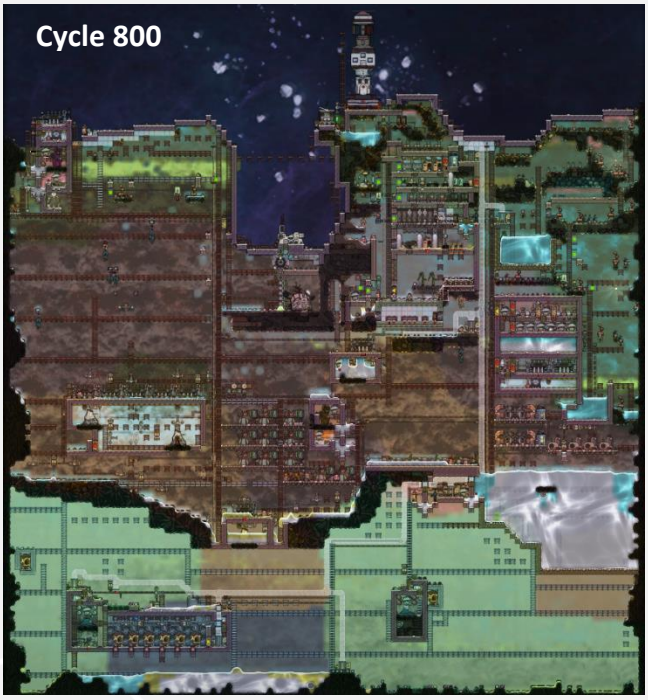
Petra





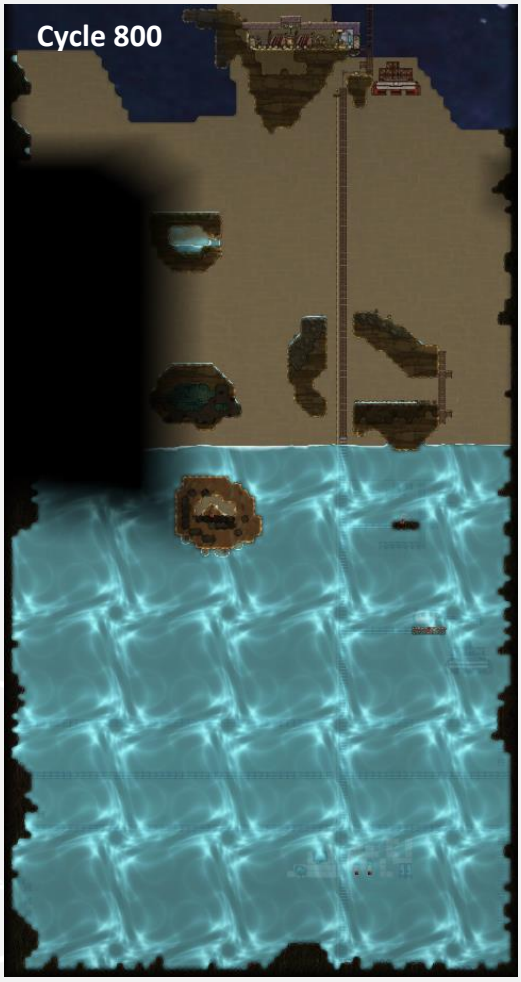
Chernobyl



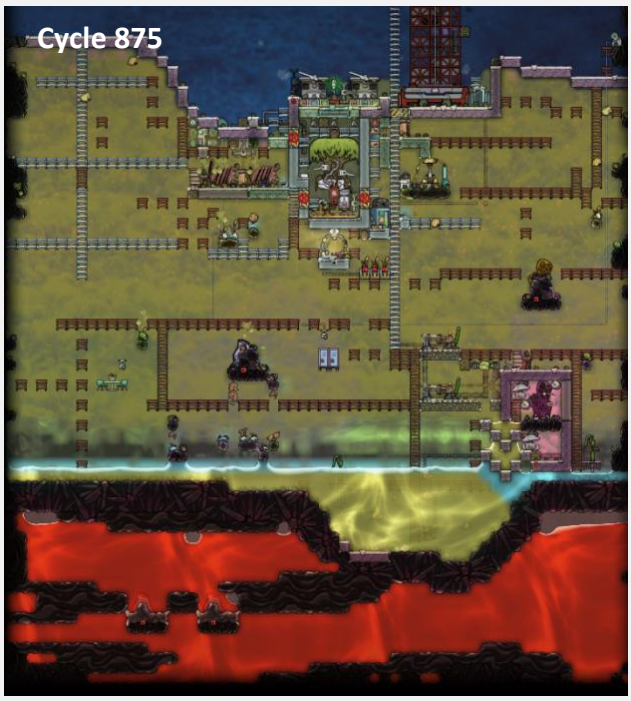


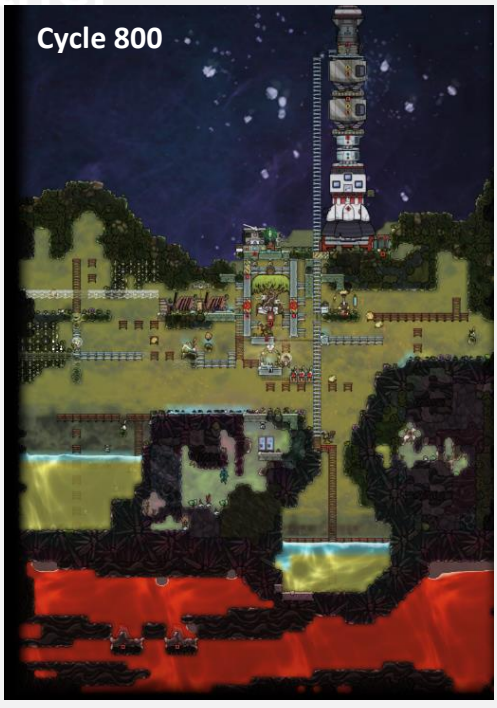
Svalbard

Numenor



Florida





1) Entering the Late game

I've never had a fixed definition of the 'late game'. But in this playthrough, I've set that benchmark as the point I make hydrogen rockets. Supercoolant is a prerequisite to hydrogen rockets, and I'd never really made viscogel before, So I thought I might as well make some of that.

Supercoolant is an extremely useful liquid and there is no other way to get the liquid hydrogen. Viscogel has some niche uses for creating liquid locks, though in all honesty, when I want reliability, I still use a full-fat liquid lock made of petroleum. Still, when you're short on space, viscogel has its place and use.

