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White Bodied Earthenware, European, and American Stoneware
Texas Archeological Stewards Network
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Deciphering White Earthenware

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- 4) Categories of White-bodied Earthenware (Price 1979).
 - a) Creamware – **ca. 1760-1820 (THC Cat #100/#109/#111)**
 - i) Refined (high fired) earthenware with yellowish or cream-colored paste and a clear lead glaze which has a yellowish or greenish cast. When glaze pools, appears deep green or yellow-green.
 - ii) Contemporaneous with Pearlware
 - iii) Decorations
 - (1) Painted underglaze
 - (2) Transfer printed
 - (3) Painted overglaze
 - b) Pearlware **ca. 1780-1840**
 - i) Refined earthen ware with white paste
 - ii) Clear lead, blue-tinted (cobalt) glaze. Decoration under the glaze in blue paint (**THC Cat #44/#16/#81/#95/#88/#89/#91/#108**), printing, and over the glaze in monochrome and polychrome painting (**THC Cat #46/#30**) (enamels).
 - c) Whiteware **ca. 1800-late 19th century**
 - i) Refined earthen ware with white paste (**THC Cat #37/#48/#90/#113**)
 - ii) Blue cobalt was omitted from the glaze, but added to the clay body to make it appear white. Overlaps Pearlware production. Every conceivable decorative style (THC [2006] 2012).
 - (1) Handpainted (**THC Cat #112/#92/#93/#45**), English origin, Delft (**THC Cat #27**) East Texas **1820+**, South Texas **1830+**
 - (2) Transfer print (**THC Cat #12/#13/#14**): English origin, **1800 to ca. 1850**; English U.S. origin, **1850-present**
 - (a) Rhine pattern ca. 1855-1870 (**THC Cat #15**)
 - (3) Lusterware (**THC Cat #5/#29**) early 19th to 1860.
 - (4) Undecorated White Ware/Ironstone, English/U.S. origin **19th century**
 - (a) Sites containing only white ware (predominantly ironstone) are post-Civil War
 - (b) Ironstone (date to **1840s-1930s**) – (**THC Cat #35/#71**)
 - (i) Molded, Chelsea Grape (**THC Cat #17**)

- (ii) Fiesta Ware ca. 1930-Modern (**THC Cat #72**)
- (5) Annular **1790–1930 (THC Cat #6/#8/#10/#85)**
 - (a) Mocha 1790-1960+ (**Cat #57/#58**)
 - (b) Cable designs (**Cat #31/#32/#33/#47**)
 - (c) Cat's eye (**Cat #54**)
 - (d) Banded and Line Slip ware **1790-1850 (THC Cat #49/#50)**
- (6) Canary Ware **1780–1835 (THC Cat #28)**
- (7) Spatter/sponge ware **1830-1900 (THC Cat #39)**
- (8) Cut Sponge Ware **1800-1860 (THC Cat #52)**
- (9) Edged Ware **1780-1850 (THC Cat #98/96/#97)**
- (10) Flow Blue **1835-1900 (#82)**
- (11) Decal Ware or “Decalcomania” **1900+** in Texas. Decorated over glaze (**THC Cat #78**)

Other Categories

- 5) Other Earthenware (**THC Cat #110**)
 - a) Prattware, cream tinted earthenware **1780-1840**. Hand painted, later transfer prints, began in Fenton, Staffordshire by the Pratt pottery works, then later made by others. Typical pallet of colors orange, green, cobalt blue, brown and black. (**THC CAT #51**)
 - b) Majolica (**THC Cat #1/#2**) - Italian and Mexico made (**THC Cat #26/#103/#104/#105/#106**)
 - c) Coarse earthenware (**THC Cat #11/#107**)
- 6) Stoneware
 - a) Ginger Beer, European origin, possibly Scotland **1850-1900 (THC Cat #59/#60/#61)**
 - b) Salt Glaze **1850-1900 (THC Cat #64/#65/#66/#67/#68/#70/#83/#84/#86/#116/#117/#121)**
 - c) Albany slip **1850-1900 (THC Cat #34/#38/#63/#69/#118/#119/#120)** deep or dark brown glaze, impervious to many liquids
 - d) Alkaline glaze **1850-1870**

A CERAMIC ASIDE *

Ceramics are classified as earthenware, stoneware, and semi-porcelain to porcelain (Table 1). The difference is the temperature at which they are fired. High firing vitrifies the quartz in the clay melting it so that it appears glassy. When you look at the break surface of a sherd, you can see not only a fine grain size but also a density to the particles.

