CHAPTER 8: ASSET PIPELINE

IMPORTING ASSETS FROM SKYRIM IN 3DS MAX

This section will cover importing an asset from Skyrim into 3ds Max to tweak or remodel.

For this section I'll be working with 3ds Max 2017. The NIF Export/Import Plugin for 3ds Max 2017 is available on Nexusmods. For other versions of 3ds Max, try NIF Plugin for 3ds Max 2015-2018 available on Nexusmods.

You can download a trial version of 3ds Max from the Autodesk website.

The first thing you need to do is export the .nif file from the .bsa archive. See the section on Unpacking the BSA Archives for step by step instructions on how to do this.

In this example, I'm going to be importing winebottle01a.nif into 3ds Max. This asset was exported from the Skyrim - Meshes.bsa file and is located under meshes\clutter\wine.

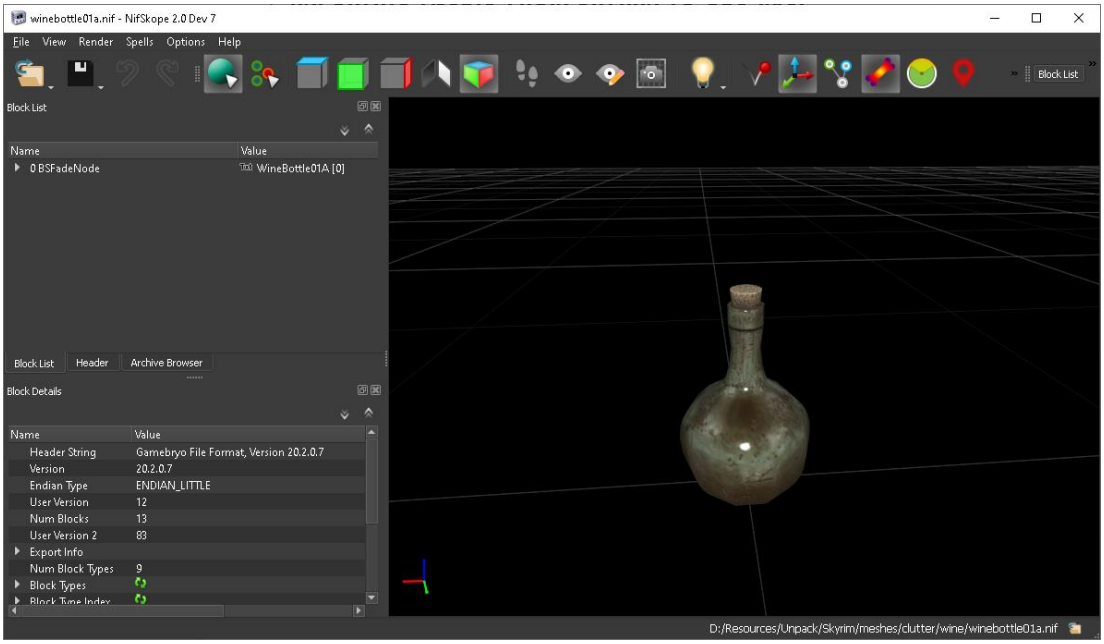

Figure 1058 - winebottle01a in NifSkope.

In 3ds Max, go to Import.

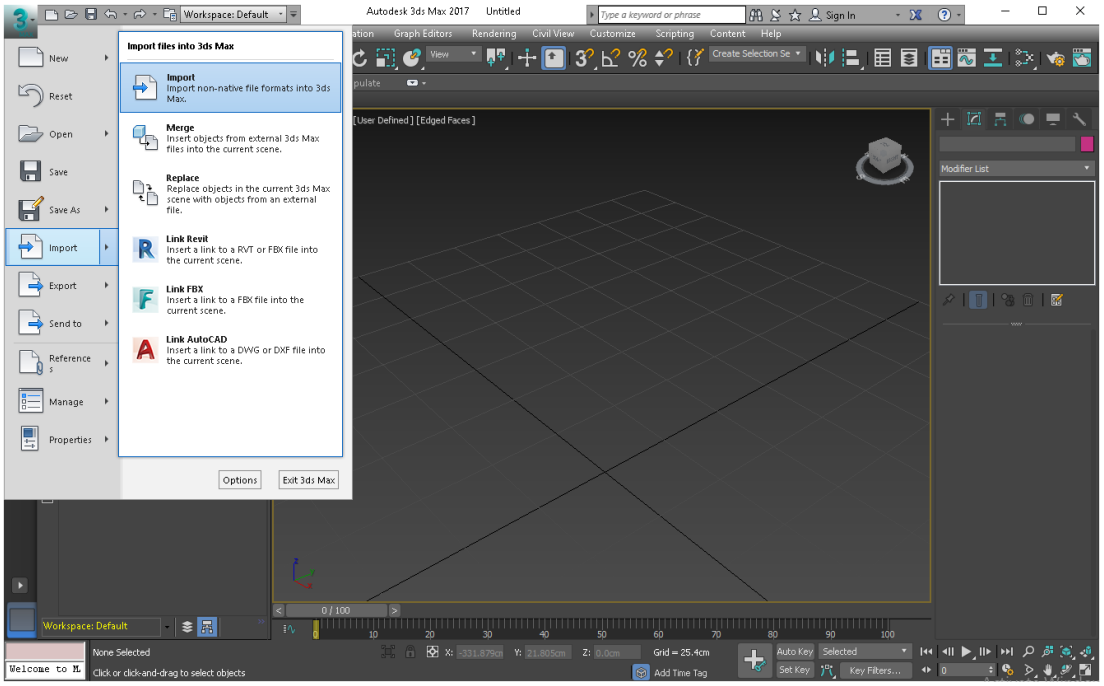

Figure 1059 - Importing an external asset.

Set the 'Files of type' to 'NetImmersse/Gamebryo (*.NIF, *.KF)'. Select the .nif file to import and click Open.

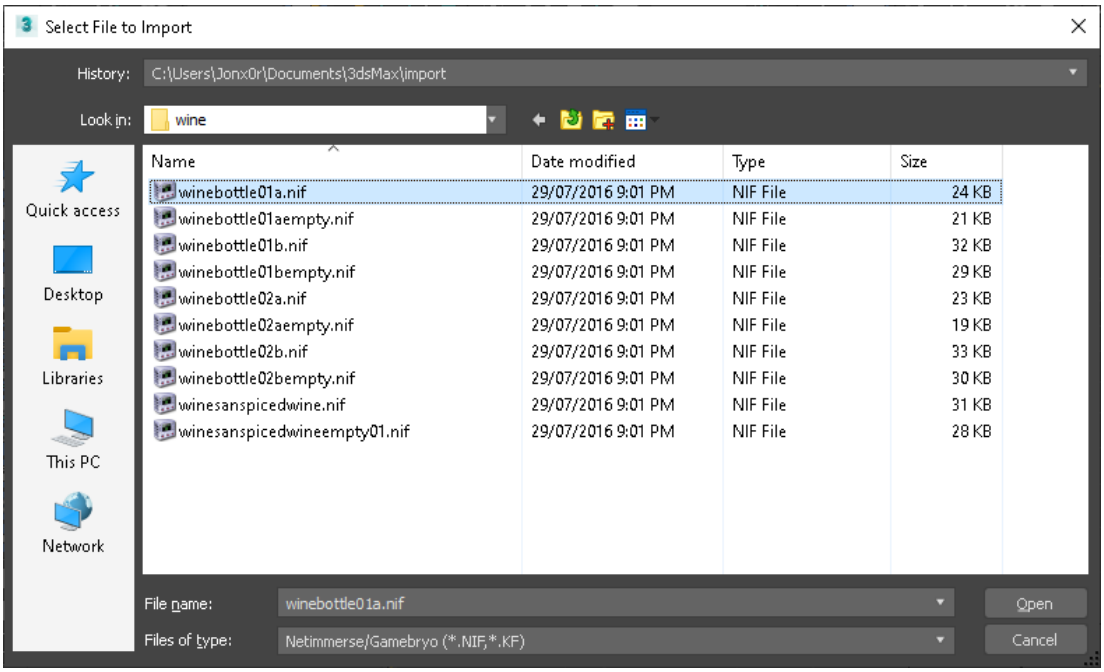

Figure 1060 - Selecting the .nif file to import.

Set the Game to Skyrim.

Under Import, tick Collision. The object doesn't have any lights or cameras, so they don't need to be ticked.

This particular object doesn't have any animation, so untick everything under the Animation section.

Under Geometry, make sure Vertex Colours is ticked. This particular object doesn't use the Skin Modifier so we can untick that checkbox. I also don't want to make any alterations to the model so I unticked 'Auto Smooth Mesh', 'Remove Illegal Faces' and 'Weld Vertices'.

Under Miscellaneous, tick 'Flip UV'. Make sure 'Render Textures in View', 'Ignore Root Node' and 'Use Niftools Shader' are also ticked.

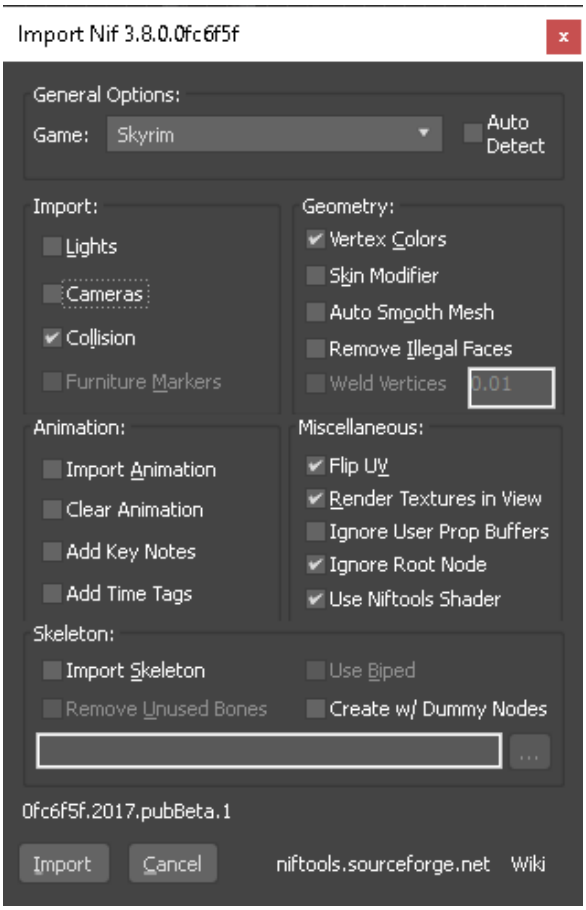

Figure 1061 - NIF import settings.

Click on the Import button.

And there's our wine bottle imported into 3ds Max.

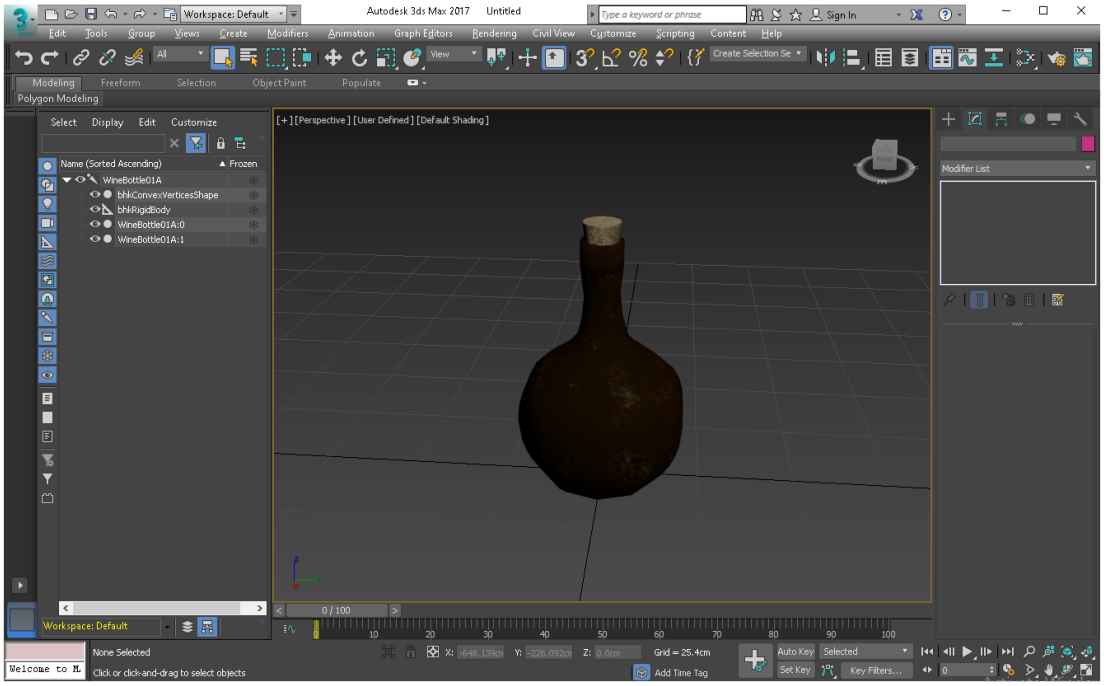

Figure 1062 - winebottle01a imported into 3ds Max.

EXPORTING ASSETS FROM SPEEDTREE TO 3DS MAX

SpeedTree is used by many game studios to create game-ready trees and vegetation.

This section covers the process of exporting a SpeedTree tree to 3ds Max to then bring over to Skyrim.

You can download a trial version of SpeedTree from the SpeedTree website.

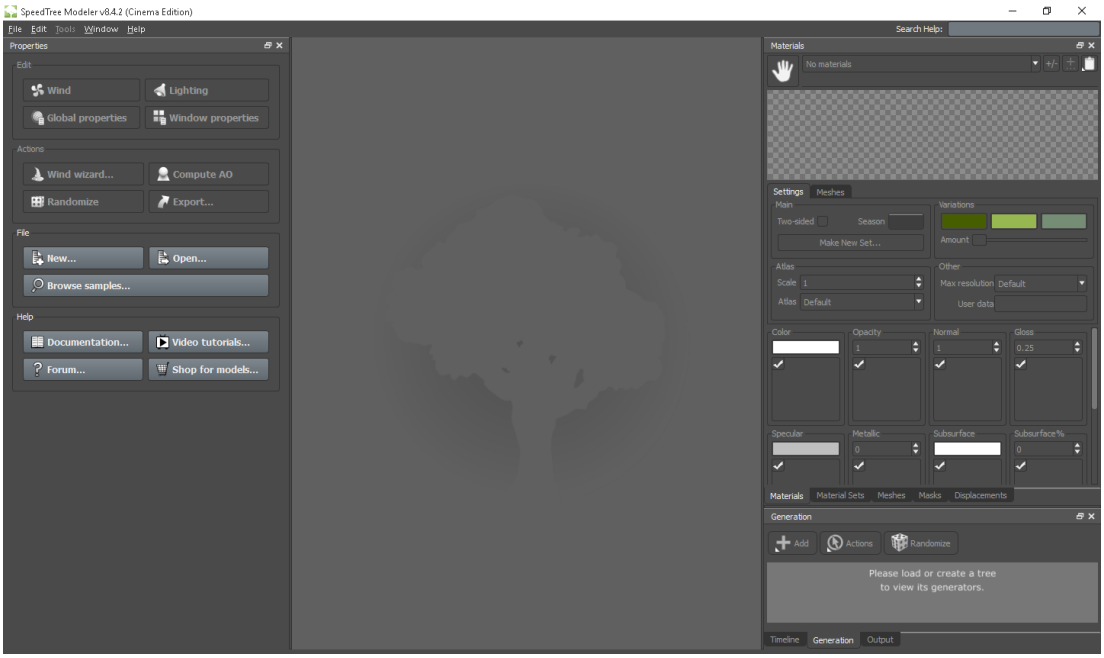

Figure 1063 - SpeedTree 8 Cinema Edition.

If we have a look at one of the trees from Skyrim in 3ds Max, we'll see that it's comprised of three main components; the trunk, large branches, and small branch & leaf cards.

Looking at an existing model will also give us a good idea on how many polygons our new tree should roughly consist of, for the sake of performance. treeaspen01.nif, for example, consists of 1,256 polys.

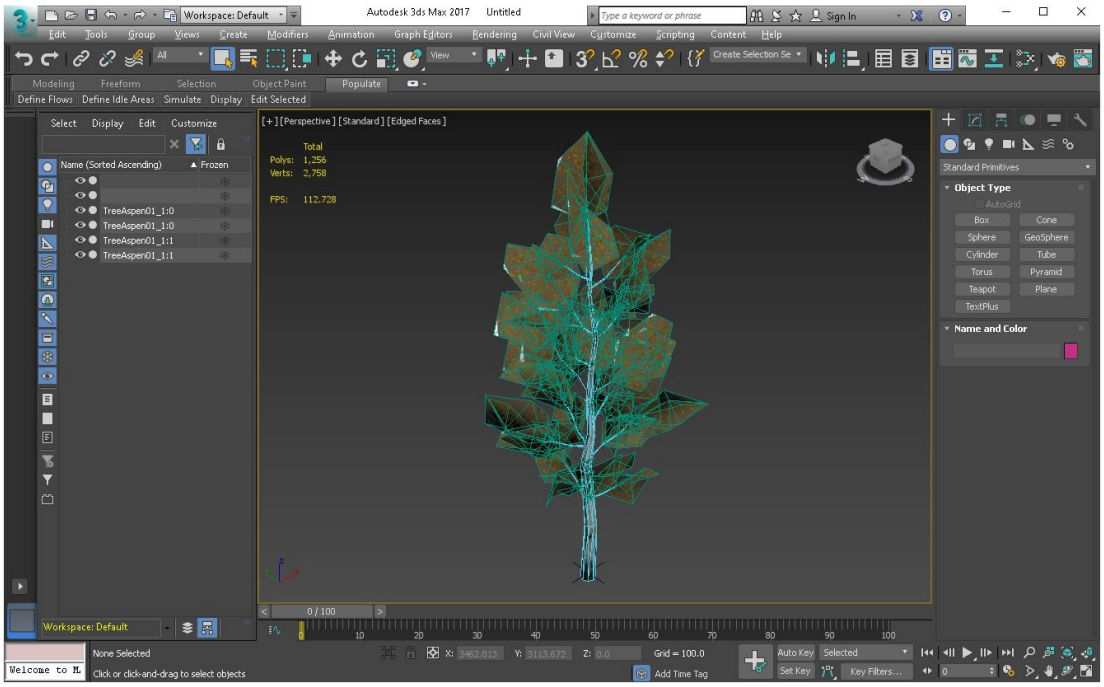

Figure 1064 - Tree in 3ds Max.

Before we export a tree from SpeedTree, we should reduce its poly count to roughly match the poly count of existing in-game trees.

Go to File > Open.

Select the tree you want to export then click Open. For this example I'll be working with the 'DouglasFir Low' tree from the sample library.

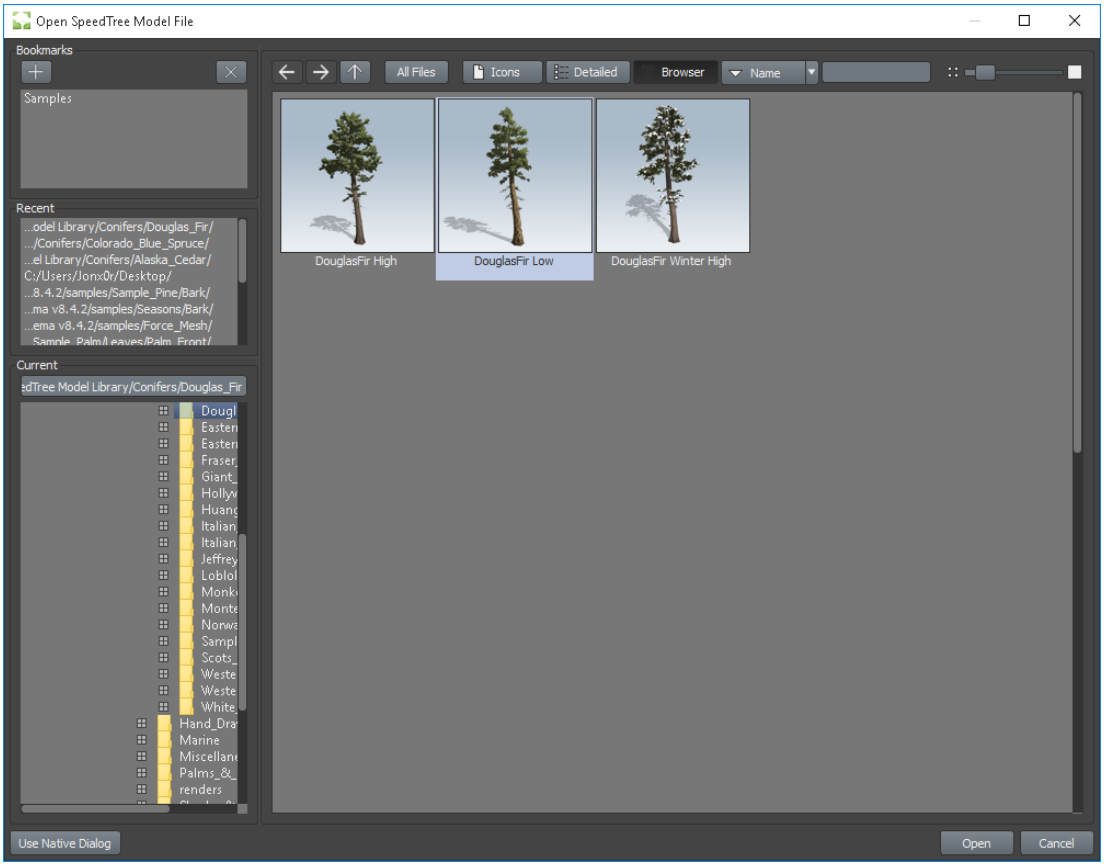

Figure 1065 - Loading DouglasFir Low.

Currently our tree has 3,781 polys. Let's reduce that a bit.

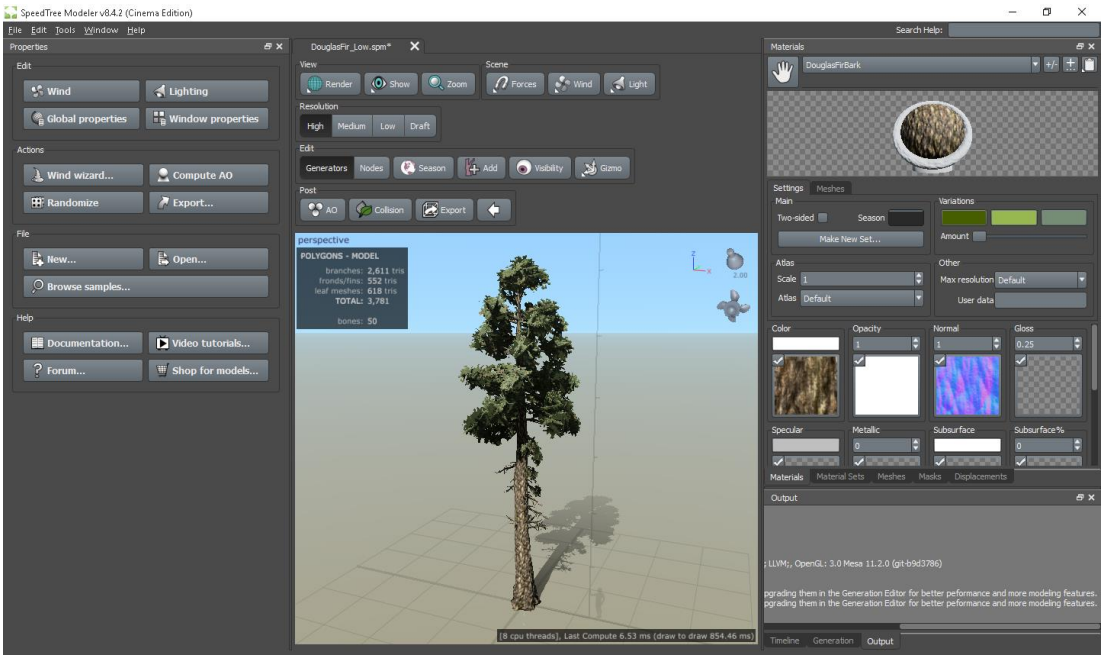

Figure 1066 - DouglasFir Low imported into SpeedTree.

Click on Render and select Scribed.

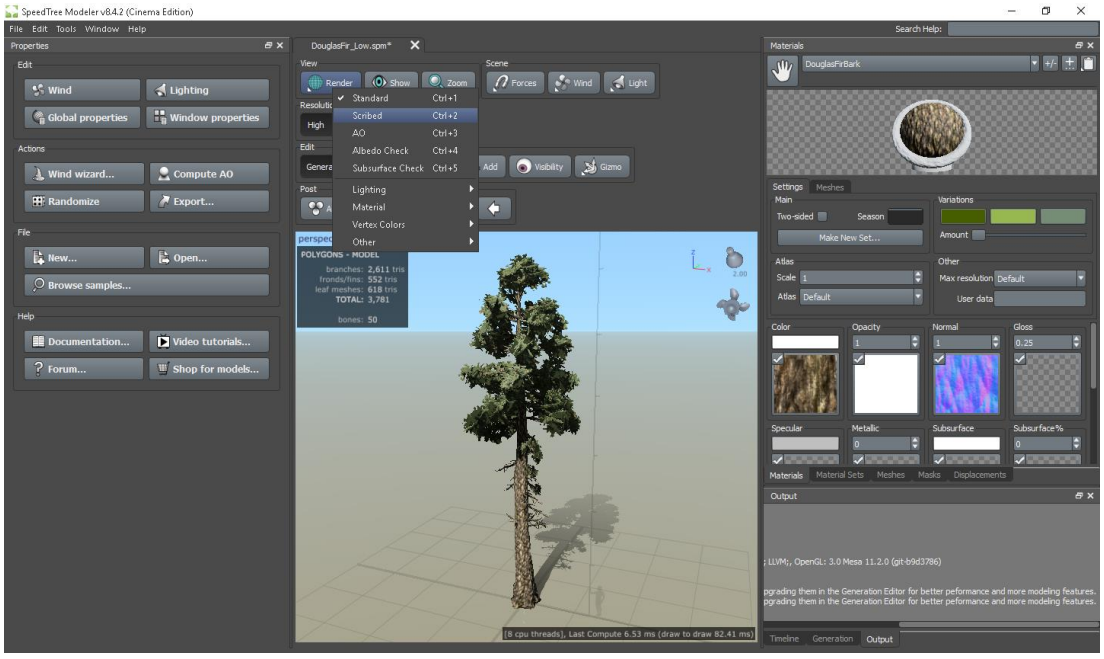

Figure 1067 - Scribed mode.

Let's start with the Trunk node. In the Generation tab, click on the Trunk node.

Go to the LOD section and reduce the Accuracy slider to simplify the trunk. In my example I lowered it from 50 all the way to 8. You should notice a simplification in the trunk geometry.

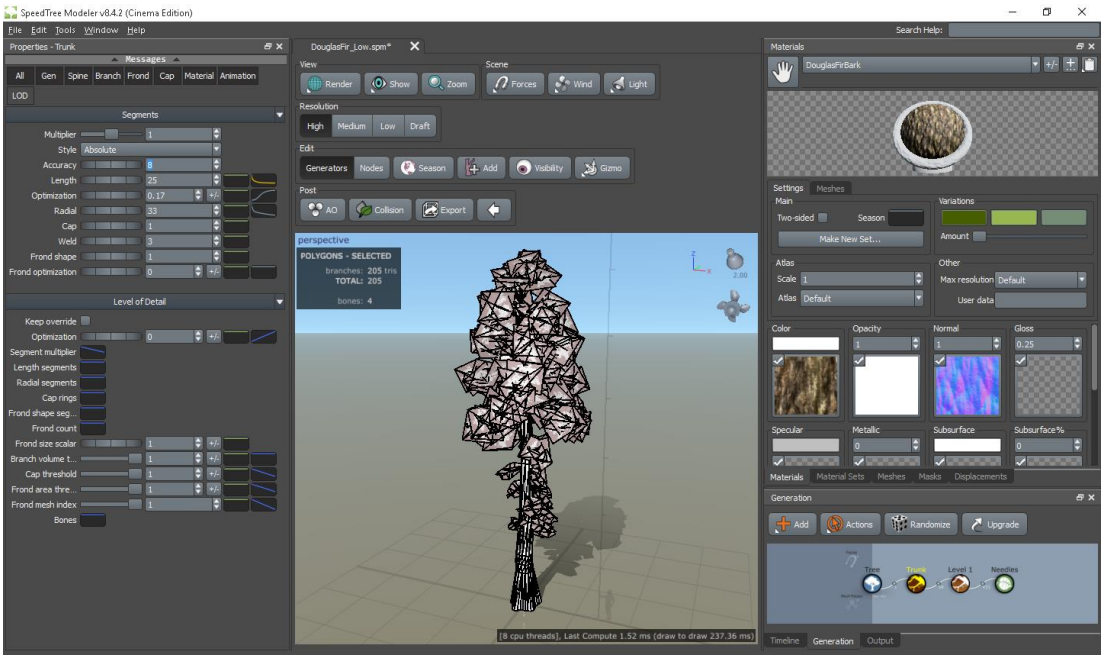

Figure 1068 - Simplifying the Trunk node.

Next, select the branches node above it. For the douglas fir example, that's going to be the node called level 1. We can see it's responsible for 2,622 polys.

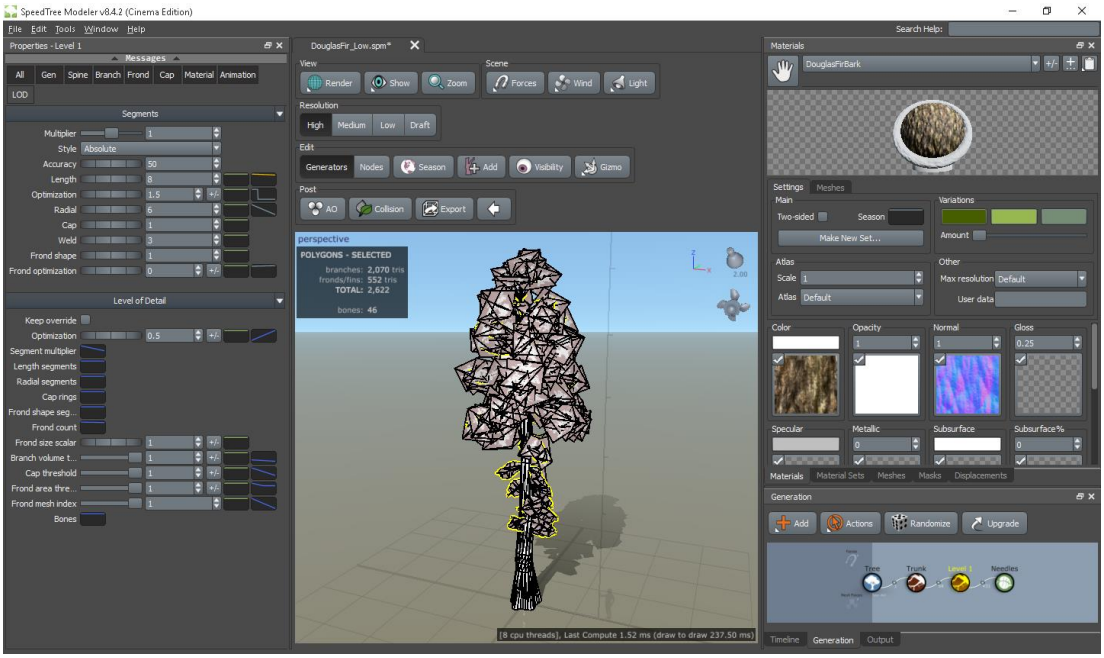

Figure 1069 - Level 1 node.

In the Gen section go to Knockout and increase the amount to randomly remove branches. But don't set it too high, just high enough to lower the density of branches without compromising the shape of the tree's foliage. In the screenshot below, I set this value to 0.25.

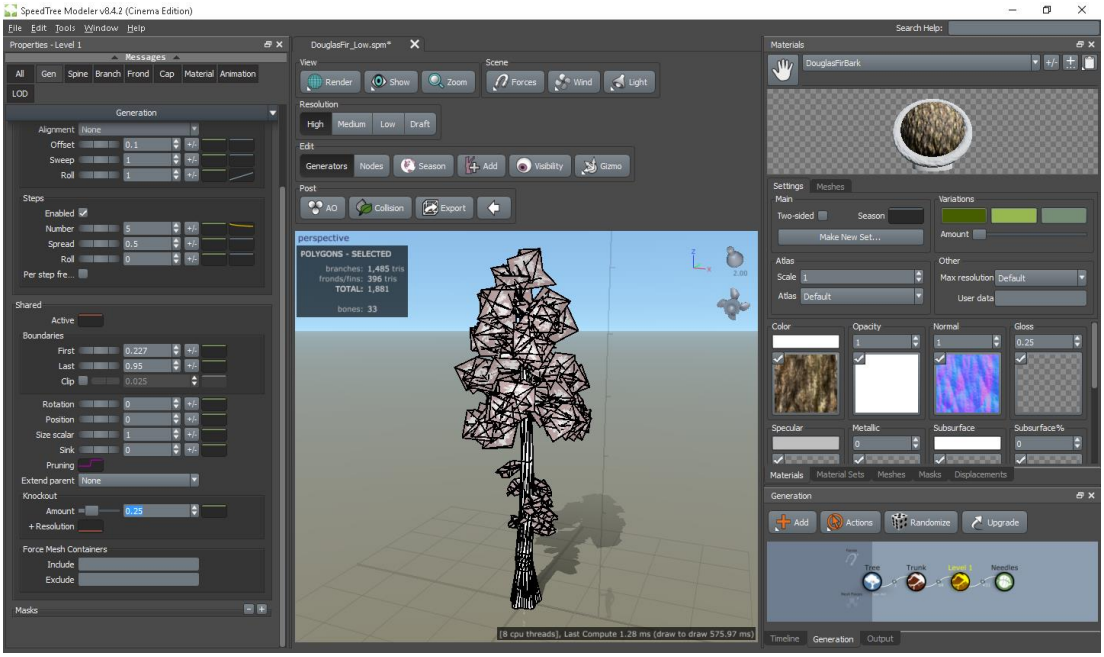

Figure 1070 - Reducing the branches poly count.

Alright, we're down to 2,526 polys.

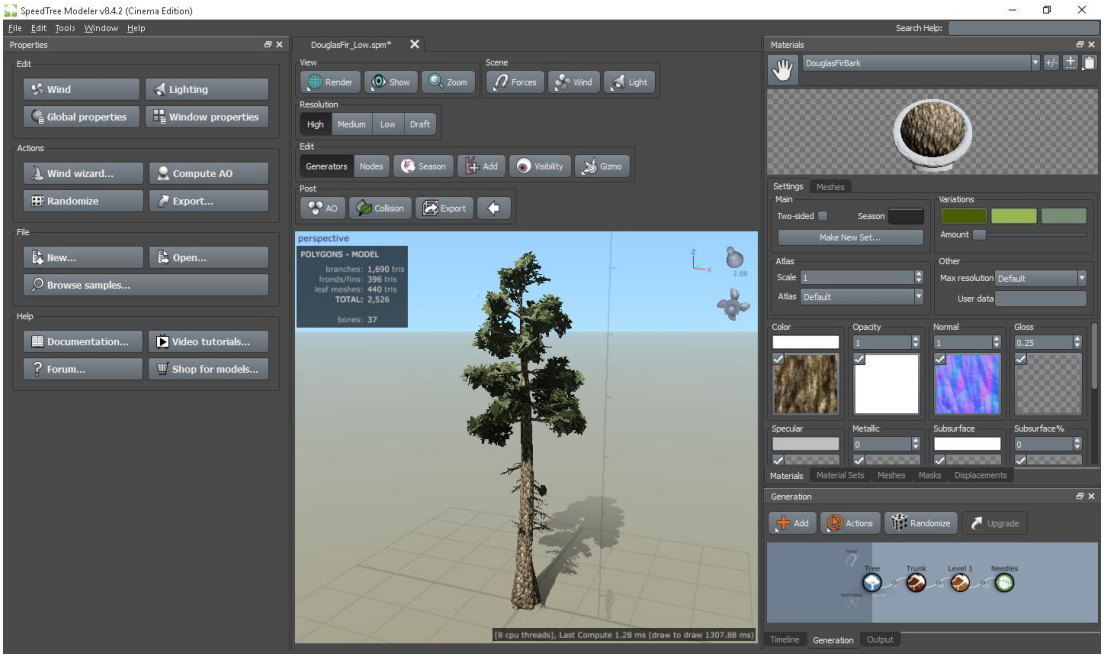

Figure 1071 - Our tree after poly reduction.

If you want a different trunk shape, click on the Trunk node in the Generator tab and click Randomize.

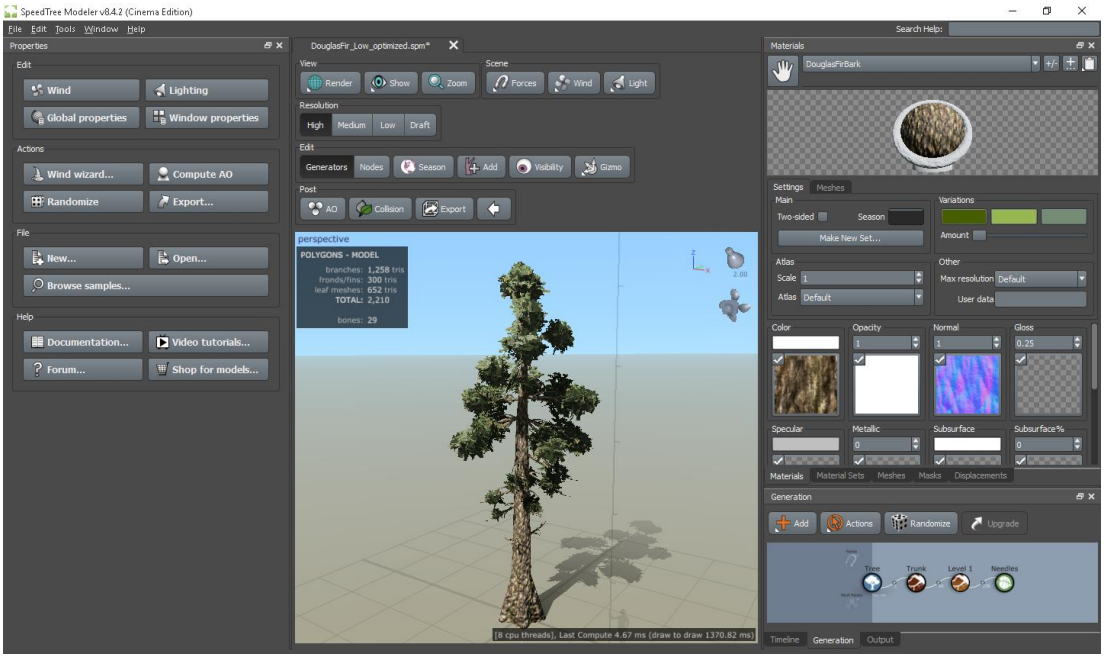

Figure 1072 - Randomized douglas fir.

I randomized until I got a tree that was 2,210 polys which should be low enough for us to use in-game.

To export the tree, go to File > Export Mesh.

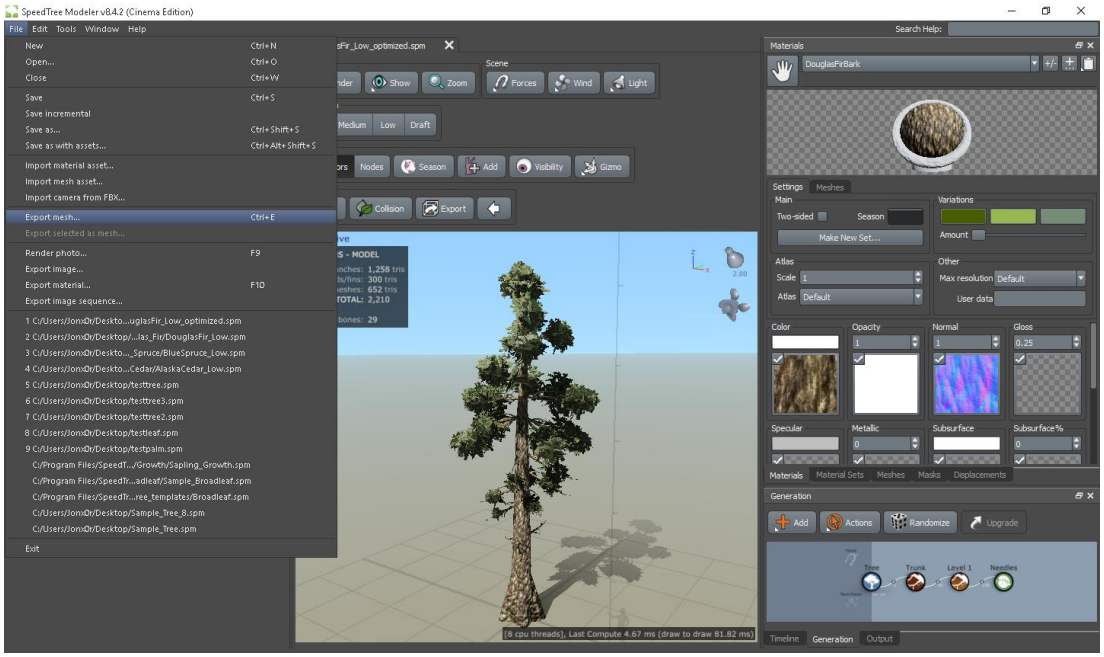

Figure 1073 - Export Mesh.

Select the folder to export the tree to and enter in a file name. Set the 'Save as type' field to 'Autodesk FBX (*.fbx)' then click Save.

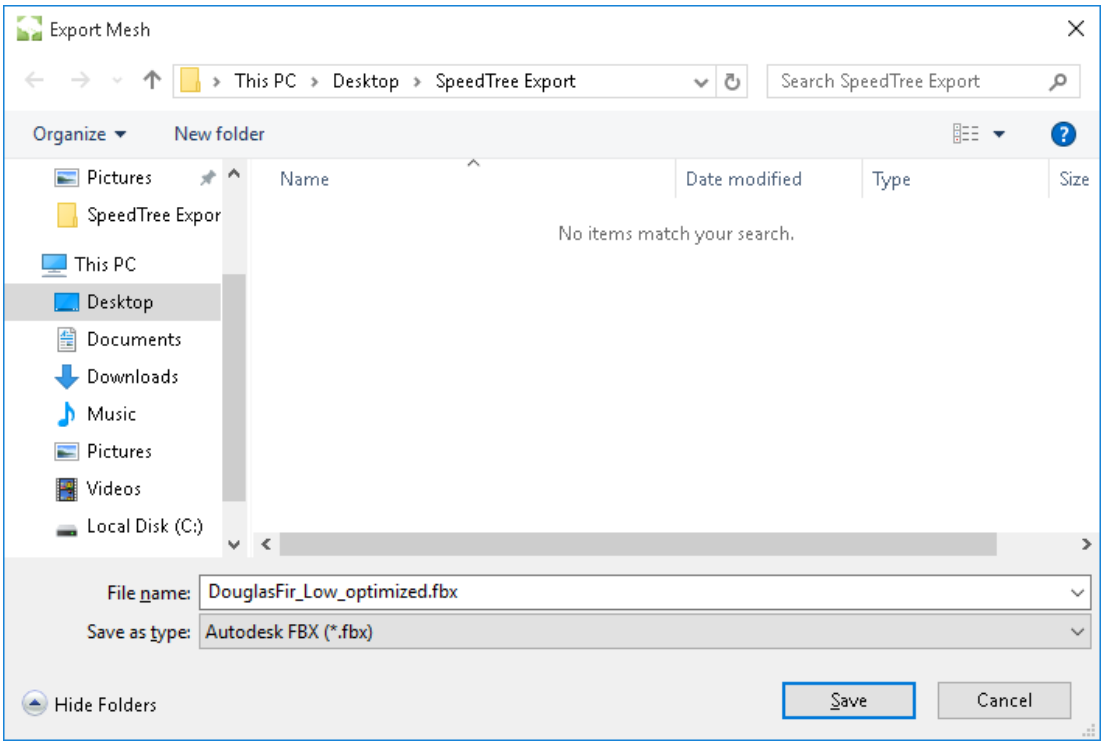

Figure 1074 - Filename and export folder.

In the Group By section, select Material. Under Transform, set the Scale to 30 and untick 'Swap YZ'. Under Textures, set Format to DDS and set 'Max size' to 1024.

Click OK to begin exporting.

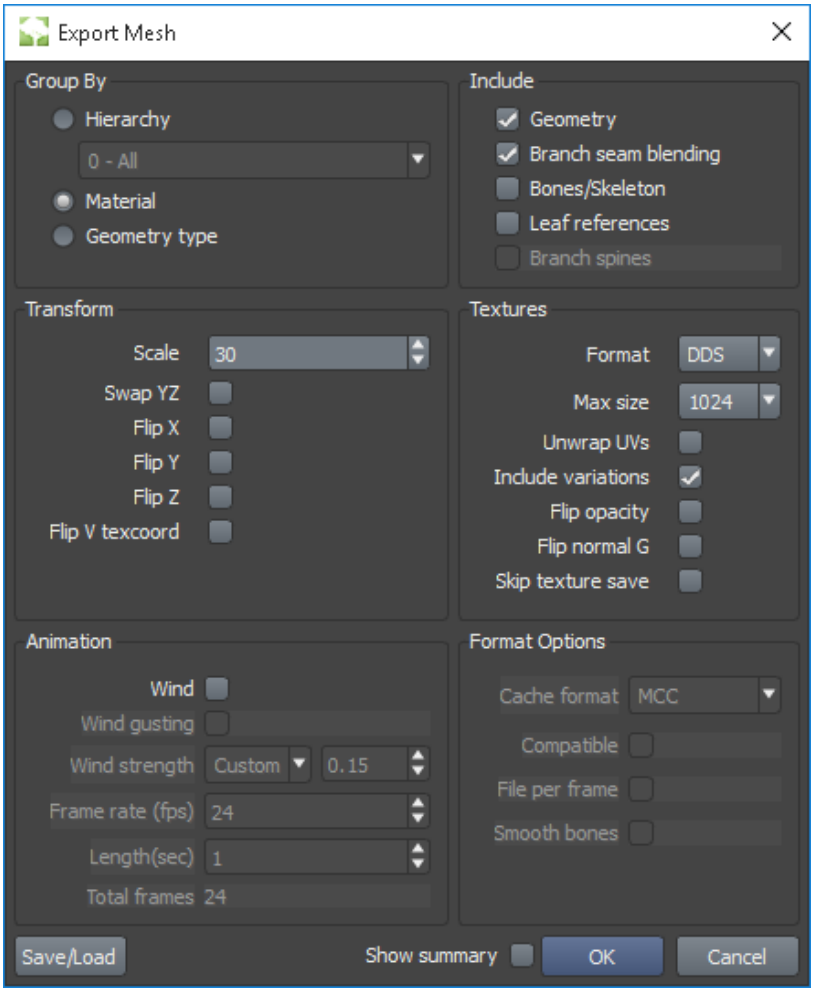

Figure 1075 - SpeedTree export mesh settings.

Now to import our asset into 3ds Max. For this, we'll need the SpeedTree Importer script which you can find in your SpeedTree installation directory under scripts\3ds Max.

Launch 3ds Max.

Go to Scripting > Run Script.