In the base game, I looked at these 2 liquids as extremely hard to make, and I don't think I ever made them. But in Space out, it's not that hard and you can make them fairly early in the game. Let's take a look at all our planets before we revisit Neo Terra and how we made these materials.

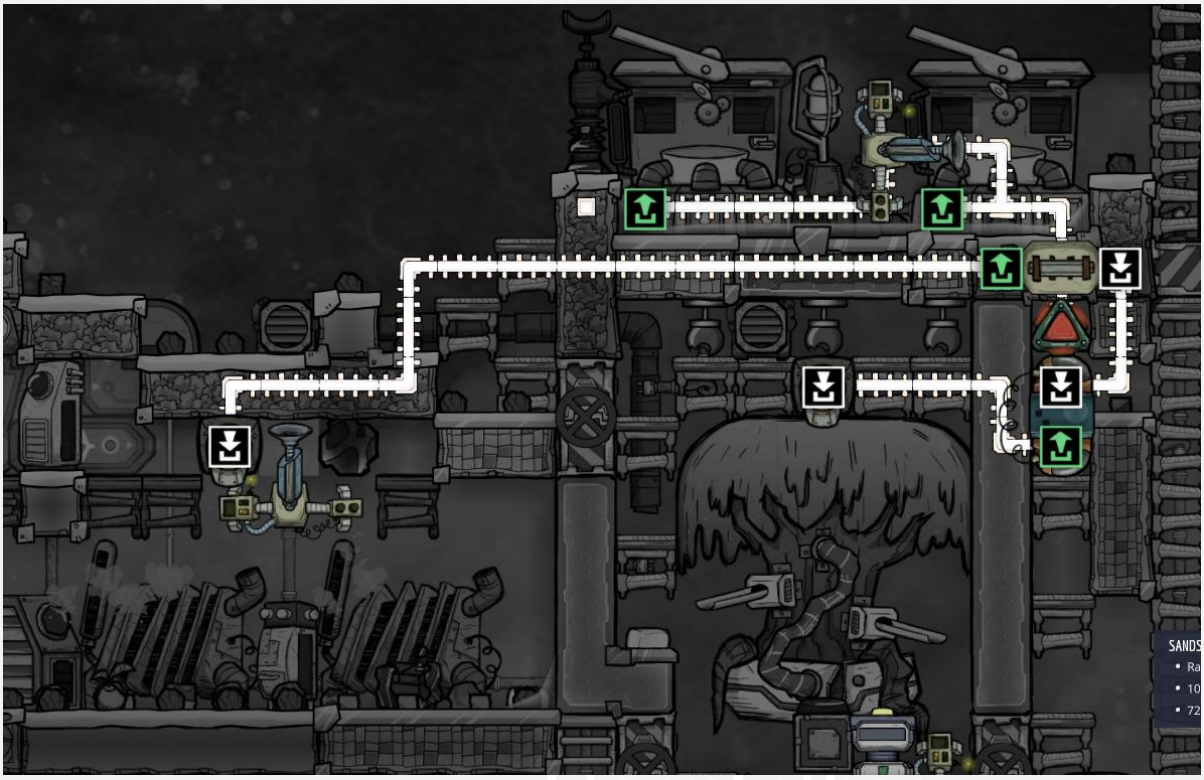
2) Life on Florida

We discovered Florida and landed on it about 200 cycles ago, but it's not been of any use to us. We had done a bit of digging, but we accelerated that progress over the last 75 cycles and have dug out the map. We have a sea of magma with 2 tungsten volcanos buried under them that we haven't touched, and we don't plan to for a while.

For now, we have tamed the hydrogen vent, which gives us a local source of power, apart from the coal that we are importing from Neo Terra. I use the word 'tamed' very liberally. Hydrogen vents are extremely at a 500 deg Celsius output that will ultimately even kill your steel pumps. To properly cool a hydrogen geyser you need a dedicated cooling loop, which I am not planning to do at the moment.