Native American and Spanish colonial ceramics are considered earthenware. Earthenware is typically coarser grained and pastes range in color from buff, to brick red to black. Most 19th century through contemporary tableware and serving bowls are also earthenware. These vessels are of an earthenware base with or without decoration of various types. A vessel type known as ironstone is earthenware fired higher than the plain earthenware. It is tricky to tell ironstone from plain earthenware without practice.

The next higher fired ceramic is the stoneware. This clay composition is a higher density material that is fired at higher temperatures resulting in a denser looking paste. It is also a heavier vessel. If you apply a stoneware sherd to your tongue it will not stick, whereas earthenware will always stick.

Using a higher quality clay and fired at high temperatures is the semi-porcelain. It has a denser and finer texture and is usually a whiter paste than stoneware. Most people have a hard time telling the difference between a white milk glass and porcelain. However, there is a simple way to tell them apart. When you look at a porcelain sherd in cross section there are two lines that are the applied glaze with the paste between. However, when you look at a milk glass sherd it is glossy all the way through, as it has been completely vitrified.

* From Tomka 2011

Table 1.

Ceramic Bodies and Their Characteristics*

Ceramic Series	Ware Type	Porosity	Firing Range	Typical Applications	Comments
Native/Prehistoric	Terra-cotta	High: 30% or more	Well below 1000°C	Flowerpots, roof tiles, bricks, art ware; most prehistoric pottery	Unglazed, coarse, and porous; often red firing, nonvitrified
Colonial	Earthenware	Med: 10%-25%	1000-1100°C	Coarse: drainpipes, filters, tiles, bricks Fine: wall and floor tiles, majolica	Glazed or unglazed; body nonvitrified
Historic White bodied	Earthenware	Med: 10%-25%	1000-1200°C	Tableware	nonvitrified
Ironstone	Earthenware	Med: 10%-25%	1200+°C	Tableware	nonvitrified
Stoneware	Stoneware	Mod: 0.5%-2.0%	Ca. 1200-1350°C	Glazed drainpipes, roof tiles, tableware, artware	Glazed or unglazed; partial to full vitrified body
Semi-porcelain	Refined Earthenware		1100-1200°C	Tableware	Partially vitrified
Semi-porcelain	China	Low: usually less than 1%	1100-1200°C	Tableware	White, vitrified
Porcelain	Porcelain	Less than 1% often near 0%	1300-1450°C	Fine tableware; artware; dental, electrical and chemical equipment	Hard body; fine, white, translucent; “rings” when tapped, fully vitrified

*(adapted from Rice 1987:5 and Tomka 2011).

GLOSSARY

Albany clay: natural alluvial clay found along the Hudson River in New York State. It forms a glaze at stoneware temperatures and was widely used in the United States. The other commercially mined slip clays, especially those from Ripley, Michigan, and Elkhart, Indiana, are so nearly like this after firing that most **dark brown** and **black slip-clay glazes** are called “**Albany type**” unless known to be a specific clay.

Annular Decoration: utilizes a series of concentric lines on the exterior of a vessel, generally mugs, bowls and jugs. Wide and narrow bands may occur in various combinations. It has been used to decorate Pearlware, Whiteware and yellowware. Produced from about 1790–1930. It has been suggested that blue and yellow bands were popular after 1850. There are several varieties of Annular wares, which combine additional decorative attributes with the concentric bands in raised or recessed patterns (see engine turned). Sometimes referred to as Slipwares, Dipped or Dipt wares, the body sometimes turns yellow due to impurities in the clay.