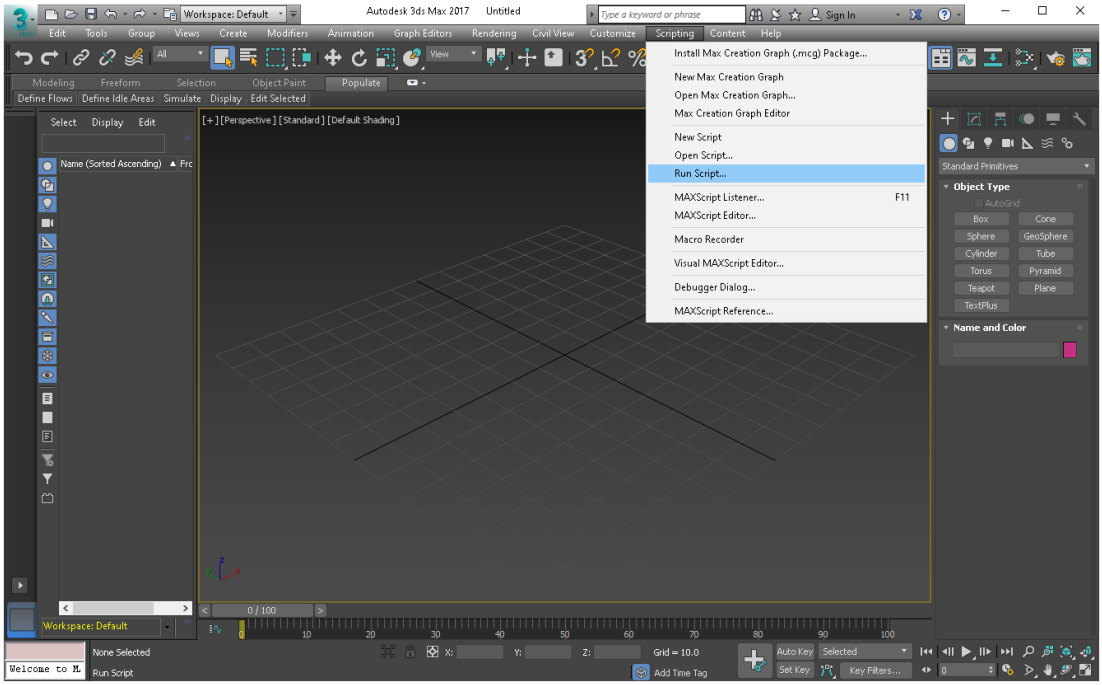

Figure 1076 - Running a script in 3ds Max.

Select SpeedTreeImporter.ms and click open.

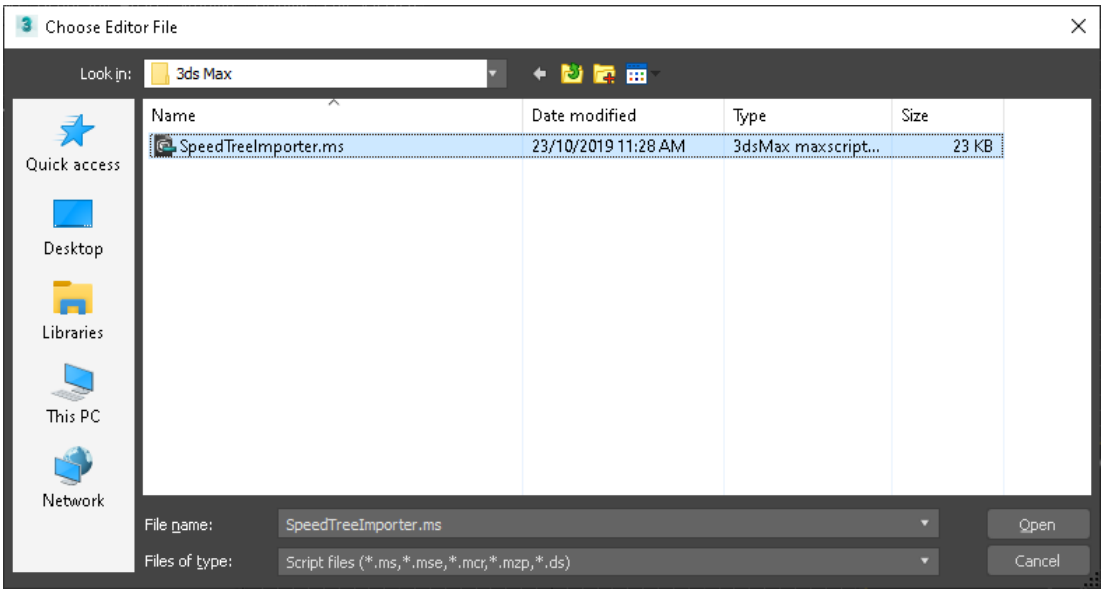

Figure 1077 - Running SpeedTreeImporter.ms.

You should see a new SpeedTree Importers panel appear on the right hand side.

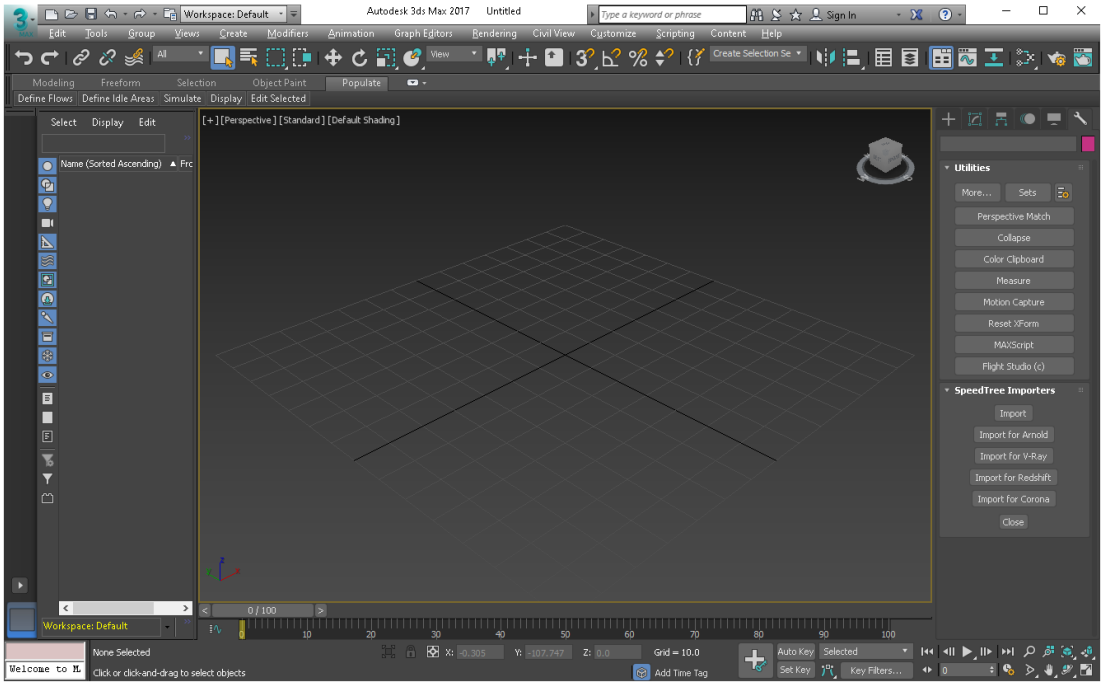

Figure 1078 - SpeedTree Importers panel.

Click on the Import button.

Select the .stmat file from the export folder we selected previously and click Open.

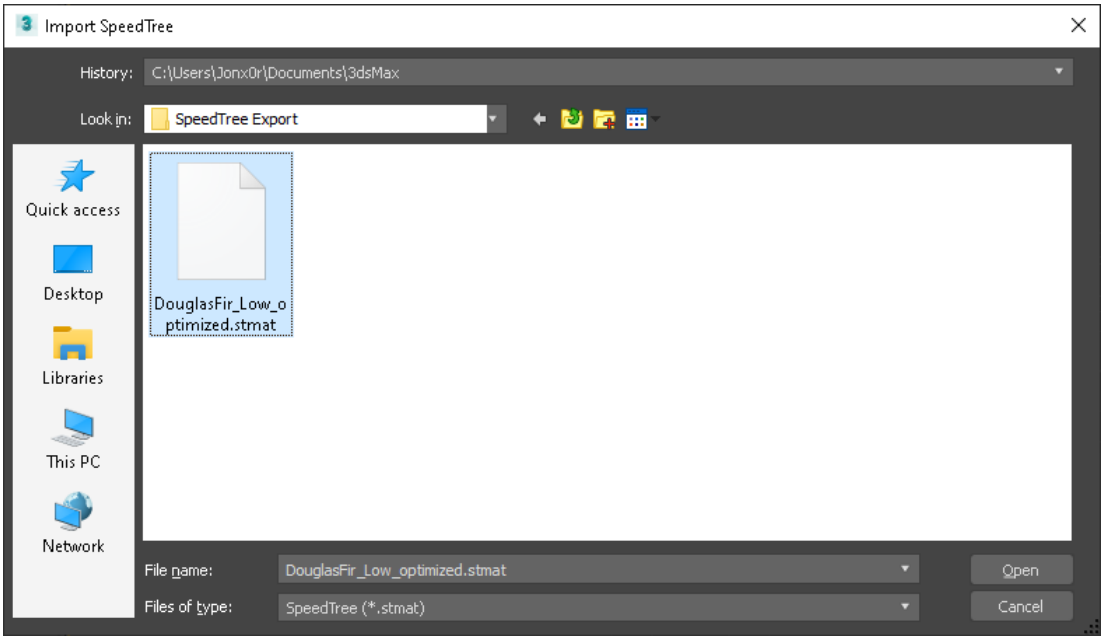

Figure 1079 - Selecting the .stmat file.

This should import the SpeedTree mesh and materials into 3ds Max.

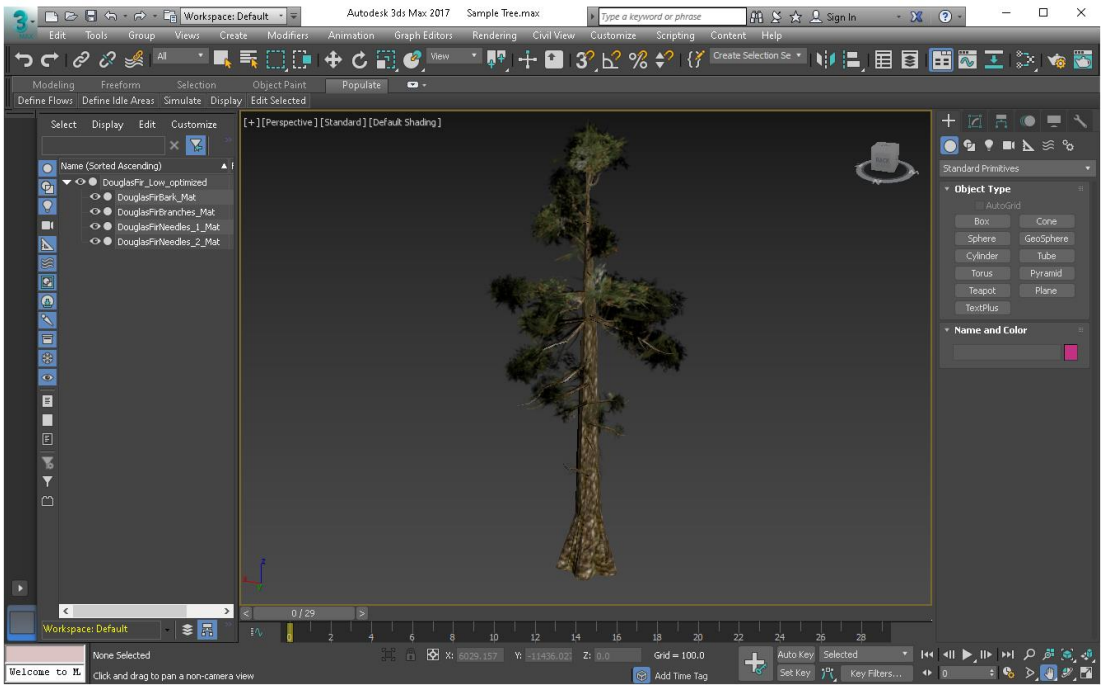

Figure 1080 - SpeedTree model in 3ds Max.

See the section Exporting Assets from 3ds Max to Skyrim for steps on exporting this asset in .nif format.

FIXING TRANSPARENCY IN NIFSKOPE

If we have a look at our tree in NifSkope, we'll see that there's a problem with the transparency on the leaf and twig cards.

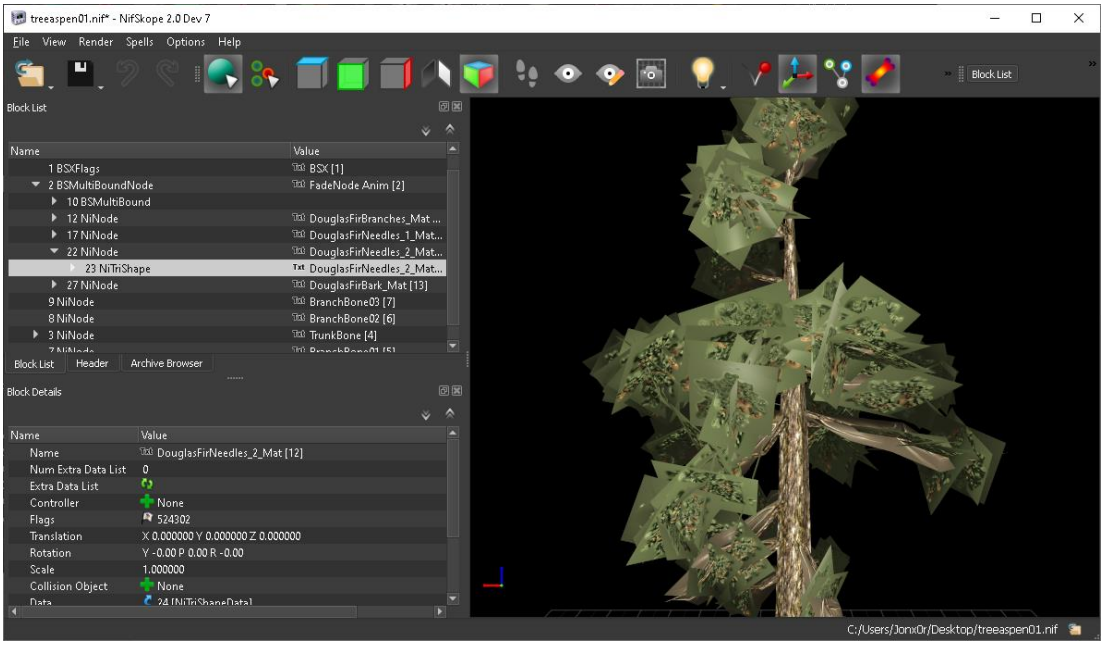

Figure 1081 - The douglas fir tree in NifSkope.

We need to make sure our alpha channels are set up properly so they appear transparent in-game.

Here's the problem. As per the screenshot below, the DouglasFirNeedles_1.dds texture doesn't have an alpha channel.

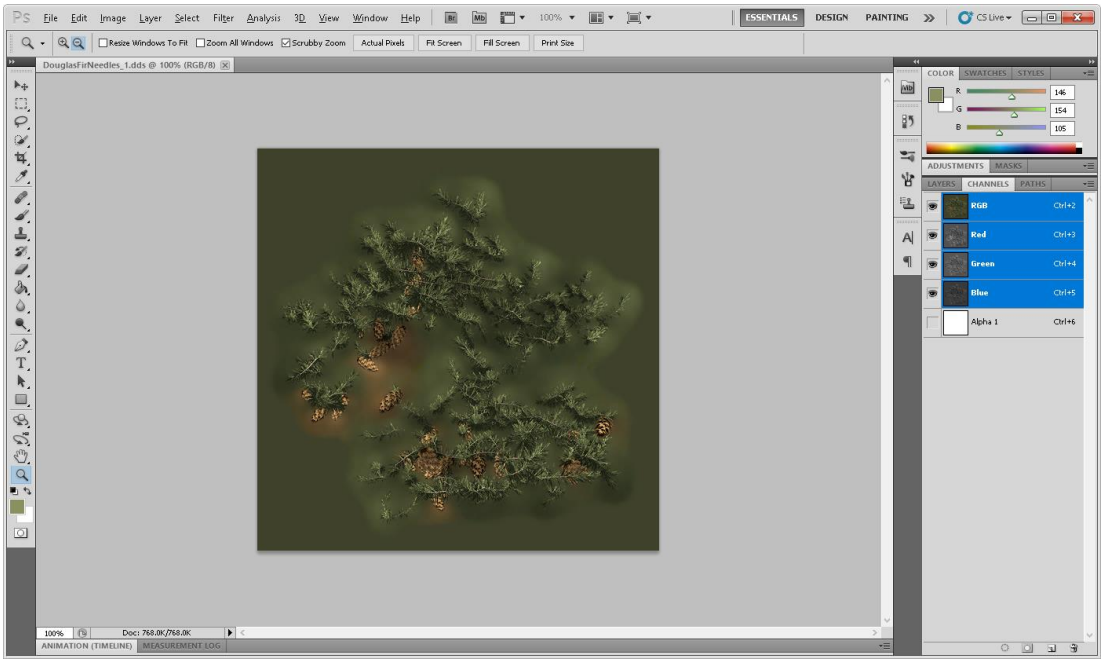

Figure 1082 - Blank alpha channel.

The leaves and twigs appear transparent in 3ds Max because we're getting our opacity from a separate opacity map, but this won't work in-game so we'll need to copy the alpha channel from our opacity map over to our diffuse map.

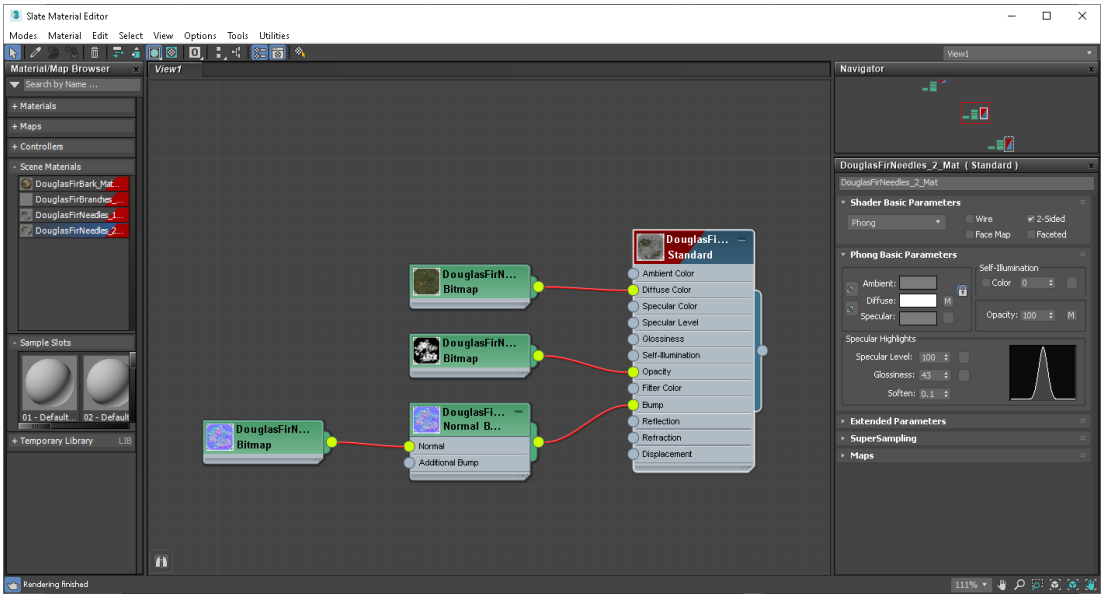

Figure 1083 - Douglas Fir needles material setup in 3ds Max.

Open the opacity map in Photoshop.

Press CTRL + A to select everything and CTRL + C to copy.

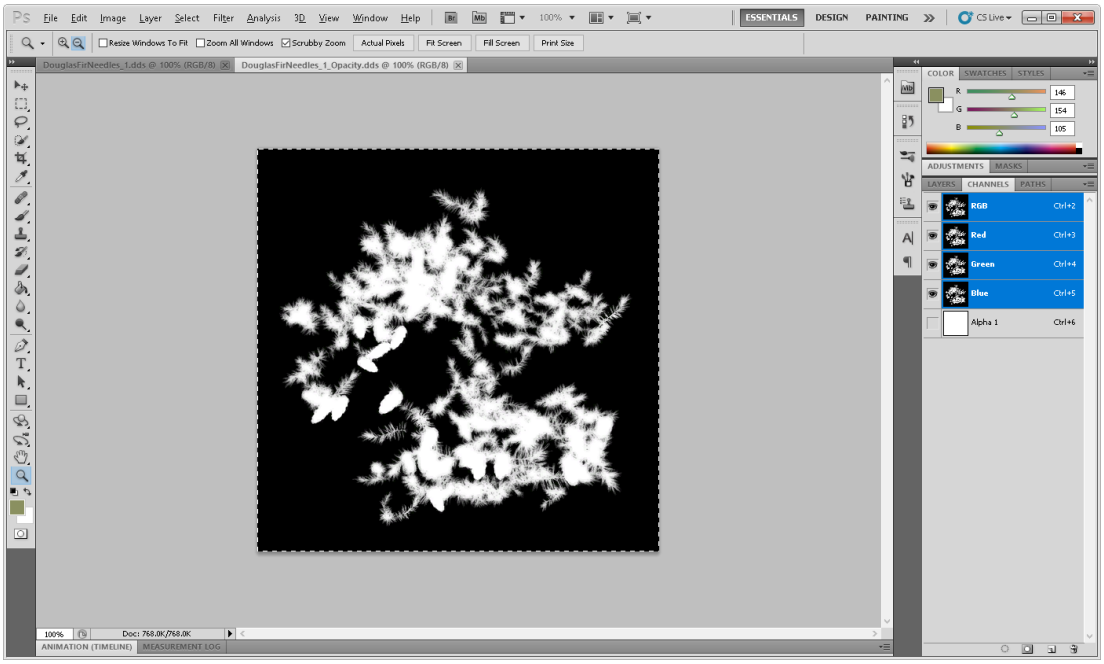

Figure 1084 - Copying the opacity map.

Now open the corresponding diffuse map and enable the alpha channel. It should be called Alpha 1.

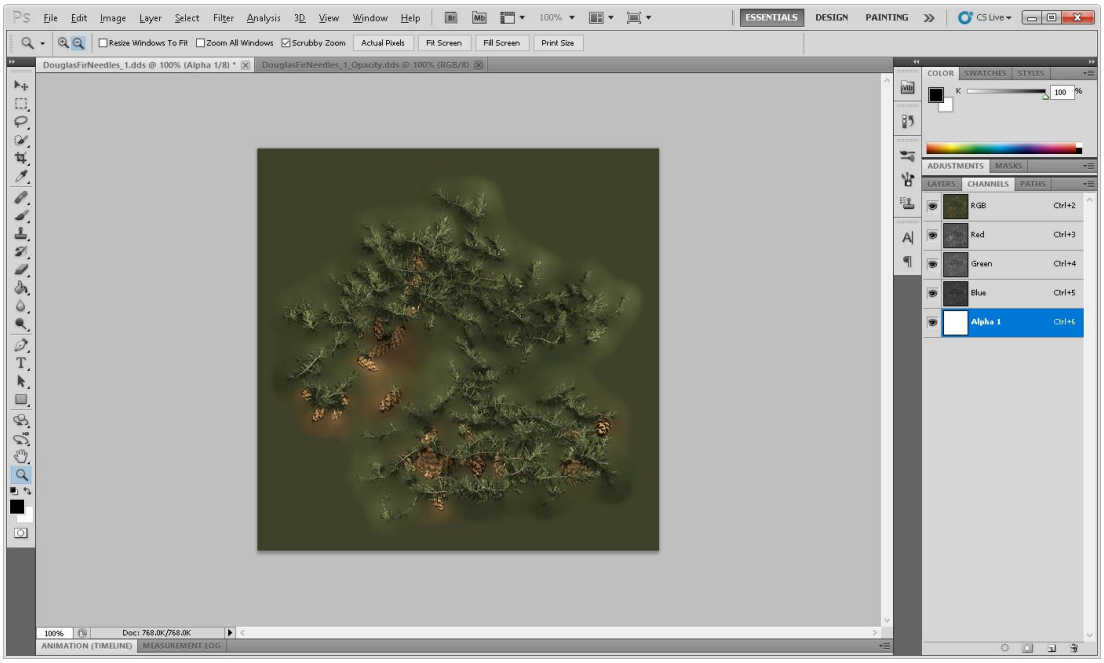

Figure 1085 - Diffuse map.

Select the alpha channel and press CTRL + V to paste in the opacity map.

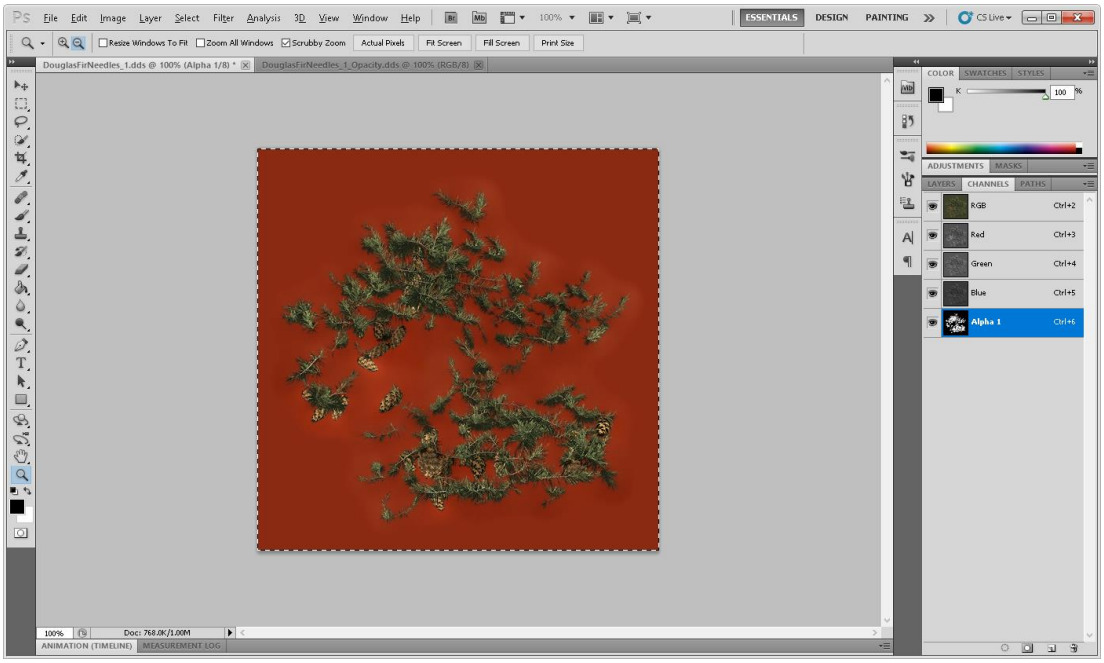

Figure 1086 - Pasting in opacity map in alpha channel.

Now save the diffuse map.

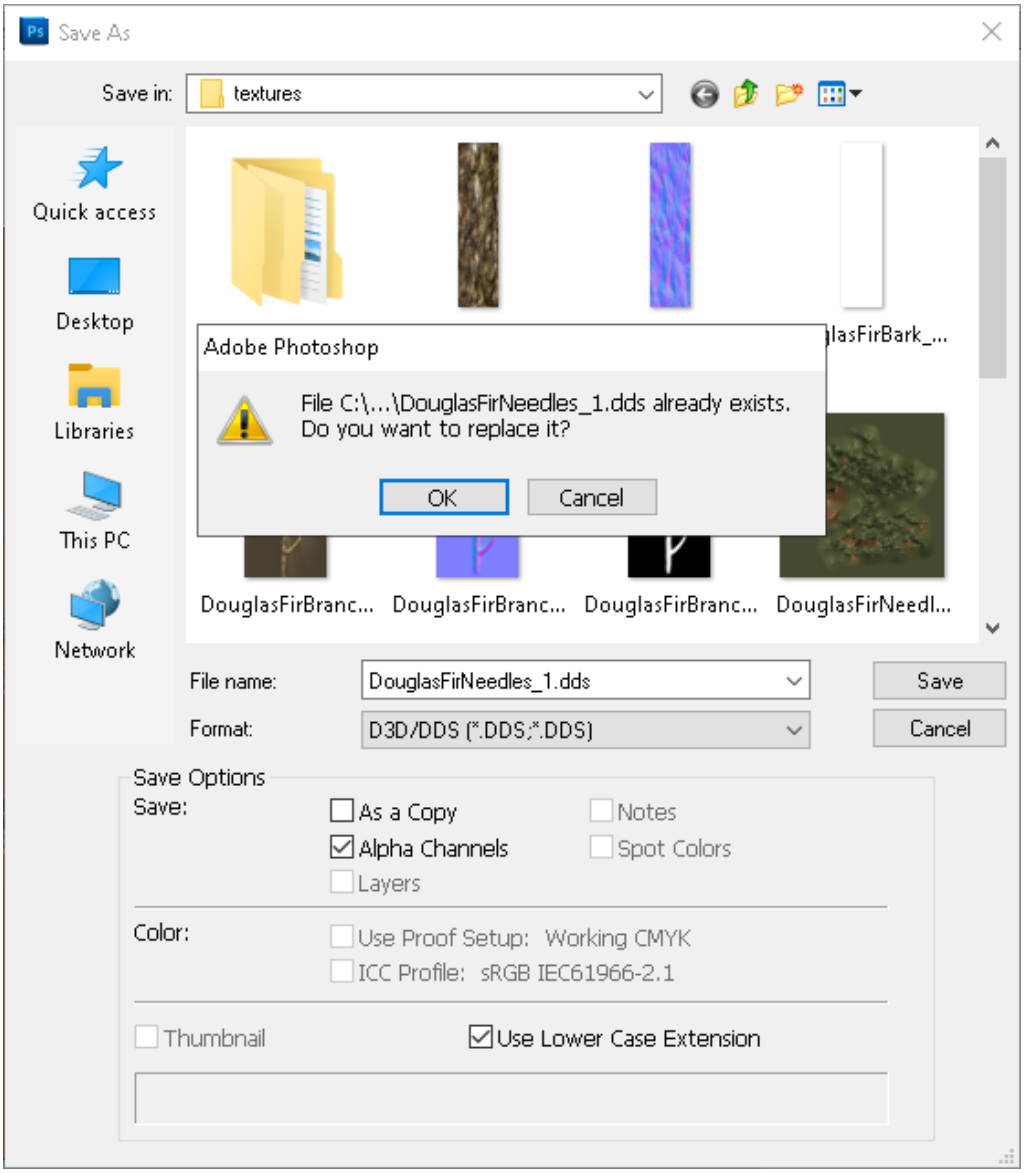

Figure 1087 - Saving the diffuse map.

Repeat these steps for any other textures that need an alpha channel.

Okay, back to NifSkope.

In order to enable the alpha channel, we need to attach a NiAlphaProperty node to each NiTriShape node that needs transparency.

Right-click on the NiTriShape node and go to Node > Attach Property.

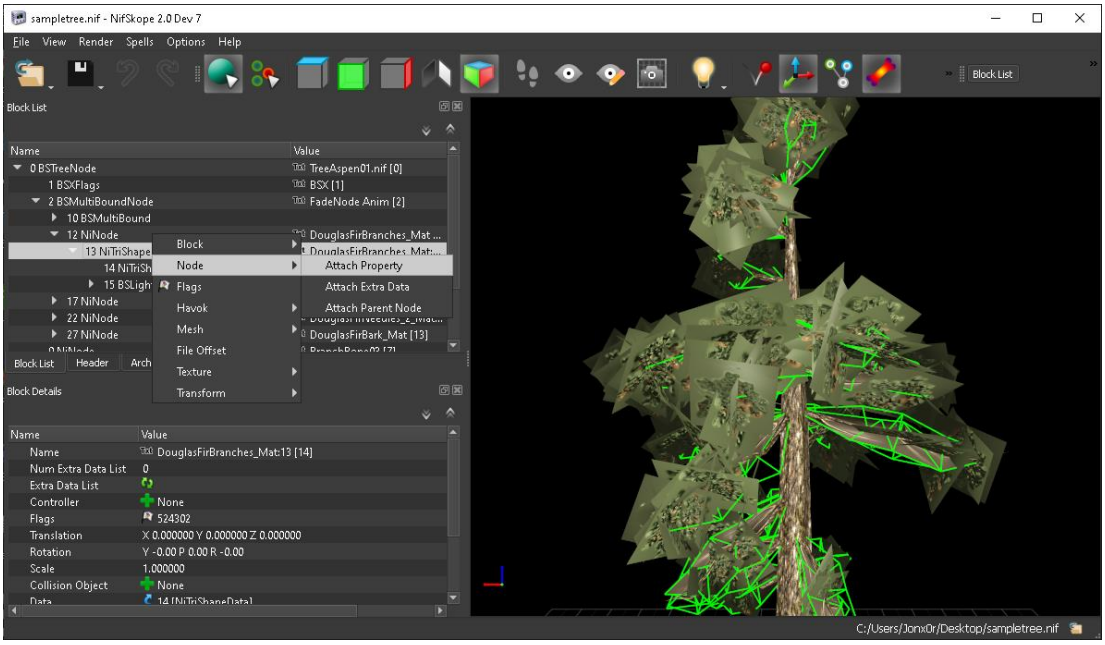

Figure 1088 - Attaching a new node.

Then select NiAlphaProperty.

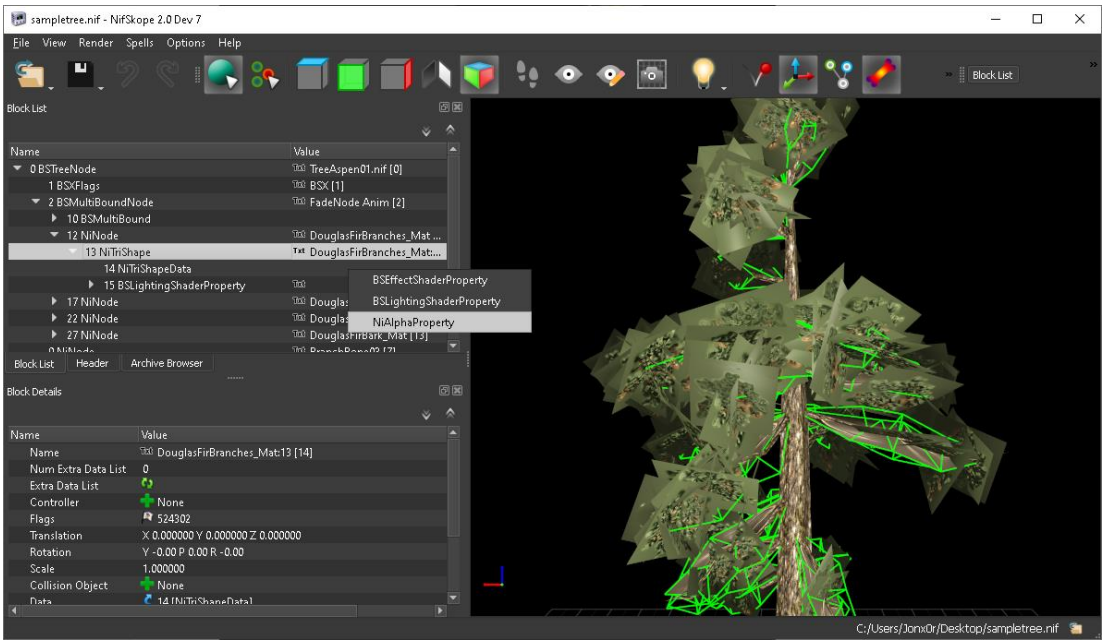

Figure 1089 - Attaching a NiAlphaProperty node.

Repeat these steps for the other NiTriShapes that need transparency.

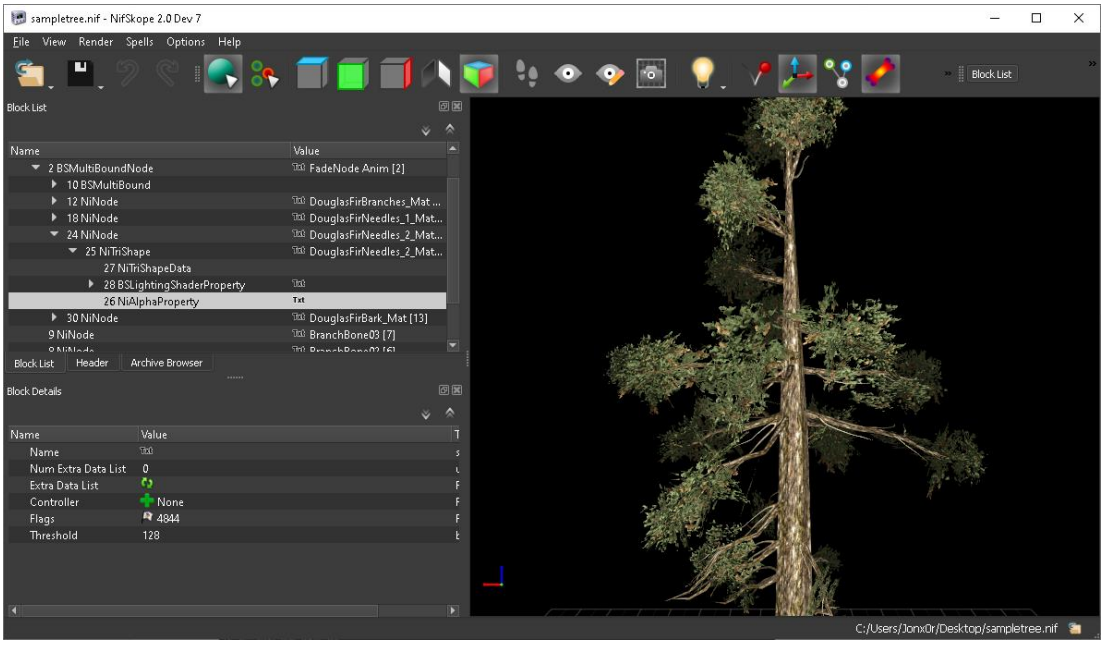

Figure 1090 - The douglas fir with transparency fixed.

Alright, so the transparency issue is fixed but our tree is looking a bit bare. This is because the exporter doesn't flag the 'Double_Sided' property on our two-sided materials. We need to do this manually.

Go to the BSLightingShaderProperty node beneath NiTriShape and scroll down to the Shader Flags 2 property.

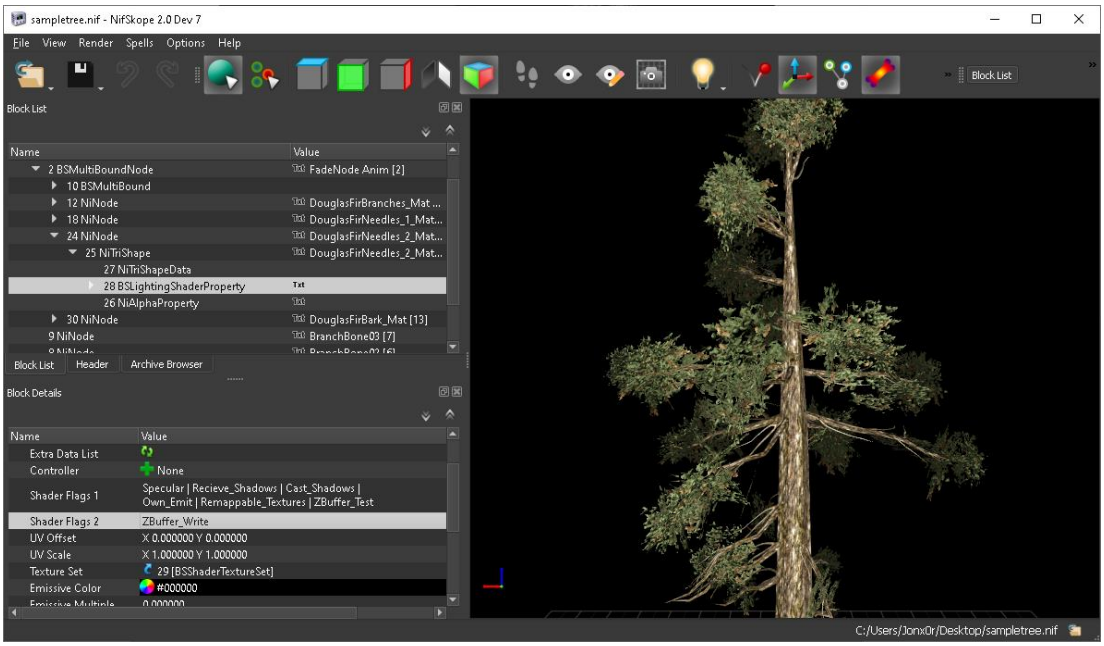

Figure 1091 - Shader Flags 2.

Right now it only has the ZBuffer_Write flag enabled.

Double-click on the Value field for Shader Flags 2 and click on the down arrow.

Tick Double_Sided.

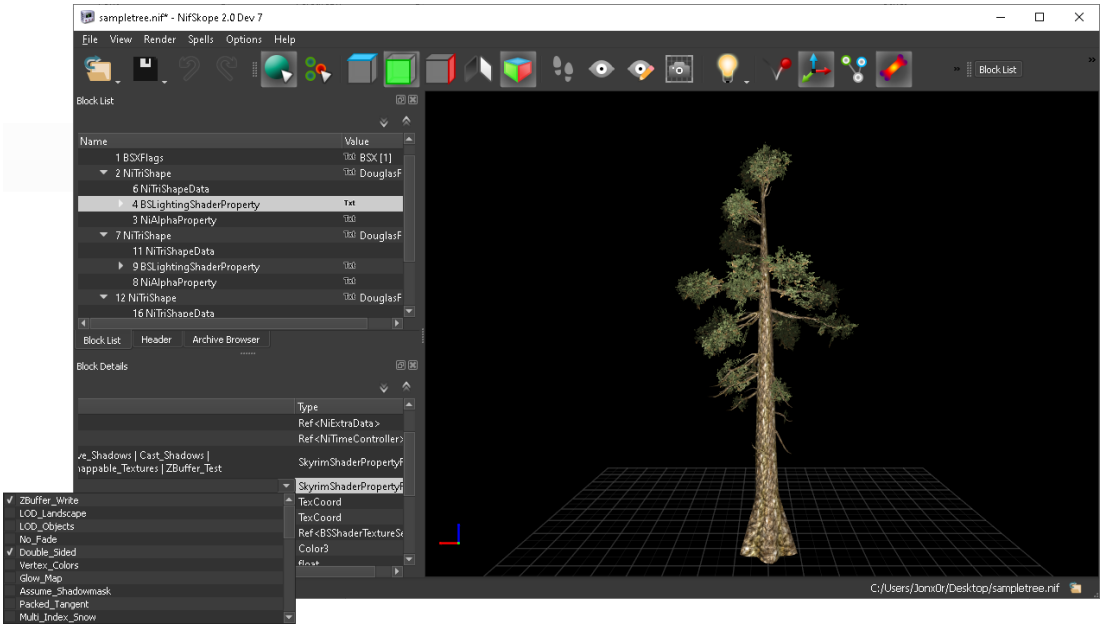

Figure 1092 - Making the leaf and twig cards double sided.

Repeat these steps for the other BSLightingShaderProperty nodes that need to be displayed as double-sided.

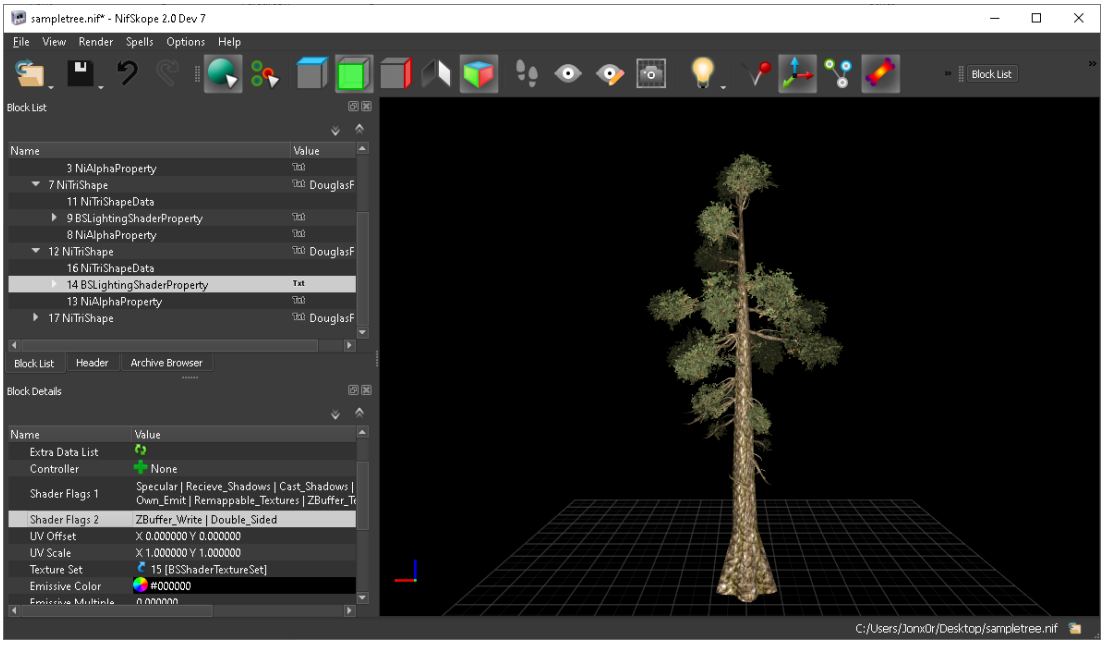

Figure 1093 - Tree with double-sided materials enabled.

EXPORTING ASSETS FROM ZBRUSH TO SUBSTANCE PAINTER TO 3DS MAX

This section is going to cover the general Zbrush to 3ds Max workflow. I'll be taking an asset made in Zbrush, texture it in Substance Painter, and import it into 3ds Max. I'll also be showing you how to fix UVs in 3ds Max.

In the following example I'll be working with Zbrush 2021 and Substance Painter 2018.

A trial version of Zbrush is available on the Pixologic website.

A trial version of Substance Painter is available on the Adobe website.

So for this example I just sculpted a simple boulder.

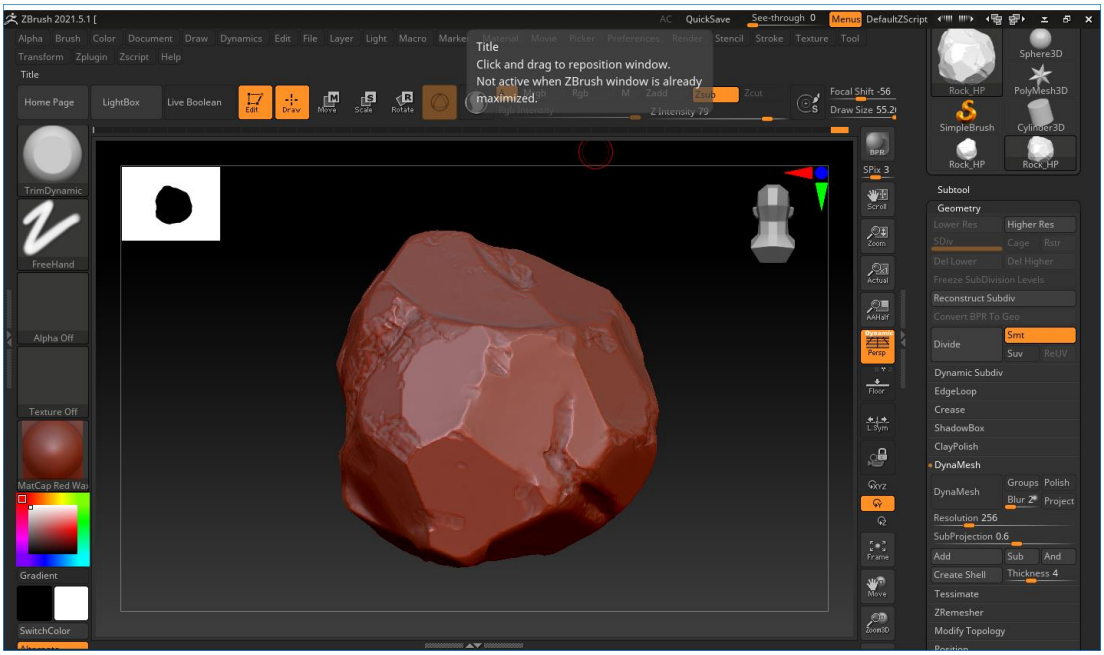

Figure 1094 - Rock sculpted in Zbrush.