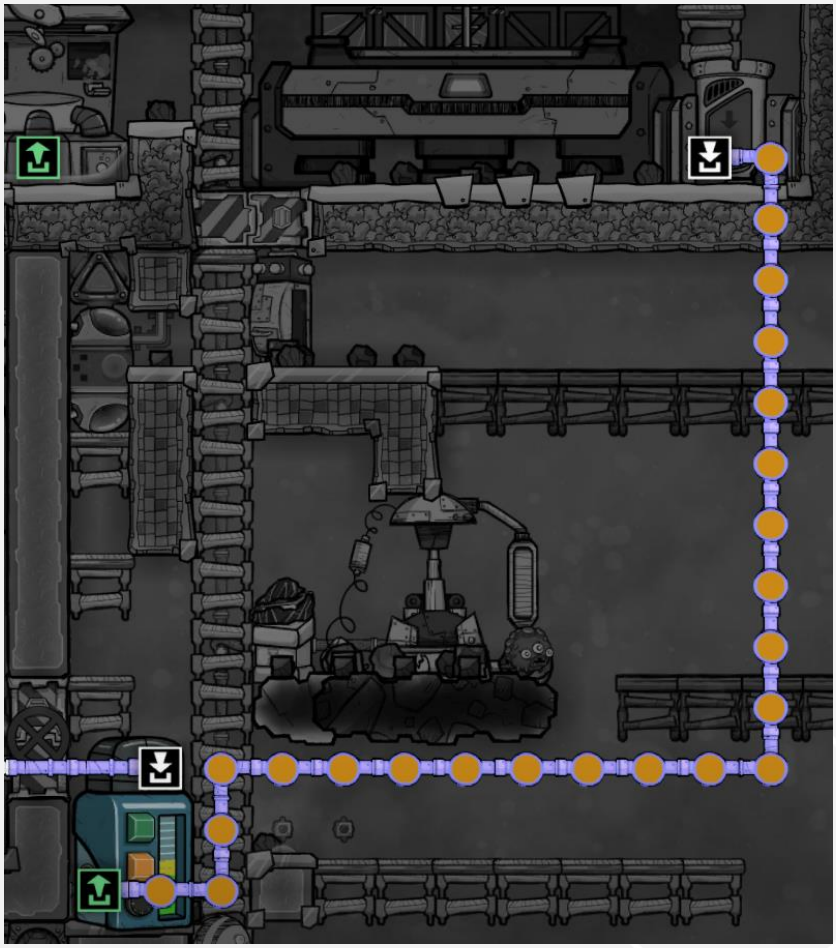
We have a tungsten volcano, which I have no use for right now and a chlorine volcano that I will probably never have use for. My focus right now is the tree. This tree is not available in the base game and gives out resin when fed with food. That resin, when heated, gives us isoresin, which can be used to make insulation and viscogel.

I set up a rail directly from my food storage in Neo Terra to the rail line that leads to the interplanetary launcher that is aimed at Florida. I've basically offloaded all my 'lesser foods' that is tofu, mushroom etc. The only foods I did not send were barbeque, berry sludge and other non-perishable food like muckroot and nutrient bars, which I may need in an emergency.



Feeding has been a pretty straightforward process, with a rail system that filters out edible food and drops it at the tree. While the whole planet is riddled with polluted oxygen, I've taken great pains to ensure that the chamber with the tree is filled with CO2, so that the food in there lasts longer. The tree eats the food at a steady rate and spits out resin, which can be collected and pumped. This planet does not have a payload launcher, so for now I'm loading the resin onto a rocket with the help of a liquid storage module. I'll elaborate more on rocket storage in later chapters when we get to asteroid mining.

Feeding directly from Neo Terra like this is not ideal, mainly because food rots over time. So if you drop too much food at the same time, the food will rot before it can be eaten by the tree, wasting all that effort we've taken to make the food. For now, I just set the payload launcher to only 20 kg per payload, but this is not a good solution in the long term.

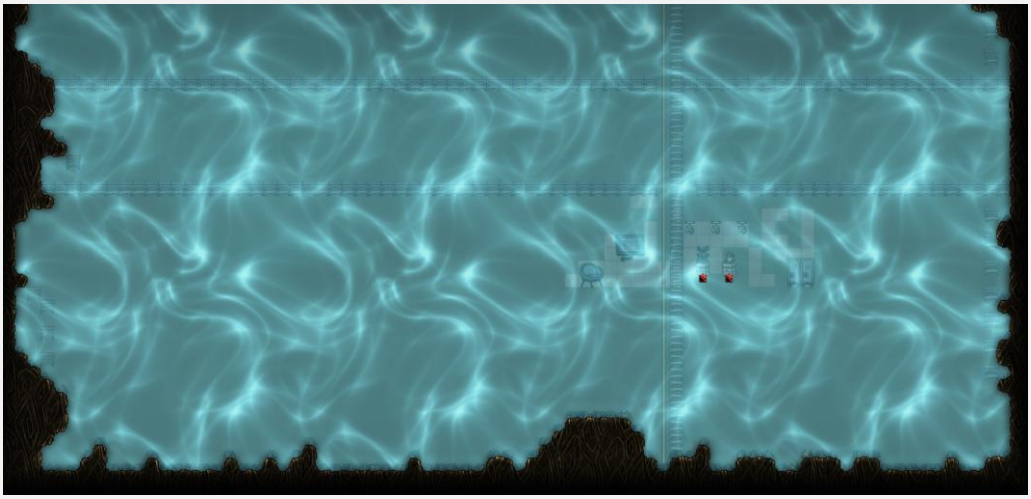


When we do feed the tree, the resin can be pumped into a rocket loader, which will fill it into a rocket liquid storage. I will end up making a launcher at some point, but this will do for now.