Band and Line: distinguish between annular/banded and band and line. According to Miller (1991:7), band and line are found on hotel wares.

Cat's-eye: prominent dot of color usually with one or more other colors dropped onto a contrasting background for an “eye” catching design. It resembles a lazy cat eye not fully dilated in light. It is commonly confused with the trailing cable designs or worms.

Clobbered: Technique where color was applied to unstippled portions of transfer pattern designs

Copper Luster: copper luminescent decoration

Creamware: Brand name for white earthenware that is cream colored on the surface. The best way to recognize is to place a sherd on a white sheet of paper next to other white earthenware.

Cut Sponge: shaped sponges soaked in color, then applied to the vessel body

Decalomania: decorative technique utilizing a decal applied directly to the ceramic vessel. It is almost always polychrome and overglazed. Unlike transfer printing, it can be felt, as the overglaze creates a raised surface. It was developed around 1845 and came into extensive use after 1860. This technique is still in use today.

Dendritic: used to describe the characteristic tree/fern-like decoration of Mocha ware. SEE MOCHA.

Earthenware: has a permeable paste and will absorb water unless glazed. The paste color and amount of permeability vary depending on the clay and additives used and firing temperatures. Pearlware, Creamware, Whiteware, ironstone-type wares and yellowware are all earthenware.

Edge decorated: have a blue, red, or green rim in combination with impressed lines or relief molded decorations along the interior rim. Vessels are generally plates and platters. A common variety known as “shell edged ware” utilized recessed curved lines along the rim. Other varieties include the popular feather edge mimicking the individual strands of feather. Also scales, flowers, *fleur de lis*, and geometric decorations. Edge decorations were placed on Pearlware (c. 1780-1830+) and Whiteware (1830-1860+).

Engine turned: is a variety of Annular ware. This decorative technique was accomplished by using an engine driven lathe to incise geometric patterns on concentric lines on the exterior of an unfired, slipped vessel.

Feather edge: type of edge decoration that mimics individual stands of feathers.

Finger painting: variety of Annular ware. Several colors are combined and dotted or swirled in lines around the exterior of the vessel, usually bowls. Both Pearlware and Whiteware were used. Production dates seem to range from about 1795-1900+, this ware seems to have been most popular between about 1820–1860.

Flow blue: a variety of transfer printing. In the process, the transfer was allowed to bleed, creating a blurred design. Although flow blue is more common, **flow mulberry** is another variety. These appear from about 1840-1860. Flow blue reappeared in the early 1900s, but with the addition of gold edging and repoussé design around the rims. Also see TRANSFER PRINTING.

Foot-ring: The ring of clay applied to the base of European style ceramic vessels. Native American ceramics do not have a foot ring until contact with European styles. A low fired earthenware with a foot ring could be a bisque ware, that is, one that will be fired again with applied glaze. But it may also be a vessel style known as Colono, which we attribute to both Native American and African American potters mimicking the European style.

Glaze: vitreous (glassy) coatings melted on the surfaces of vessels to make them watertight. The vessel is coated and then fired. During firing the glaze melts. It can be translucent, opaque, colorless, tinted, or a color. Color variation is achieved by varying the mineral composition of the coloring agents, such as tin, zinc, and cobalt. Lead glazes are colorless and were very popular in the 18th and early 19th century.

Hand painted designs: common throughout the 18th and 19th centuries. Large overall floral patterns seem to be found in Oklahoma before 1850. Finer, more detailed designs, usually near the rim, seem more common between 1860-1900. Hand painting, in addition to other decorative techniques, is frequently found on sponge or spatter decorated ware.

Hotel ware: A ware that has a standard motif used as a brand for a hotel, institutional kitchen, or a restaurant. See ironstone and semi-porcelain.