Currently it consists of 205,854 points which is way too much for a game asset, so we need to create a low-poly version that we can bake the high poly version's details onto via a normal map.

But before we do that we need to save the high poly version of our asset.

Under Tool click on Export.

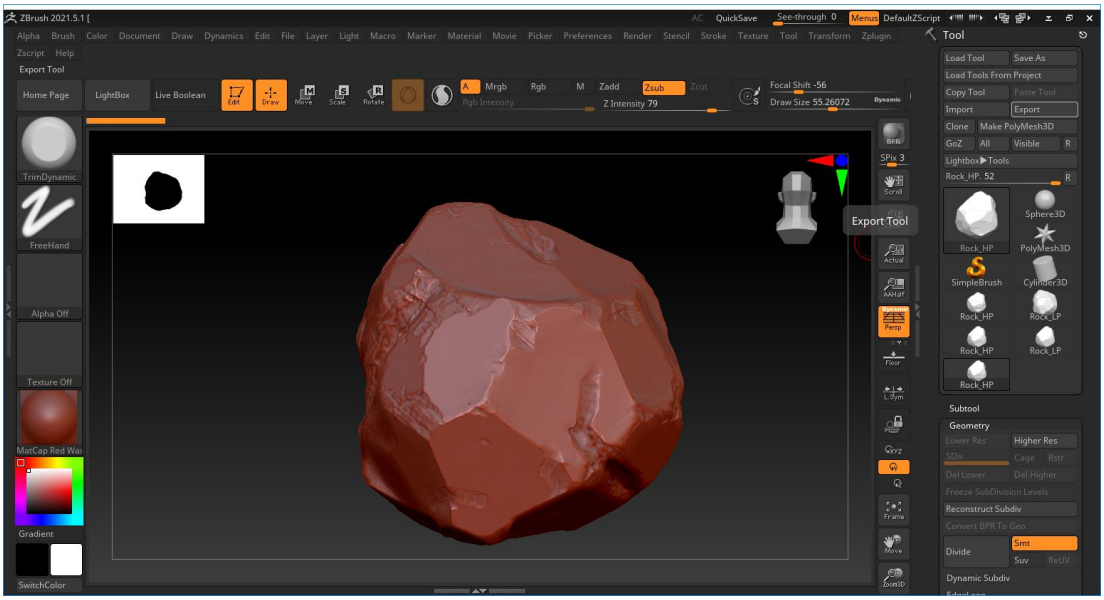

Figure 1095 - Saving the high poly asset.

Choose the folder to save to, enter in a file name and click Save. I appended '_HP' to the file name to differentiate it as the high poly version of our asset.

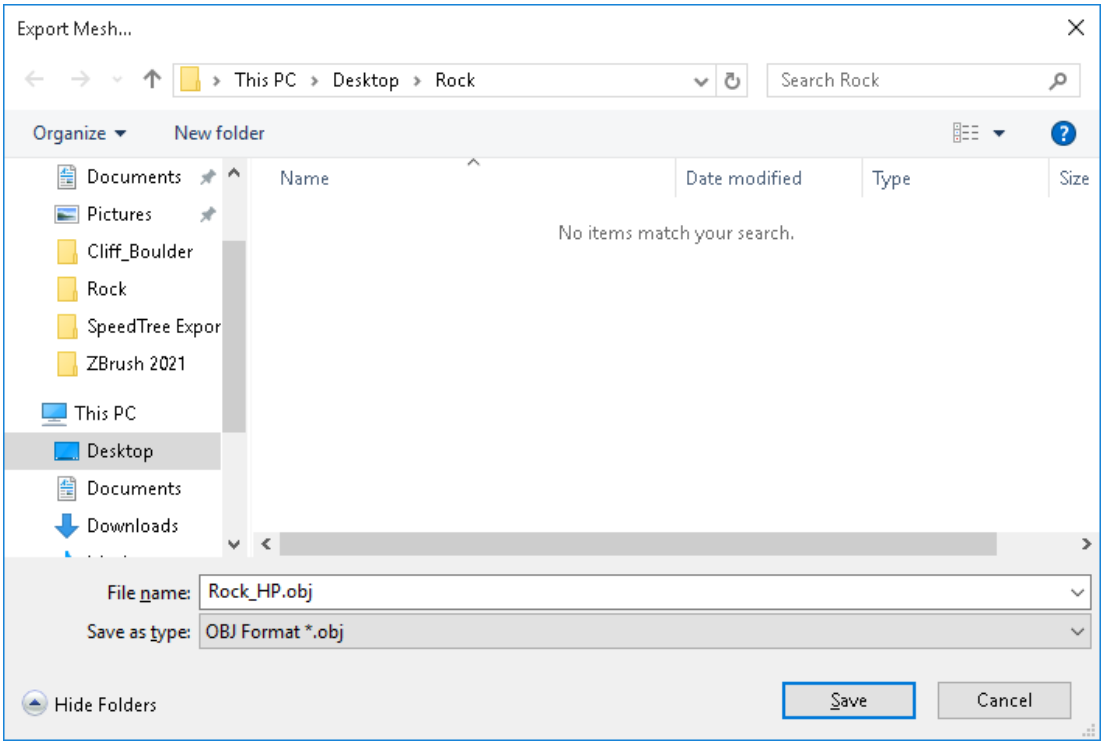

Figure 1096 - Setting the folder and file name.

Next, to create a low poly version I'm just going to use ZRemesher. I set Target Polygons Count to 0.3. You might need to play around with this value on your end to reduce the point count to something more reasonable.

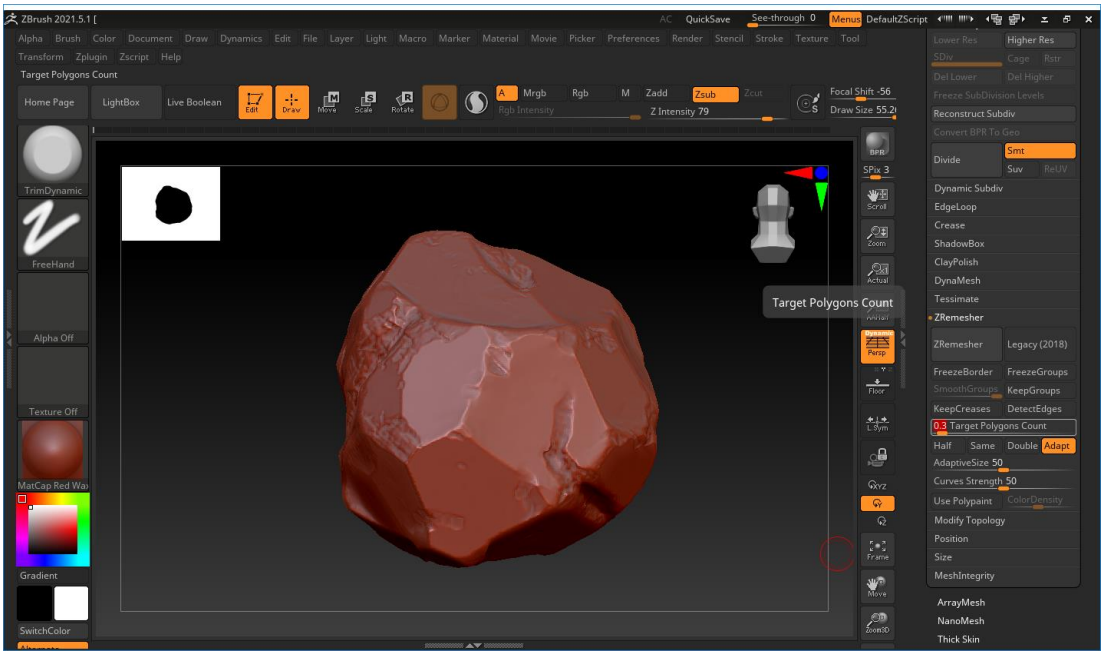

Figure 1097 - ZRemesher.

Click on ZRemesher to begin retopologizing. Depending on the type of model you may need to toggle KeepCreases to maintain hard edges, but for a natural object like this rock it isn't really necessary.

Once that's done, our model is now down to 600 points which is roughly on par with the vertex count of Skyrim boulders.

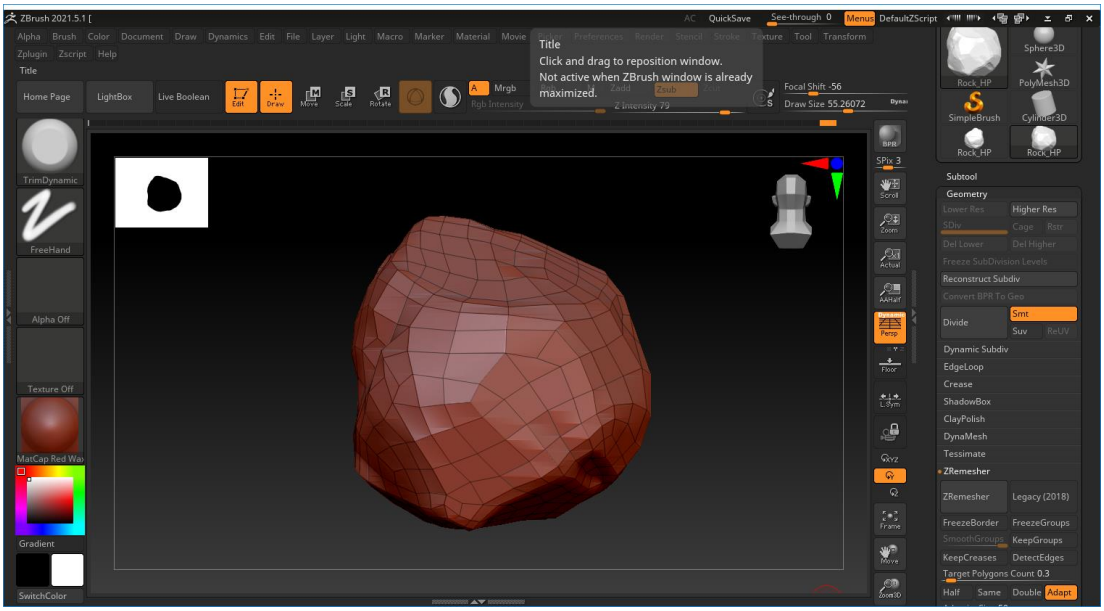

Figure 1098 - Retopologized mesh with a lower poly count.

Before we save our low poly version of the asset, we need to make sure the UVs have been unwrapped.

Go to Zplugin > UV Master.

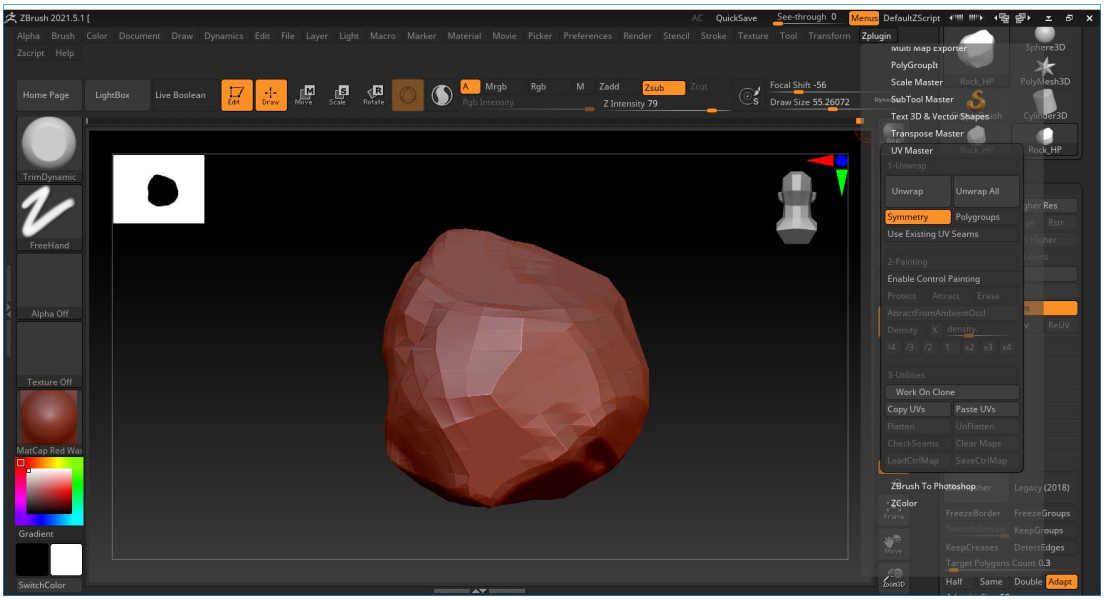

Figure 1099 - UV Master.

Click on Unwrap All.

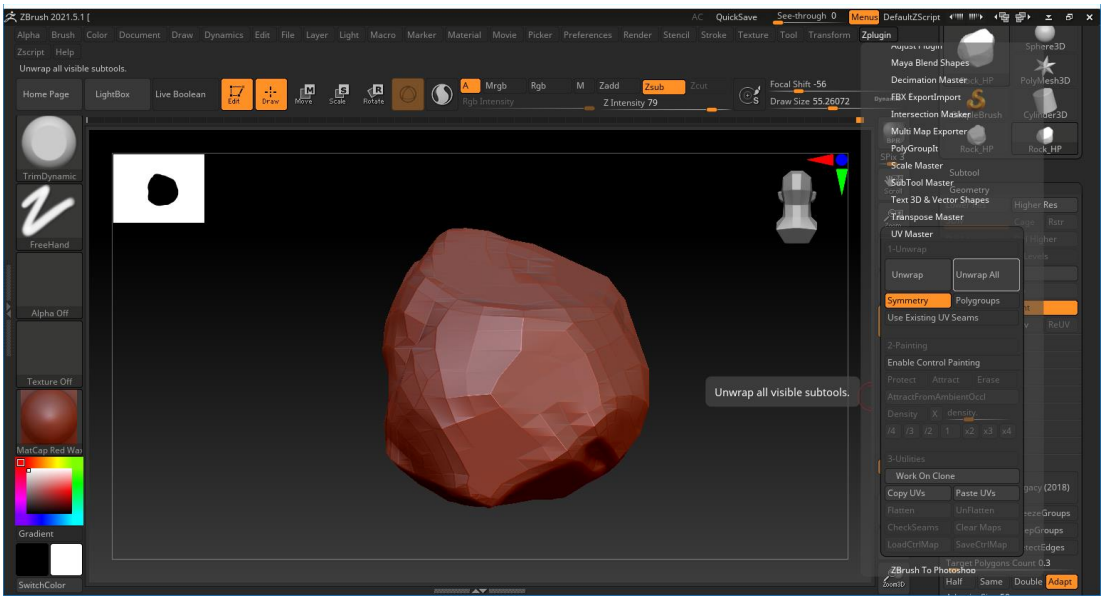

Figure 1100 - Unwrap All.

To view the UVs, go to Zplugin > UV Master and click on Flatten.

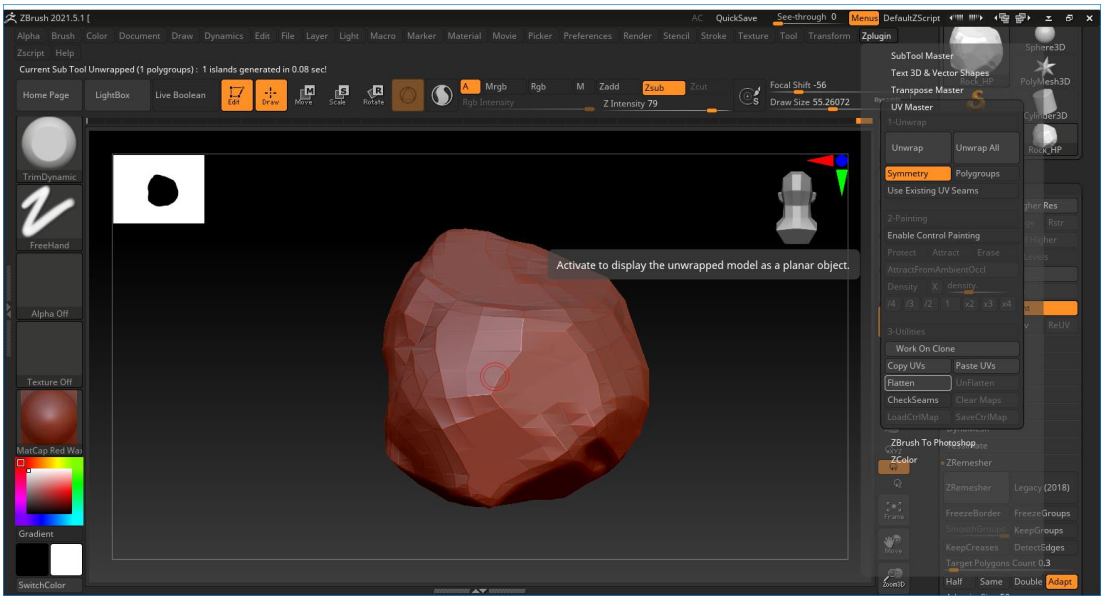

Figure 1101 - Flatten.

Here are our UVs. As you can see there are some problems with stretching and pinching that we'll need to fix.

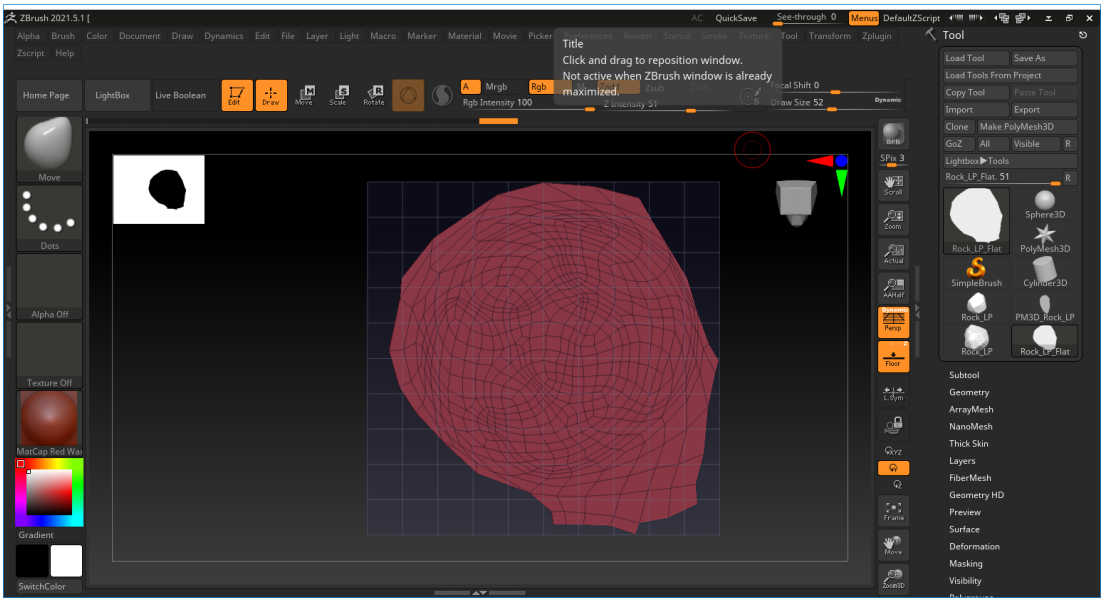

Figure 1102 - UVs.

There are several ways to go about doing this. You can use the Polish slider under Deformation to try and relax the UVs, or use the Move and Smooth brush to adjust and relax specific areas.

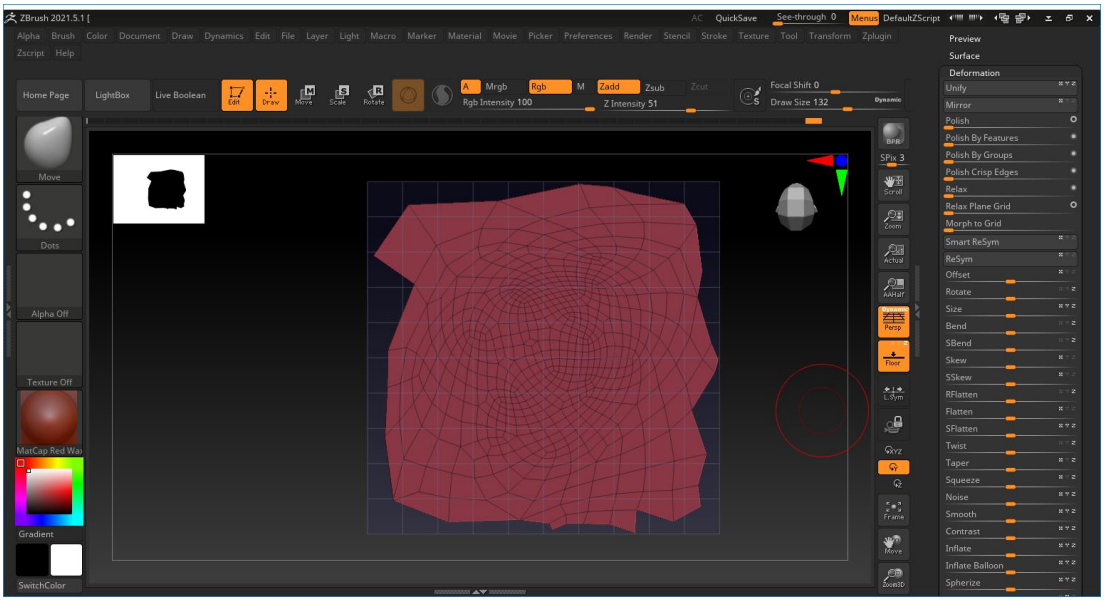

Figure 1103 - Relaxing the UVs.

This is still not *good*, but it's a slight improvement on what we had before.

We'll be adjusting UVs in 3ds Max shortly.

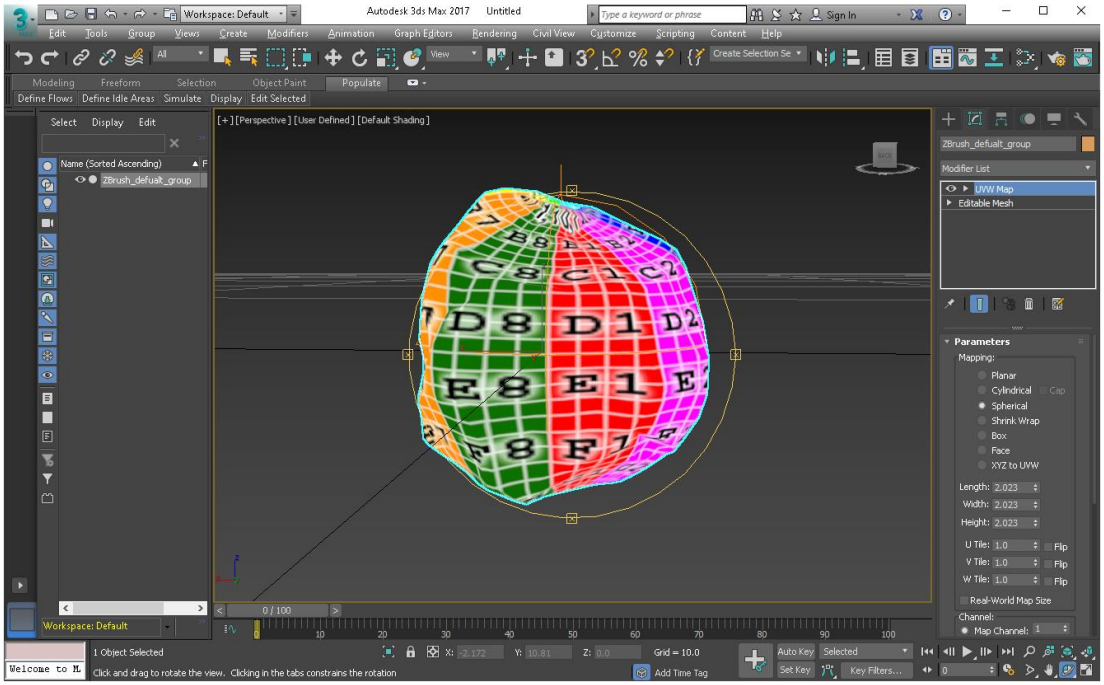

Figure 1104 - UVs in 3ds Max.

When you're done adjusting the UVs in Zbrush, go back to Zplugin > UV Master and click on Unflatten.

Click on Export again and save the low poly version of the asset. I added a '_LP' extension to differentiate it from the high poly version.

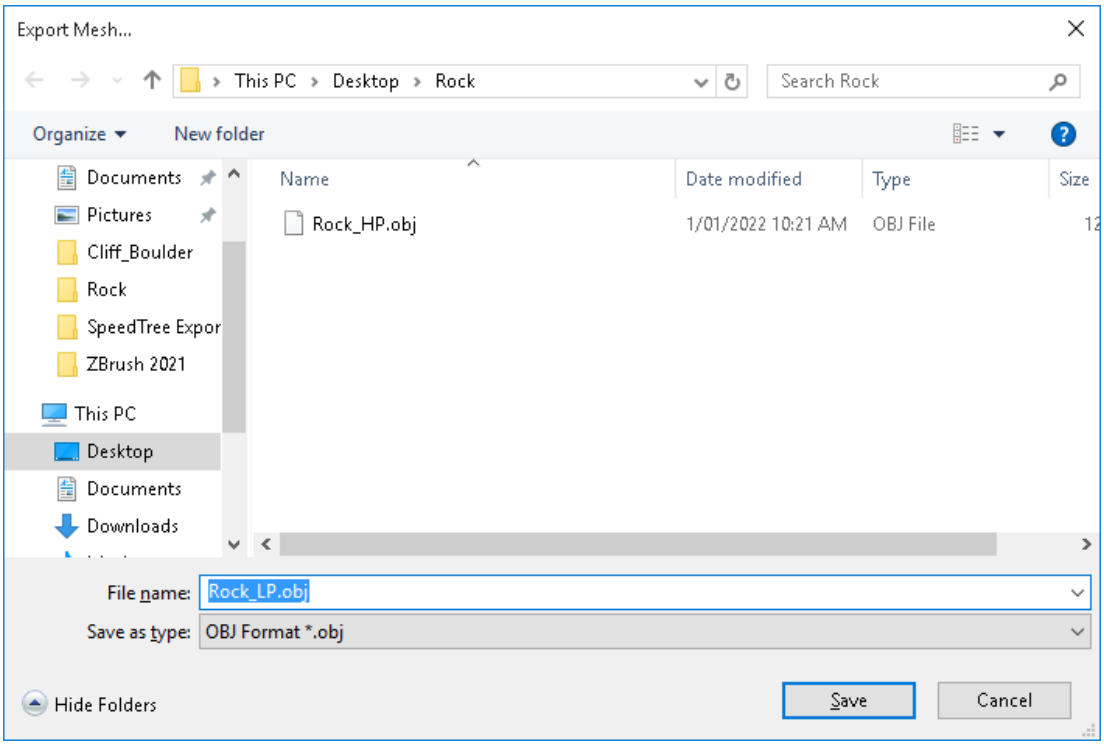

Figure 1105 - Saving the low poly asset.

Like I mentioned previously, we can adjust the UVs in another program which, for this example, will be necessary before we bring the asset into Substance Painter to apply a material. Organic shapes are generally a bit trickier to unwrap.

Note: I'm not an expert at 3d modelling and there are probably better methods for fixing UVs. I'd recommend taking a look around for plugins that simplify the process, but for the following example I'm just going to use the standard tools in 3ds Max.

So let's bring the model into 3ds Max first to try and tweak the UVs.

Open 3ds Max and go to Import.

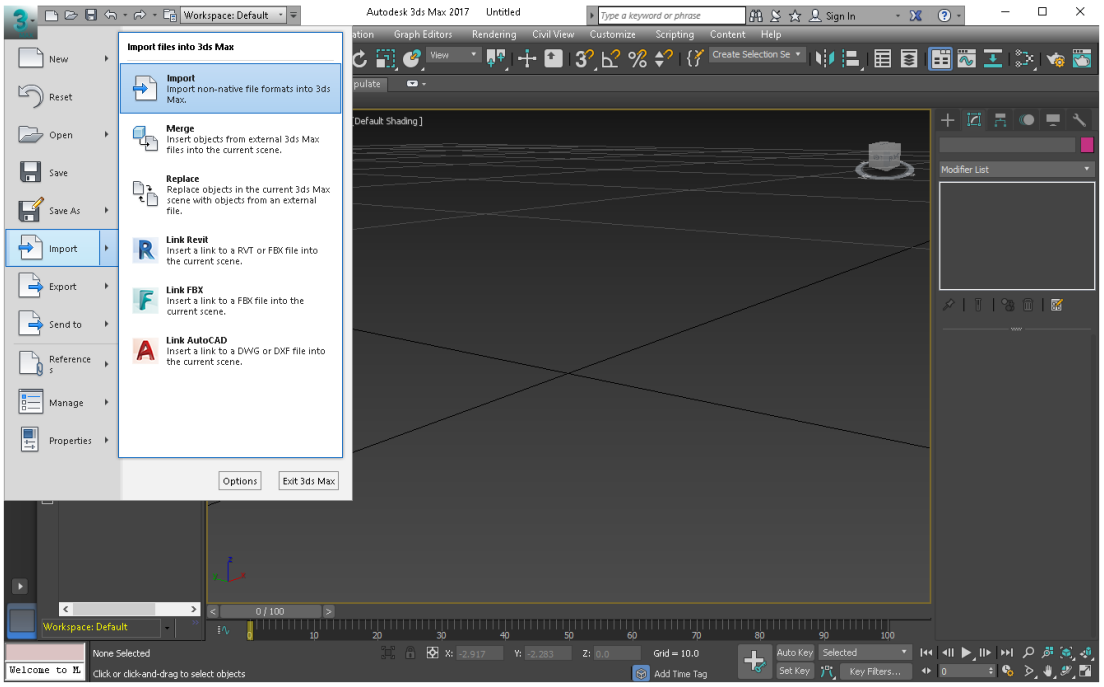

Figure 1106 - Import.

Select the low poly .obj and click Open.

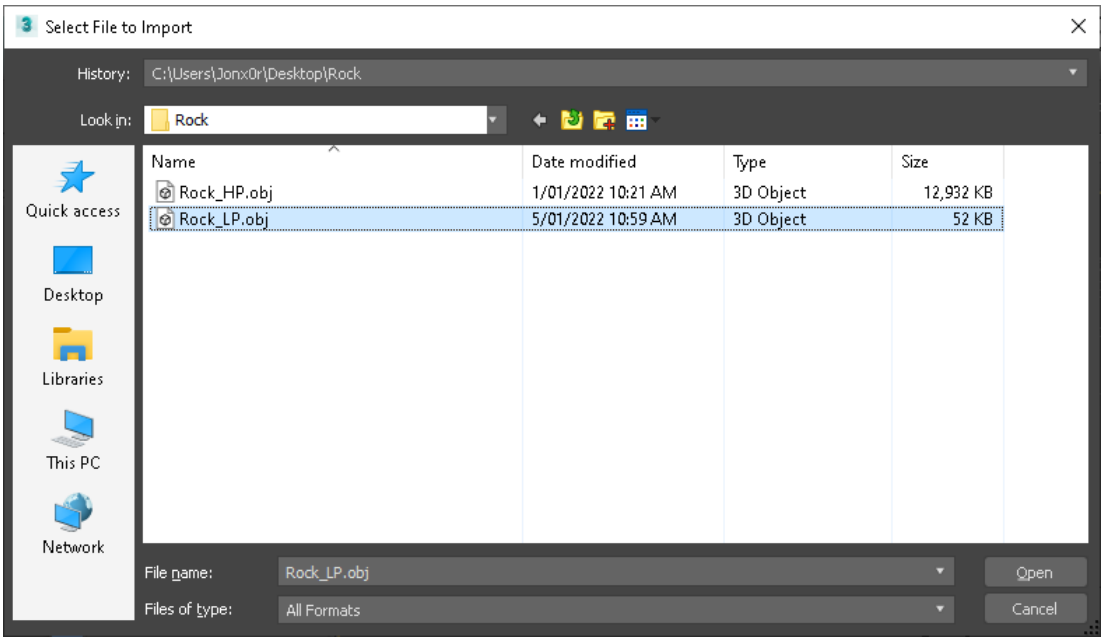

Figure 1107 - Importing the low poly .obj.

Tick 'Import as single mesh' and 'Import as Editable Poly'.

Under Geometry, ensure 'Flip ZY-axis' and 'Texture coordinates' are ticked then click Import.

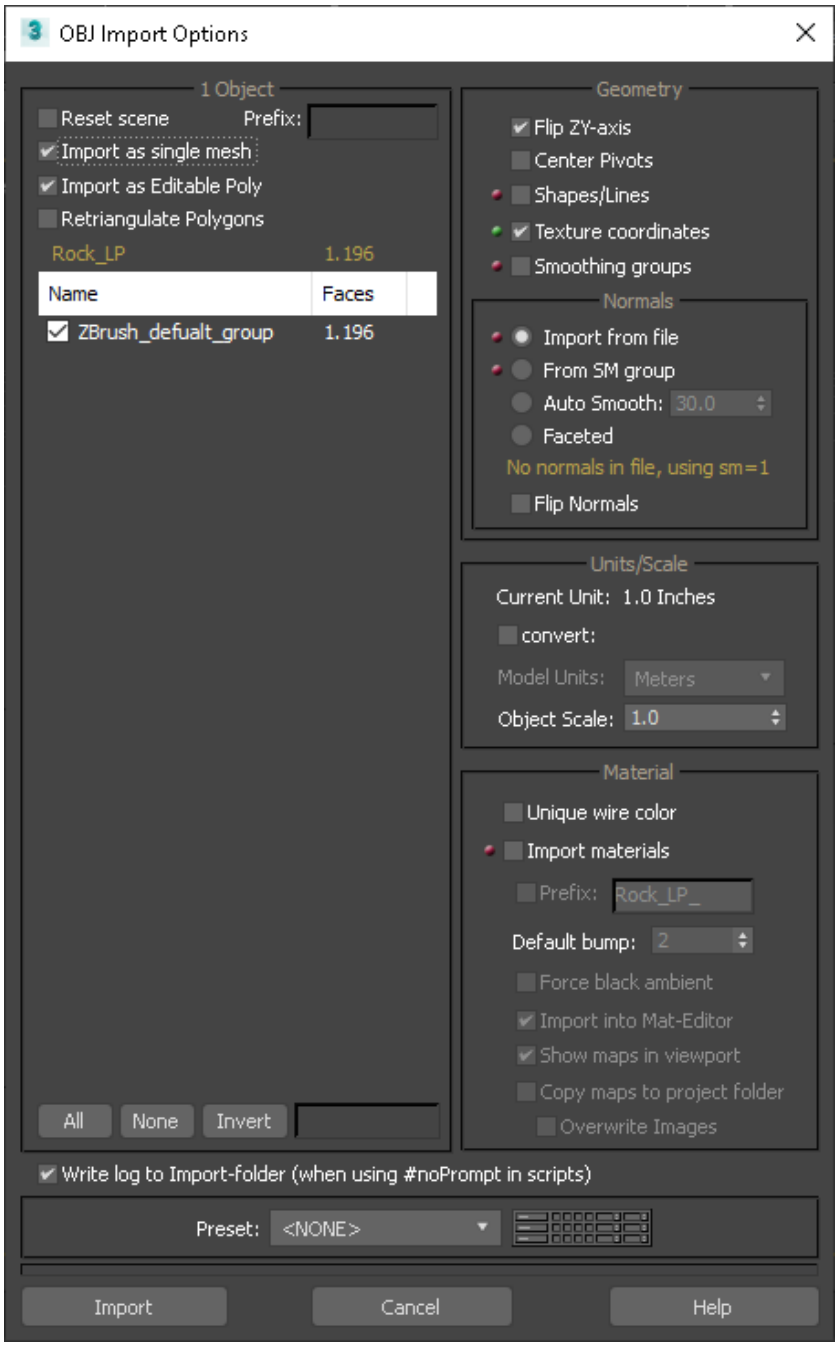

Figure 1108 - .obj import settings.

Here's our low poly asset in 3ds Max.

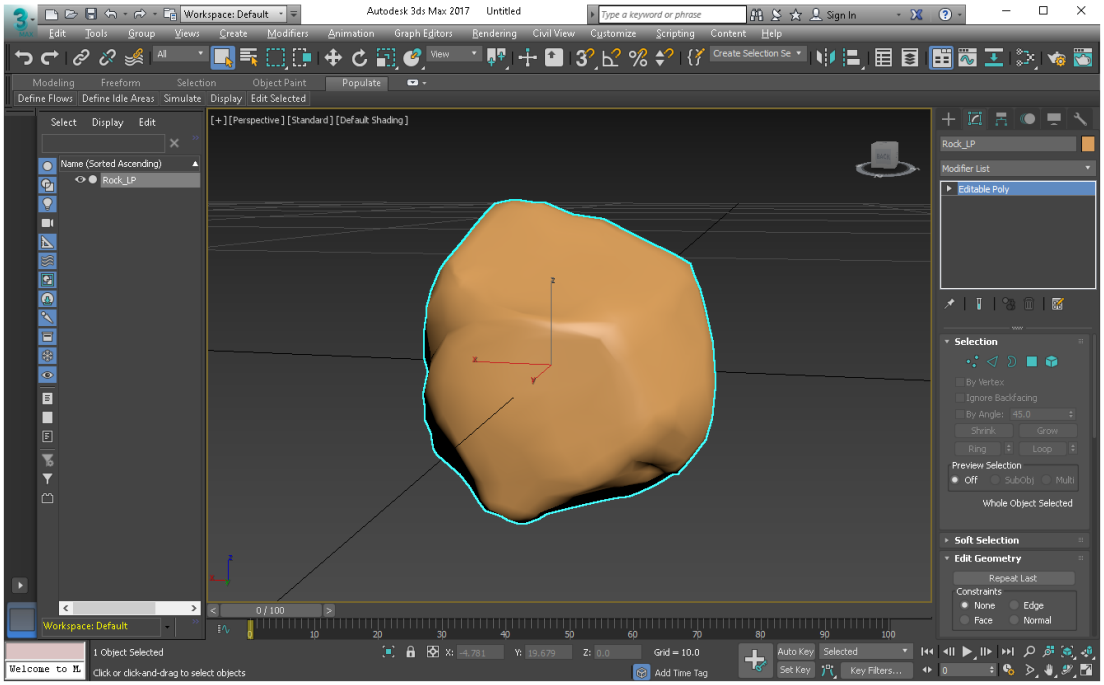

Figure 1109 - .obj imported into 3ds Max.

To quickly see UVs, click on Standard and go to Materials > Override with UV Checker.

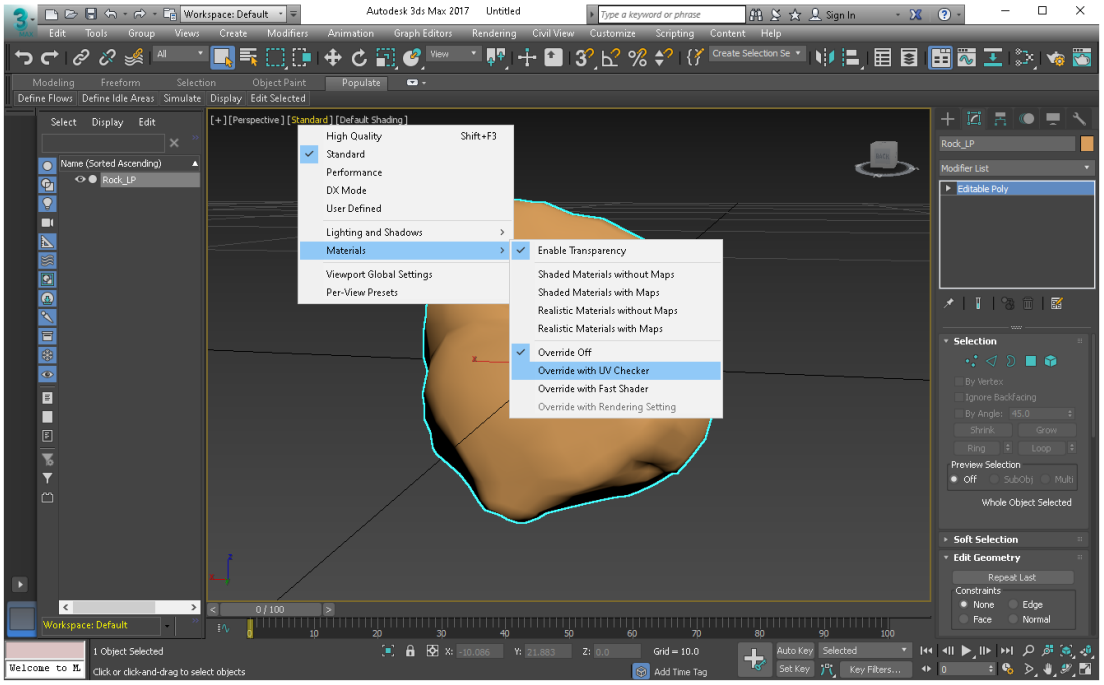

Figure 1110 - Enabling UV Checker material override.

We should now be able to see the UVs on our model. As you can see, some work needs to be done.

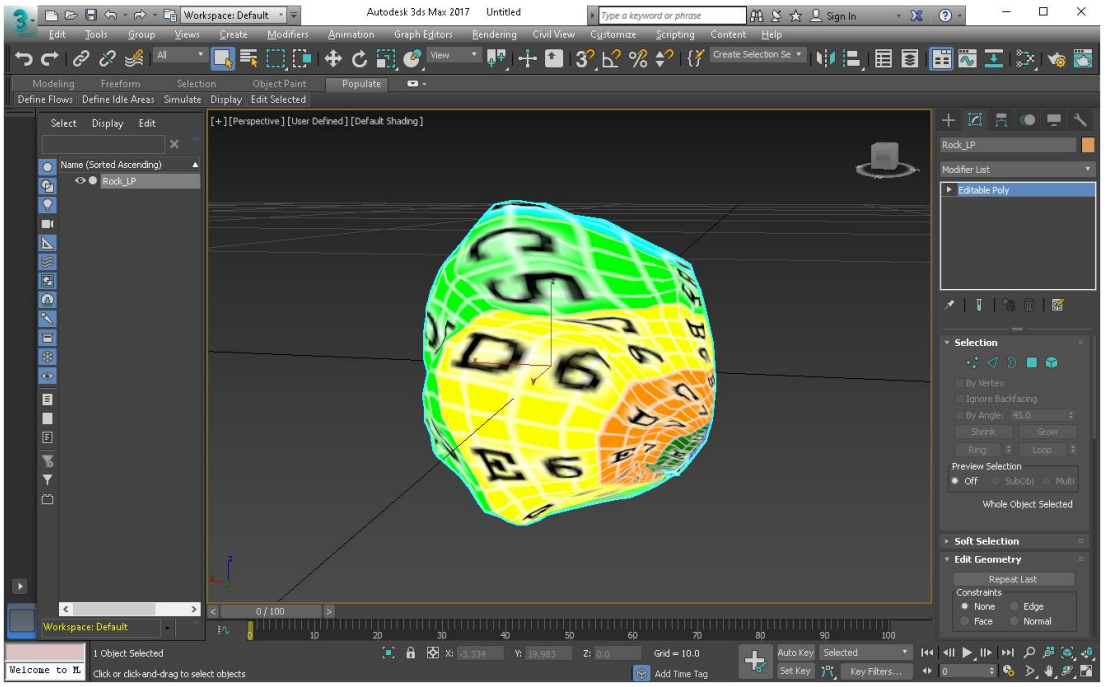

Figure 1111 - UV material override.

From the Modifier List, add an Unwrap UVW modifier.

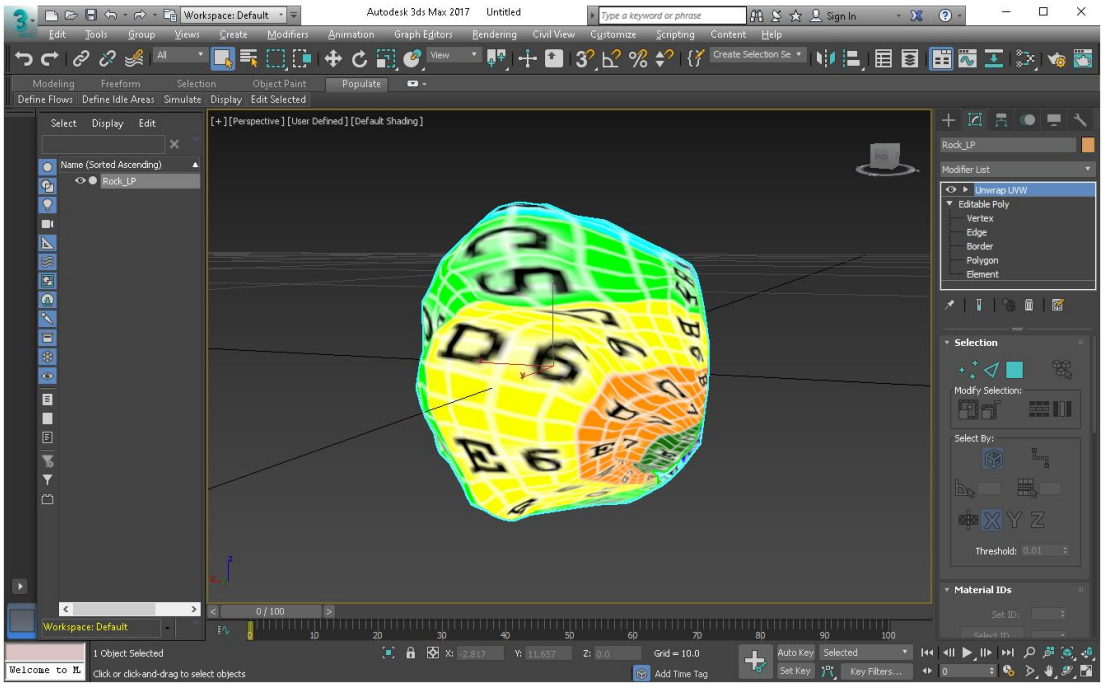

Figure 1112 - Unwrap UVW modifier.

Scroll down and click on the Open UVW Editor button.