Coal, berry sludge and other essential are being imported via payloads, though most is still being sent manually and not automatically via stormlink. Note that the payload unpackers need to be actively cooled, or rather, the auto sweeper needs to be actively cooled. For now, I've just disabled the auto repair on the autosweeper and will keep deconstructing and reconstructing it when it breaks.

3) Life on Numenor –

There is still no life on Numenor because it doesn't produce anything we need. I use the word 'produce' very specifically because the planet is very rich in lime, fossil, graphite, fullerene and other rare materials, but these were just part of the bottom crust of the planet.

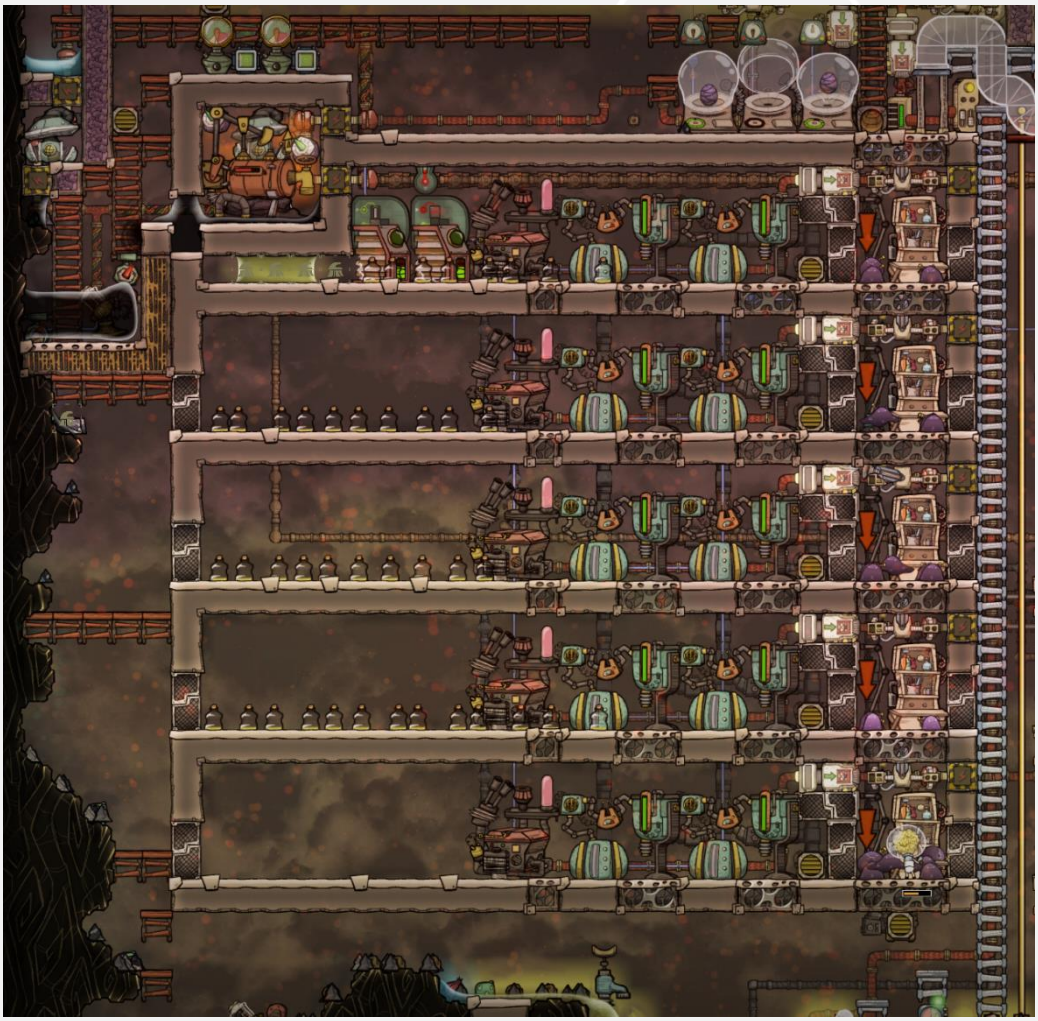


We demolished it a long time ago, taking away all the lime almost 200 cycles ago. We come back this time to pick up the graphite, and we'll come back later to pick up the fossil. The point is, these resources won't replenish, meaning that once we pick up the material we need, we have no reason to keep coming back. The only replenishing resource we have here is water, so until the time comes when we need that water, our trips to Numenor will be short and far between.

4) Life on Petra –

The last major change on Petra was us moving our ranches there, and switching to Slicsters.

On top of that, we have now consolidated all our extra petroleum into a single pit. We will need to cut power production from Natural gas and move to Petroleum, mainly because we are building up a lot of petroleum and we have nothing to do with it. It's still good to have natural gas as a backup.



