**WORKING FIRE OBSIDIAN**

1. **GENERAL**

**Fire obsidian is found in the Glass Buttes area of Central Oregon. General appearance is the same as for Mahogany and Sheen type Obsidians; except that strata and flow layers of Fire Obsidian have special refractive powers to reflect sunlight or strong incandescent light. This one feature solely identifies Fire Obsidian from other types of Obsidians, the same as the fire in Fire Opal and Fire Agate identifies that material from plain opal or agate. The reflective seams or strata in Fire Obsidian are called “Fire layers” and have become highly prized as a source of natural gem material.**

1. **FINDING THE FIRE**

**Not all strata or flow layers contain fire. In fact, most are Mahogany or Sheen layers that will only show silver or golden shine, if any. The valued “Fire Layers” will reflect spectrum colors mostly on the blue/green side, orange and flashes of green. To find the fire the usual procedure is to study the piece of rough in bright sunlight. Note the flow and pattern of strata lines through the piece, like the grain in a piece of wood. The first place to check for fire is where the ends of the strata layers are exposed on the surface or the edges of the piece in work. Especially check any pointed ends and spots where the strata layers may shallow out or feather near the surface. A chip across the shallow end of a near exposed layer is ideal for finding the fire, or lack of it. Use the squirt bottle liberally to wet the piece of rough. View the exposed chips and flat ends of the layers at the shallowest possible angles in direct sunlight, keeping the sun over your shoulder or behind you, with the reflecting spot in question at right angles to sunlight. Practice will soon show you the best techniques to use. If available flat spots and layer ends are not sufficient to reflect the layers in question. A little chipping, grinding or sawing may be necessary to show the fire. Once good fire has been found, the whole fire layer should be marked with a china marker pencil, tracing the fire layer entirely around the piece. Remember that direct sunlight is best for finding the fire. After fire has been found work may proceed using the available artificial light(incandescent). A crayon may be used to mark the fire layer if a China marker is not at hand.**

**It is usually best not to try to develop or even check for fire in layers that are not readily visible until you finish working those you have already checked with fire. Remember, obsidian fractures easily and you can easily shatter a “bird in the hand” for “one in the bush”. So don’t get carried away searching out the fire, it will still be there. Work your fire layers from the top down!**

1. **SELECTING THE WORKING FACE**

**Fire layers will generally be slightly concave or convex in shape, depending on the point of view (dished up or dished down). Once in a while they appear seemingly flat, in which case it doesn’t matter. Often both sides of a fire layer are equally reflective. When that occurs it is best to select the convex (upside down dish) side as the working face. This presents a broader opening of fire to view and greater diffusion of reflected light. When there is a noticeable difference in the availability or intensity of reflected fire from one side of the fire layer, then the side with the most fire should be selected. In the case of good fire from both sides the possibility of a double faced pendant can be considered.**

1. **OPENING UP THE FIRE LAYER**

**Having identified and marked the fire layer and selected the working face, we are ready to open up or expose the fire. Cut or grind away the excess material covering the fire layer, taking care not to cut or grind down too closely to the fire layer. Close inspection of the glass (obsidian) will show a slight discernable difference that exists between the material in the fire layer and the rest of the bulk material. The difference is most evident in the clearness and opacity of the fire layer and the bulk. The fire layer will be slightly foggy or less clear, with often a slightly rosy hue as a demarcation outline. Take care not to grind too heavily into the outline – the fire can disappear very quickly. Once the entire outline of the fire layer appears you are reducing the size of your fire the more you grind. The fire layer may be left as attached to the piece of bulk for easy handling during grinding, sanding and polishing. How closely to grind down the face of the fire layer is dependent upon the color density of the volcanic glass composing the fire layer itself. If the glass is clear and there are no interfering strata layers or lines the grind need not be too close. If, however, the glass is dark or there are strata immediately above the fire layer you may need to grind very close. This can become rather ticklish and you might choose to do the final grind (before sanding) with about 400 grit wet/dry paper or equal, using a very light touch.**

1. **SANDING AND POLISHING**

**Sanding of the fire layer should be carried out starting from the center of the working face toward the edge. This is necessary to minimize the sanding drum or disk carrying edge fragments or grit across the face of the already sanded area and scoring it anew. In addition, sanding from the center out helps to form the dome or elliptical surface essential for proper refraction of the inner fire. One of the most u8seful techniques in working obsidian is “dry sanding” – using wet/dry type sanding cloth on a revolving drum or disk. When not overdone it is possible to follow the progress of sanding, observe the effect, and help assure achievement of a smooth finished surface. Care should be taken to avoid prolonged contact, sand in short bursts, removing the stone often to dampen it and assure it is not getting too hot. Overheating will make it brittle and cloudy. After sanding through the finest grit available (we use worn 600 grit wet/dry sanding cloth) polishing may be undertaken. Methods used are optional according to individual preferences or the equipment available. Some use diamond wheels or disks. Some prefer to use diamond compound. We like a wet slurry of cerium or tin oxide on a leather covered disk ar about 400 rpm. Taking care not to let the slurry dry out and always taking care to polish the working face from the center out toward the edge. After polishing has been done to satisfaction, the fire layer slabbed off, if not already done, freeforming or cabbing of the finished piece can be done.**

1. **CHECK THE REMAINDER**

**The remaining piece may contain fire layers that are even better than the one you just finished. No two fire layers have identical properties. We find an endless variety of colors, shapes and patterns in each chunk of rough we work. Some are patchy, hit or miss, like a checker board, some are striped, and some have color that swirls or fades in and out. Even years of working this material we still find anticipation with each piece of rough we screen – when we dig it – and again when we mark the fire layer prior to shipment. So don’t think you have seen it all. We guarantee each new piece you work will be different. The tenth piece you finish will be so much finer than the first you will probably feel like throwing the first effort away.**