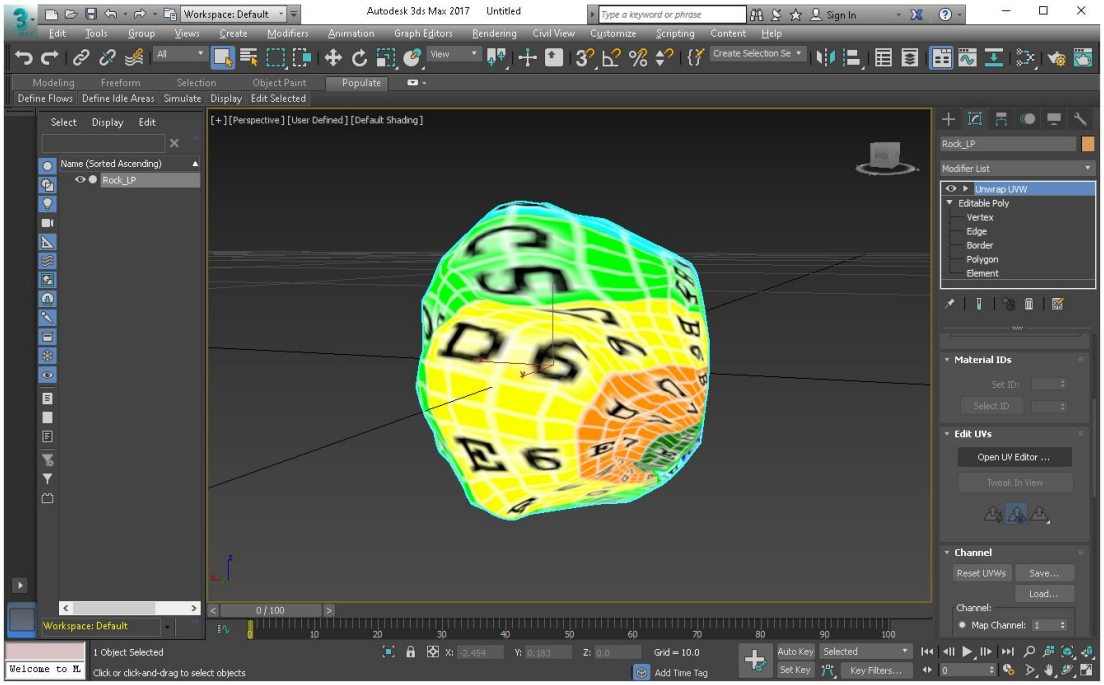

Figure 1113 - Open UVW Editor.

We should be able to see the UVW map here.

Under the Peel section, click on the Reset Peel button.

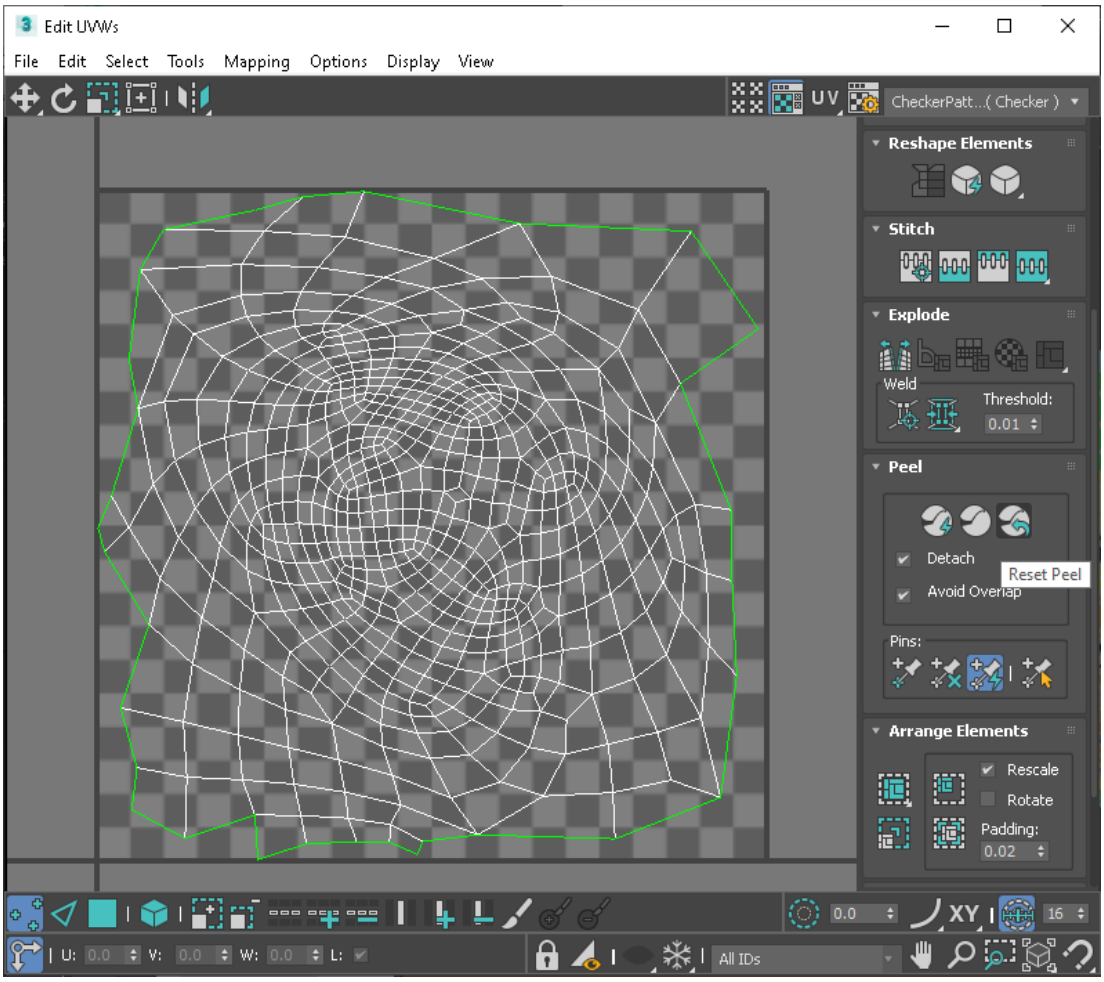

Figure 1114 - Reset Peel.

This should reset our UVs like so.

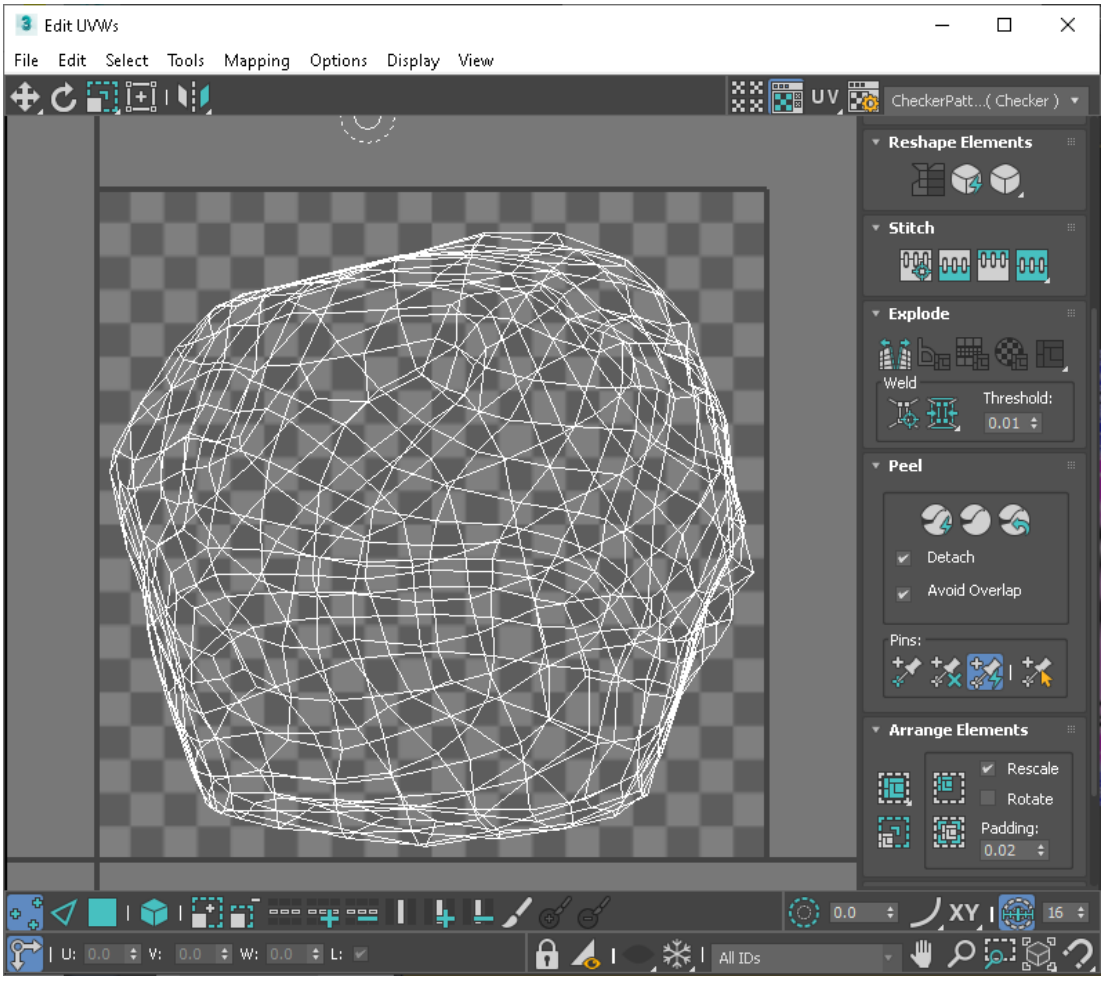

Figure 1115 - UVs reset.

For this example I'm going to cut the rock in half using the Point-to-Point Seams tool. Generally you'd want to follow hard edges, but for a naturally shaped object like a rock it's a bit less obvious where the seam should go.

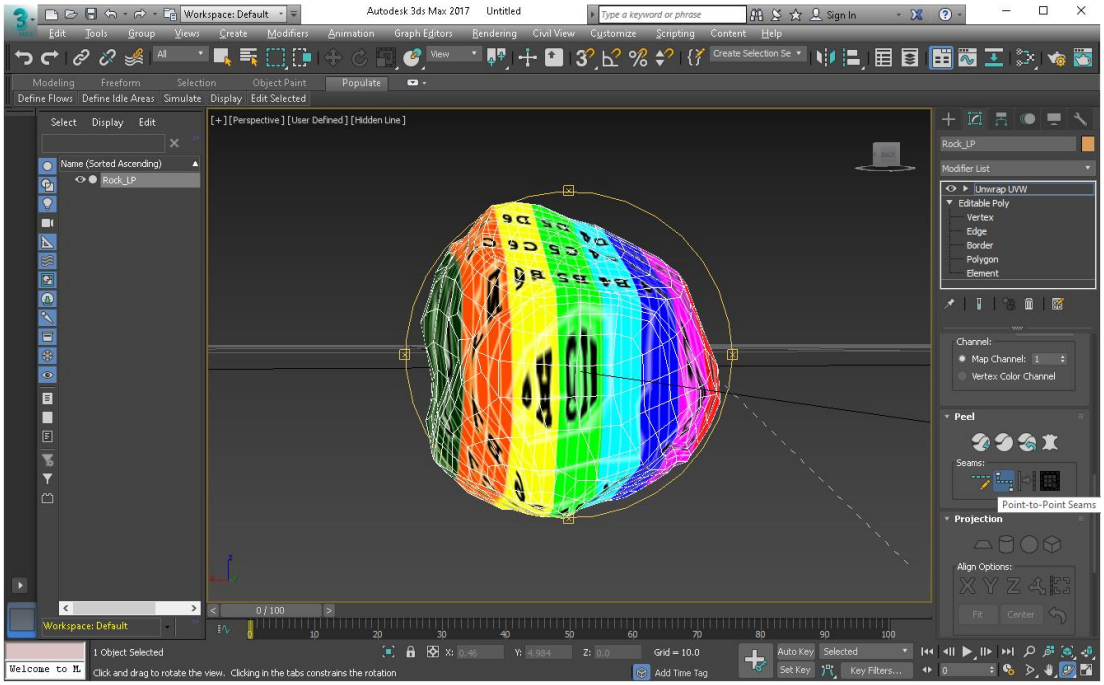

Figure 1116 - Point-to-Point Seams tool.

This seam will affect how the UVWs will unwrap when we peel them next.

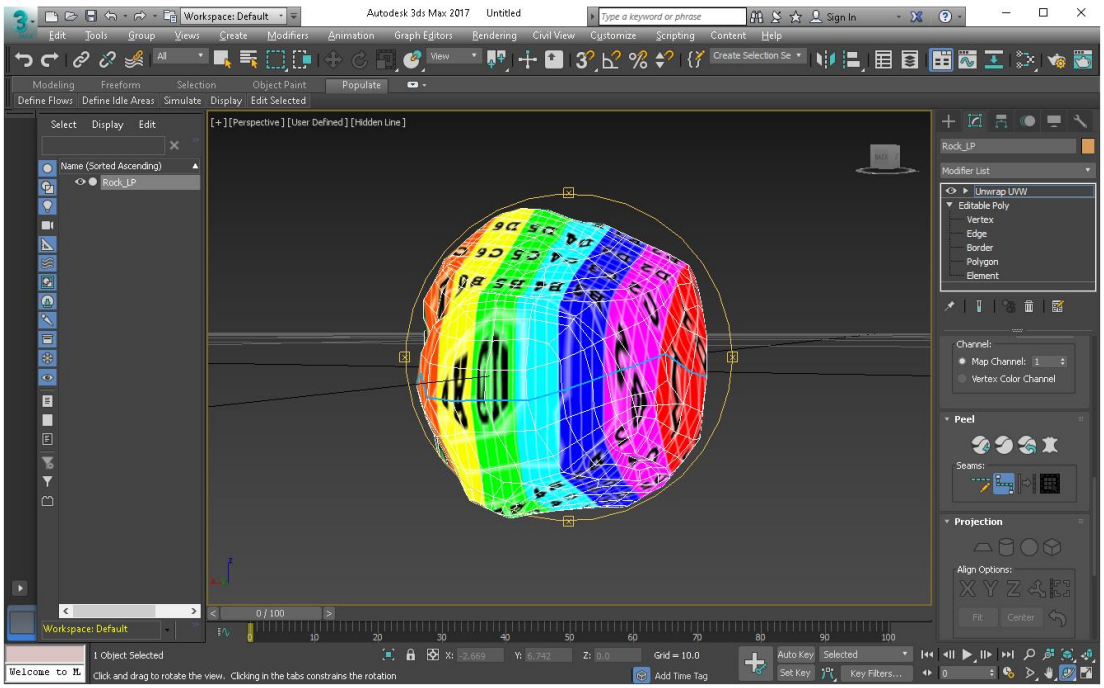

Figure 1117 - Seam added to UVW.

Once the seam has been added, click on Quick Peel.

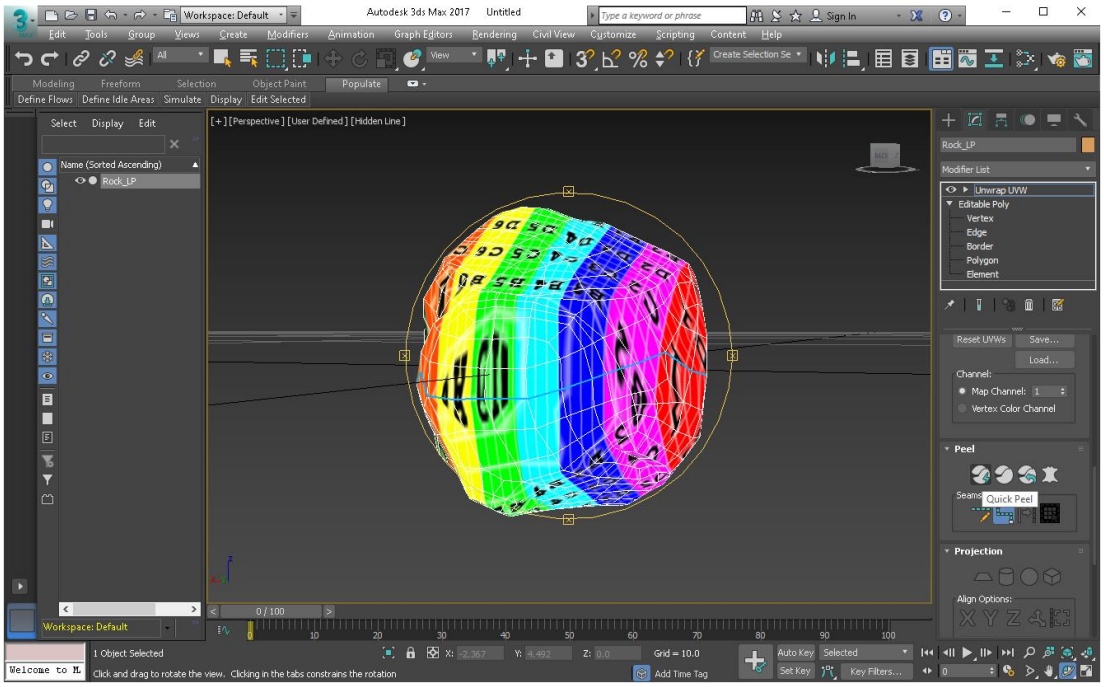

Figure 1118 - Quick Peel.

The seam should've split the UVWs into two separate islands like so.

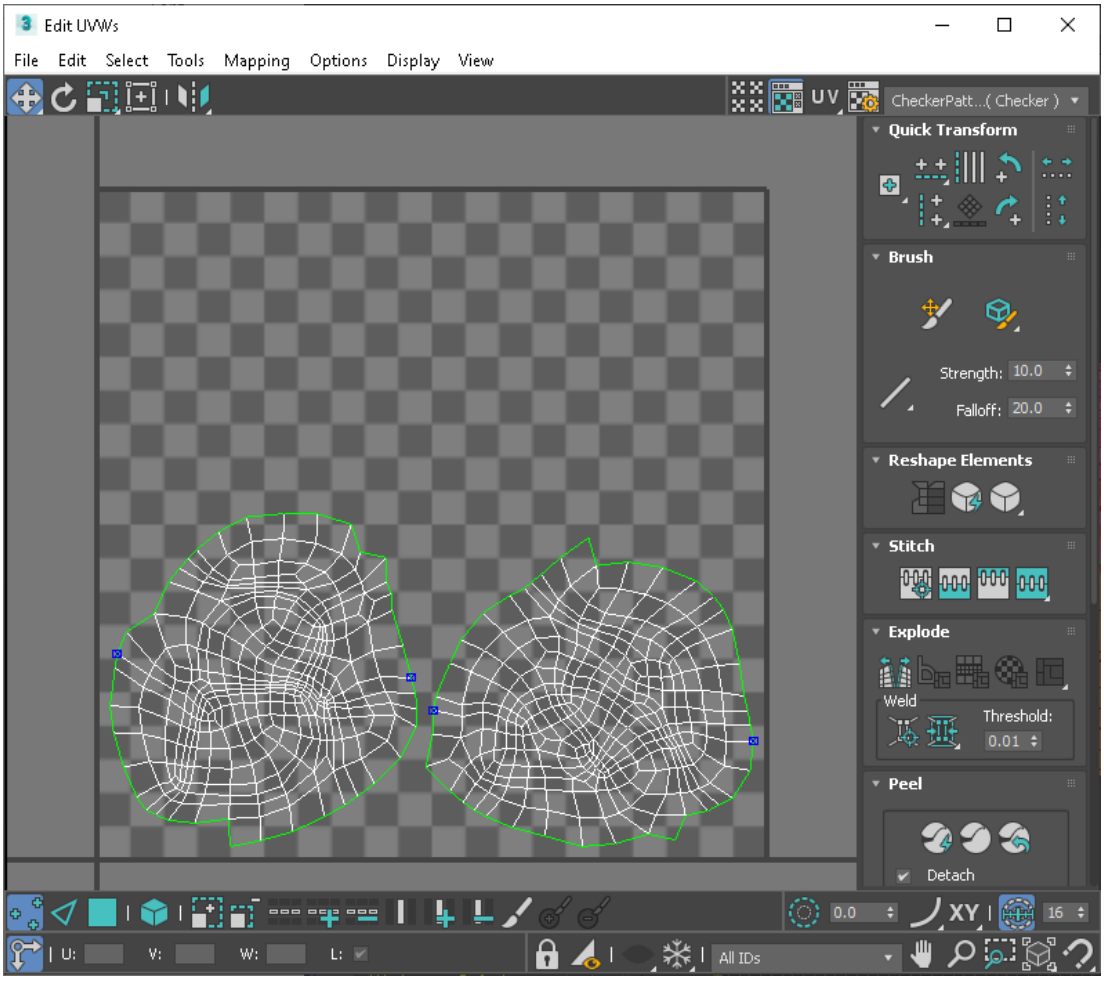

Figure 1119 - UVWs with seam.

Firstly, turn the viewport material override off by going to Materials > Override Off.

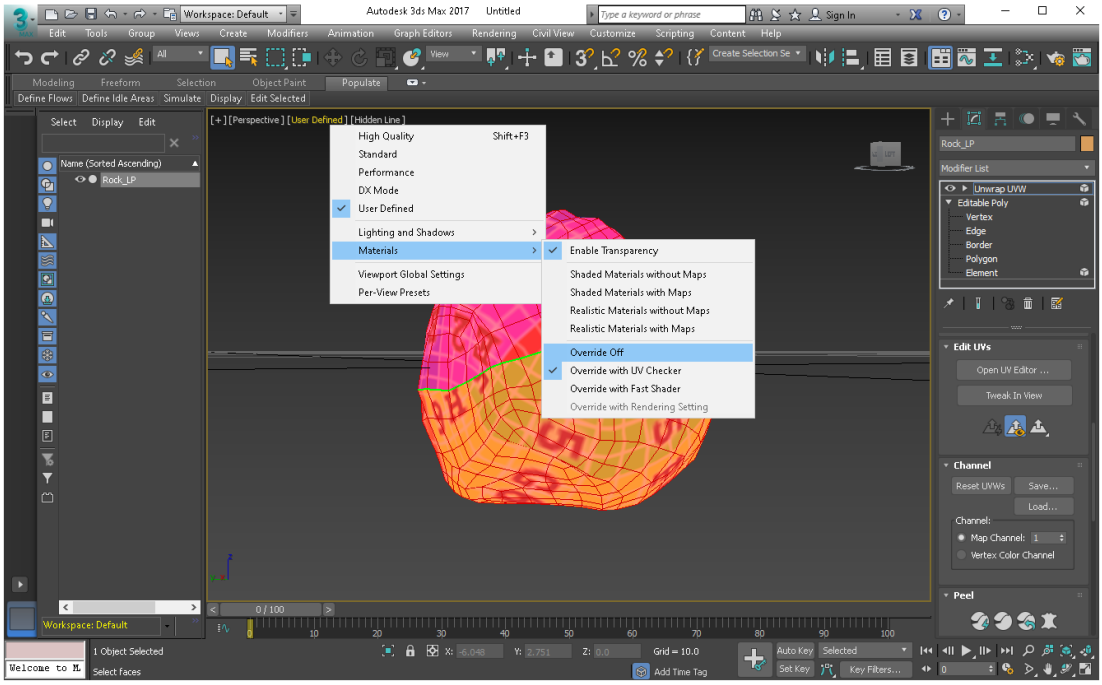

Figure 1120 - Turning off the material override.

In the UVW editor, select CheckerPattern. You might need to select Texture Checker first then switch back to CheckerPattern in order to update the texture on the model in the viewport.

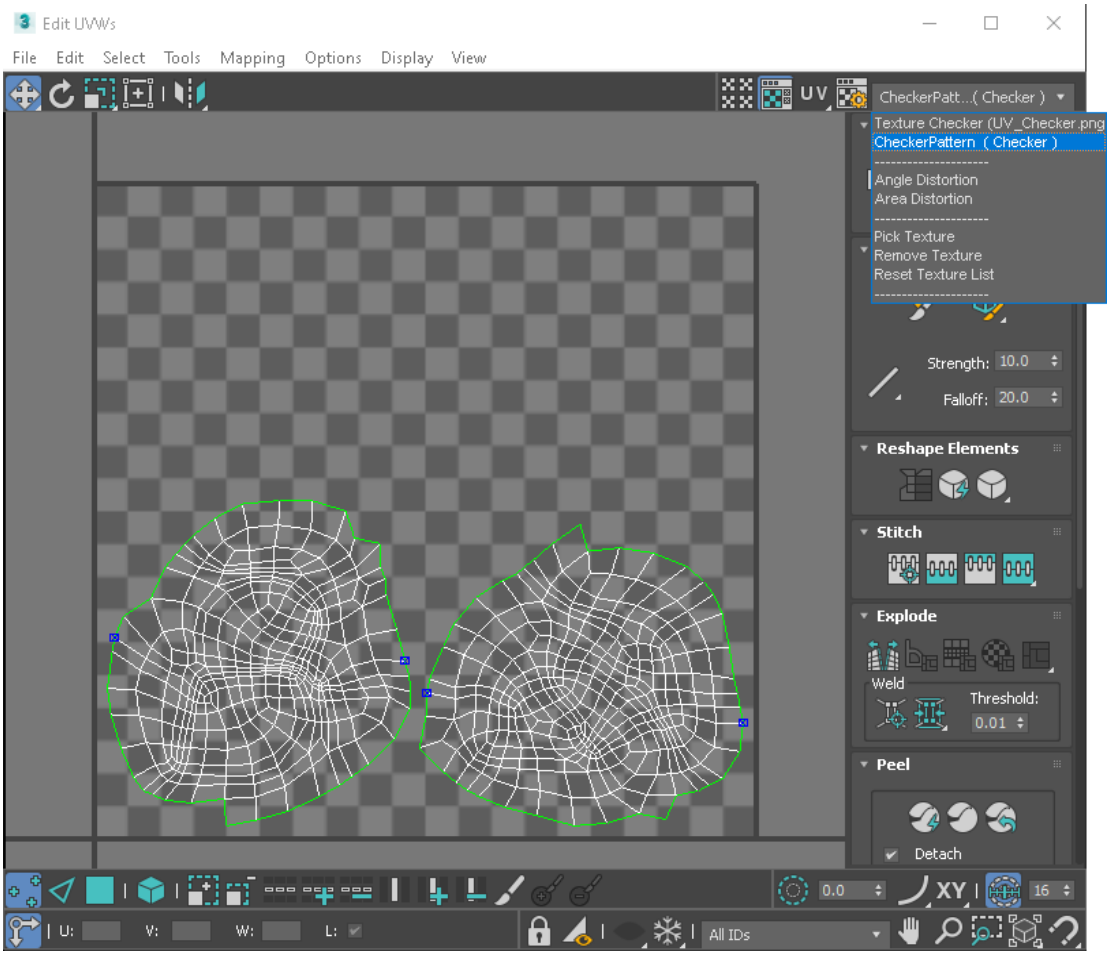

Figure 1121 - Checker Pattern.

The checker pattern should help us visually gauge whether there's any pinching or stretching that needs to be fixed in our UVWs.

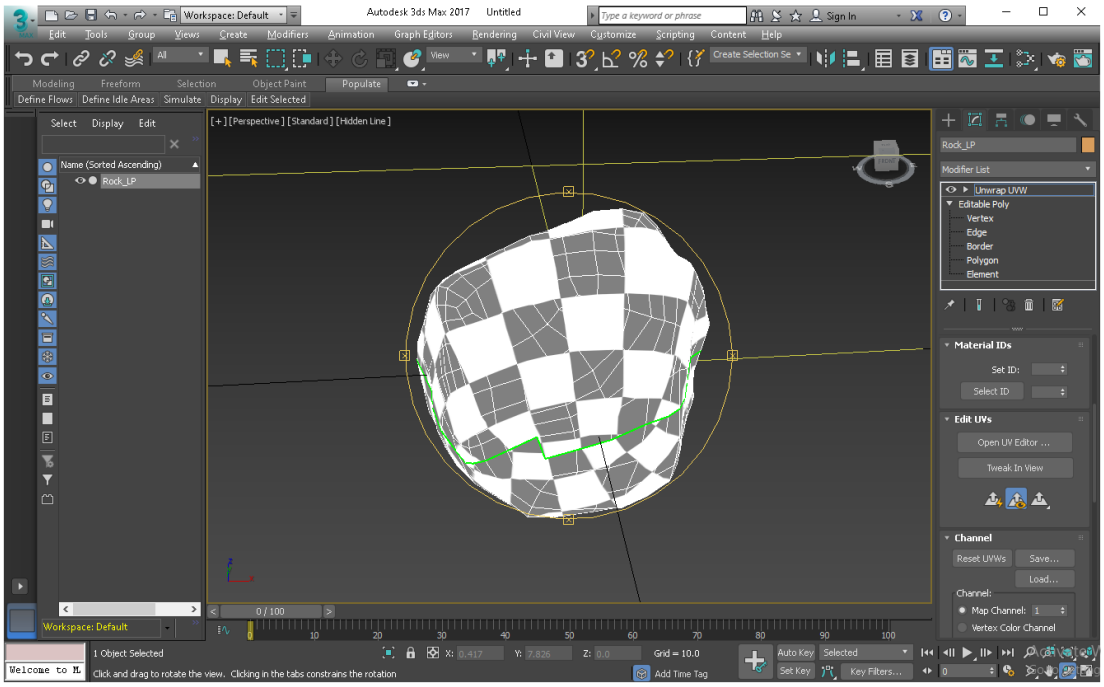

Figure 1122 - Checker pattern in viewport.

In the UVW editor, go to Tools > Relax.

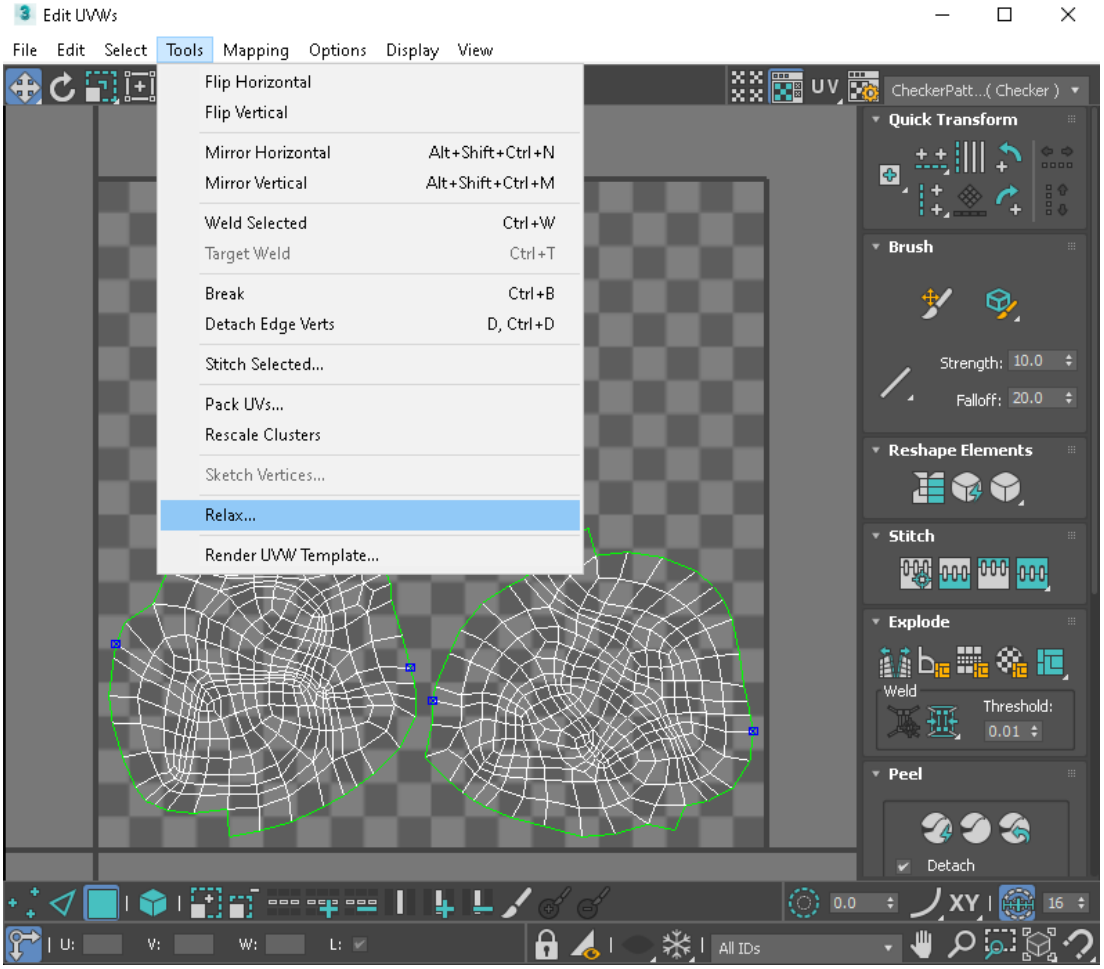

Figure 1123 - Relax UVW.

Ensure the drop-down is set to 'Relax By Polygon Angles' then click on Start Relax.

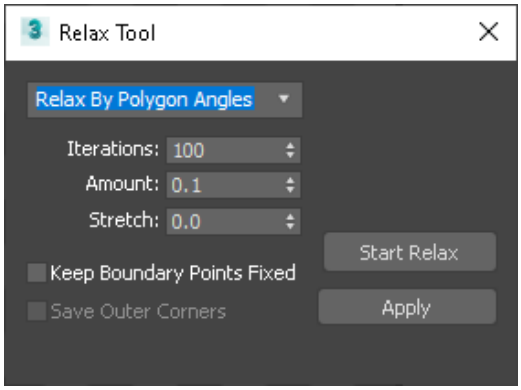

Figure 1124 - Relax settings.

Once the quads have spread themselves a bit more evenly, click Stop Relax.

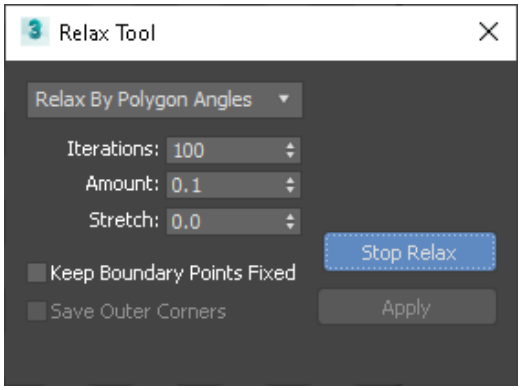

Figure 1125 - Stop Relax.

Close out of the Relax Tool.

Set the drop-down to Angle Distortion.

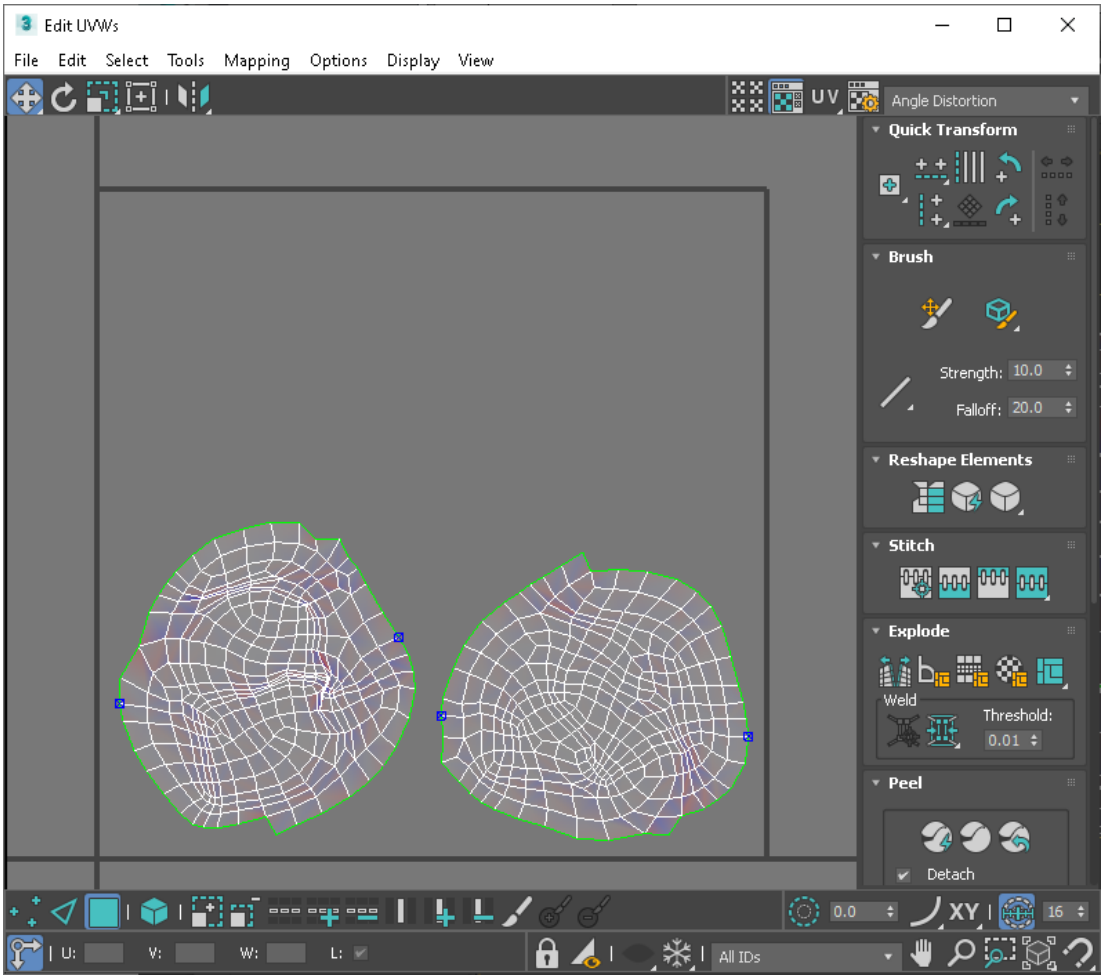

Figure 1126 - Angle distortion.

This will show us where the UVWs are getting pinched or stretched.

As you can tell by the red and blue, there's some stink happening in our UVWs. The brighter the colour, the stronger the distortion.

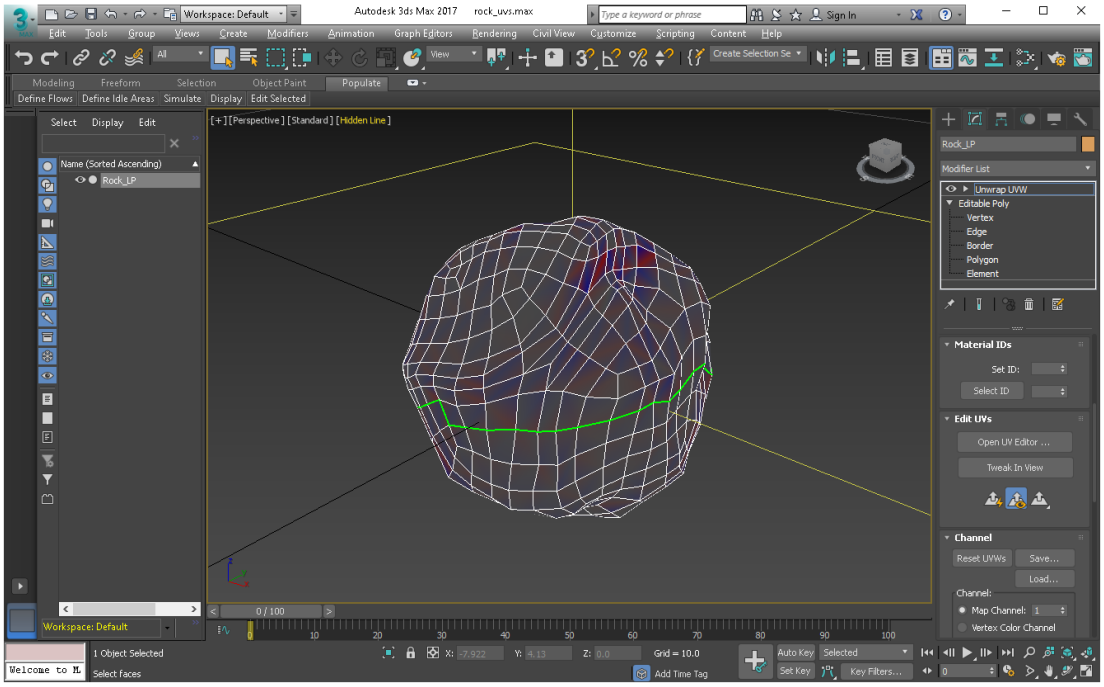

Figure 1127 - Angle distortion showing pinching and stretching.

You can use the UV Paint Movement tool to move vertices around to try and fix problematic areas manually. The colours will update automatically as you adjust things.

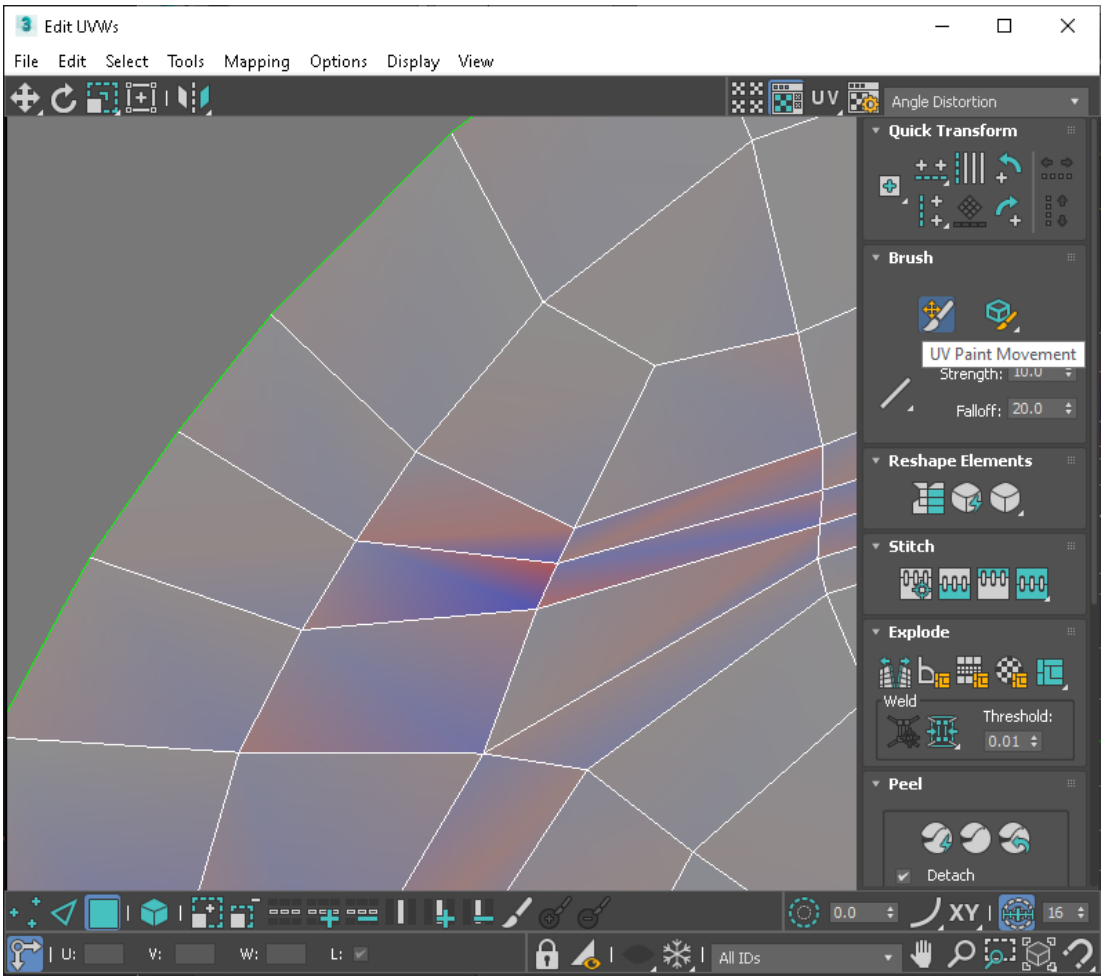

Figure 1128 - UV Paint Movement.

I added a couple extra seams near the most problematic areas and did another Quick Peel which seems to have eliminated most of the distortion.

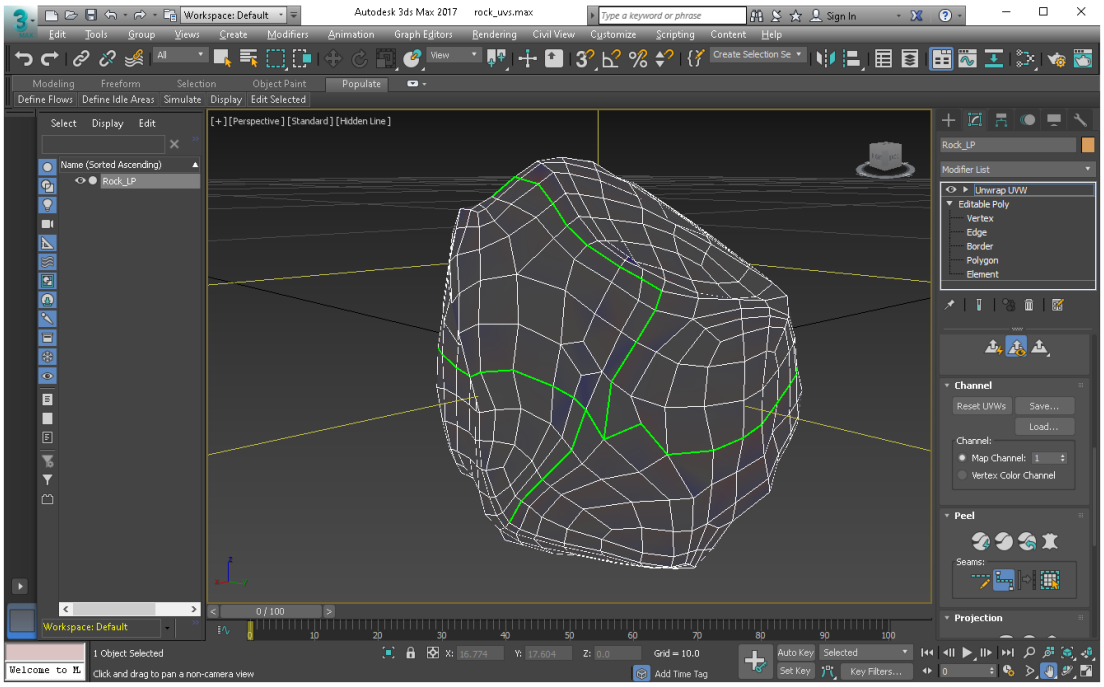

Figure 1129 - Added extra seams.

After running Relax again, the UVWs now look like this:

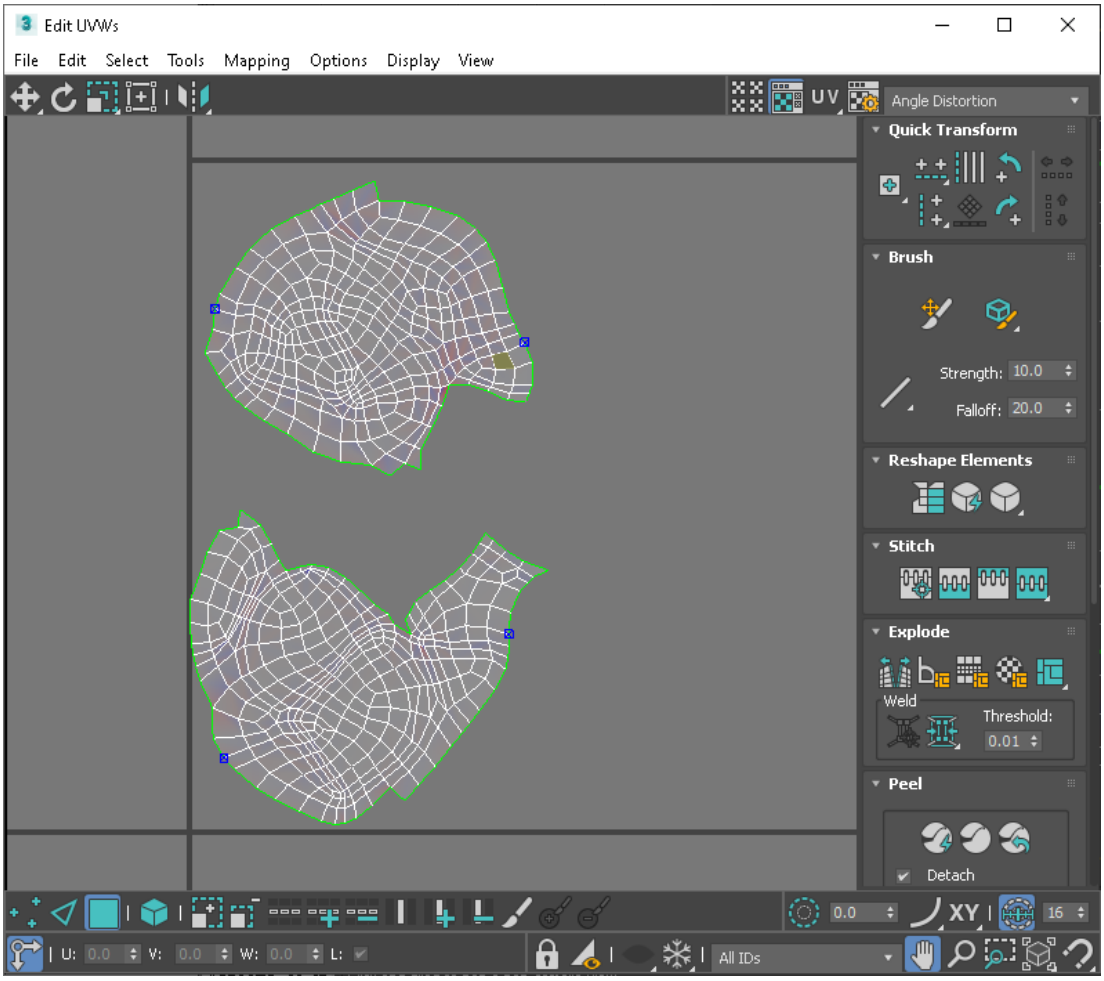

Figure 1130 - UVWs with distortion mostly fixed.