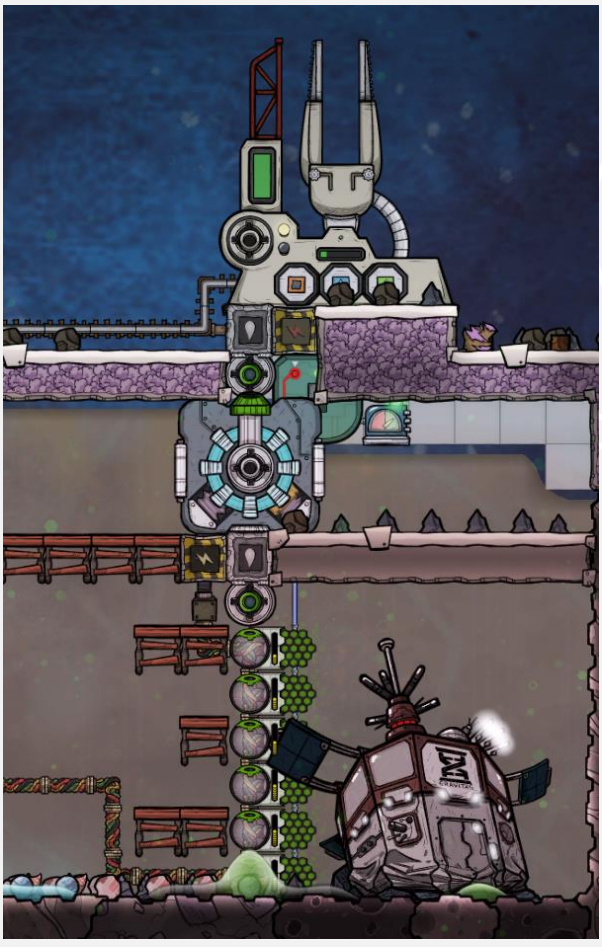
With this in mind, I looked around for a new power brick. And instead of building a new setup in a different part of the map, it made a lot more sense to simply use the extra space in the slickster ranches. This gives us several advantages.

It's very space efficient. But it also generates a lot of heat and CO2, both of which are great for our slicksters. The CO2 we are importing from Neo Terra is a lot colder, so overall this evens out the temperature quite well.

Petroleum is my primary power source with Natural gas as an optional backup. Automation is set such that natural gas only kicks in when the petrol generators are not sufficient.

5) Life on Chernobyl -

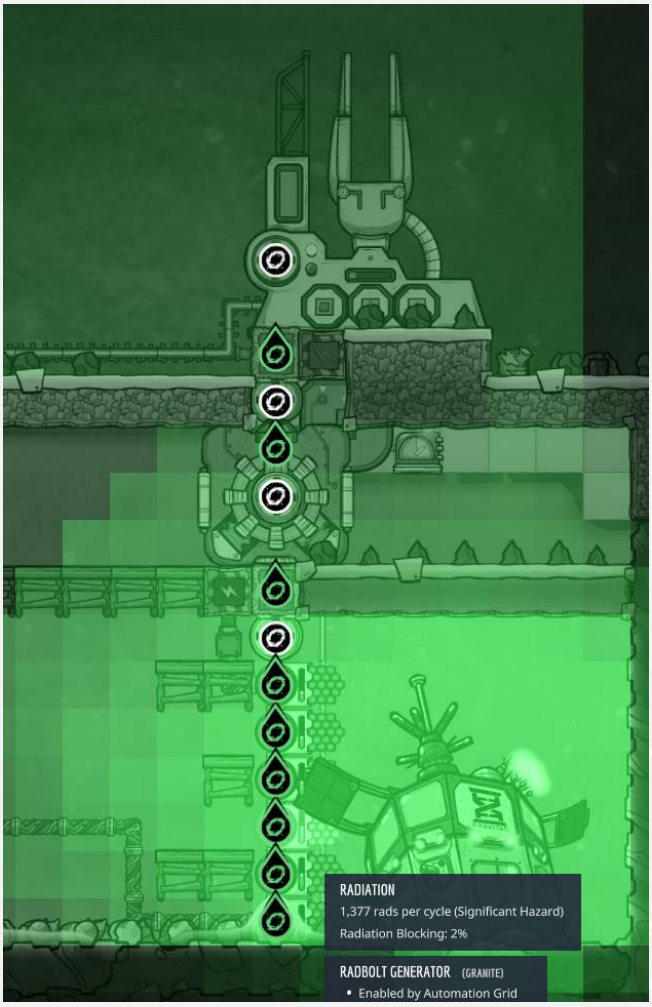
Chernobyl has had a payload launcher for a few hundred cycles now, but I think we glossed over it so far as we focus on other things.



But this planet needs a dedicated launcher. It has an abundance of refined metal, polluted water, salt water, hydrogen and most importantly, enriched uranium. I've used storage bins in the rockets to transport some of the solid materials before, but these materials are so hot that they even heat up the insides of the rockets. Plus all this manual work stretches my multitasking ability. Much better to just launch them.

Of course, a payload launcher needs radiation, and we haven't built a nuclear plant on this planet. Fortunately, we have a fallen satellite, and this thing is extremely radioactive. So I've just built some radbolt generators around them, with automation very similar to the one we did for the Nuclear payload launcher a couple of chapters ago.

The advantage compared to that is of course that this is very compact and is not at risk of going critical. The disadvantage is that a nuclear reactor also produces energy, whereas the satellite does not. This means we will have to generate a lot of energy using conventional fuels such as natural gas or hydrogen.