Impermeable paste: will not absorb water. It occurs as a result of high firing (over 1200°C) and the clay body. The terms high-fired and VITRIFIED are used interchangeably. Stonewares and porcelains are impermeable.

Ironstone: denotes a specific refined earthenware patented in 1813. Developed to compete with Chinese porcelain, it is an earthenware with iron slag and other ingredients incorporated into the clay body. This ware is still in production, but was most popular 1850-1900+. Ironstone or ironstone-type is in general use to indicate the many similar wares with white permeable paste, i.e., stone china, granite china, and opaque china. The distinction between the permeable ironstone type wares and impermeable semi-porcelain type ware is very difficult; it is primarily due to the lack of temperature control during production. Therefore, both are referred to as whitewares.

Confusion arises when maker's marks indicate an "Ironstone" or "Semi-porcelain" when porosity suggests either, and occasionally a lower fired white earthenware. Ironstone and semi-porcelain were very commonly used as hotel wares.

Lug: an appendage usually found on native ceramics that serves as a hand hold or for passing a rope or twine through to secure it to another object. The lug is usually wider and lower against the vessel wall than a handle. Handles don't always serve for picking up the vessel but are more decorative and may also be another style adoption as the foot ring. Goliad handles are not securely attached to be weight bearing.

Luster: metallic decoration that gives a luminescence to the vessel's appearance

Mocha decoration: variety of Annular wares, and is usually found on bowls, jugs, and mugs. A mixture (frequently of tobacco and urine) is applied to vessel body exterior by brush dipped in “mocha tea” acidic compound while rotating vessel on a lathe. The chemical reaction between slip and mixture creates a dendritic design. The background design is generally brown or black, although blues, greens, etc., were produced. This variety was in production from about 1790-1960+. Pearlware, Whiteware, and yellowwares were all used for Mocha ware. It was common between 1800-1900, and most popular 1840-1880. **(THC Cat #10)**

Majolica: Typically a red or orange paste earthen ware produced in Europe and the Spanish colonies that is covered with an opaque tin glaze and decorated before firing: Varieties found in Texas include French Faience, Italian, 19th century, and Mexican majolicas from the 16-21th century. Molded into naturalistic shapes and glazed in bright colors.

Non-vitrified: refers to a permeable paste, one that absorbs water and may be used interchangeably with permeable.

Paste: refers to the clay body of a vessel. Paste hardness, color, and permeable or impermeable qualities are important attributes in ceramic identification.

Pearlware: earthenware with white paste. Cobalt was added to the glaze which creates a slight overall bluish tinge, occasional small, blue flecks and a blue cast where the glaze builds up (base, handles). It was in production c. 1780-1840. Some whitewares can also have a bluish tinge. Edge decoration, Mocha, transfer printing and other decorative techniques were applied to both Pearlware and Whiteware. Whiteware had generally replaced Pearlware by 1830-1840.

Permeable paste: absorbs water. Term NON-VITRIFIED is used interchangeably. Earthenware has permeable paste. In the field, the distinction between permeable and impermeable paste can sometimes be made by licking a sherd; the tongue sticks to a permeable paste. Alternatively, a drop of water on the interior wall of the sherd will absorb into permeable paste.

Porcelain: highly fired with impermeable paste. True or hard paste porcelain is slightly translucent and made with kaolin clay. Ware includes bisque porcelain (unglazed or thinly glazed). European refined

Repoussé: a decorative technique with designs molded into the vessel. Mold lines are sometimes visible. This technique is also called RELIEF MOLDING and was used on whitewares, yellowwares, and Rockingham type wares from about 1820-1900, but was most popular after 1860s. Design motifs include floral, geometric, scenic, scrolls and figures **(THC Cat #4)**.