Setting the drop-down to Area Distortion shows us some mild distortion around the sharper edges of the rock and along the seam.

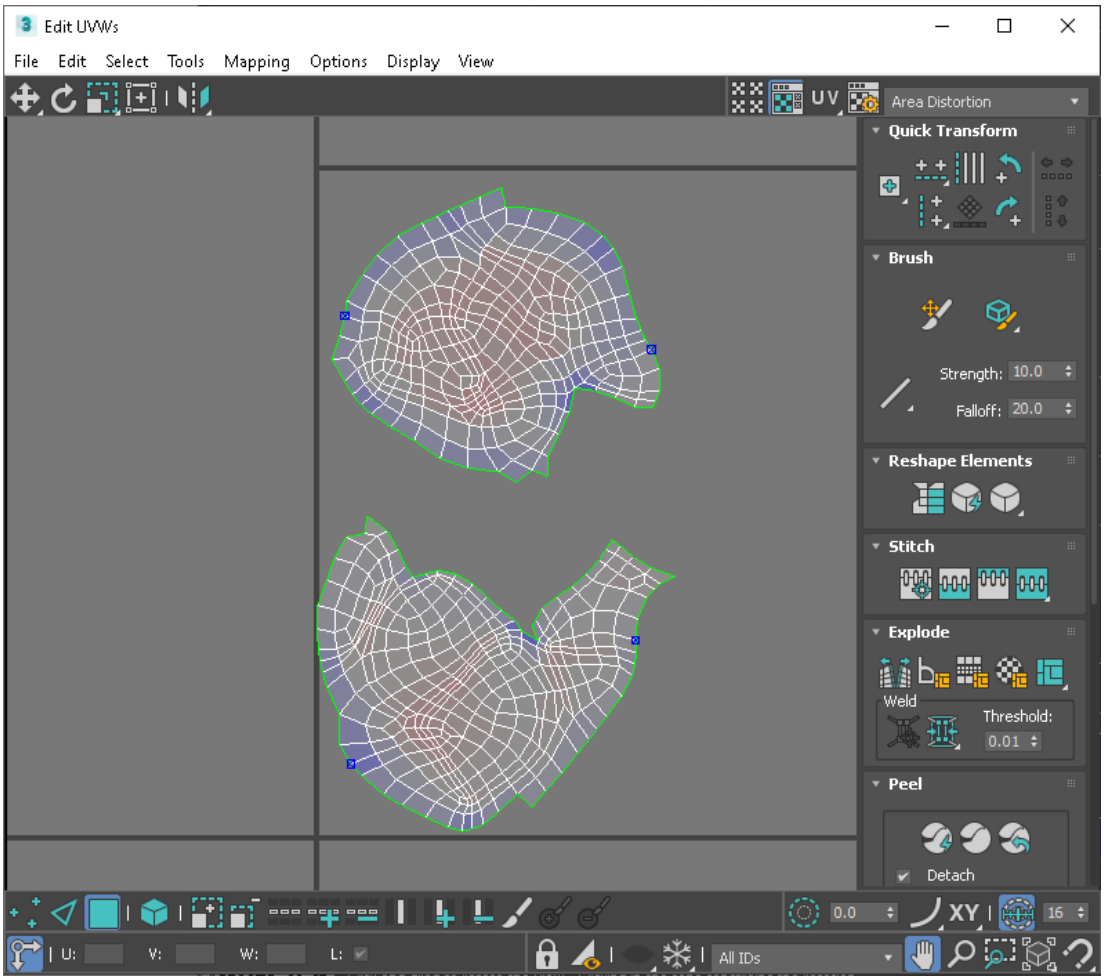

Figure 1131 - Area Distortion.

Once you're done tweaking the UVW map, scroll down to Arrange Elements.

Ensure Rescale and Rotate are ticked then click on the Pack Normalize button.

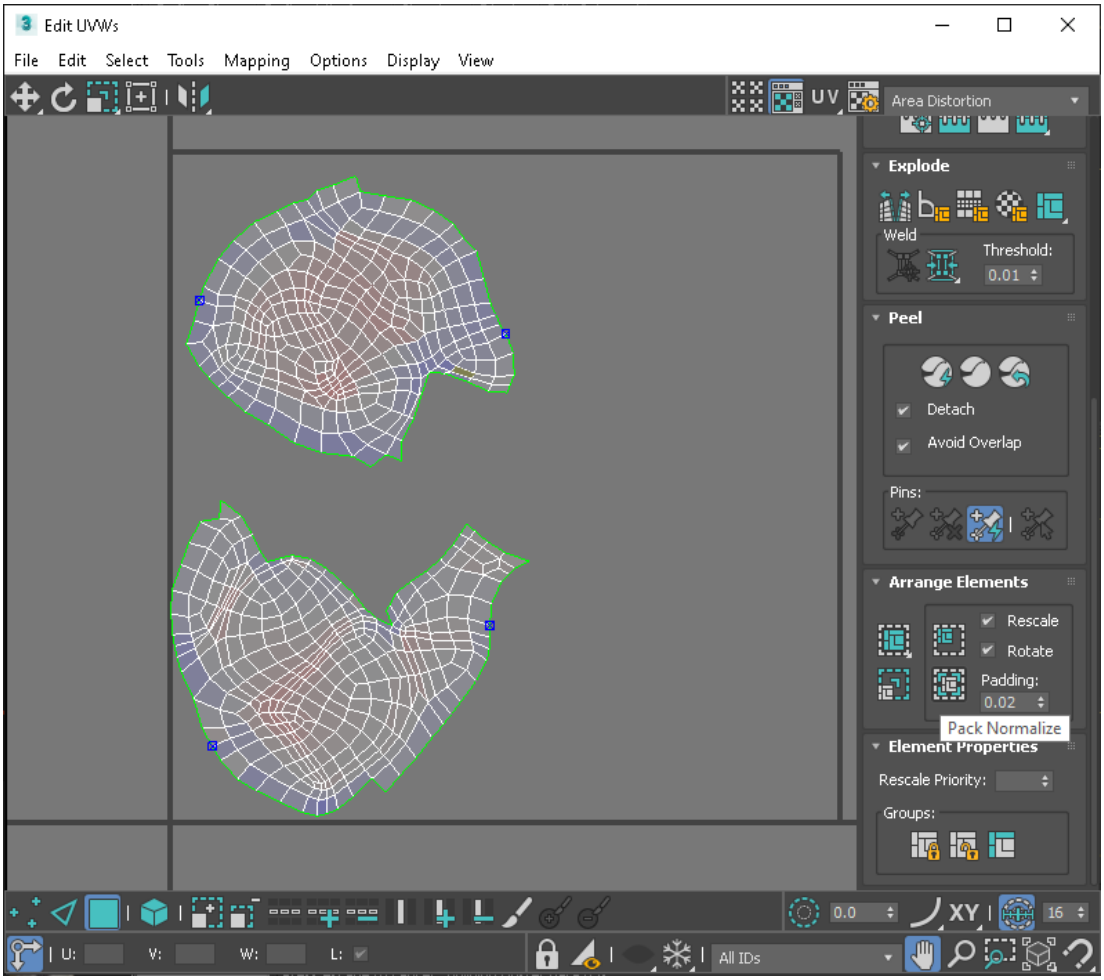

Figure 1132 - Pack Normalize.

This will attempt to make scale up the UVWs and rotate them so they use up as much of the available space as possible. It's not perfect but you can manually adjust the scale and rotation after the fact.

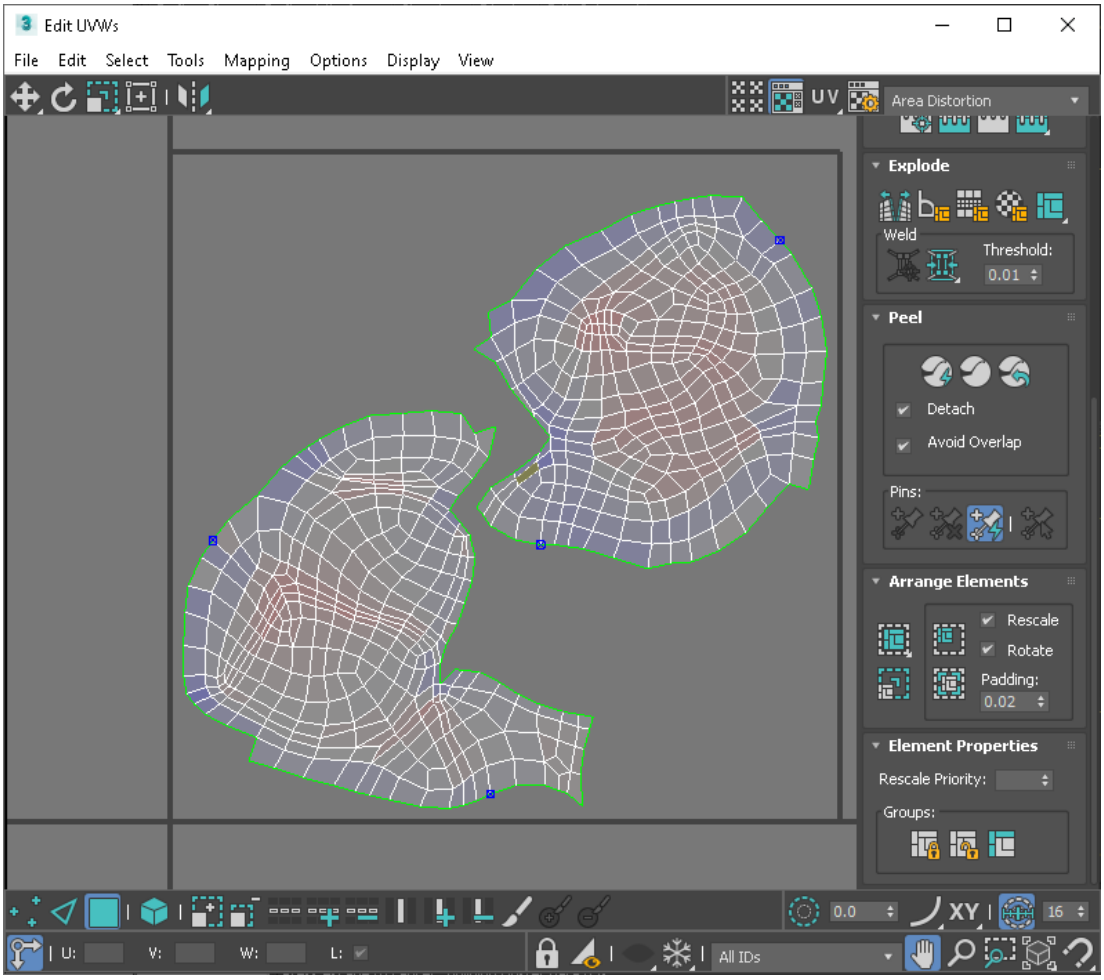

Figure 1133 - UVWs repacked.

Close Edit UVW, go back to the Modifier stack, right-click on Unwrap UVW and select Collapse All.

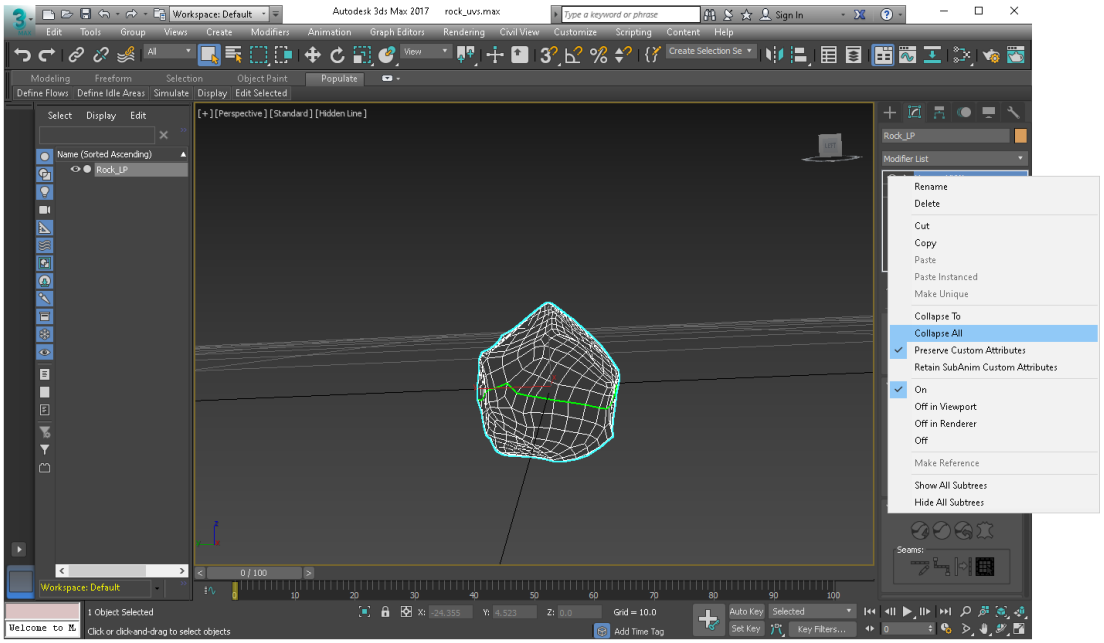

Figure 1134 - Collapse All.

This will collapse the Modifier stack down to Editable Poly.

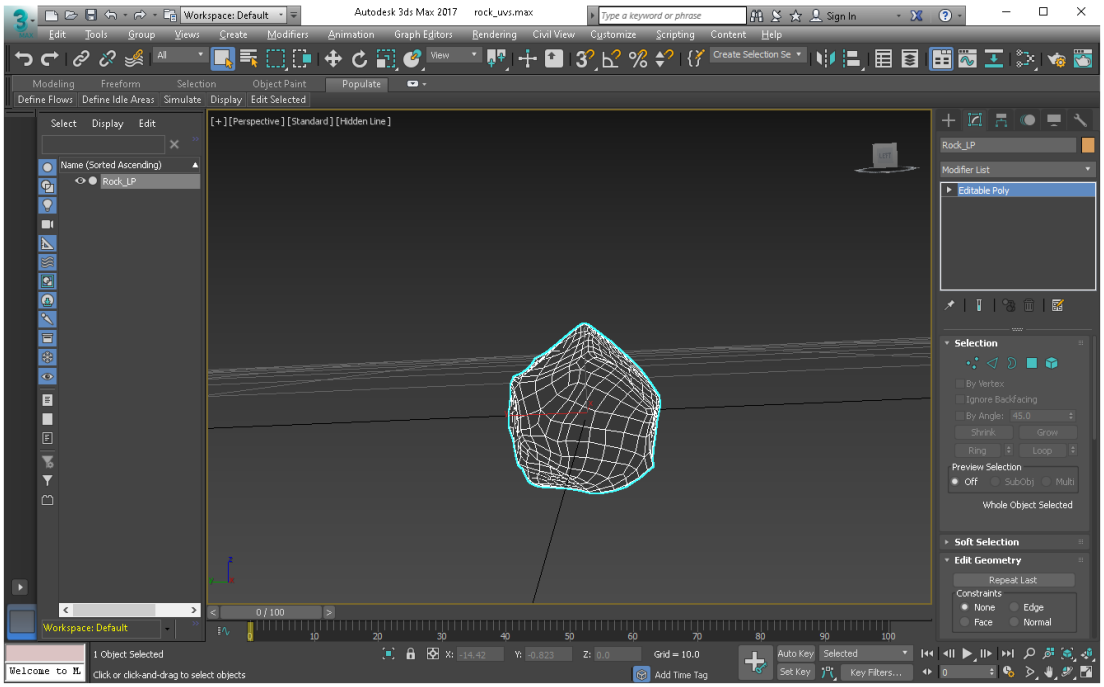

Figure 1135 - UVs embedded to Editable Poly.

Now we can export the .obj back out.

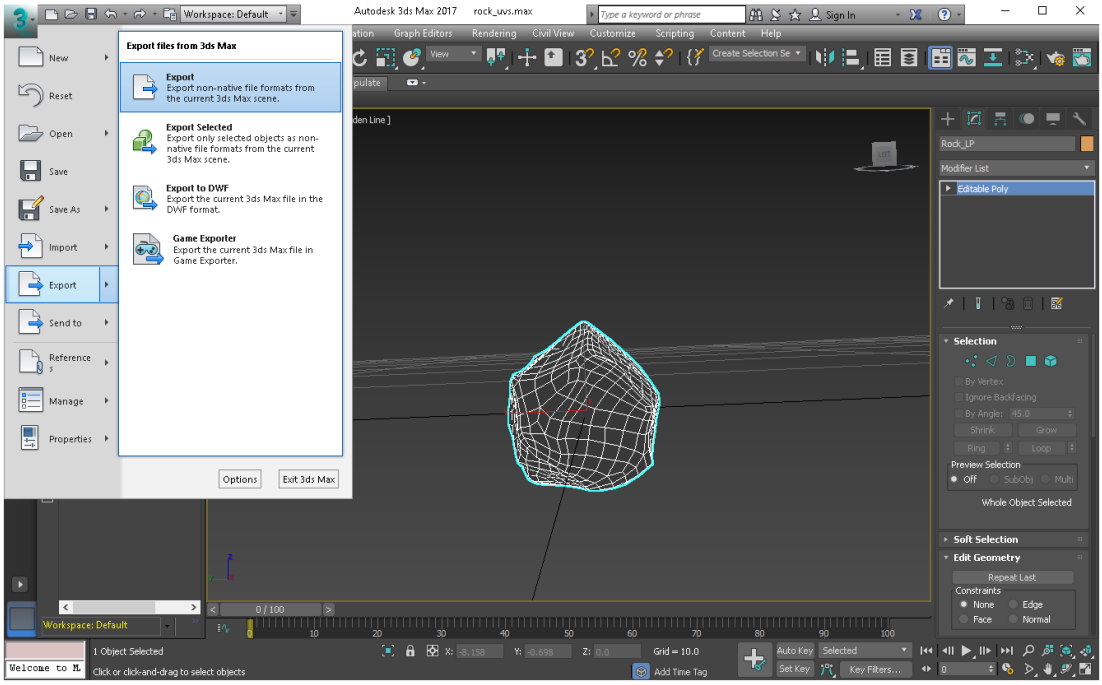

Figure 1136 - Export.

Select the folder to export to, enter in a file name and click Save.

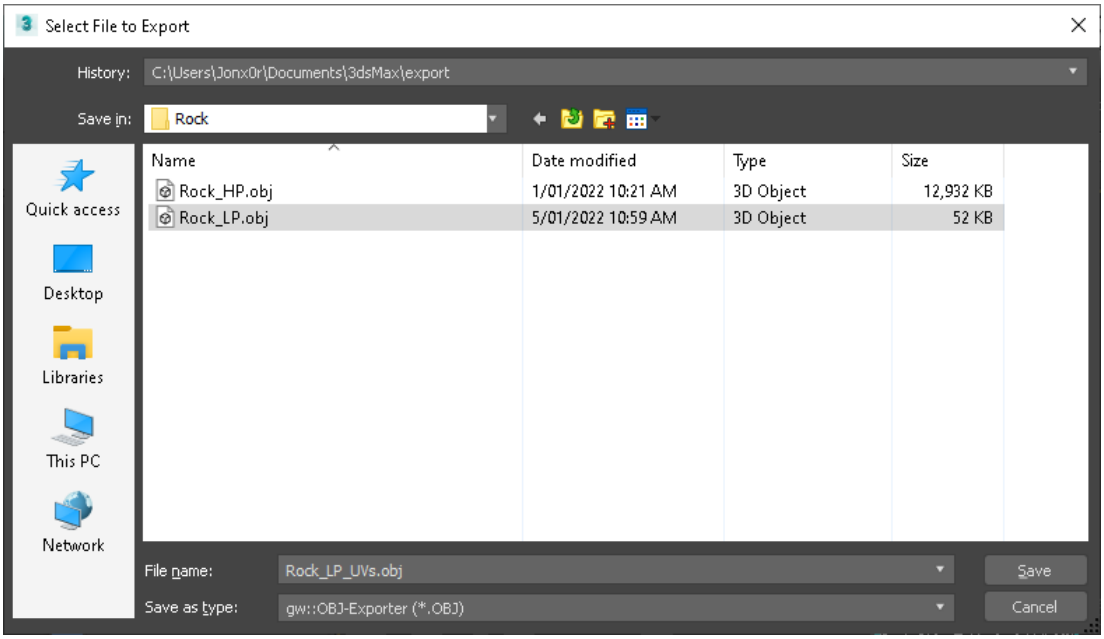

Figure 1137 - .obj export directory and file name.

Under Geometry, ensure 'Flip YZ-axis (Poser-like)', 'Texture coordinates', 'Normals' and 'Smoothing groups' and ticked then click Export.

Figure 1138 - OBJ Export Options.

Next, let's head into Substance Painter to try and texture the boulder.

Create a new project by going to File > New.

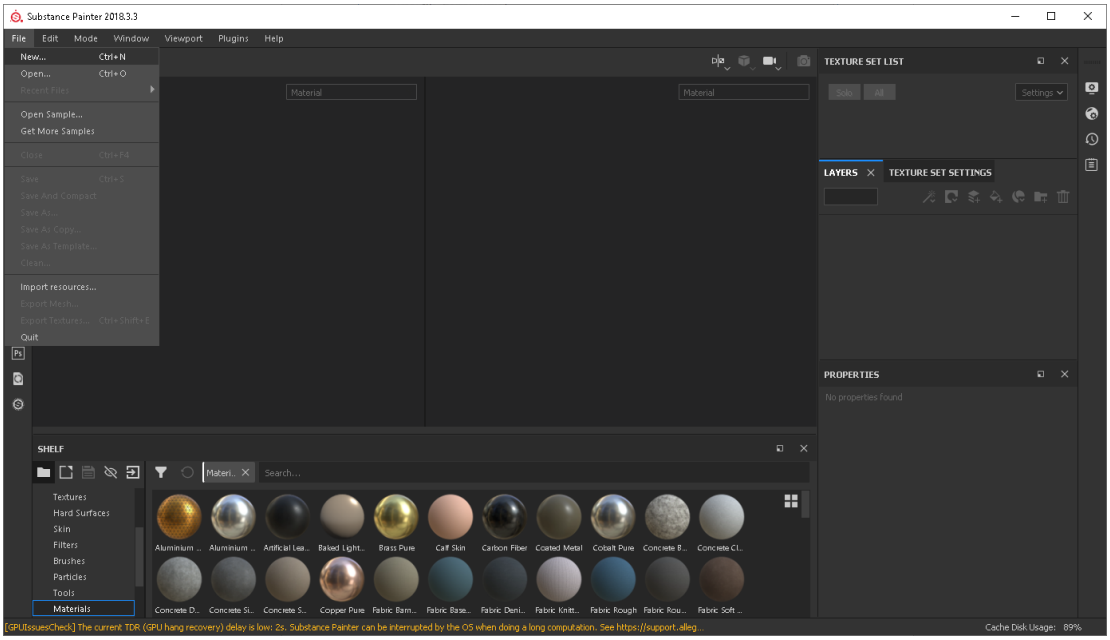

Figure 1139 - Substance Painter.

Set the Template to 'Non-PBR - Specular Glossiness (allegorithmic)'.

Click on the Select button next to File.

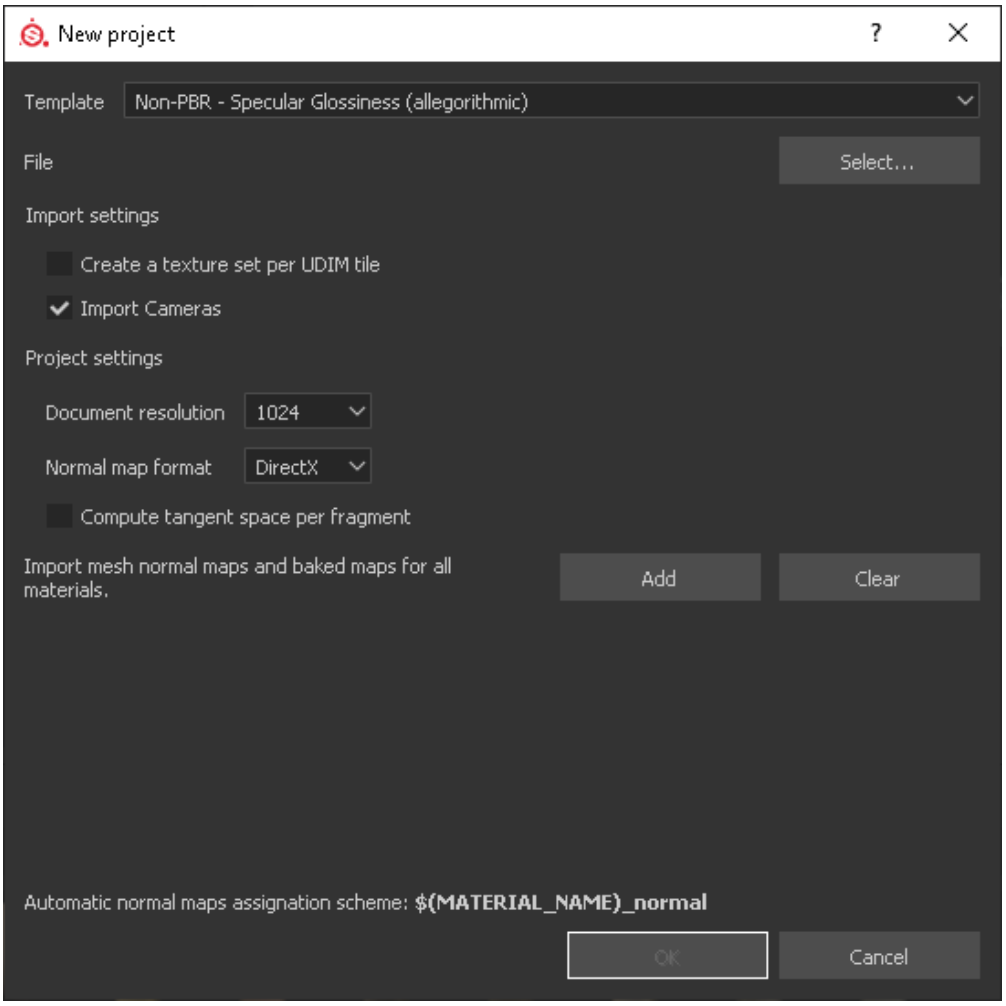

Figure 1140 - Selecting the file to load in Substance Painter.

Select the low poly version of your asset and click Open. Make sure you select the version with the fixed UVs.

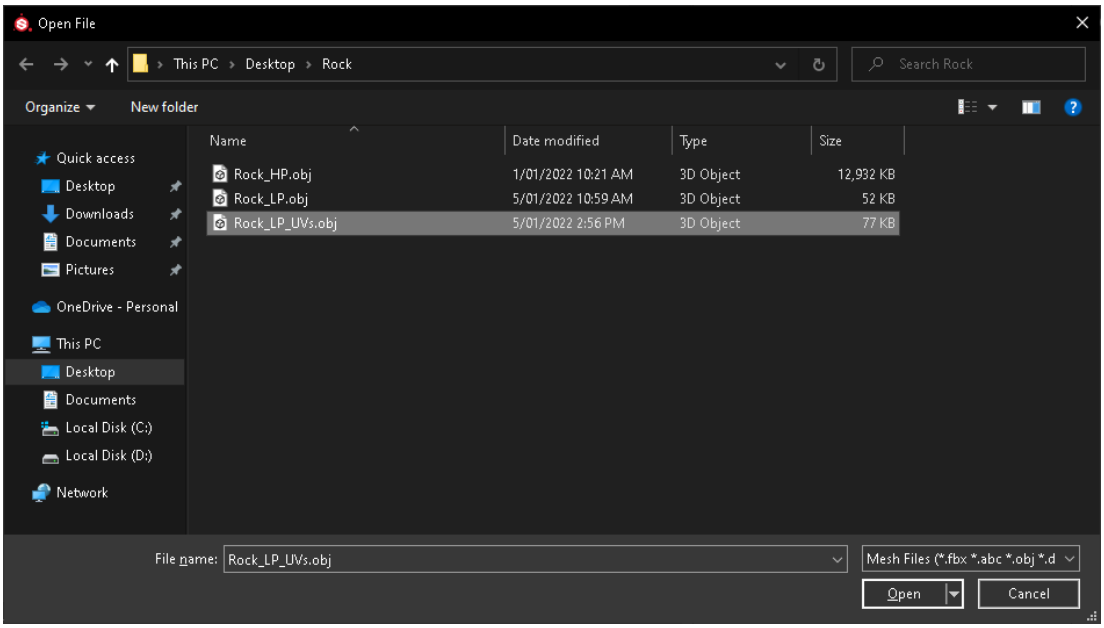

Figure 1141 - Selecting the low poly version of the asset.

The default resolution of Skyrim texture maps is 1024 so I'm going to leave the Document Resolution set to that.

Ensure the Normal map format is set to DirectX.

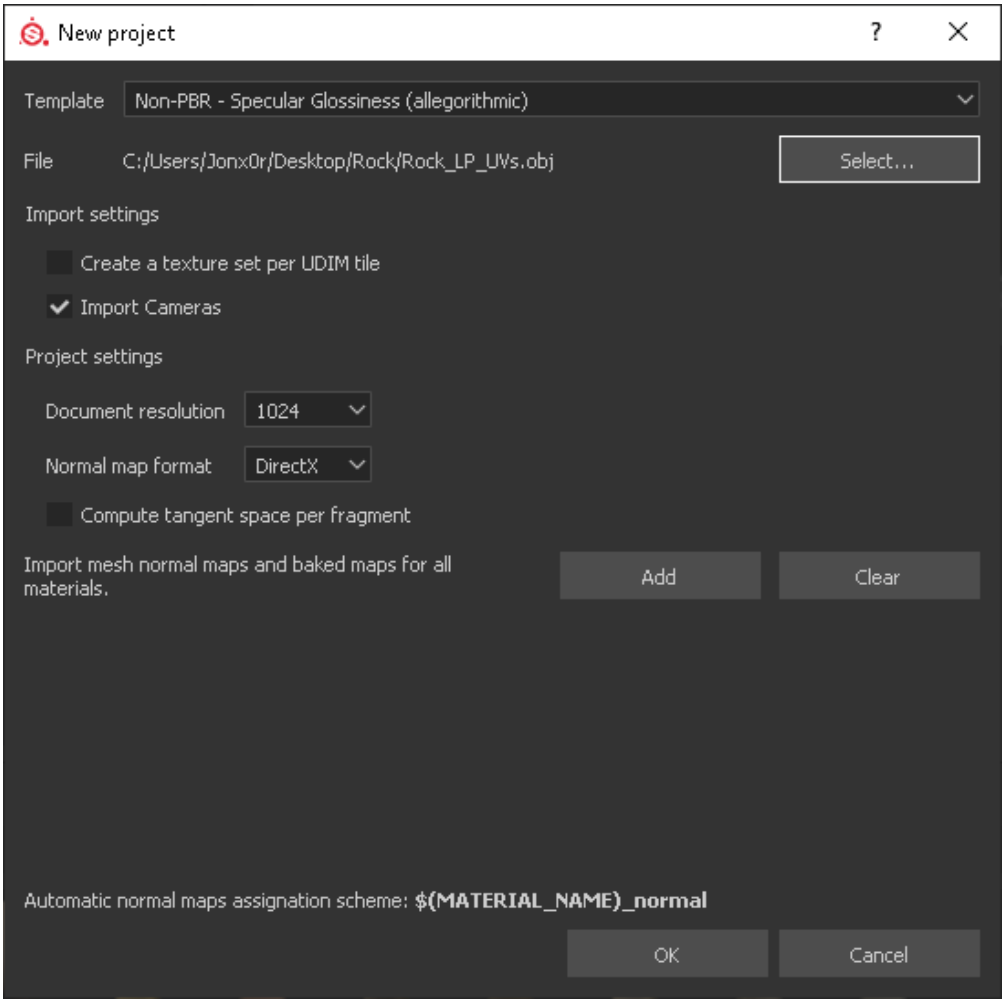

Figure 1142 - Project settings.

Click OK to load the asset into Substance Painter.

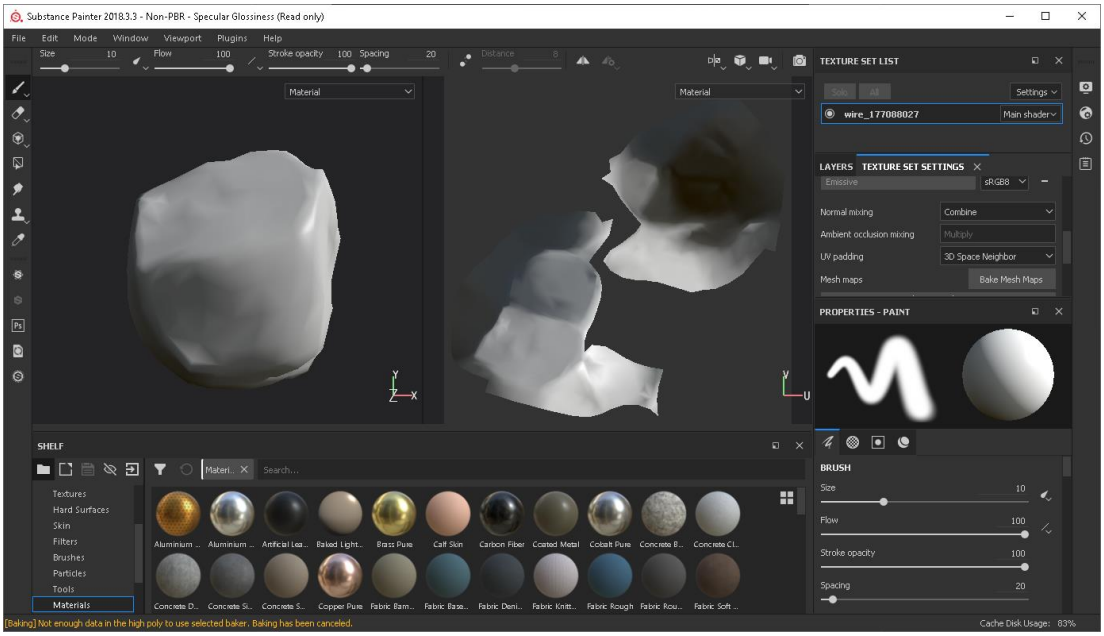

Figure 1143 - Rock loaded into Substance Painter.

The first thing we'll need to do in Substance Painter is bake in the details from our high poly asset.

Under the Texture Set Settings tab, click on the Bake Mesh Maps button.

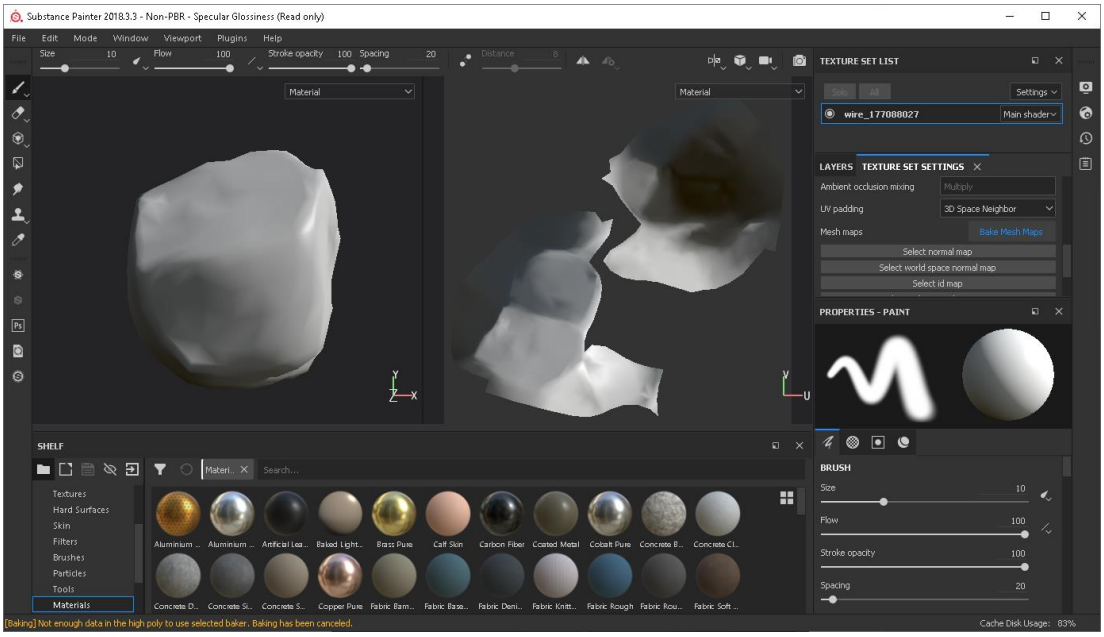

Figure 1144 - Bake Mesh Maps.

Click on the File icon next to High Definition Meshes to select the high poly version of the asset.

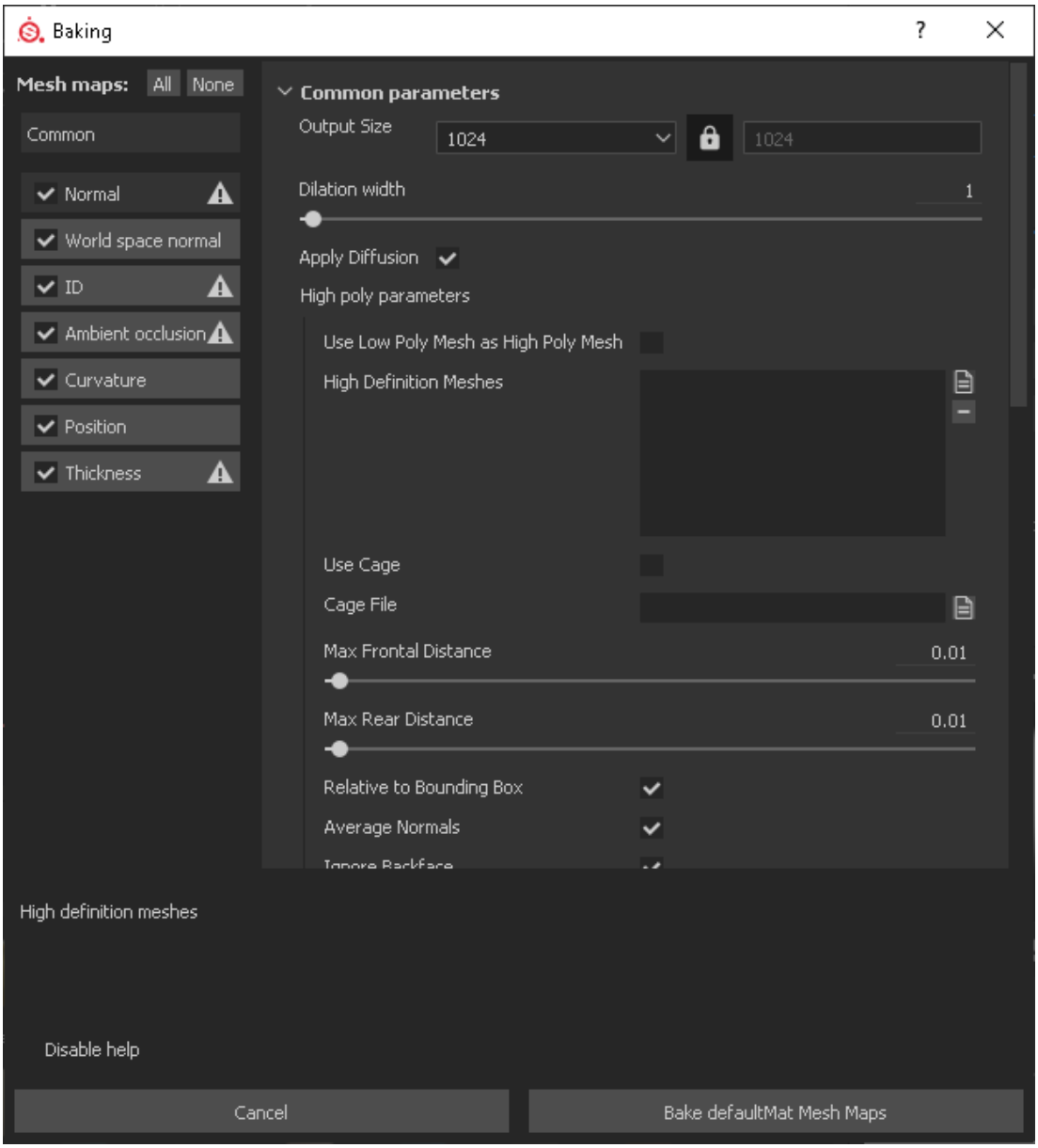

Figure 1145 - Selecting the High Definition Mesh.

Select the high poly version then click Open.

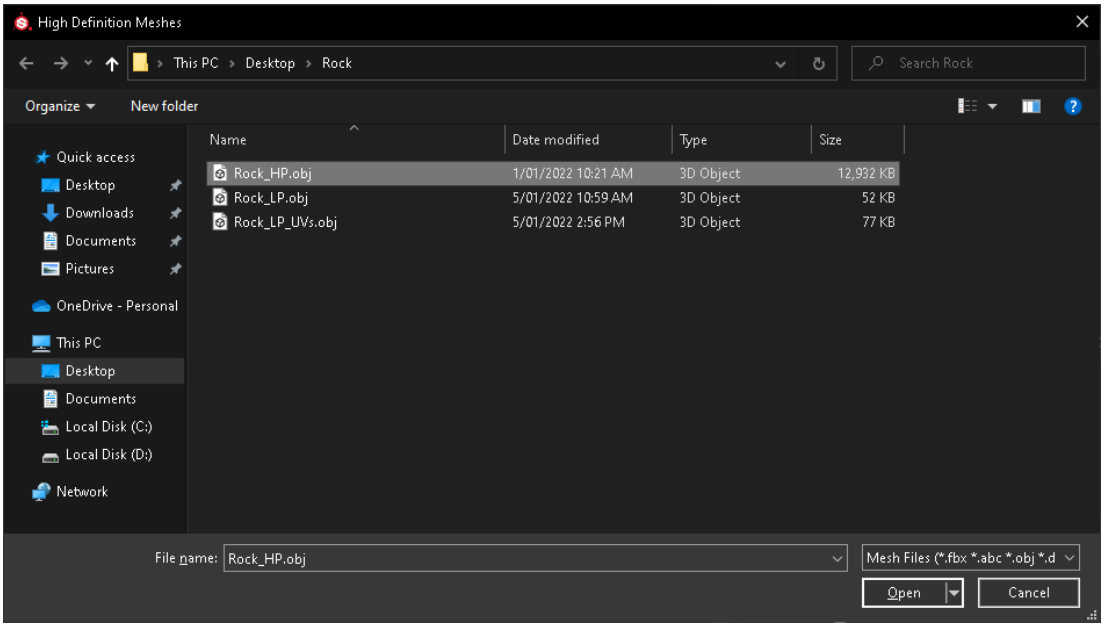

Figure 1146 - Selecting the high poly asset.

Some modellers also bake an ambient occlusion pass to add some fake shadows onto the actual texture. For Skyrim assets I would recommend using vertex colours instead.

Click on the Bake button to begin.

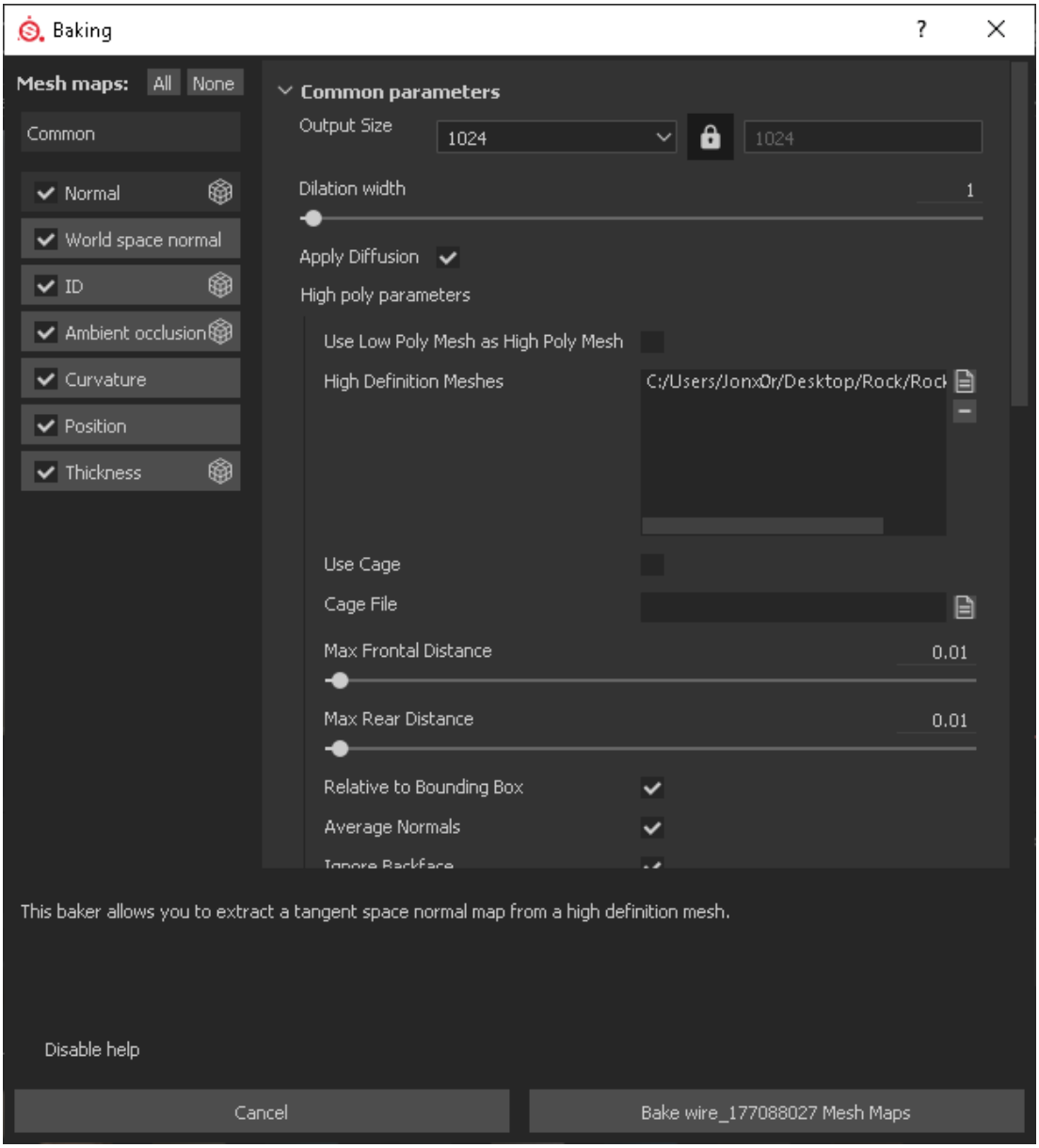

Figure 1147 - High definition mesh added.