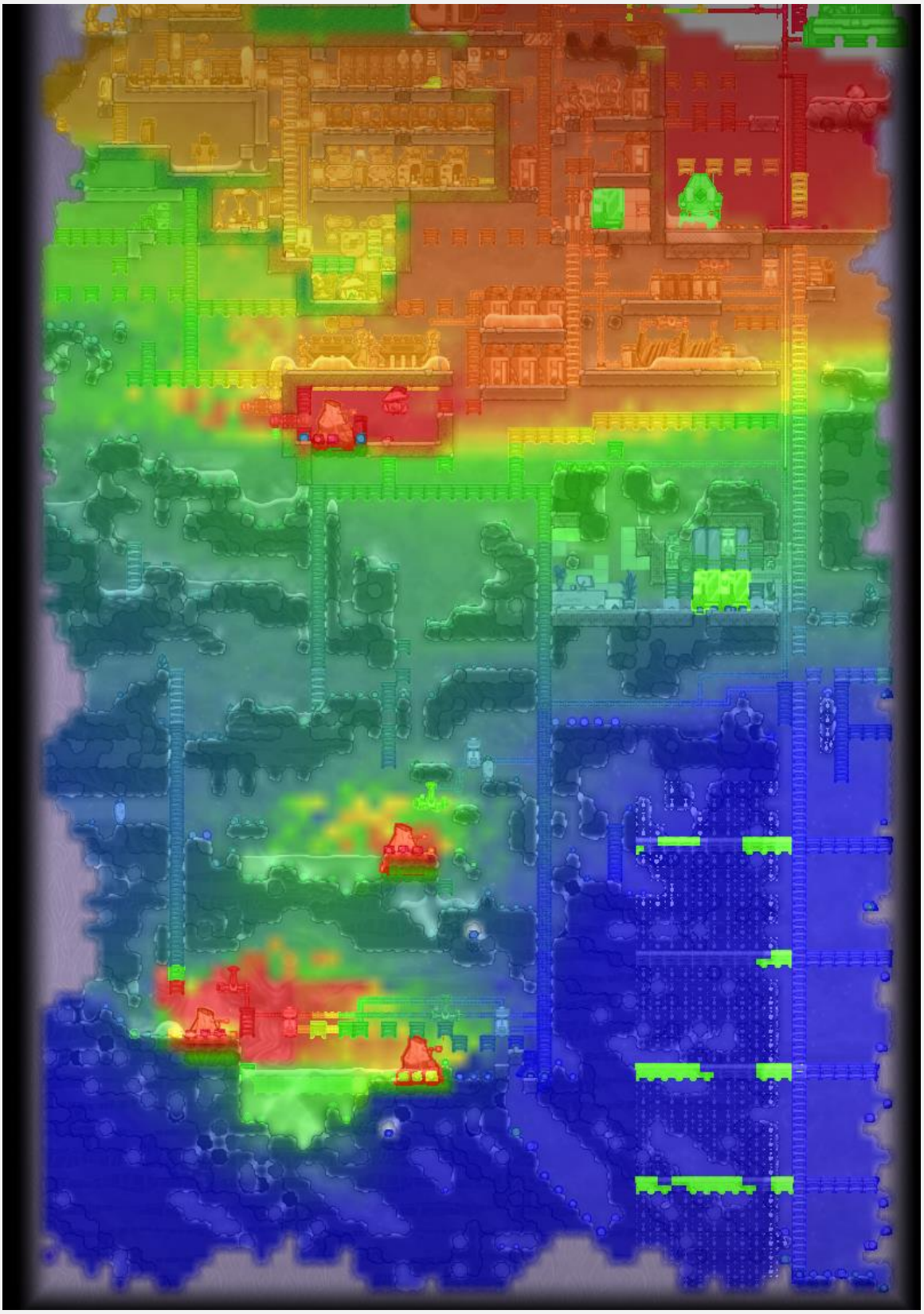
Speaking of volcanos, I've gone into detail on my volcano-taming design in chapter 12, but you don't need to make things that complicated. If you look at this planet, for example, I've just made an insulated box with steam in it. The advantage is that it's simple. The disadvantage is that the excess heat from the turbines will ultimately heat up the atmosphere and superheat the planet. That will take some time though, so we'll deal with that problem when it comes to it.

6) Global Warming -

Rising temperatures are an issue on other planets as well, such as Svalbard.

We named the planet after the Northern island synonymous with cold, but in reality, our Svalbard is not going to stay cold for too long. As we discussed in earlier chapters, Svalbard has no source of cooling, meaning that if temperatures increase, there is nothing to bring them back down.

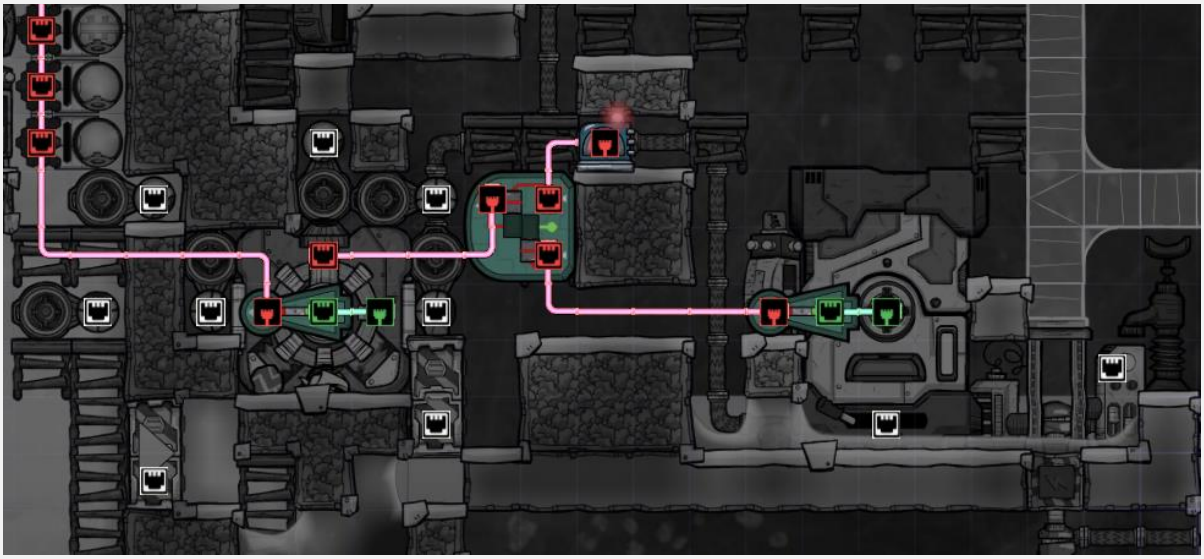
We have 4 volcanos left open, with no taming mechanism whatsoever. This is fine for the next hundred cycles or so, but at some point, the planet will be too hot for duplicants.