Rockingham wares: earthenware with a mottled black/brown glaze. Common variety has repoussé decoration. They were produced from about 1830-1900, but seem to have been most popular between 1850-1900. Tablewares, pitchers, and some utilitarian wares such as Turk's head molds were common. Frequently seen on yellowware vessels. **(THC Cat #36)**

Salt glaze: first used in Germany in the 15th century. Earliest use in North America was in the mid-18 century. Generally utilitarian wares are salt glazed and without interior lining glazes. Salt glazing produces a distinctive surface texture that is described as resembling orange peel. The salt is thrown into the kiln during the firing process to achieve this result.

Semi-porcelain: Known to potters and collectors as white granite, vitrified or semi-vitrified ware closer to porcelain than to white earthenware in porosity. Confusion arises when maker's marks indicate “Ironstone” or “Semi-porcelain” when porosity suggests either, and occasionally a lower fired white earthenware. Ironstone and semi-porcelain were very commonly used as hotel wares. See SOFT PASTE PORCELAIN.

Shell edge decoration: variety of edged ware.

Slip: clay in liquid form used to cover the vessel body surface.

Soft paste porcelain (THC Cat #22/#99/#114/#115/#122): one of the popular 19th century white earthenware. It is formed by adding ground glass and other additives to the clay body. The resulting vessel has an impermeable white paste, but lacks the translucent quality of true porcelain. It has been in production since 1820, although its major popularity was from about 1850-1900. Semi-porcelain is another name frequently used for soft paste porcelain. The distinction between permeable ironstone and impermeable soft paste porcelain can be very difficult, but are on a continuum between earthenware and porcelains.

Spatterware: Pipe was used to blow colored pigment onto a piece of pottery, creating a spattered coloration. This process was tedious, and eventually sponging became the preferred method of application. Spatterware is more closely identified with pottery in which the mottled color pattern (whether spattered or sponged) surrounds the decoration.

Sponge decorated ware: frequently confused with SPATTER WARE. The designs were applied with sponges. Cut sponge is a variety utilizing stencils sponges cut into shapes. Additional decoration by hand painting is very common. In production from about 1830-1900, these decorated white earthenwares were popular from 1850-1890.

Stoneware: is impervious to liquids without glazing. It is fired at a high temperature (over 1200°C). Paste colors vary but browns and greys are common. Many utilitarian wares, i.e., crocks, bottles, are stoneware.

Transfer printing: was developed in England in the 18th century. It was imported to the U.S. by 1780. Designs or scenes were engraved on copper plates, inked and transferred to paper, which were then used to transfer the colored design onto the interior, exterior, or both, of a vessel. The design appears dotted or stippled from the holes pressed into the copper plate to allow flow of the color. Both Pearlware and Whiteware were utilized for transfer printing and it is still in use today. Designs were floral, geometric, scenic, architectural, and commemorative. Chinese type designs were popular, particularly one called *Willow*. It is sometimes possible to date the design; however dating is quite complex. There are some general guidelines to follow. Blue on white was the most popular combination until about 1830+; from about 1795-1830+ the blues were medium to dark in color and after about 1830+ light blue, pink, purple, sepia, black, and green became common. More than one color on the same vessel appears after the late 1840s. Transfer printing was very popular until about 1860+ when Decalomania became more common.

Underglaze: refers to the placing of a decorative treatment; i.e., hand painting under a clear glaze.

Vitrified: the paste of a vessel will not absorb liquids, as in stoneware, porcelain, and soft paste porcelain. This term is used interchangeably with IMPERMEABLE.

Wedgewood china: technically this is fine-grained stoneware that is dyed either black or blue. Quite rare in archaeological collections (Miller 1991:10).

White earthenware: Generic term that lumps types of wares: pearl, white, and cream, and applied to high fired vessel bodies such as ironstone.

Whiteware: Two schools of categorization:

- 1) A category of ware developed by Stanley South (1974) to refer to the 19th century white paste wares (ironstone type and soft paste porcelains). Refined earthen ware that contains a white paste.
- 2) Brand name for white earthenware that is plain white in color when contrasted with creamwares or pearlware (Miller 1981). The use of term is inconsistent, and also is referred to as white earthenware, or earthenware.

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