You should now see details from the high poly version of the asset appear on the low poly mesh in the preview section.

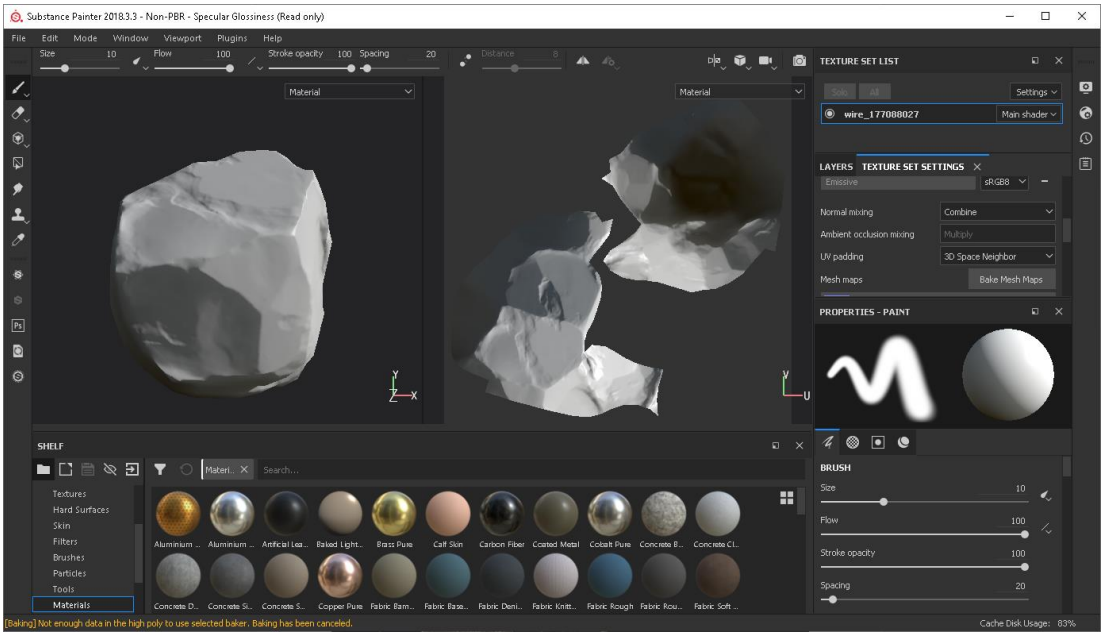

Figure 1148 - High poly detail baked onto low poly mesh.

For this example I just used Dirt, Concrete Bare with an Edges Scratched smart mask, and Mortar Wall with a few alterations to base colour to create the texture for the rock.

If you notice UV seams, try changing the Projection drop-down to Tri-Planar Projection.

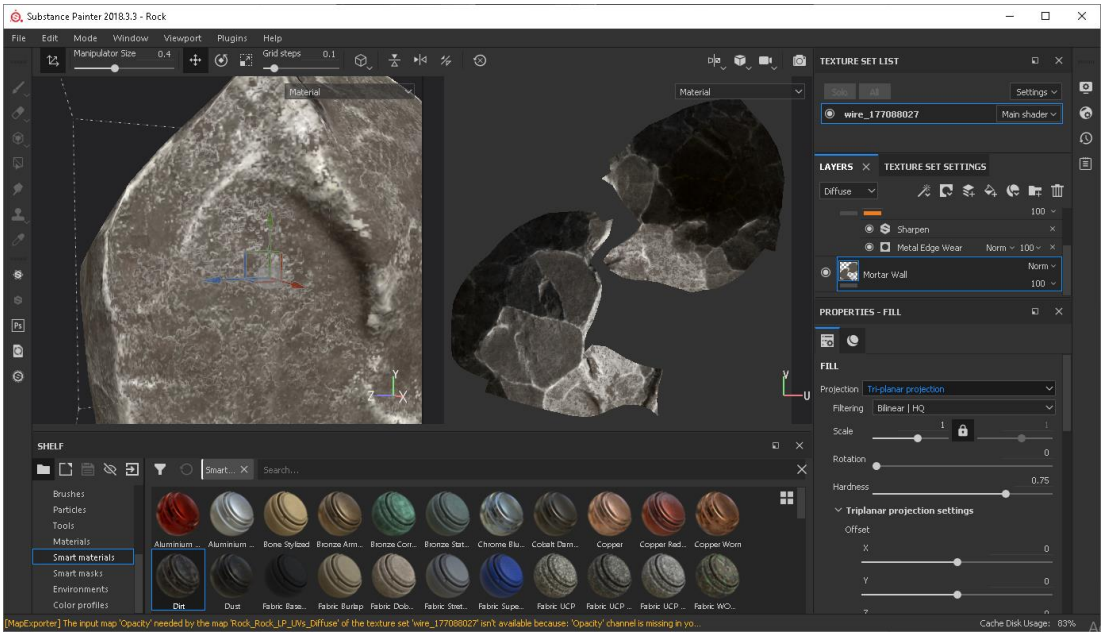

Figure 1149 - Tri-Planar Projection.

The last thing we need to do is export so we can bring the finished asset into 3ds Max.

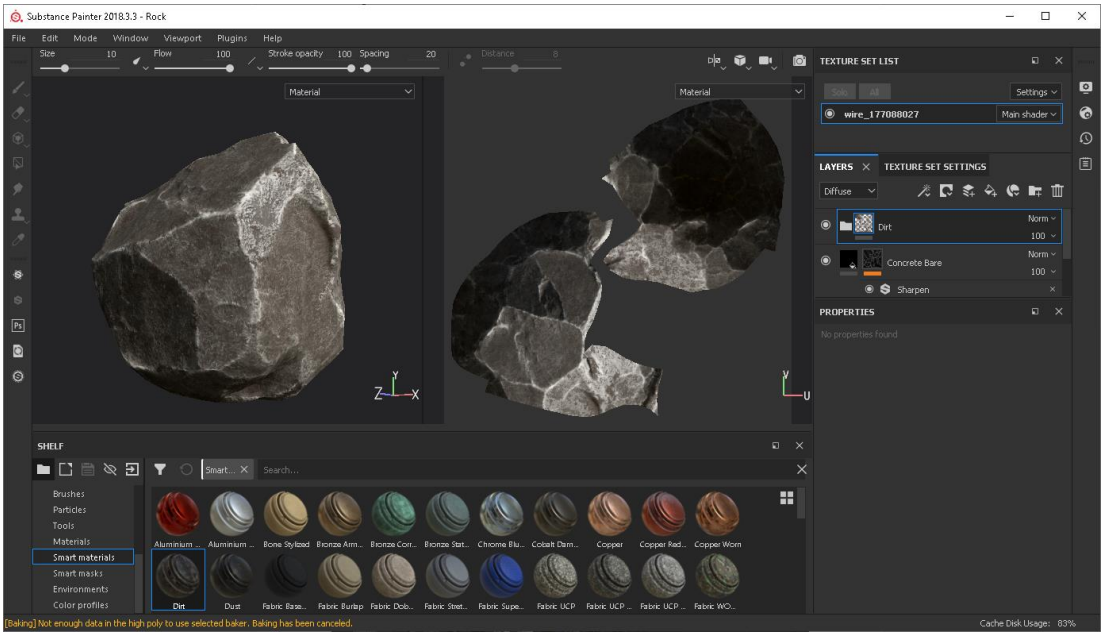

Figure 1150 - Sample rock textured.

Go to File > Export Textures.

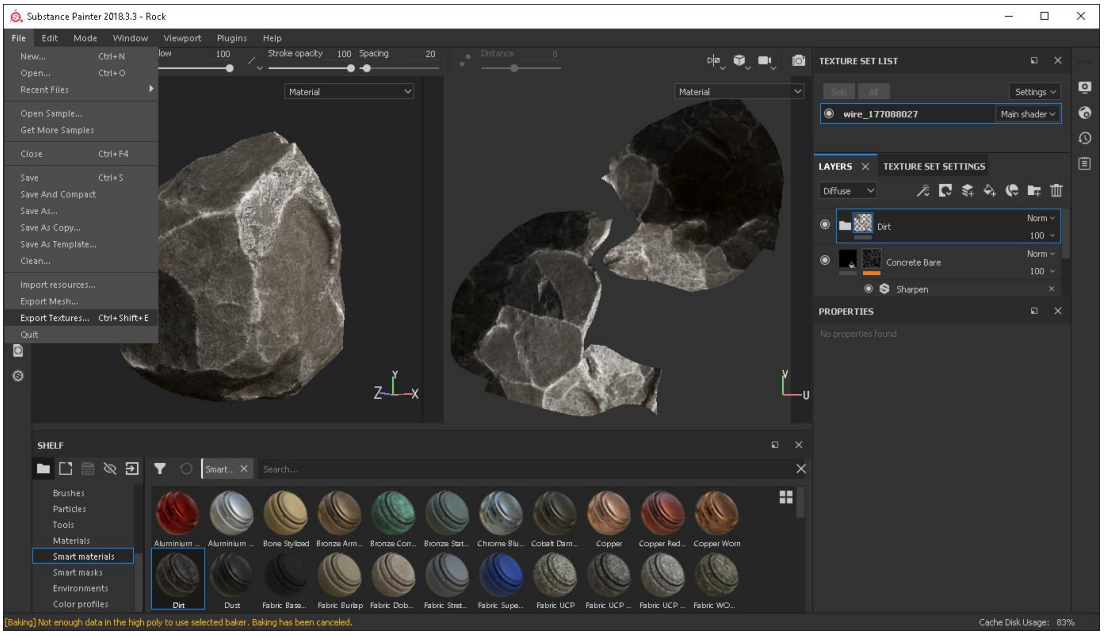

Figure 1151 - Export Textures.

We'll need to export the textures in the .png format then convert them to .dds in Photoshop later, so set the export format to 'png' and the bit depth to '8 bits'.

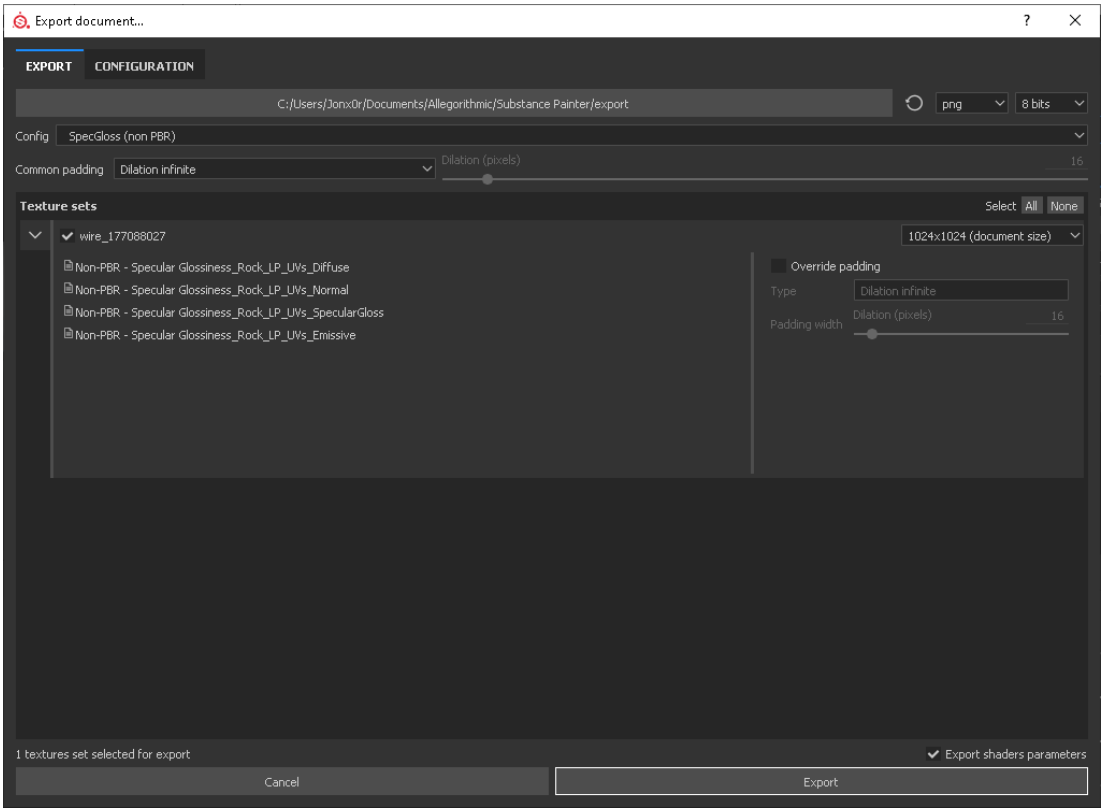

Figure 1152 - Export tab.

Set the export location by clicking on the folder path.

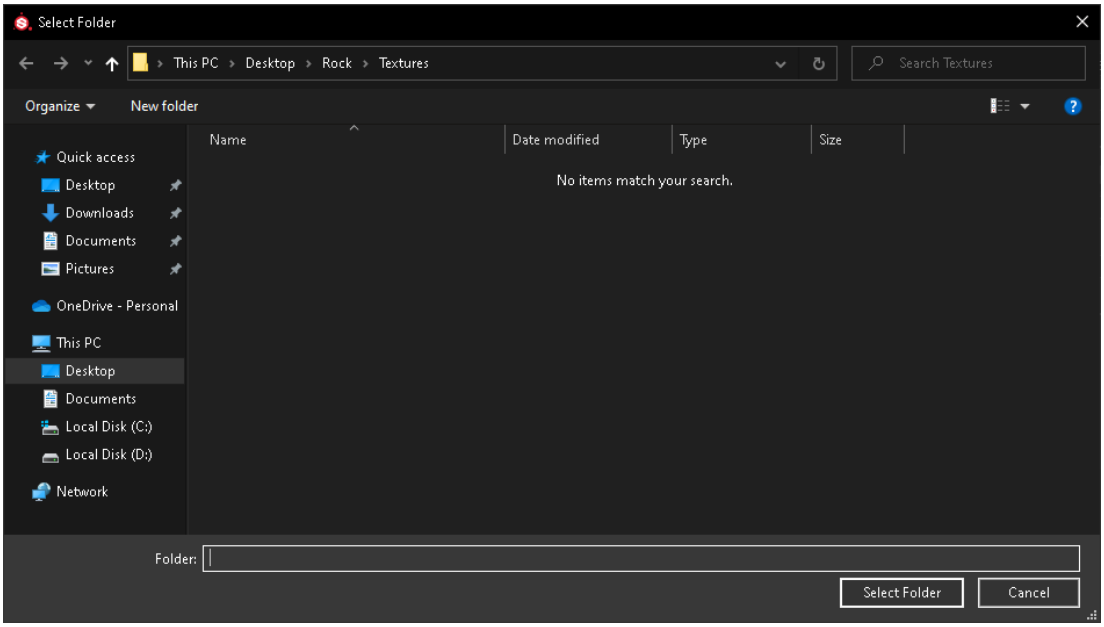

Figure 1153 - Setting the texture export path.

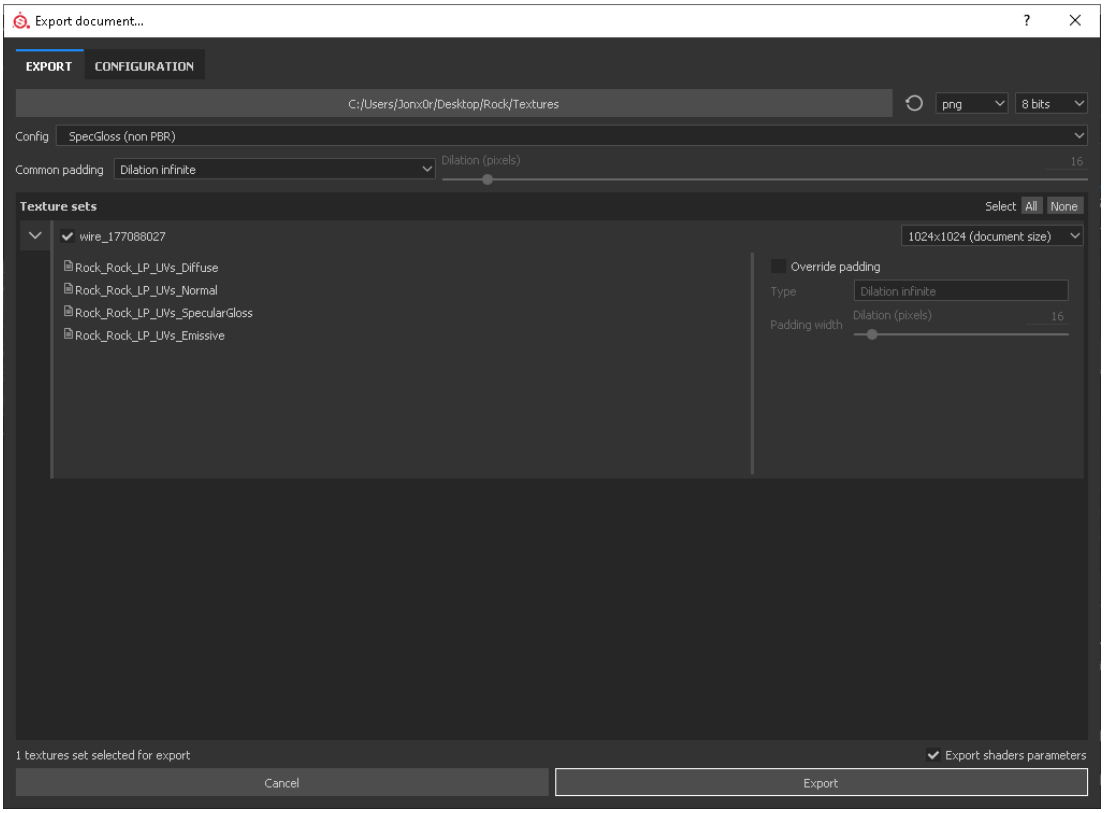

Figure 1154 - Texture export path set.

Go to the Configuration tab and click on the 'SpecGloss (non-PBR)' preset.

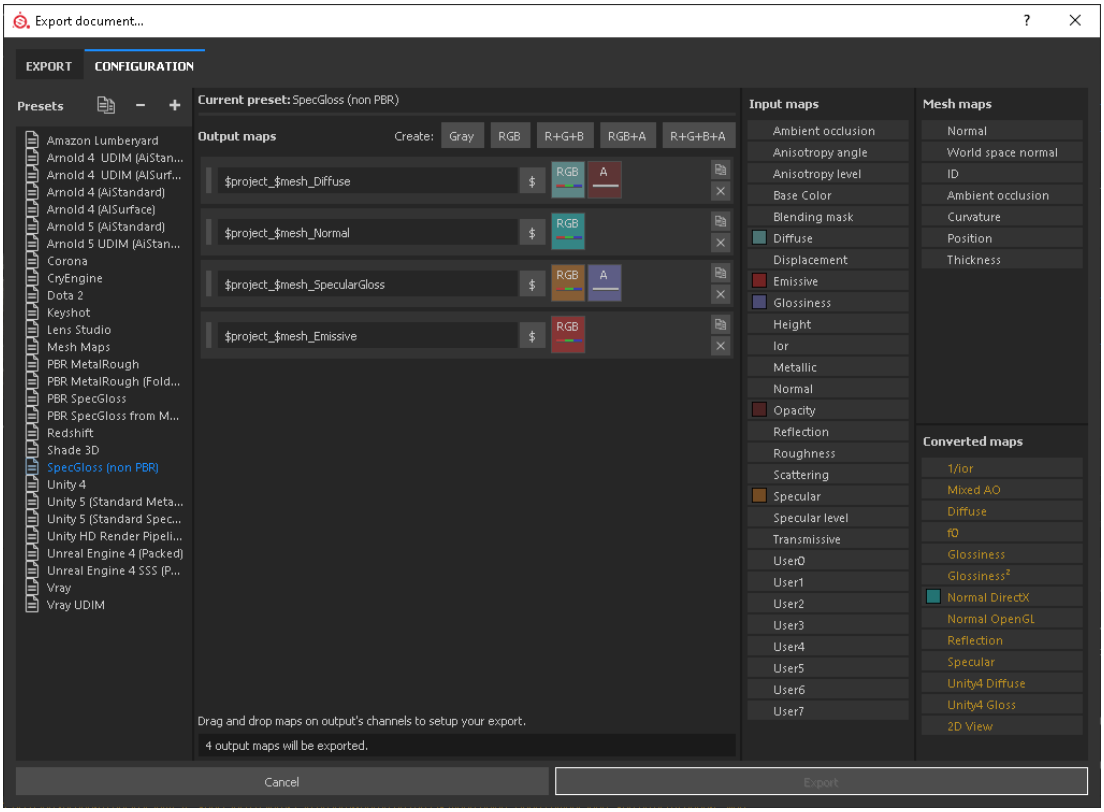

Figure 1155 - SpecGloss (non PBR) preset.

This will export a diffuse map with an alpha channel, a normal map, a specular map and an emissive map. All we really need are the diffuse and normal maps for this example.

Go back to the Export tab, untick 'Export shaders parameters'.

Click on the Export button to begin the process.

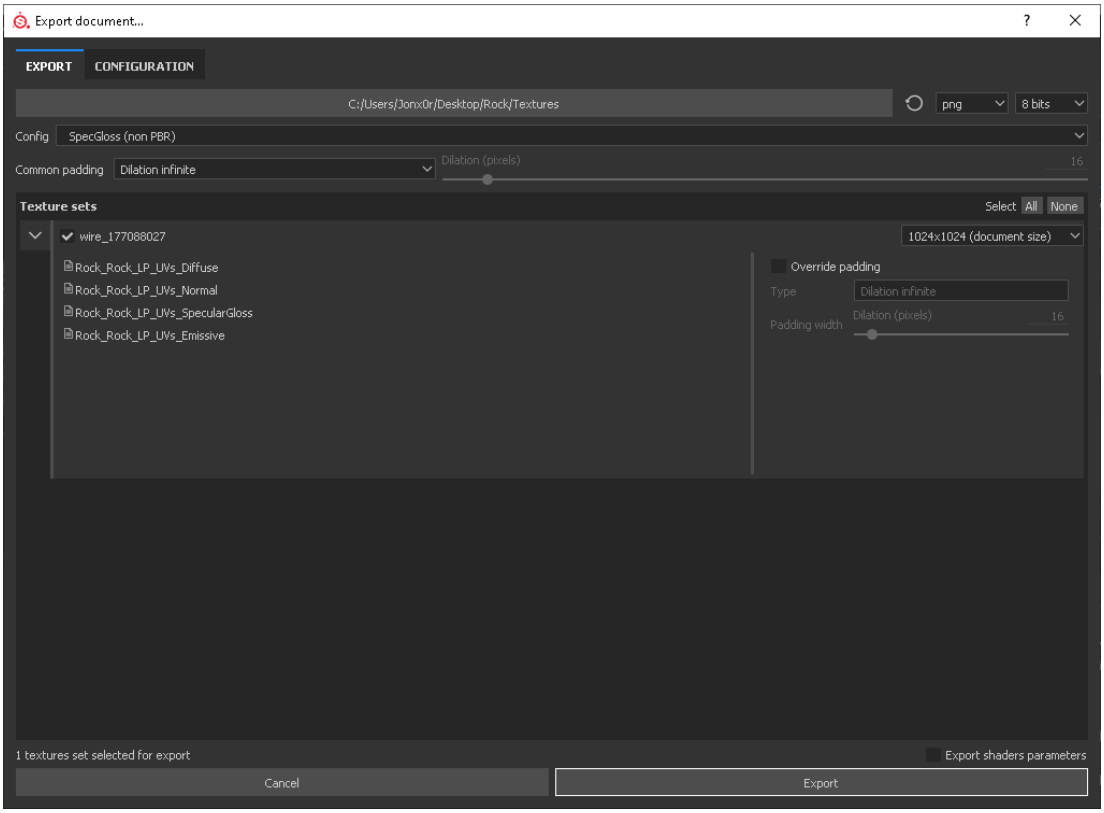

Figure 1156 - Exporting the texture maps.

Click OK to the pop-up once the process is complete.

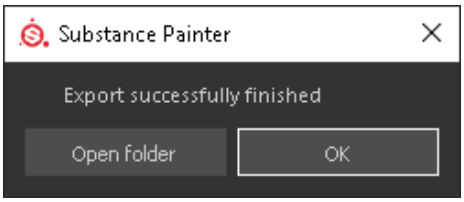

Figure 1157 - Export successfully finished.

Go to your export folder and confirm the texture maps have been successfully created.

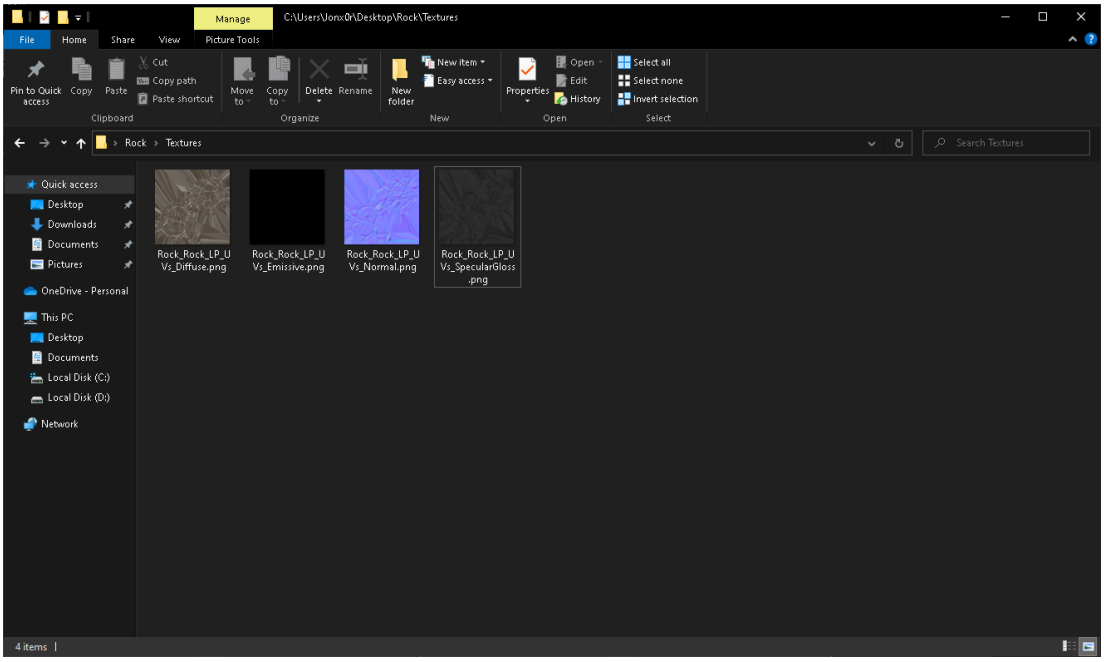

Figure 1158 - Texture maps created.

These maps can be converted to the .dds format in Photoshop using the NVIDIA Texture Tools plugin.

Open a texture map in Photoshop.

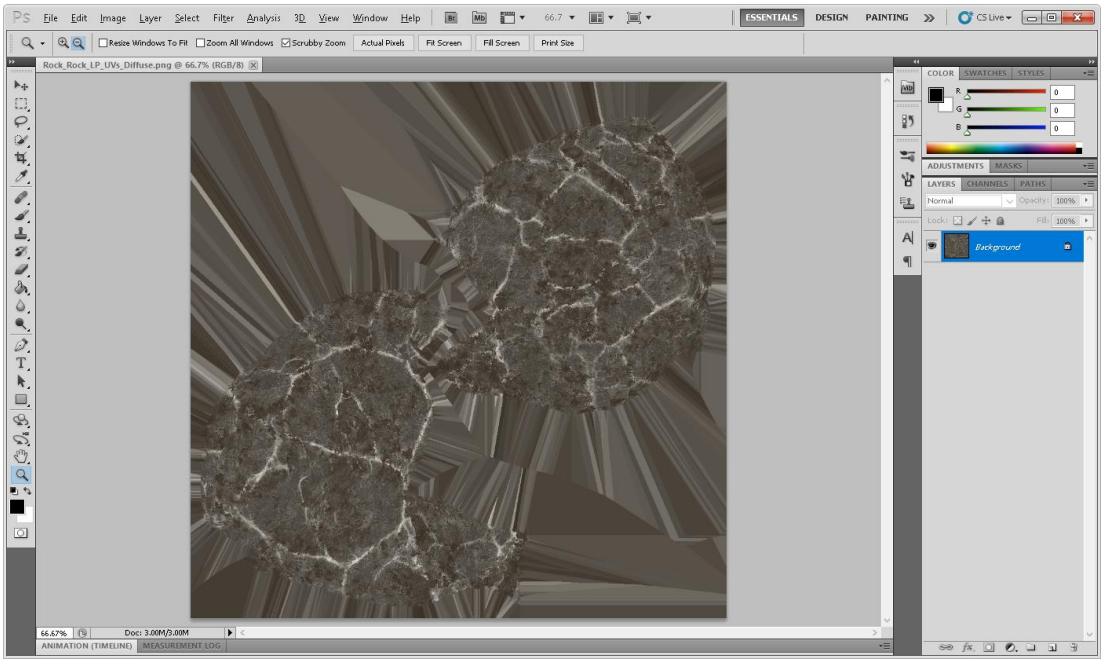

Figure 1159 - Diffuse map in Photoshop.

Go to File > Save As.

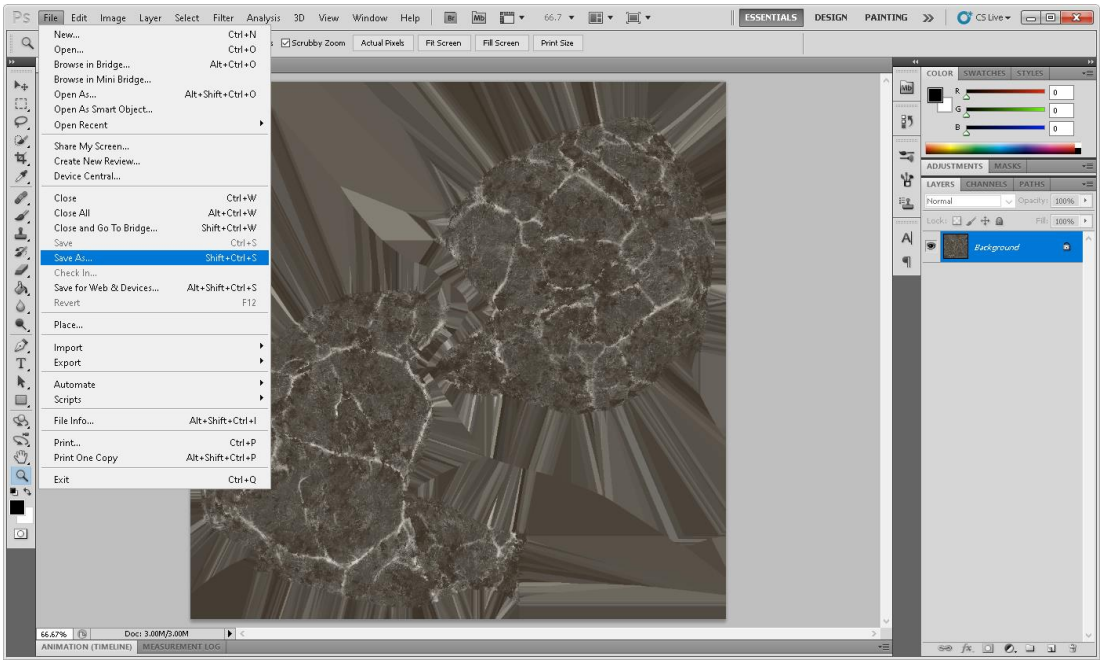

Figure 1160 - Saving a file in Photoshop.

Set the Format to .dds then click Save.

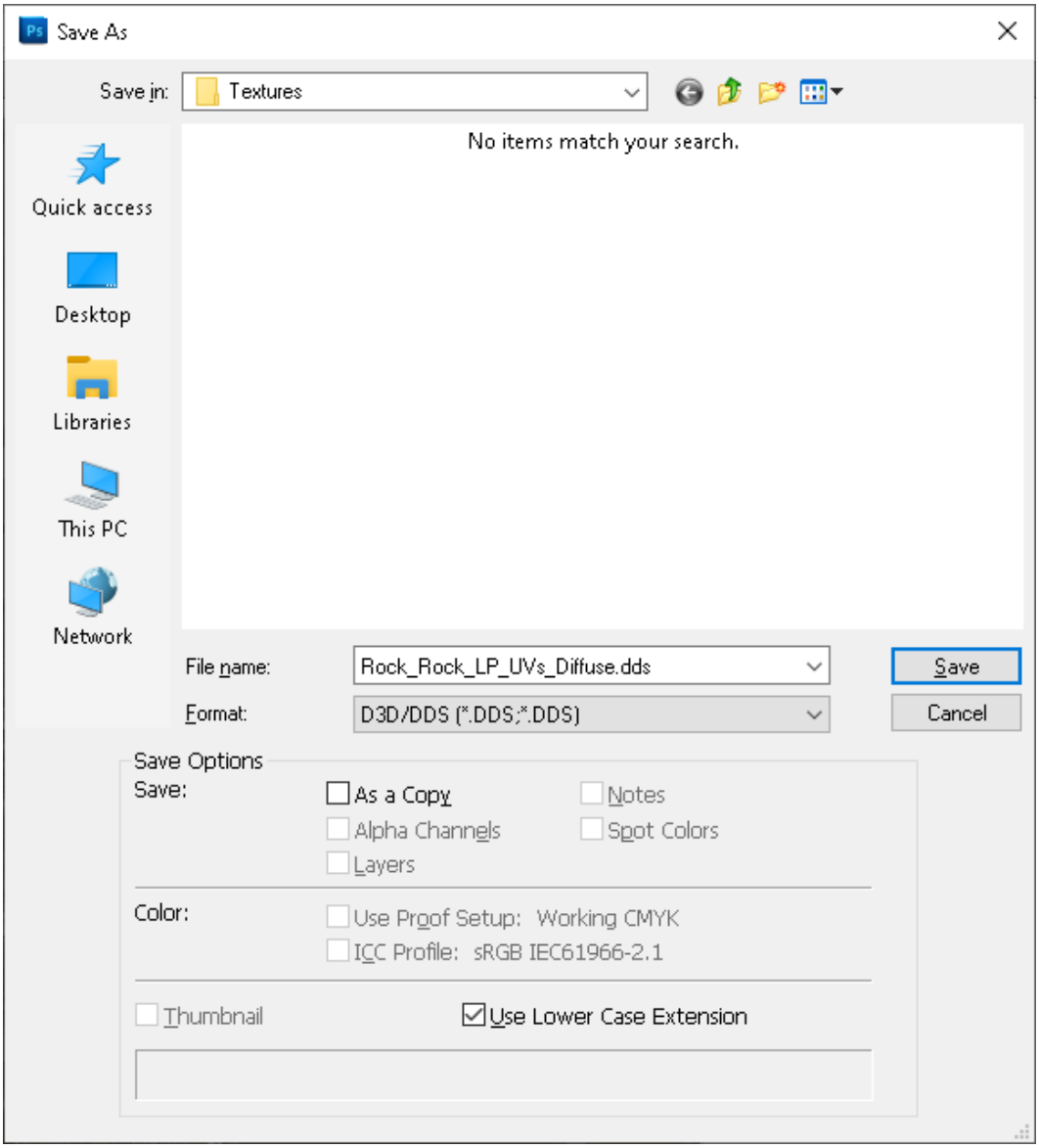

Figure 1161 - Saving a .dds file in Photoshop.

Set the format to DXT5, make sure 'Generate MIP maps' is selected then click Save.

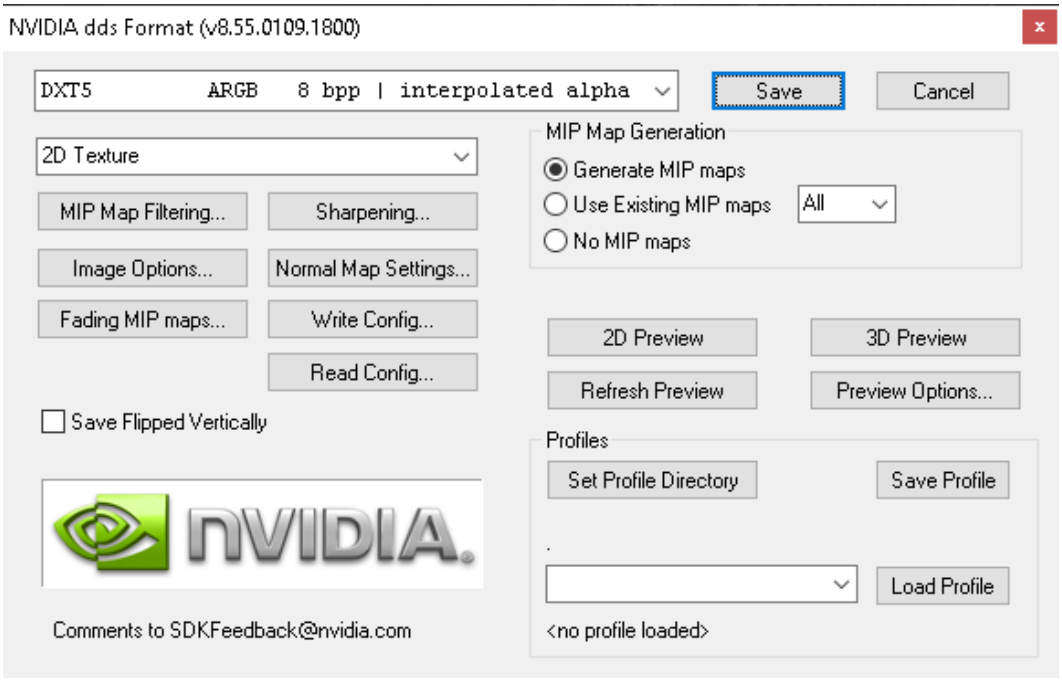

Figure 1162 - NVIDIA Texture Tools plugin for Photoshop.

Repeat these steps for the other texture maps.

Alright let's go back to 3ds Max.

To make setting up a new material a little bit easier and to help with scale, I'm going to import rockl01 from Skyrim. You can find it under meshes\landscape\rocks in Skyrim - Meshes.bsa. See the section titled Importing assets from Skyrim in 3ds Max for steps on how to do this.

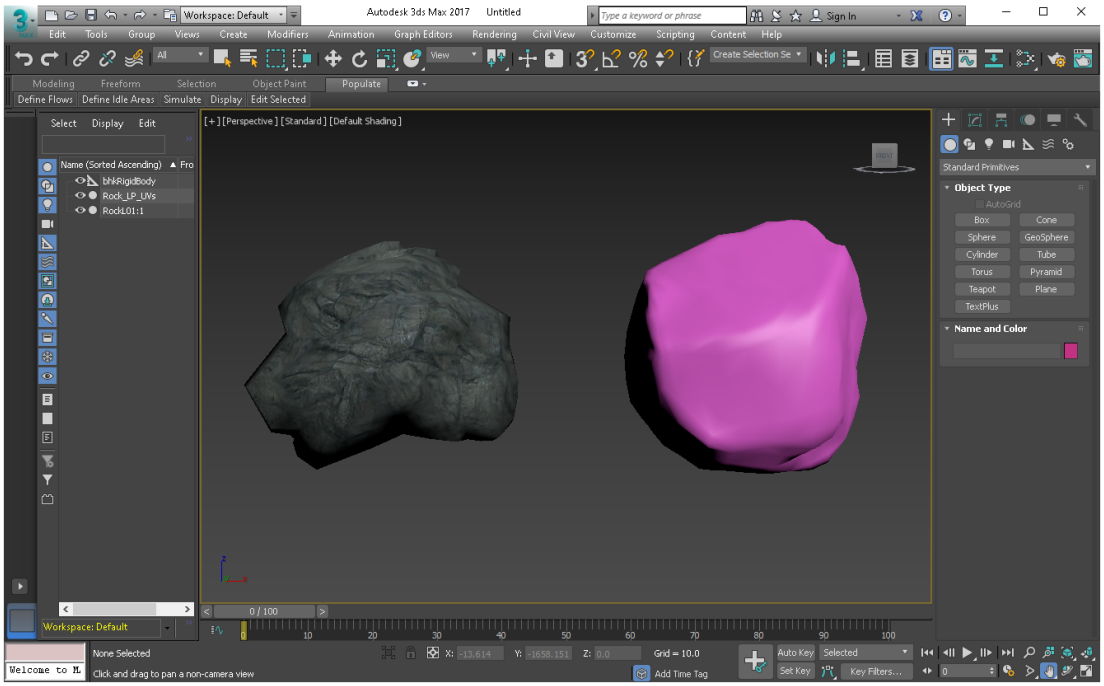

Figure 1163 - A Skyrim rock and our custom asset in 3ds Max.

Open the material editor. If you don't already have a view, right-click in the Views heading area and select Create New View.

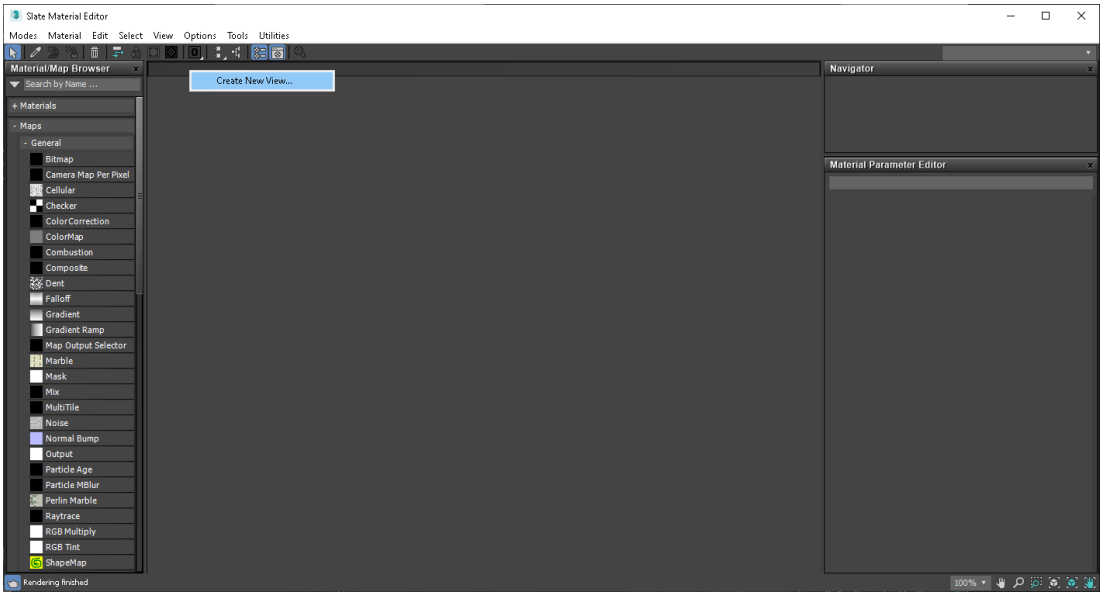

Figure 1164 - Material editor.

I'm just going to call this tab Skyrim Rock for this example.

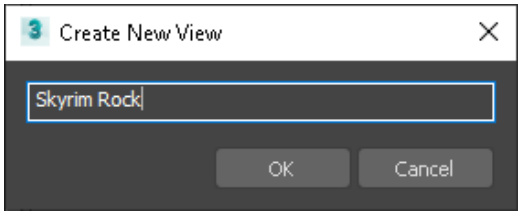

Figure 1165 - Naming the first tab.

Click on the eye-dropper in the material editor toolbar, then click on the Skyrim asset to get its material.

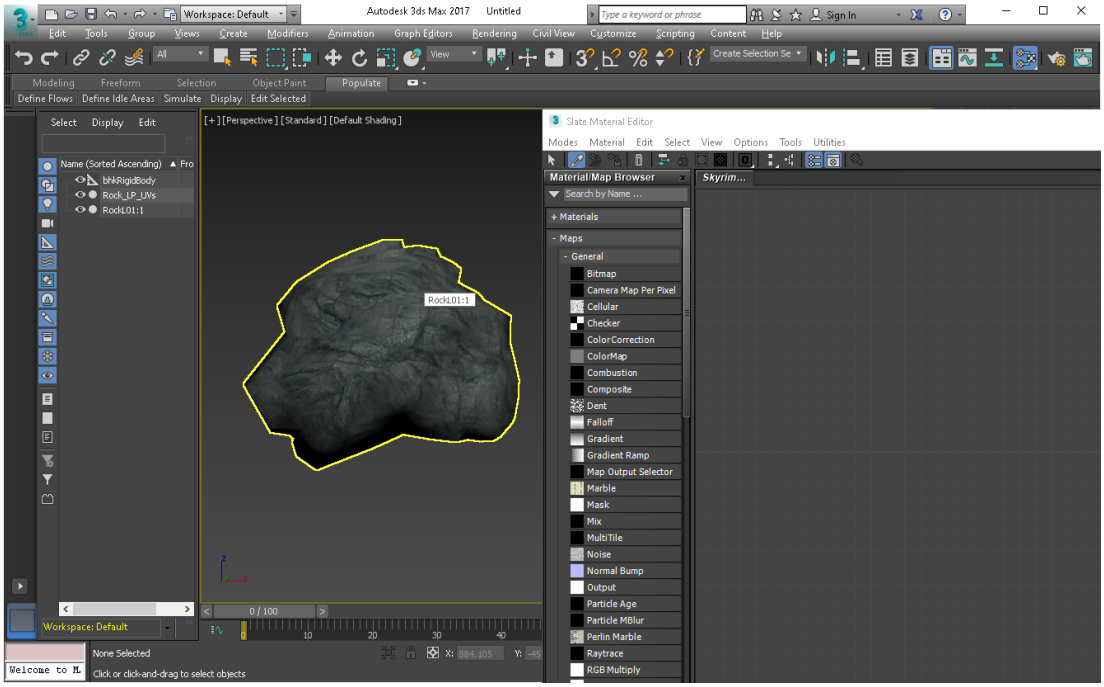

Figure 1166 - Loading the Skyrim rock material into the material editor.

The Skyrim asset's material setup should look like this:

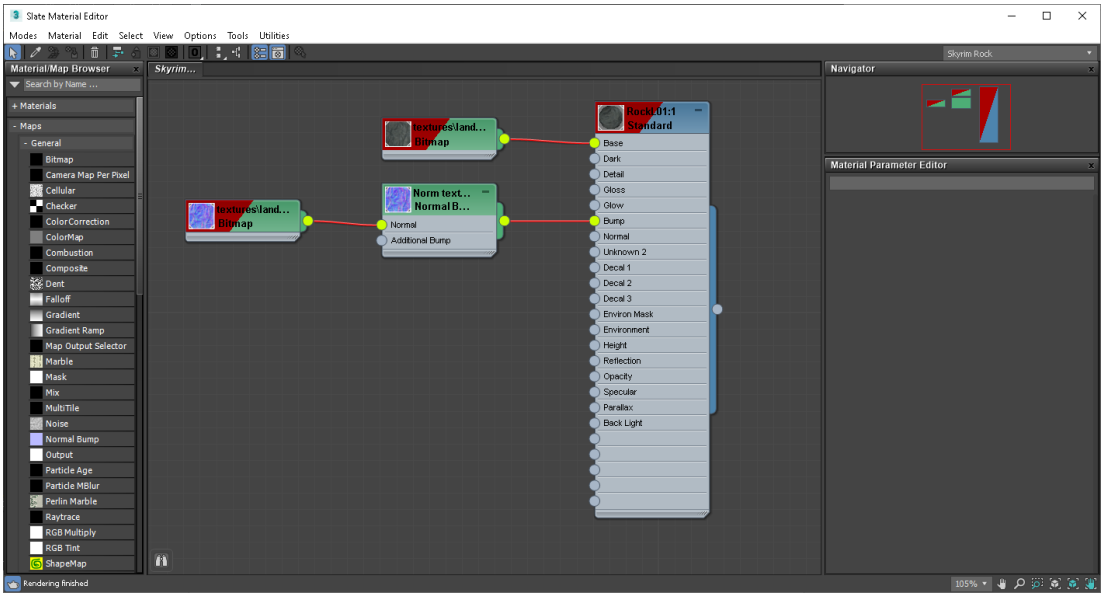

Figure 1167 - Skyrim rock material.