7) Nuclear Enhancement

We've made many minor changes around the map on Neo Terra, and some significant ones as well. We've started to build many more stormlink pods, and we've made 2 changes to the nuclear reactor.

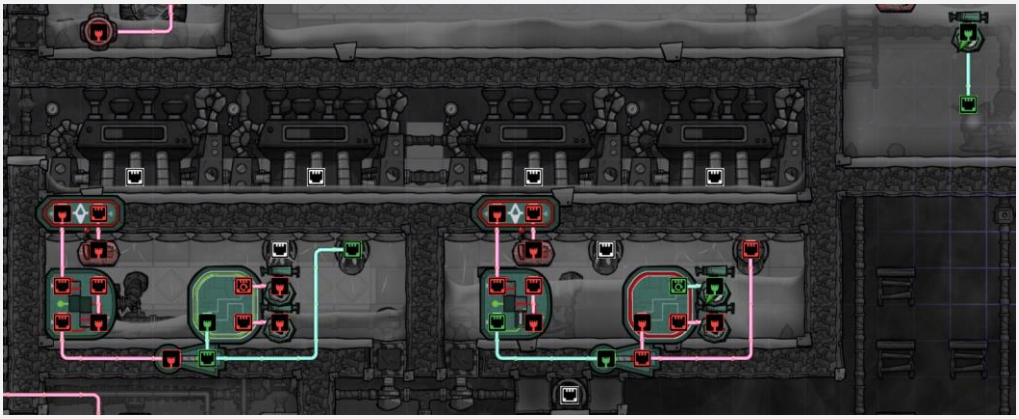
One is that we're now also using our nuclear reactor to make diamond. A diamond press takes in radbolts and power to convert refined carbon to diamond. Putting coal into a kiln will give you refined carbon, and the rector will give us all the radbolts we need. Here too we have automation in place that will request radbolts when the press requires it.



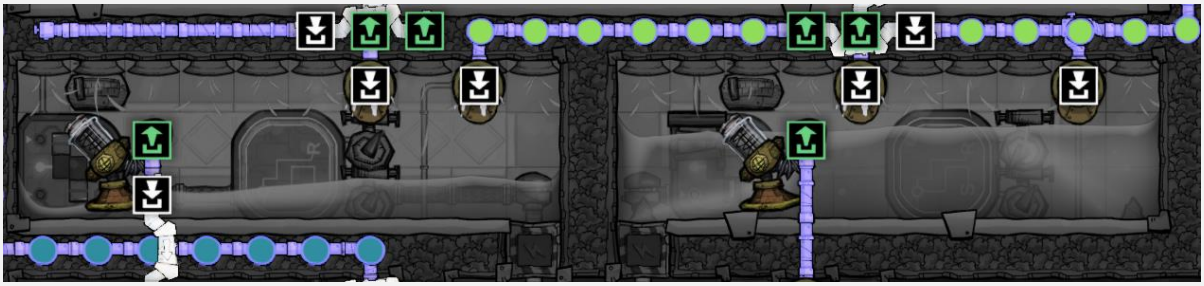
The second modification is a waste heat recovery system. This, you might be surprised to know, is based on something I've done in the real world. In college, I did my internship in a manufacturing company, where the byproduct of the process was hot steam. I worked on a project where instead of just releasing this steam into the open, we proposed a 'waste heat recovery boiler' that recovered this heat, thus reducing energy costs.

Coming back to ONI, the reactor produces hot nuclear waste, which accumulates and needs to be pumped out every now and then. So far I've just been dumping this nuclear waste, but this waste is at around 220 degrees, whereas steam turbines work for steam at 125 degrees, this made me wonder if I could use this heat to produce more electricity.

With that, came this design. The concept is simple – Excess nuclear waste is pumped into the system, where it heats the steam that kickstarts the turbines. The pump continues to run until a certain amount of nuclear waste is reached, at which point the pump stops. The turbines then continue to produce power as the hot nuclear waste increases the temperature of the steam. Once the steam temperature reaches 130, a pump is activated that pumps the cool nuclear waste back out of the system. Once a low level is reached, fresh waste is pumped in.