Double-click on the Bitmap node plugged into Base in the Standard node to open its properties.

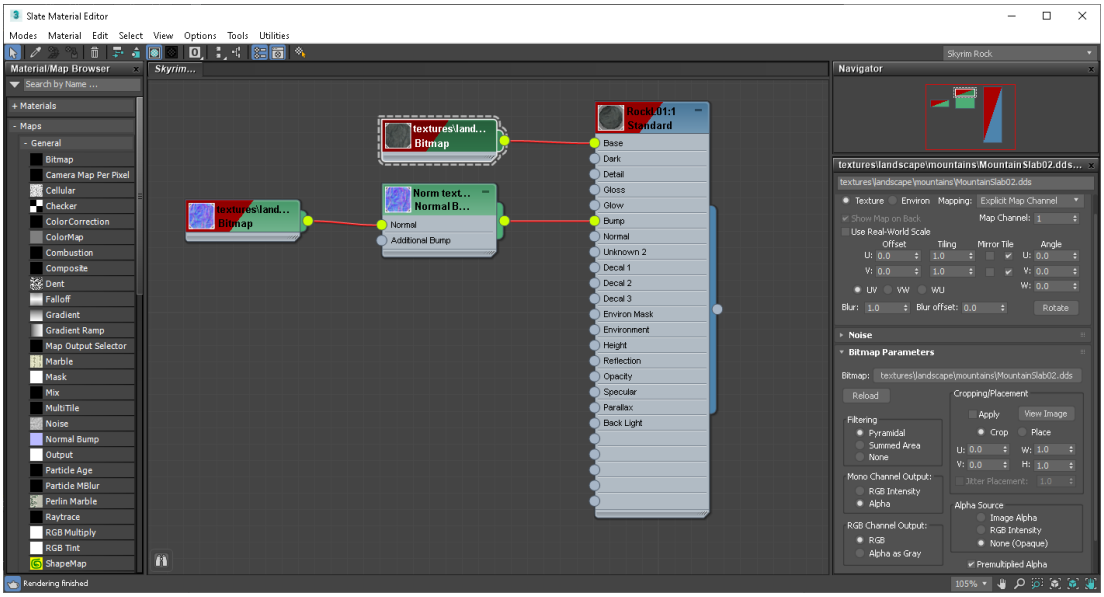

Figure 1168 - Diffuse map properties.

Go to the Bitmap Parameters section and click on the bitmap path. It should currently say 'textures\landscape\mountains\MountainSlab02.dds'.

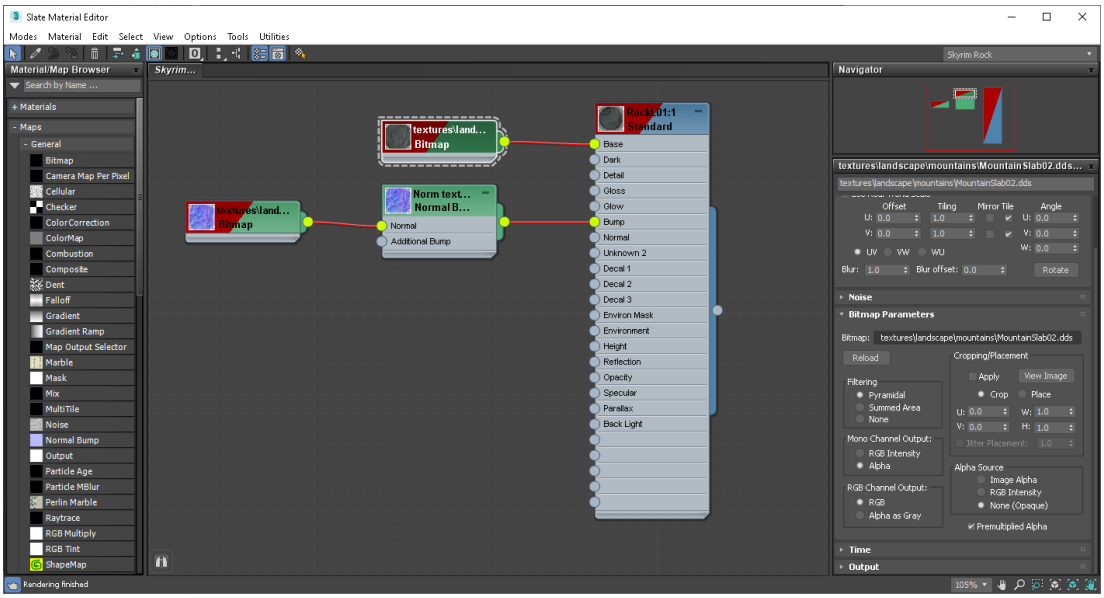

Figure 1169 - Bitmap Parameters.

Select the diffuse map exported from Substance Painter then click Open.

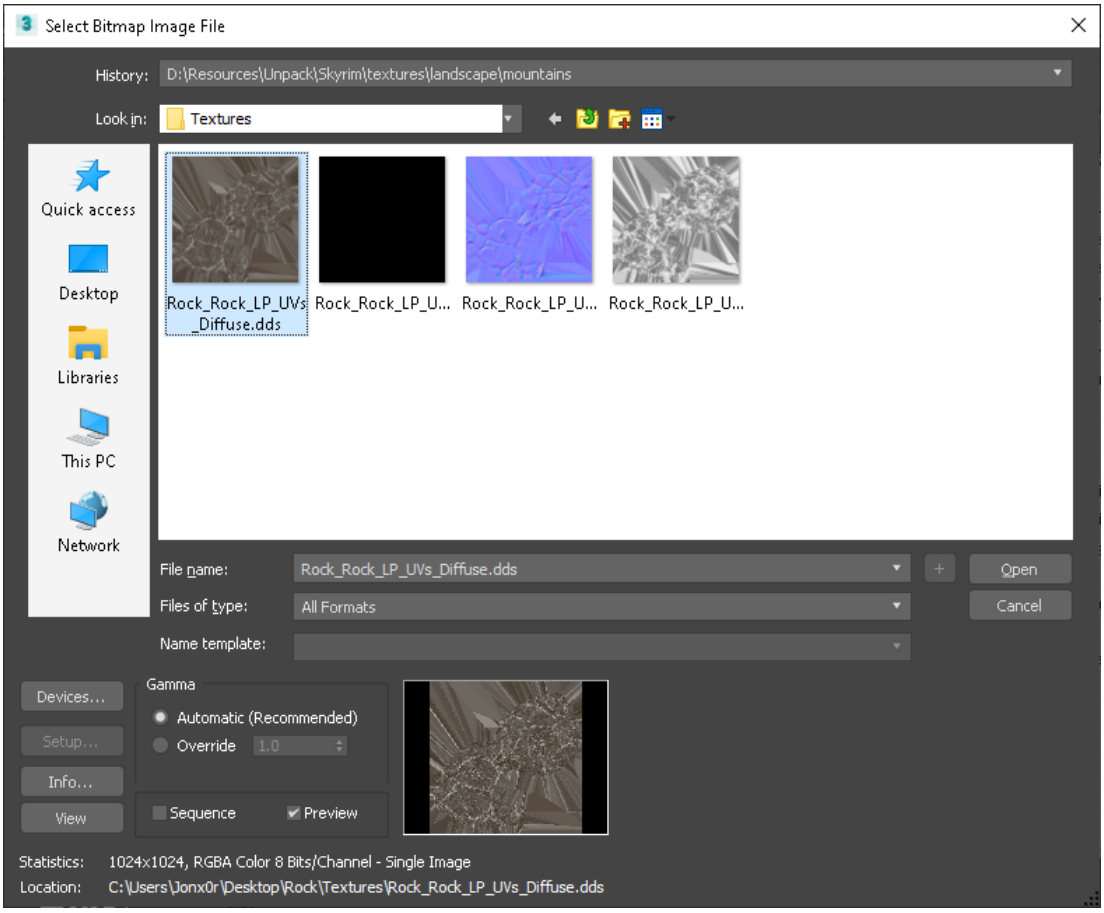

Figure 1170 - Changing the diffuse map.

Next, double-click on the Bitmap node used for the Normal/Bump map.

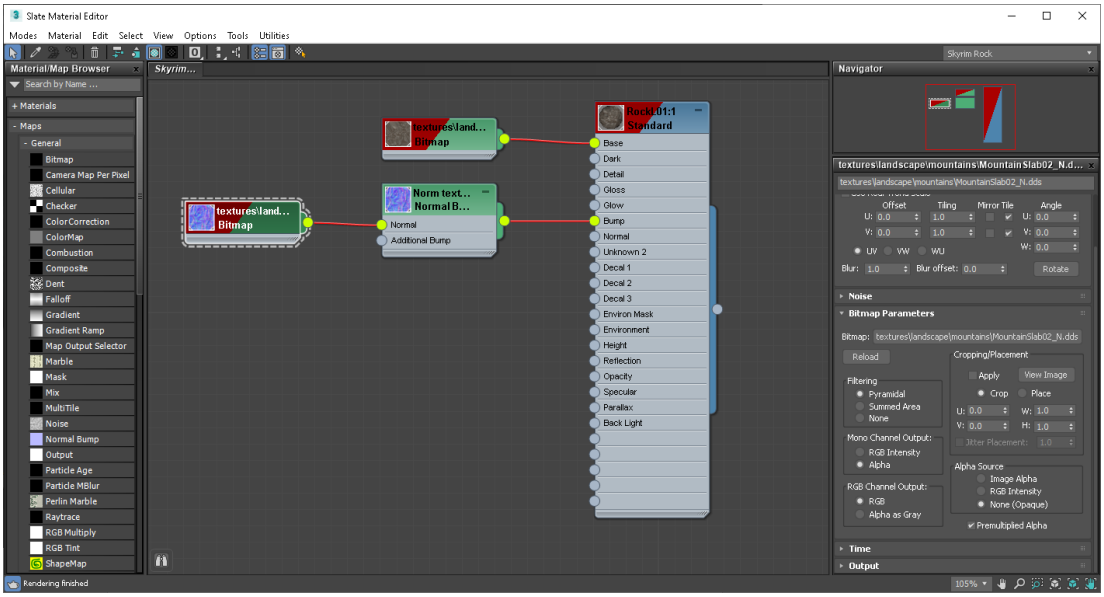

Figure 1171 - Changing the normal map.

Under Bitmap Parameters, click on the Bitmap path and change it to the normal map exported from Substance Painter then click Open.

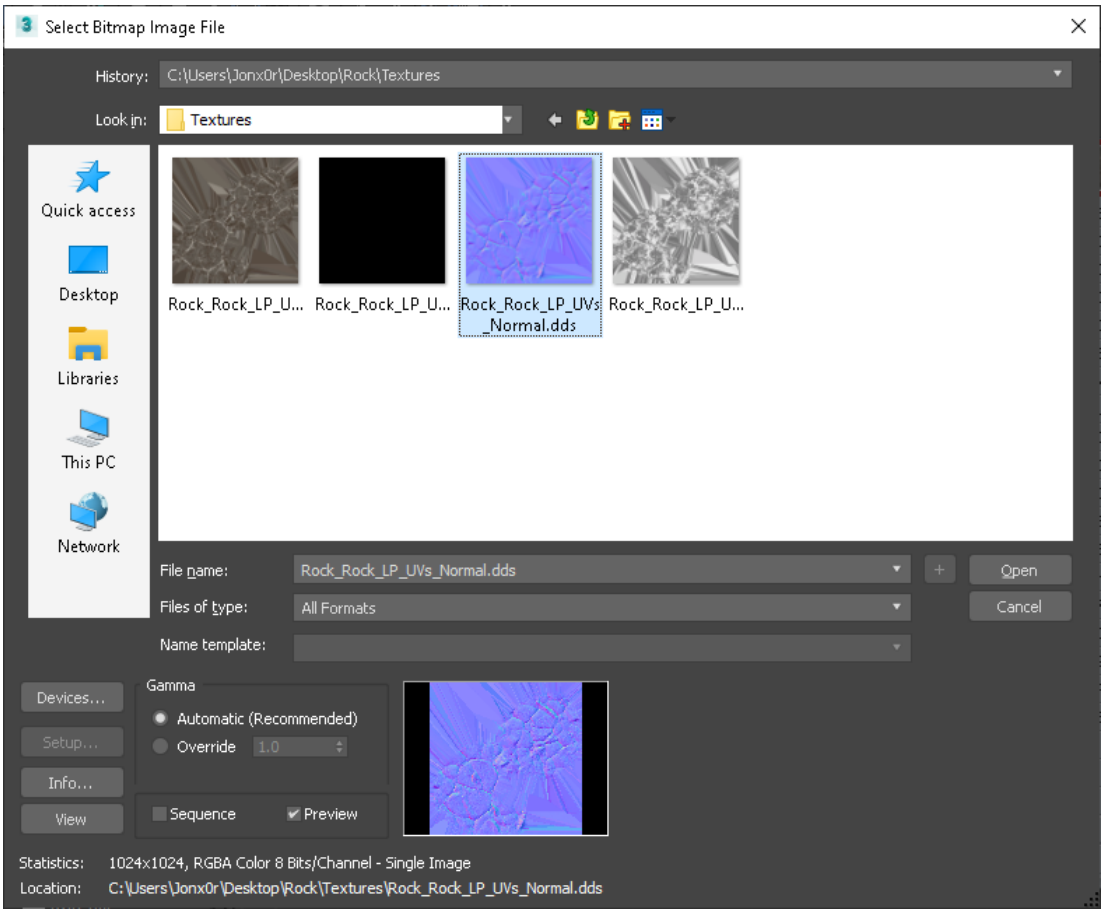

Figure 1172 - Changing the normal map.

The material layout should now look like so:

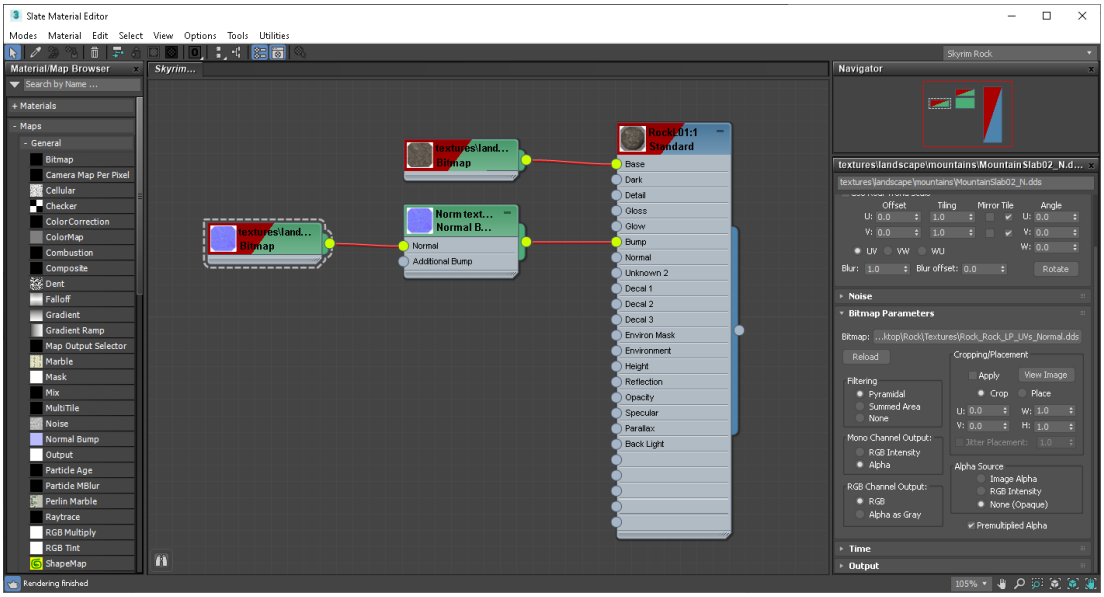

Figure 1173 - Updated diffuse and normal maps.

To apply the material to our custom asset, select it in the viewport then click on the 'Assign Material to Selection' button in the material editor.

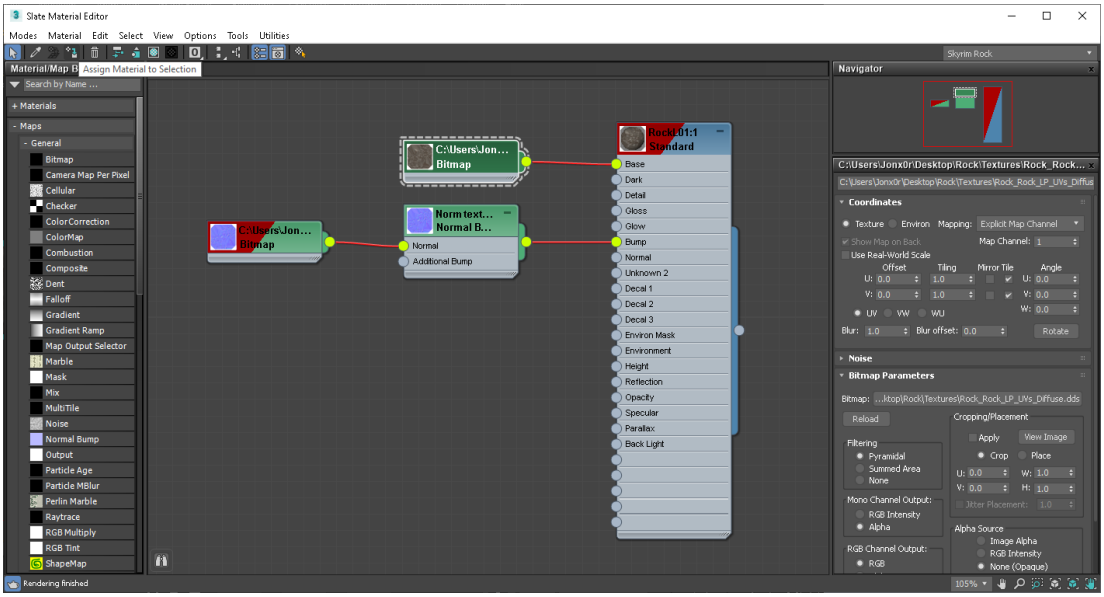

Figure 1174 - Assigning the material to our custom asset.

The specular map can also be added in the same way, but for this specific asset with a rough matte surface it isn't really necessary.

If any parts of the model needed to glow, we would connect the emissive map to Glow.

The viewport might still show the old material, so click on Standard and go to Materials > Shaded Materials with Maps to refresh it.

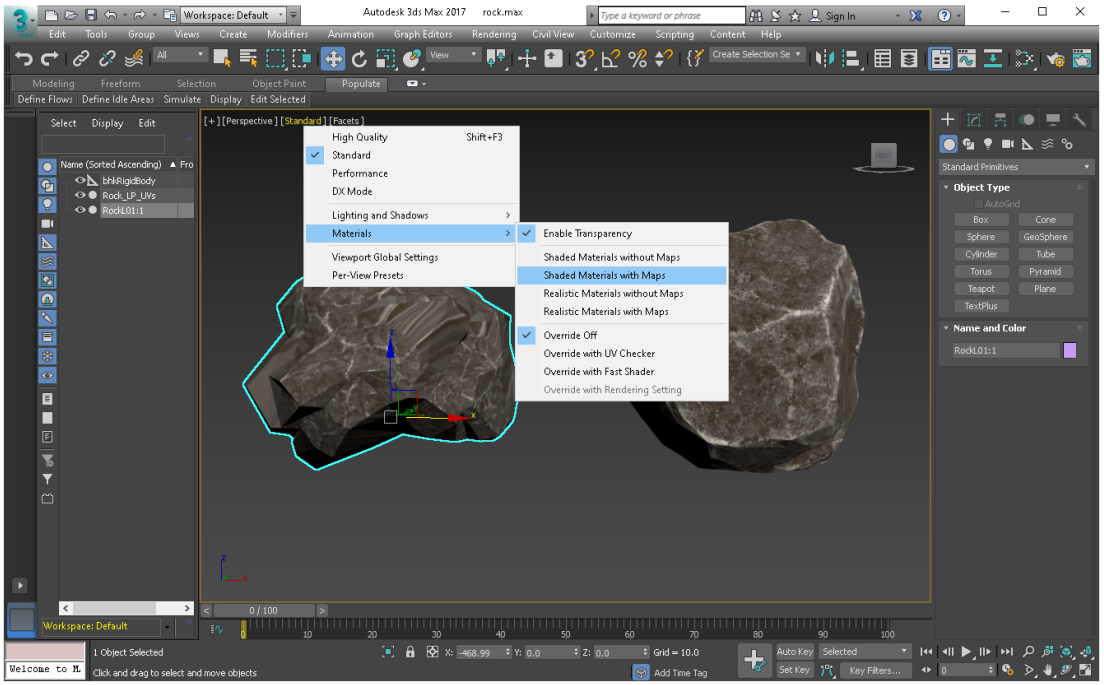

Figure 1175 - Refreshing the material view in viewport.

That's basically it. We no longer need the Skyrim asset at this stage so it can be deleted.

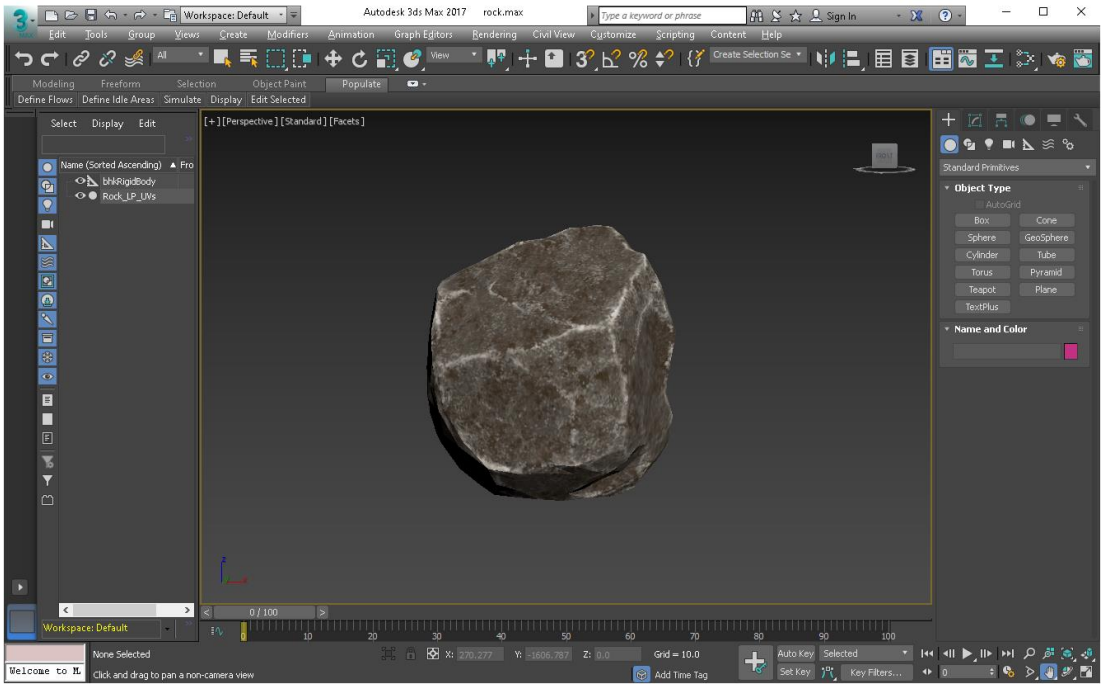

Figure 1176 - Custom asset textured in 3ds Max.

EXPORTING ASSETS FROM 3DS MAX TO SKYRIM

This section will cover the process of exporting a model from 3ds Max as a .nif and setting it up as a new object in the Creation Kit.

For this section I'll be working with 3ds Max 2017. The NIF Export/Import Plugin for 3ds Max 2017 is available on Nexusmods. For other versions of 3ds Max, try NIF Plugin for 3ds Max 2015-2018 available on Nexusmods.

In this example, I'm going to be exporting a custom wine bottle and will be setting it up in the Creation Kit as a new consumable item.

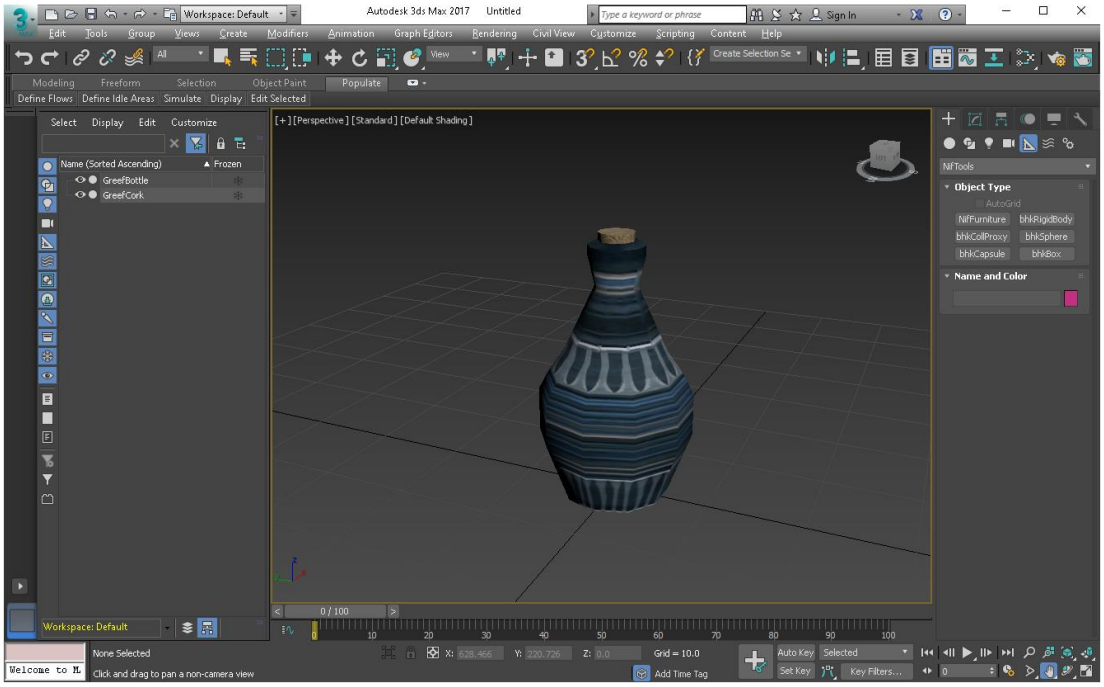

Figure 1177 - A model in 3ds Max.

The first thing we need to do is add collision.

Let's start by adding a bhkRigidBody object.

Under the Create tab, go to Helpers and click on bhkRigidBody.

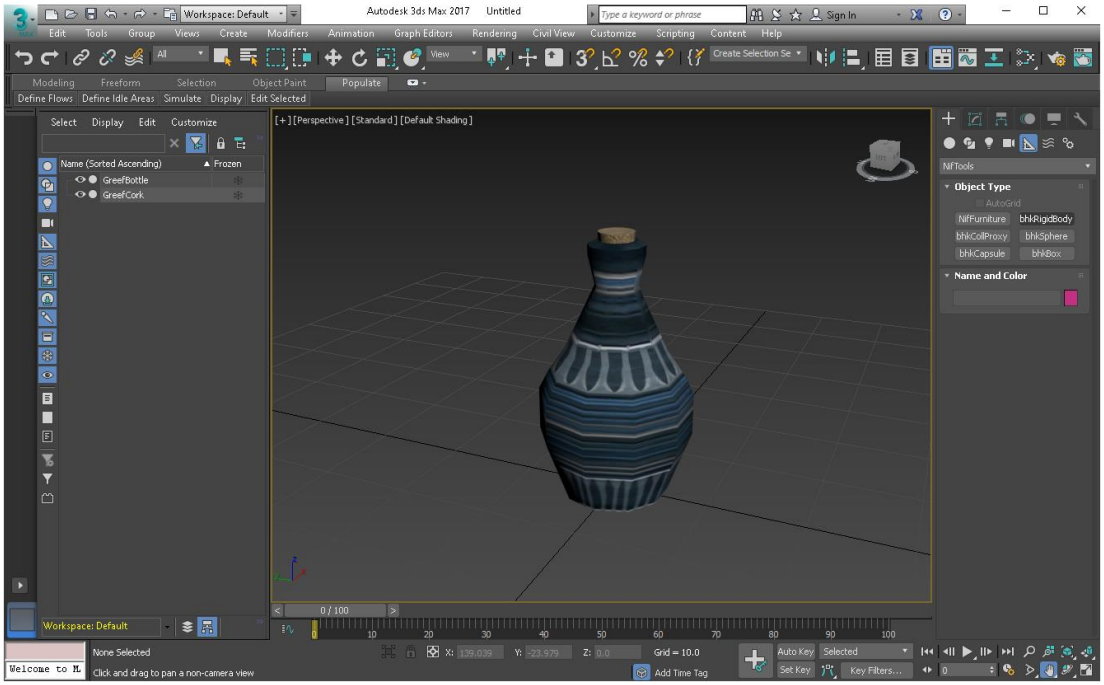

Figure 1178 - Adding a bhkRigidBody object.

Click in your scene to add it.

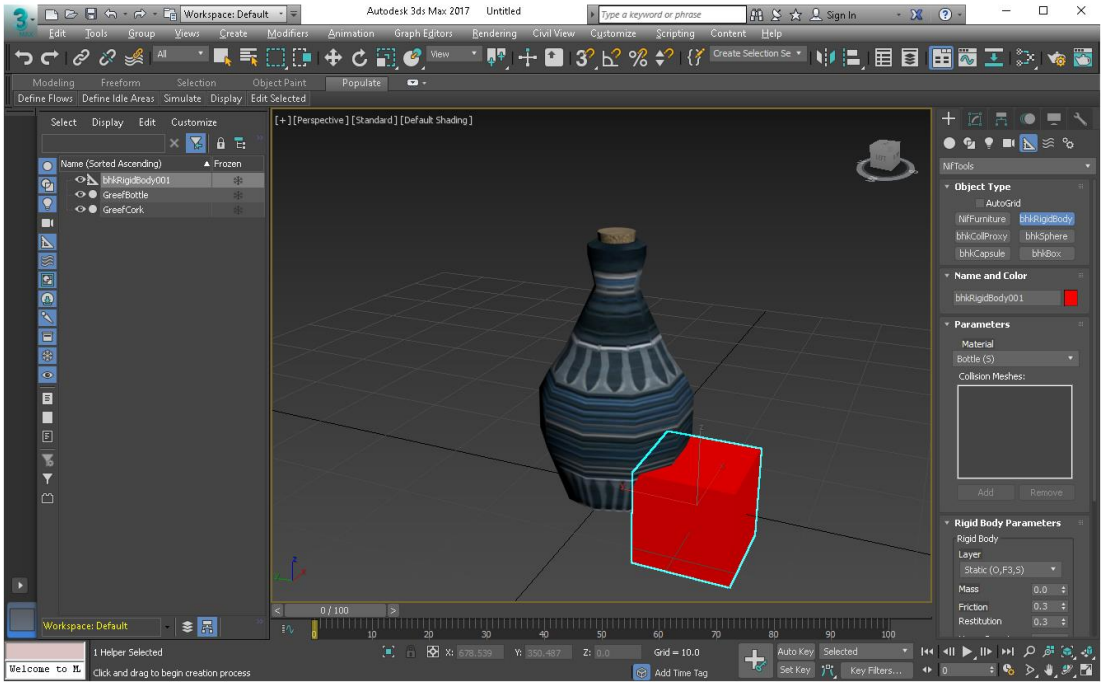

Figure 1179 - bhkRigidBody object added to scene.

Right-click on the Move tool and center the bhkRigidBody object.

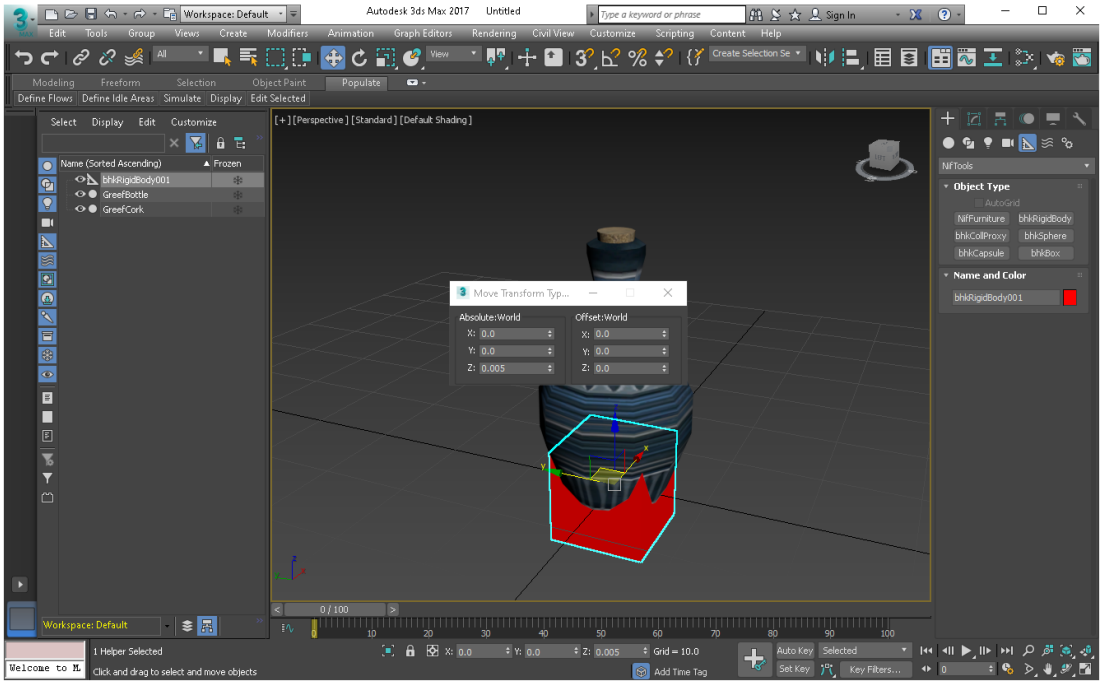

Figure 1180 - bhkRigidBody object centered.

Rename the object 'bhkRigidBody'.

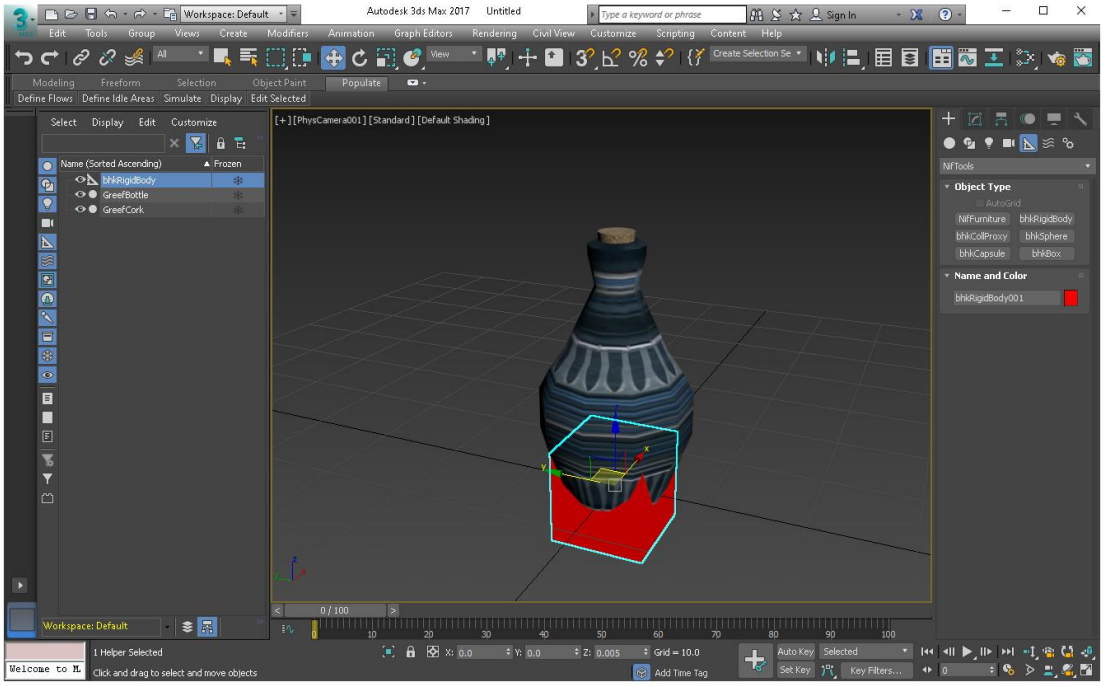

Figure 1181 - Renamed bhkRigidBody.

For this example, I'm just going to duplicate the GreefBottle mesh and use the duplicate as the object's collision. Here I'm using CTRL + V with the GreefBottle selected to duplicate it. I set the duplicate as a Copy of the original object and named it GreefBottle_collision.

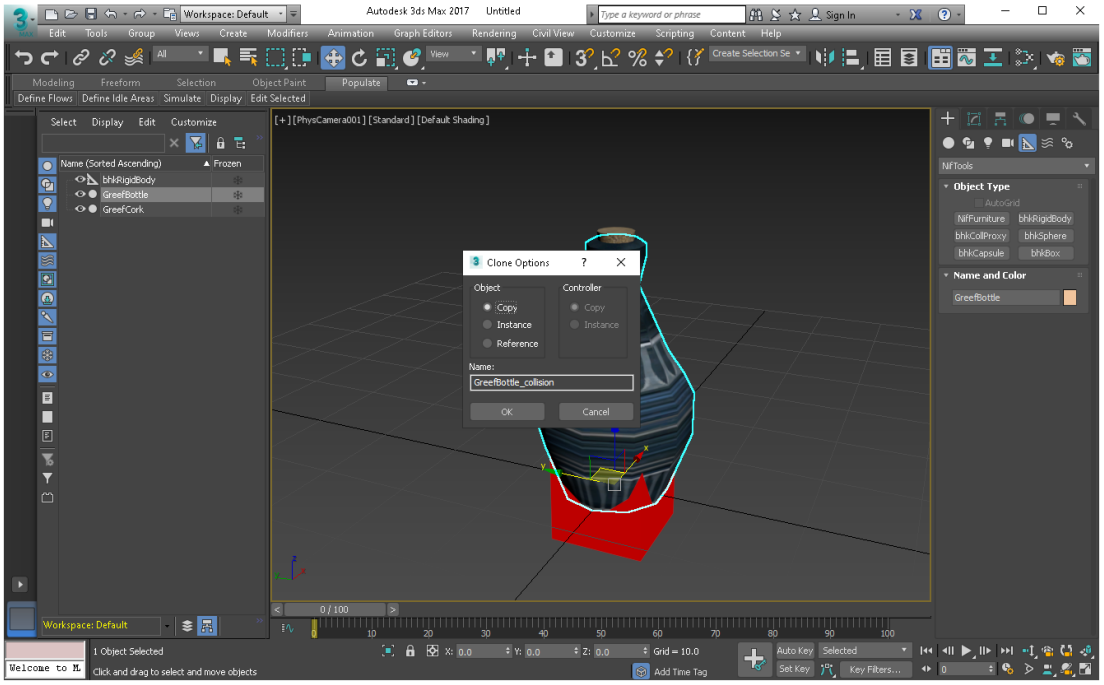

Figure 1182 - Duplicating the mesh to use as collision.

With the collision mesh selected, go to Modifiers and add bhkRigidBodyModifier.

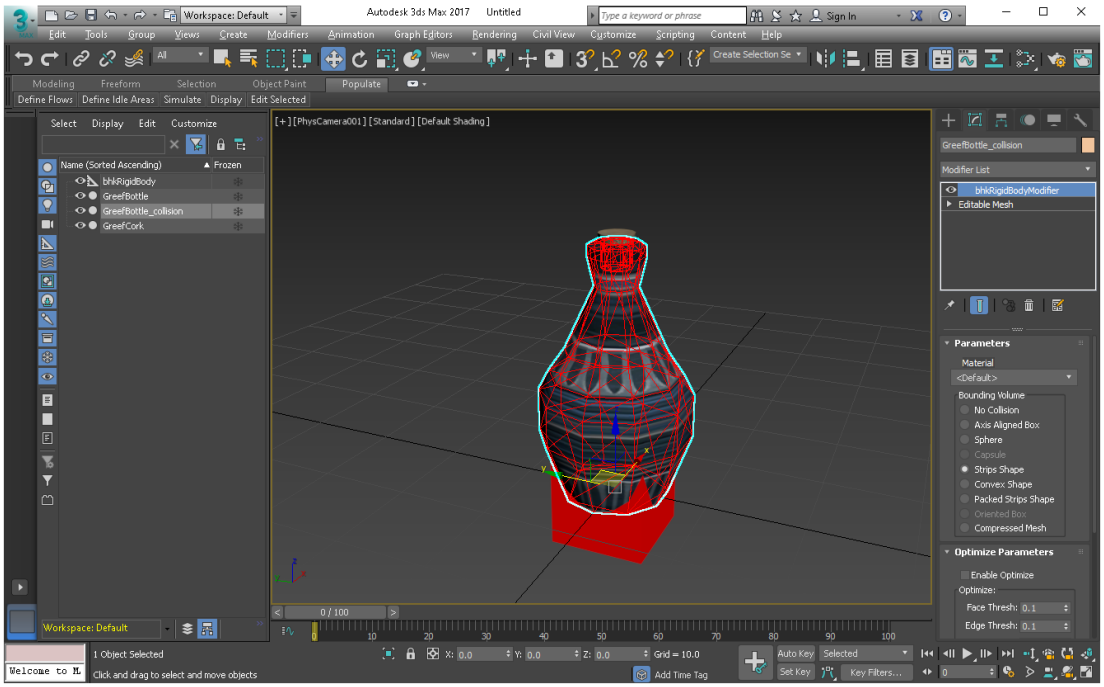

Figure 1183 - Adding bhkRigidBody modifier to the collision object.

For this object, set the Material to 'Bottle (S)' and the Bounding Volume to Convex Shape.

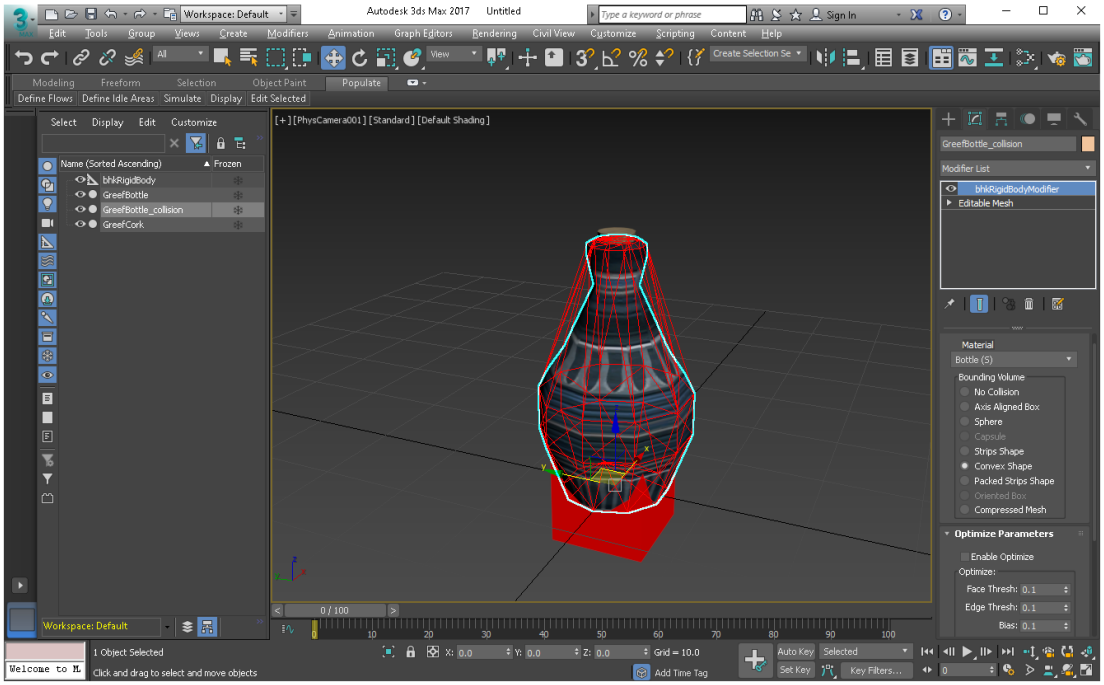

Figure 1184 - Setting the bounding volume.

If you were working with a static mesh select Compressed Mesh instead.

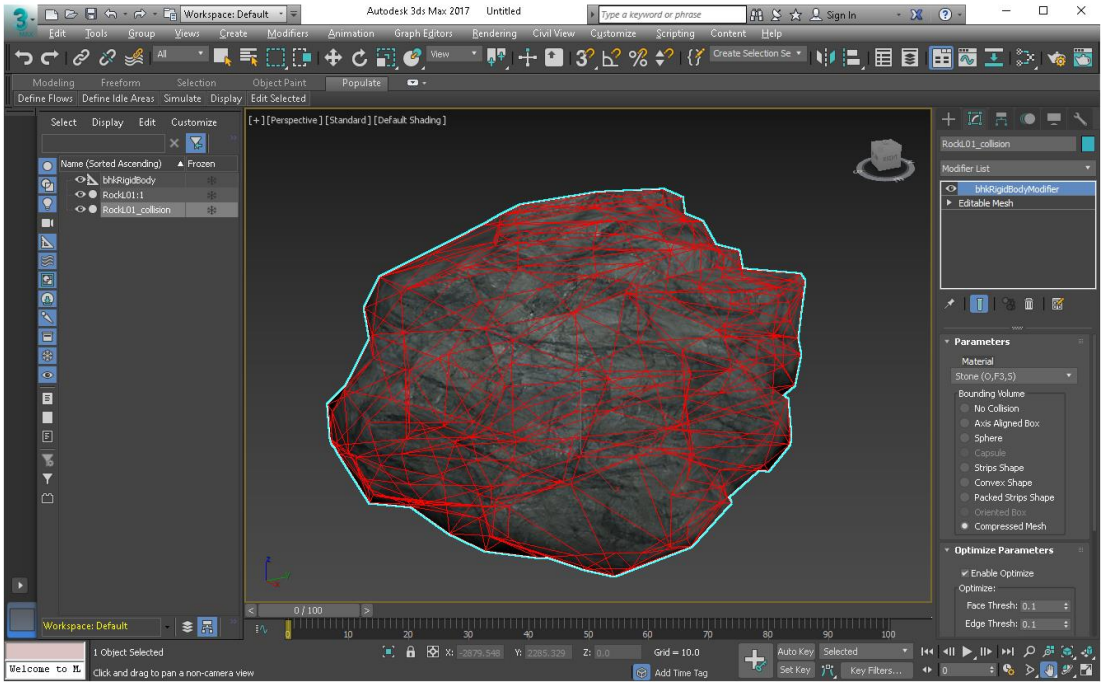

Figure 1185 - RockL01 collision.

Scroll down and tick 'Enable Optimize'. This should render the geometry as quads where possible rather than in triangles.