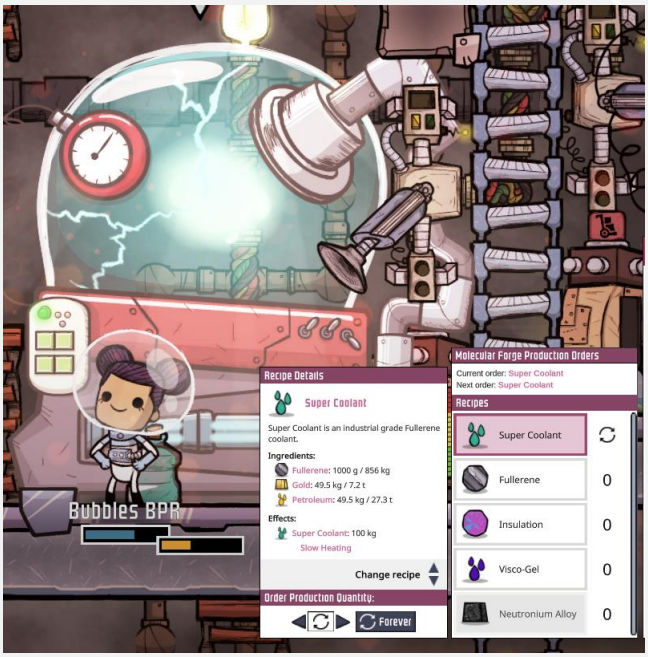
Frankly. This build is a bit unnecessary and the energy savings from it are significant but not earthshattering. I built in Neo Terra as I could use the excess energy, but on planets like Svalbard. where we are wasting a bunch of energy anyway, there is no point in such a build.

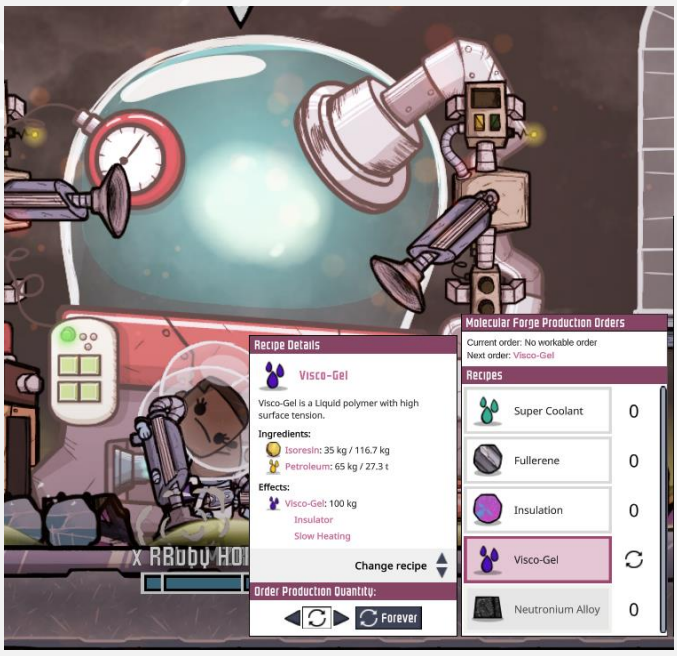


8) Space Age Materials

I promised you viscogel and supercoolant, so here we are.

Supercoolant is actually very easy to make in spaced out. It's mainly gold, petrol and fullerene made together in a molecular forge. Gold and petrol are available in plenty, thanks to the petroleum boiler and the gold volcanos. 100 kg of supercoolant only needs 1 kg of fullerene, and this material can be found in your water asteroids, which in our case is Numenor. I demolished the full planet and took everything I needed back home. Easy peasy.





Viscogel is a little more tricky to make. This needs isoresin and petroleum. Again, petroleum is available in plenty, but the only way to get Isoresin is via the mutant tree in Florida, that we saw earlier.

Viscogel also takes 35 kg of isoresin per 100 kg of viscogel, which is a lot.

I got the resin Imported from Florida in a rocket, and then I boiled it in my plastic room to get isoresin. I believe it needs a temperature of 125+ to make that happen. When you have the isoresin, set it up in a molecular forge and voila, you have viscogel. Simple enough.

9) Base Check-

Plenty of small changes but nothing major has changed. We're demolishing the pre-space biome because we are VERY low on metal ore.

Somehow I'm always low on metal ore. It might have something to do with the number of conveyer rails I build….

Author's Note –

Thank you for taking the time to check out Project Shatterstar. I hope this helps you to up your game. Each episode will be updated when necessary, so do keep an eye on the change history.

This series is a labour of love and an attempt to create quality written content. It does take up a lot of effort, though, so If you do like the work, please share and recommend it actively. You can also support me directly if you are willing and able.

There is always scope for improvement and new perspectives, so I encourage you to reach out to me if you have any specific thoughts on the work, be it good, bad or ugly. Reddit is the best way to get a hold of me. Do follow me there to keep up to date with the latest on what I do.

Check out the 'Stormfather's Guide to the Galaxy' and 'Academy Not Included', both of which are series that I built on Reddit. SGG is now scrapped, thanks to some complications when Spaced Out came out of Beta. But ANI will continue in some form or another.

Reddit is also the perfect place to point out any errors in the file. Due credit will be given to those who find errors or provide feedback that is incorporated into the file.

To check out any past or future work, or to support or follow me, do check out the following link-

https://linktr.ee/Stormfather

Until next time

Change History –

Date	Version	Change	Credits
27th June ‘23	0	New Release	-