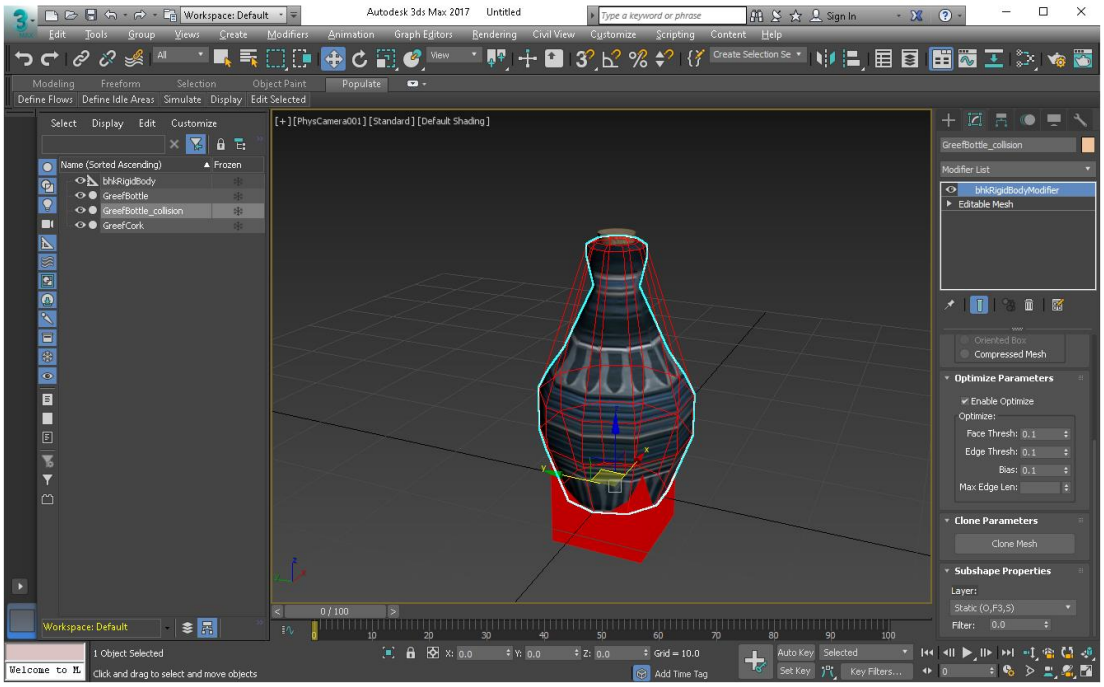

Figure 1186 - Collision geometry optimized.

Go back to the bhkRigidBody object. Under Collision Meshes click Add.

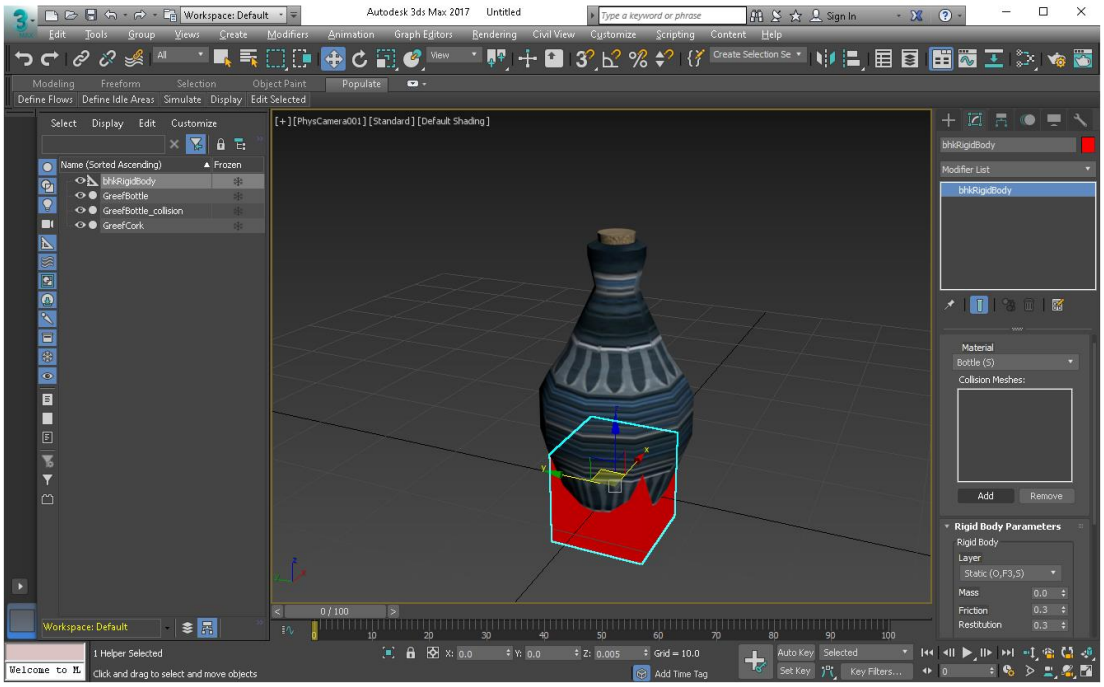

Figure 1187 - Adding a collision mesh to bhkRigidBody.

Add the collision mesh by clicking on it in the scene explorer.

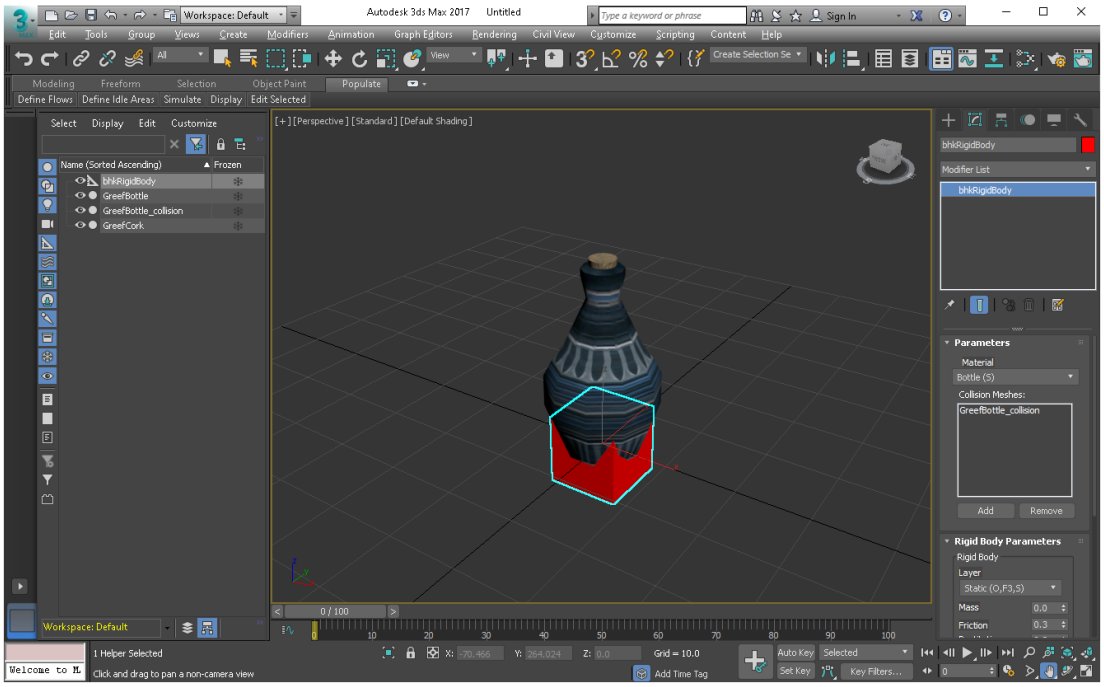

Figure 1188 - Adding the collision mesh to bhkRigidBody.

Now we can export the model from 3ds Max. To accomplish this, go to Export.

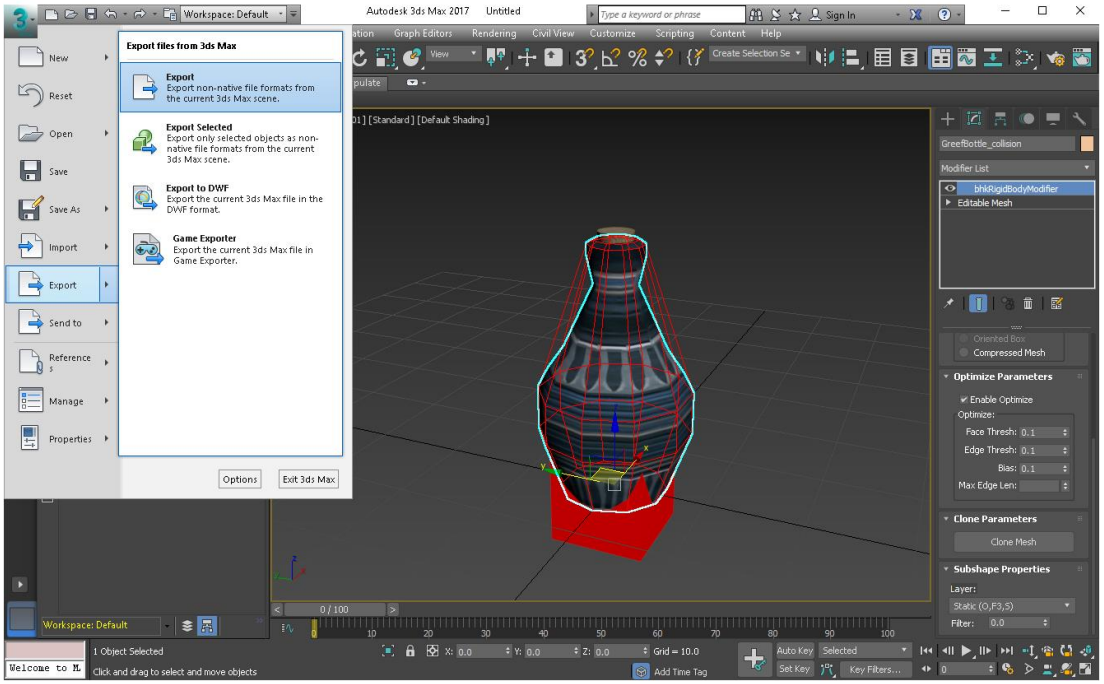

Figure 1189 - Exporting a model.

Set 'Save as type' to 'NetImmerse/Gamebryo (*KF,*.NIF)'. Set the location to export the model to and enter in a file name. In my example I'm saving to the Skyrim\Data\Meshes\clutter\wine folder, and the model is going to be called 'wtgreef.nif'.

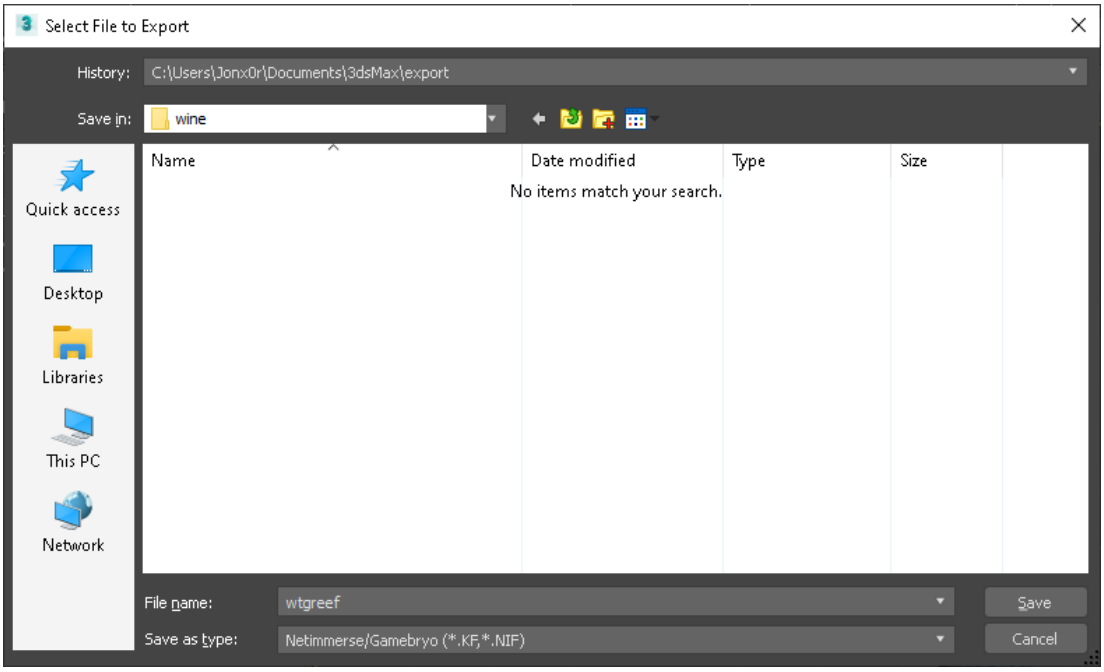

Figure 1190 - Set 'Save as type' to 'NetImmerse/Gamebryo (.KF,*.NIF)'.*

Set the Game to Skyrim.

Under the Export section I ticked Collision. If your model includes lights, cameras and hidden nodes, tick those tick boxes as well.

Under Mesh, tick Flatten Hierarchy, Update Tangent Space, Collapse Transforms and Zero Transforms.

For my example, I unticked the options under Skin Modifier as it doesn't apply to the model I'm exporting.

Under Animation, I left the drop-down set to 'NIF w/o Animation' and left 'Transforms' ticked.

Under Scene, I set the Root Node Type to BSFadeNode and under Miscellaneous I just left 'Sort Nodes' ticked.

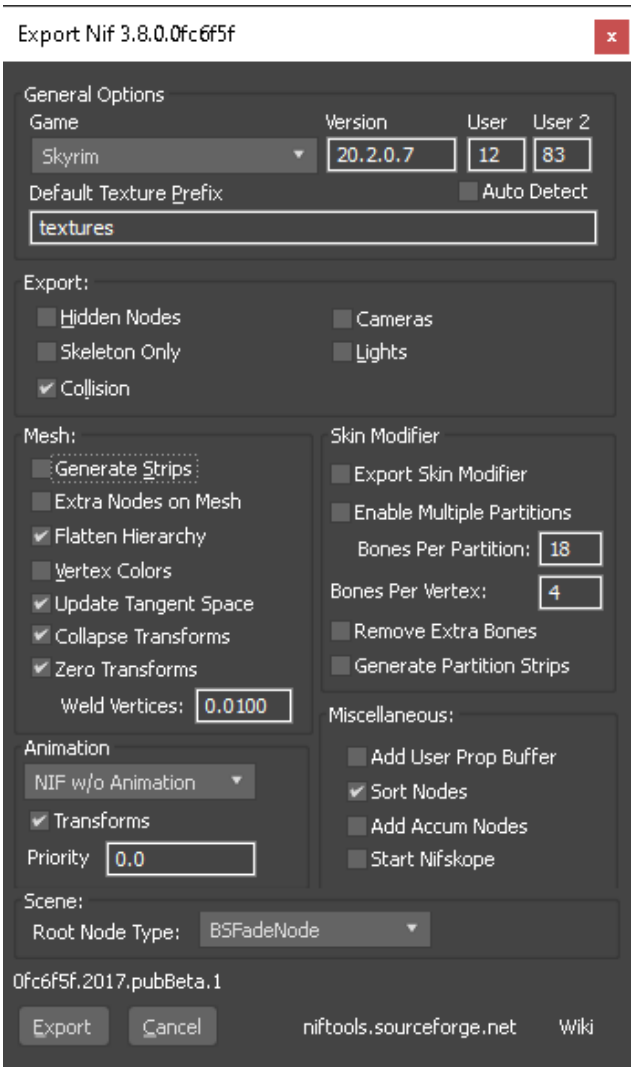

Figure 1191 - Export options.

Click Export to create the .nif.

For more information on what each export option does, see the 3ds Max Export article on the Beyond Skyrim wiki.

Important: If we add this .nif to a mod right now and launched Skyrim, Skyrim will crash as soon as it tries to render it.

There are several ways to work around this issue. Typically what I do is take a similar .nif exported from the .bsa archives and **turn it into the new .nif** by copying across the NiTriShapeData and bhkConvexVerticesShape blocks and the texture paths from the .nif we exported from 3ds Max.

Open the original exported .nif in NifSkope.

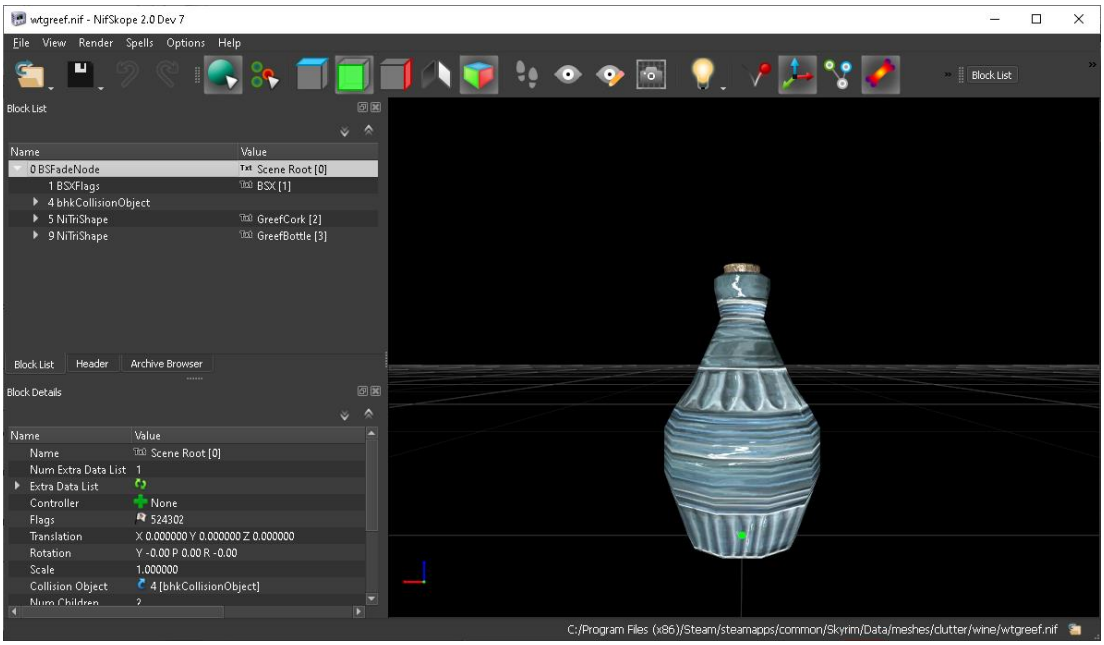

Figure 1192 - The .nif in NifSkope.

Open a second instance of NifSkope and open a similar .nif. For this example, I'm going to be working with winebottle01a.nif.

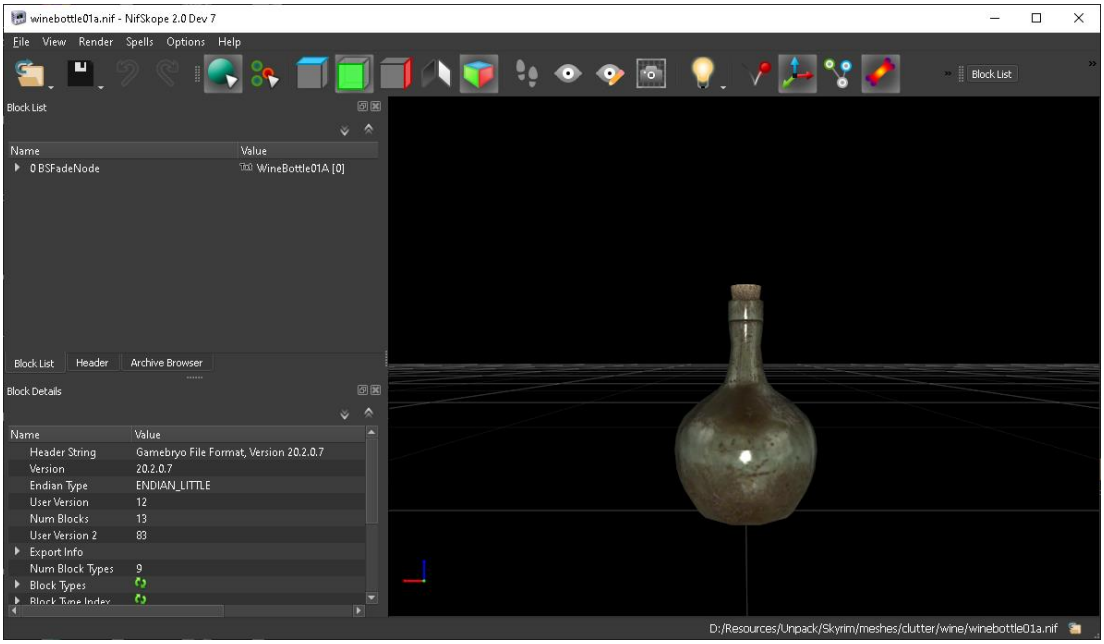

Figure 1193 - winebottle01a opened in a second instance of NifSkope.

In the source .nif, right-click on the NiTriShapeData block and select Block > Copy.

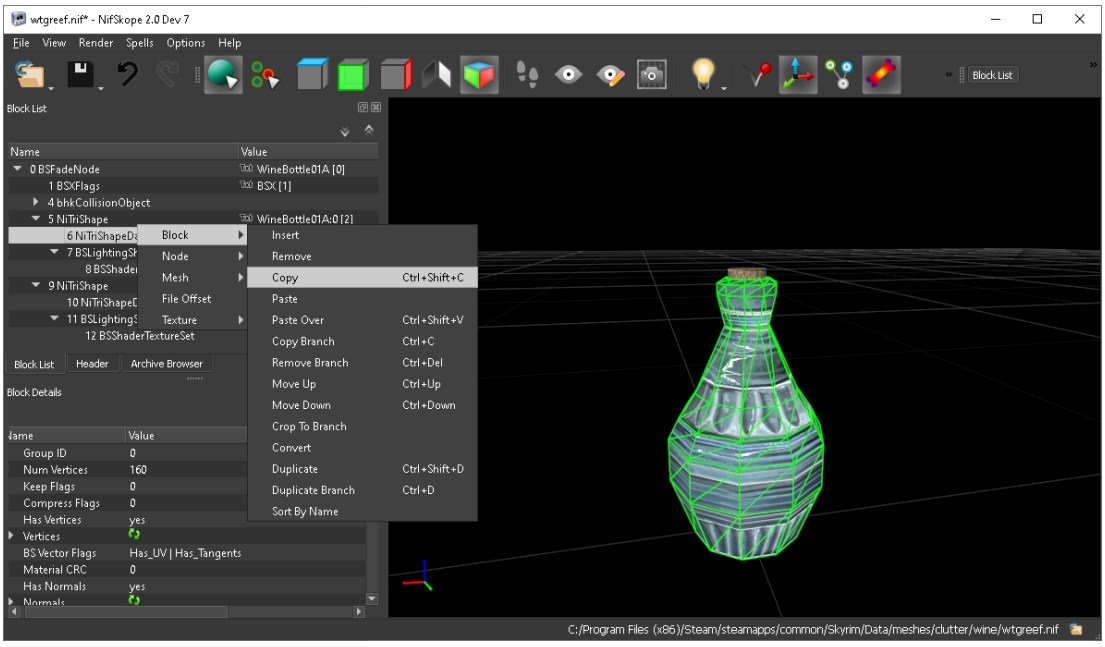

Figure 1194 - Copying the NiTriShapeData block from our source .nif.

Go back to the destination .nif, right-click on its NiTriShapeData block and select Block > Paste Over. It's important that you select Paste Over and not Paste. We need to replace the existing blocks.

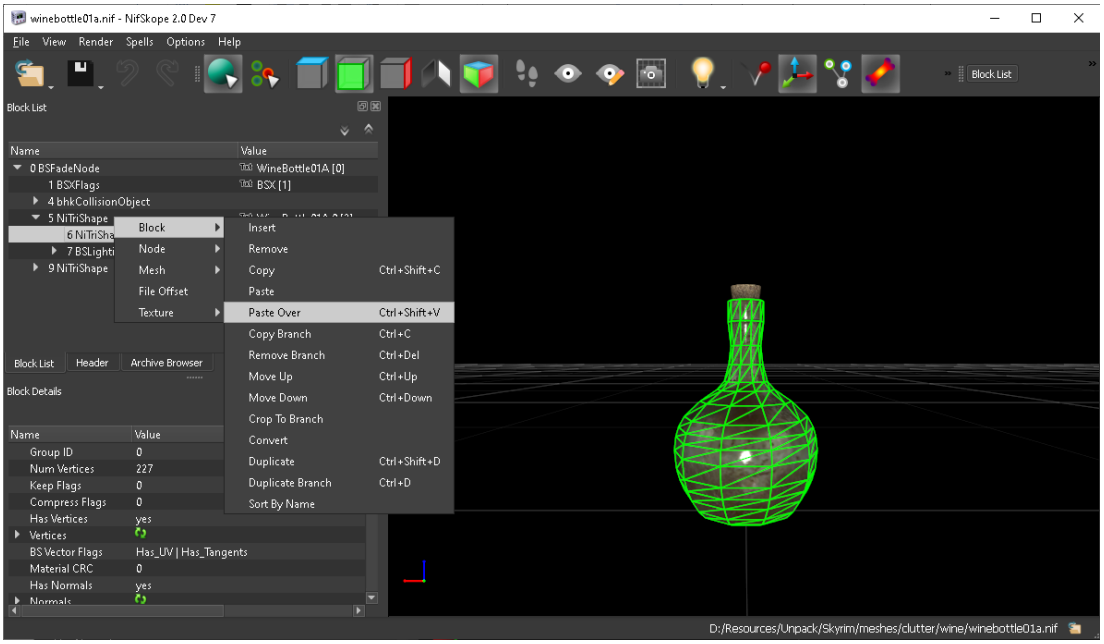

Figure 1195 - Pasting over an existing NiTriShapeData block.

Ok. It has the model, but now we need to transfer the textures.

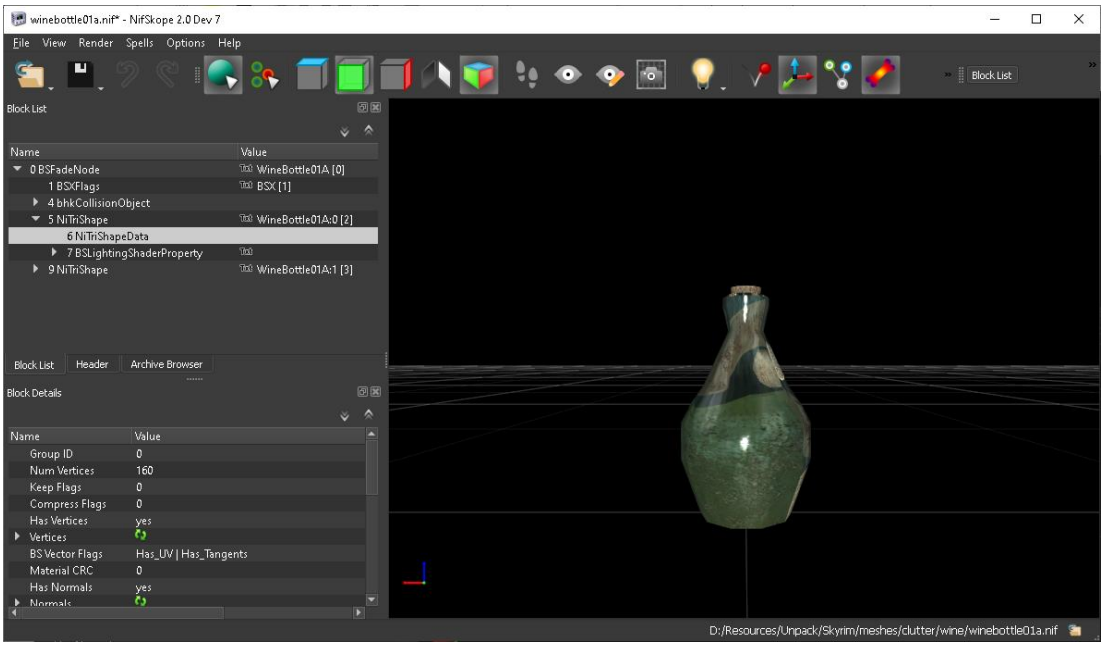

Figure 1196 - NiTriShapeData block replaced.

Copy the texture paths under the BSLightingShaderProperty > BSShaderTextureSet nodes in the source .nif.

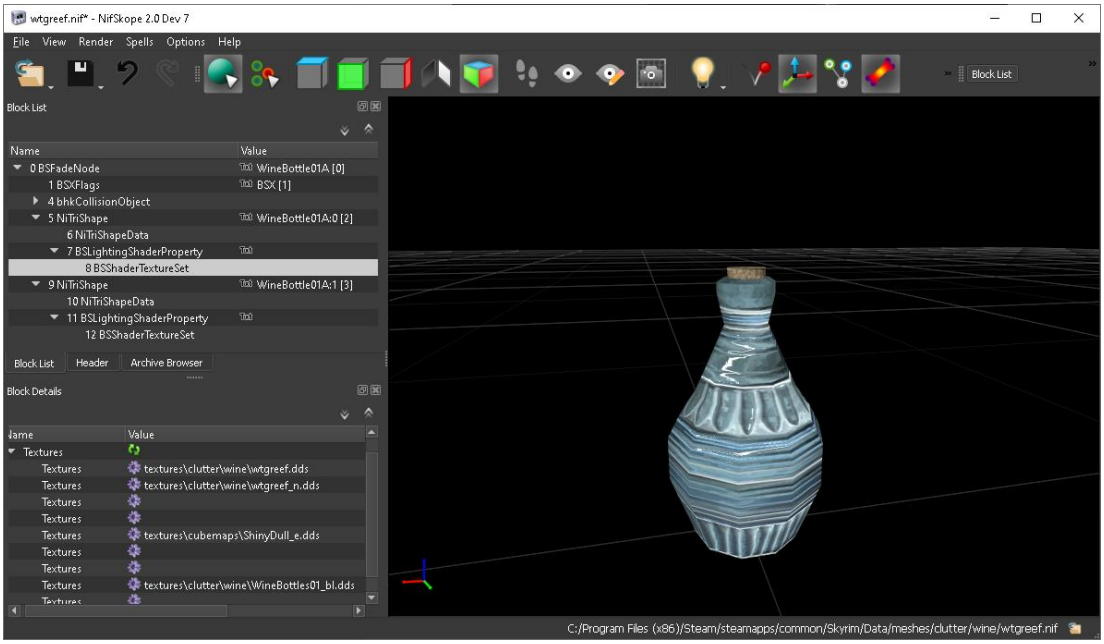

Figure 1197 - Copying texture paths from source .nif.

Replace the texture paths on the destination .nif.

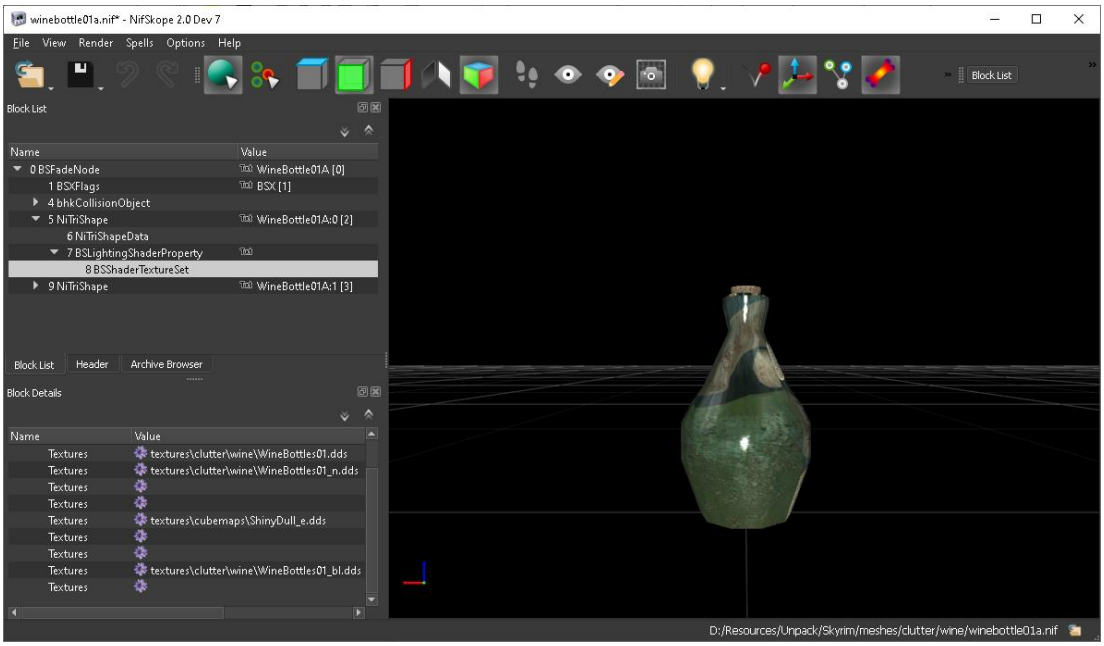

Figure 1198 - Texture paths on destination .nif.

Here's the destination .nif with the mesh and textures of the source .nif.

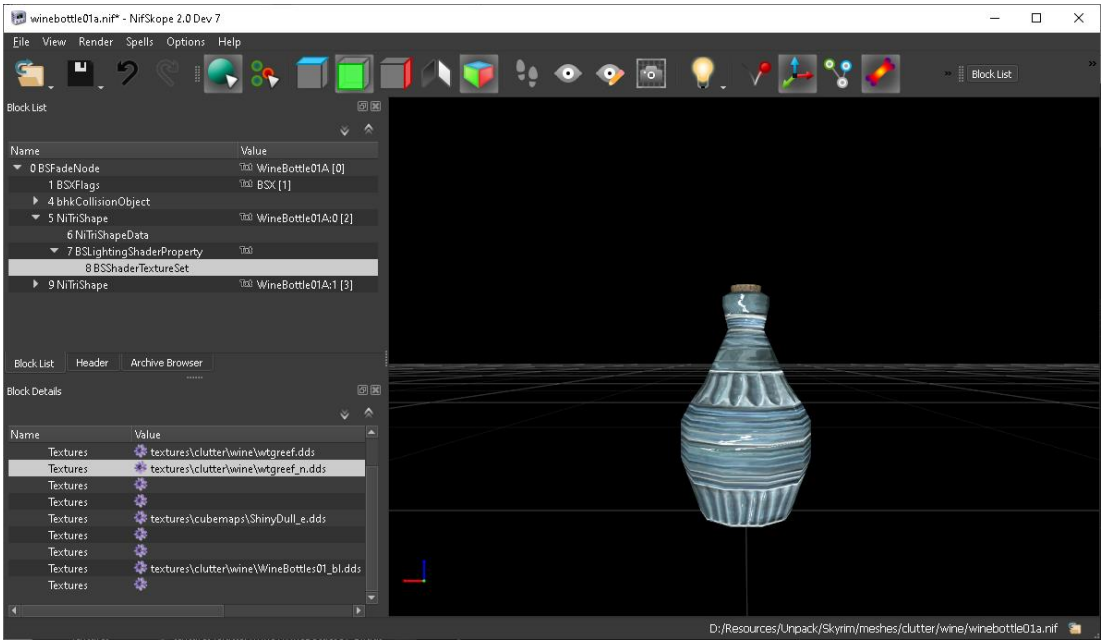

Figure 1199 - Destination .nif with mesh and textures from source .nif.

Repeat these steps for any other separate NiTriShapeData nodes in the model. For this example I also had to replace the cork object too.

Now, to replace the collision. On the source .nif, right-click on the bhkConvexVerticesShape node and select Block > Copy.

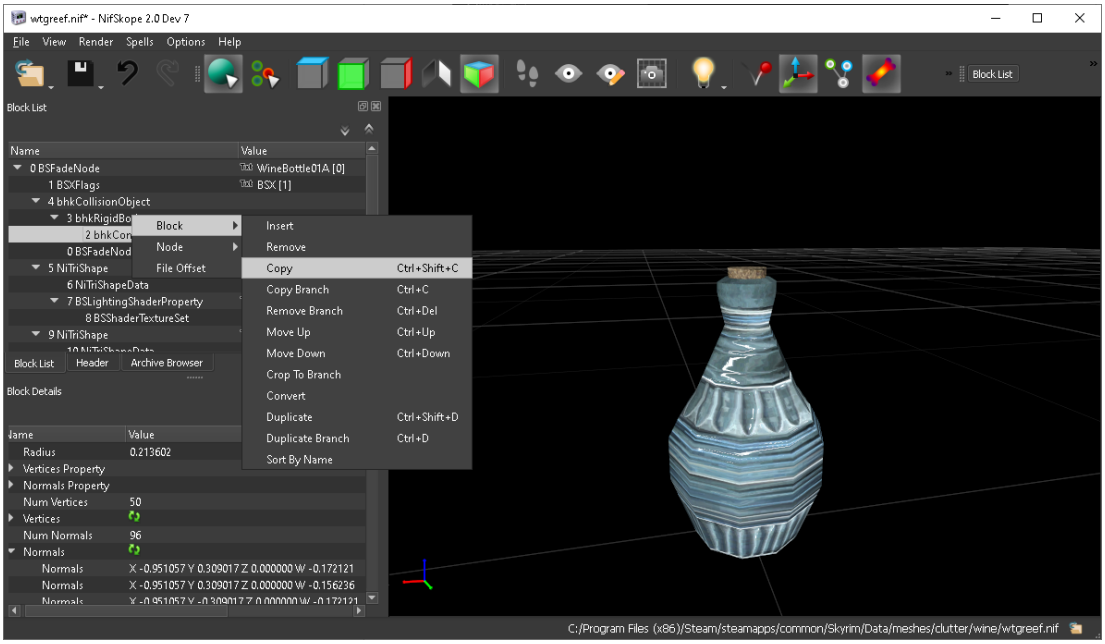

Figure 1200 - Copying the bhkConvexVerticesShape node from the source .nif.

On the destination .nif, right-click on its bhkConvexVerticesShape node and select Block > Paste Over.

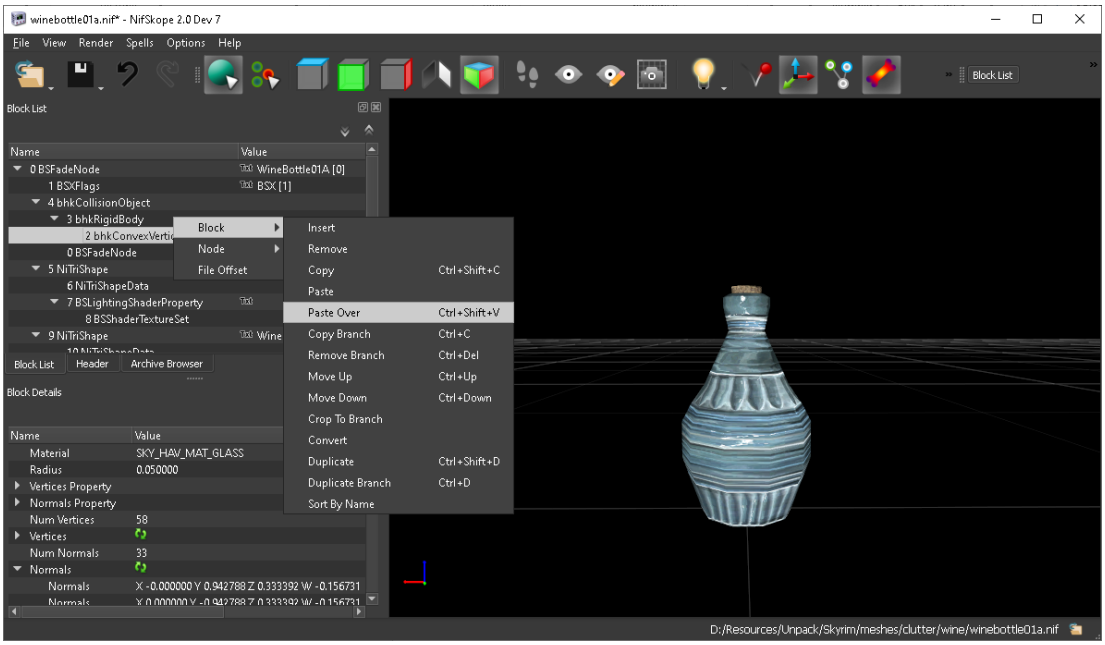

Figure 1201 - Replacing the existing bhkConvexVerticesShape node on the destination .nif.

Alright, time to save our .nif. Go to File > Save As.

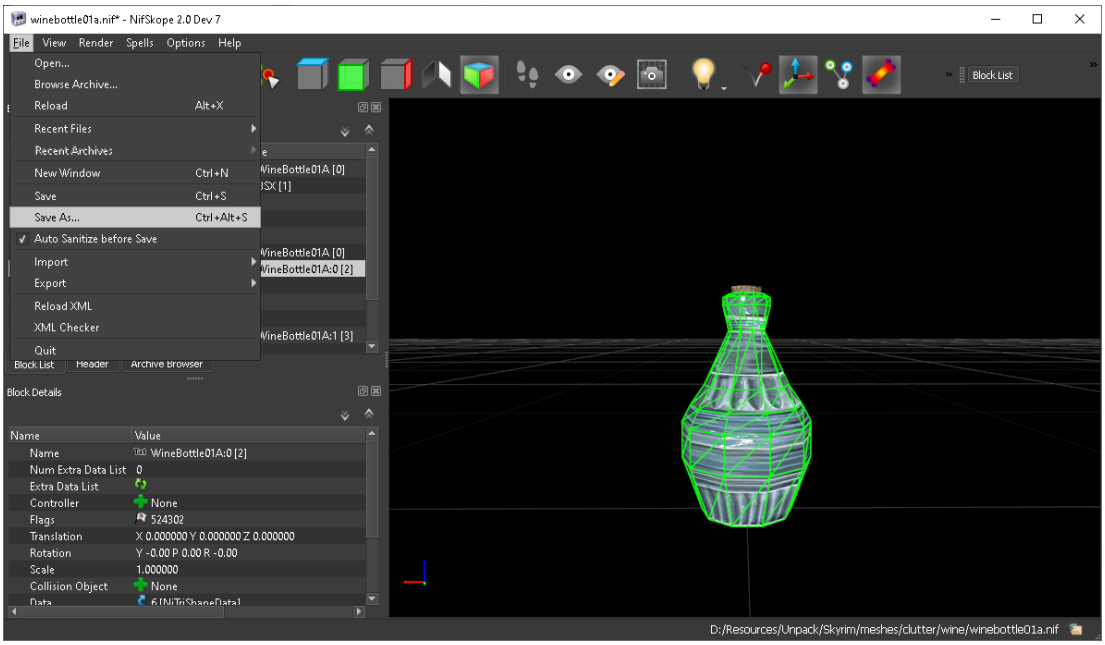

Figure 1202 - Saving the destination .nif.

Overwrite the source .nif that we exported from 3ds Max earlier.

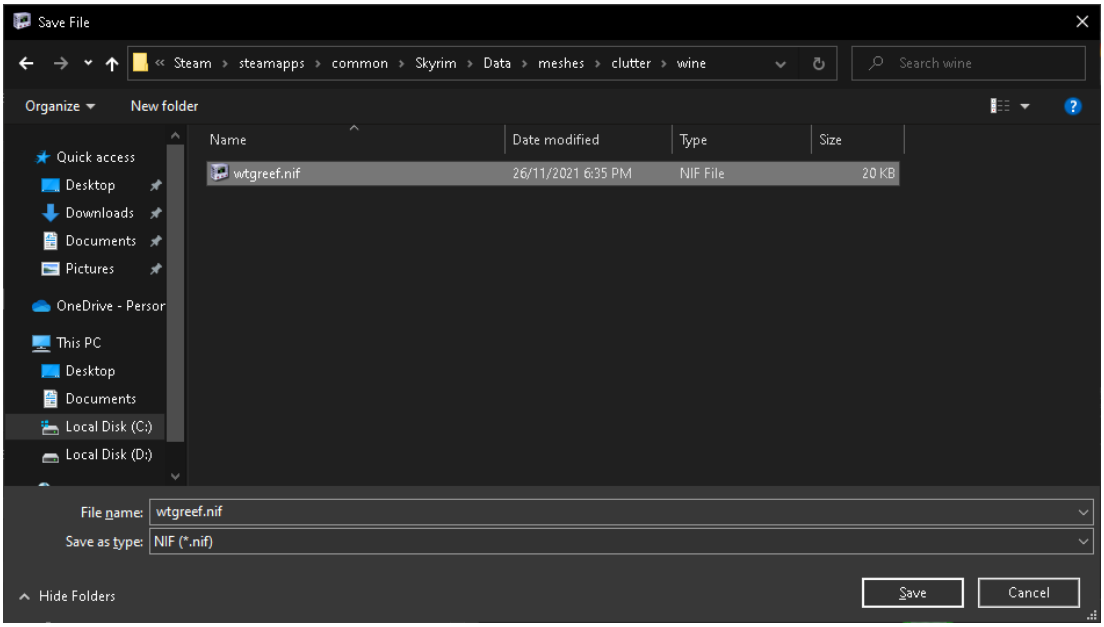

Figure 1203 - Replacing the source .nif with the destination .nif.

Good news. If we launch the game and go to a cell containing the object, the game doesn't crash. The bad news is that its collision radius is too large and is causing our object to float above the surface of the table.

Figure 1204 - New model in-game.

So let's fix that by reducing the collision radius in the .nif.

In the bhkConvexVerticesShape, set the Radius field to 0.000000.

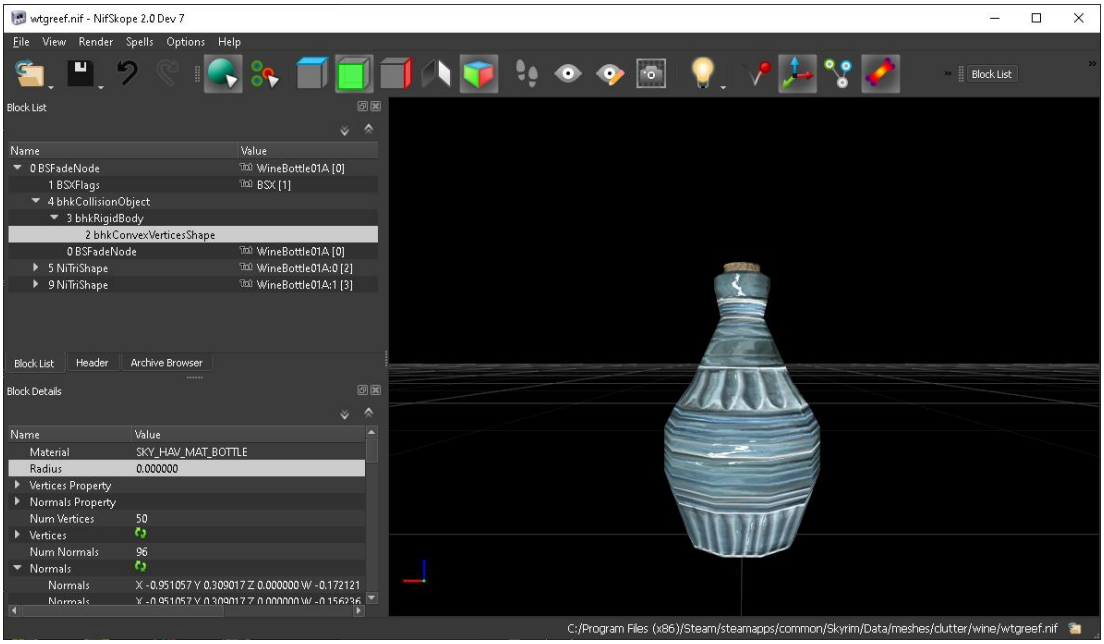

Figure 1205 - Setting the collision Radius to 0.000000.

Save the .nif. And that looks like it fixed the issue. The model is now sitting flush with the surface of the table instead of floating above it.

Figure 1206 - Collision radius fixed.