MEL FISHER'S TREASURES

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Atocha admiralty claim #75-1416 Civ-Aronovitz (King)
Margarita admiralty claim #79-1381 Civ-JLK

Florida Keys National Marine Sanctuary

Submerged Cultural Resources
Research & Recovery Permits
#FKNMS-2016-052-A6 (Atocha) & #FKNMS-1998-110-A14 (Margarita)

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1 EXECUTIVE SUMMARY

In addition to the joint *Nuestra Senora de Atocha* and *Santa Margarita* permit application update requested by the Florida Keys National Marine Sanctuary (FKNMS) which was submitted on December 6, 2018, this is also an official request and required joint Research & Recovery Permit Report for the renewals of FKNMS Research & Recovery permits #FKNMS-2016-052 (*Atocha*) and #FKNMS-1998-110-A14 (*Margarita*) by Motivation, Inc., the Admiralty arrest holder and FKNMS permittee. These permits cover the known areas as well as exploratory areas of the wreck sites identified as the *Nuestra Senora de Atocha* and *Santa Margarita,* 1622. These ships were merchant vessels carrying large merchant cargos and part of the *1622 Tierra Firma Fleet*.

The aim of this document is to update the managers of the Florida Keys National Marine Sanctuary and the State of Florida Division of Historical Resources of our work over the last permit period, to continue to build this report into a summary document to include the history and highlights of our work conducted under these permits over the many years and to request a renewal of our current permit to continue our work for an additional 5 year period and to combine the *Atocha* and *Margarita* sites under one 5-year permit with seasonal summary type reports done at the beginning of each year for the pervious salvage year to be consistent with our Admiralty reporting requirements.

2 INTRODUCTION

Motivation, Inc., (Motivation) founded by the late Mel Fisher, is the corporate successor in interest of the entity awarded title to the vessel under admiralty law. Motivation is the corporation that is making the request for the permit renewal. Motivation's current President & CEO is Mr. Kim Fisher. Motivation and the companies that preceded it have participated in the recovery of the *Atocha* and *Margarita* for nearly five decades. Motivation has also held the permits from the Florida Keys National Marine Sanctuary since the Sanctuary's inception.

Notably Motivation was in the forefront of the formation and implementation of the programmatic agreement in the Florida Keys National Marine Sanctuary. It continues to be active in ongoing reviews and participates in the new action plans and has also participated in the most recent review and amendments of the State 1A-31 rules governing the salvage of historic shipwrecks in State waters.

Motivation continues to survey, recover, conserve and exhibit the artifacts from the *Nuestra Senora de Atocha, 1622* and the *Santa Margarita, 1622*. Motivation is utilizing new technology and archaeological methodologies in addition to the current methodologies required by the Sanctuary and the Florida DHR, FBAR. Motivation has the equipment, personnel, expertise, funding and desire to conduct ongoing operations on this site.

As such, it is with continued respect and appreciation for the history of these shipwrecks that we apply for the renewal of our permits #FKNMS-2016-052, the *Nuestra Senora de Atocha, 1622* and permit #FKNMS-1998-110-A14, the *Santa Margarita*. We also acknowledge the tireless and persistent work of those who have dedicated so much of their lives to the recovery of these wrecks and the archaeological and historical meaning they contain.

3 ARCHIVAL RESEARCH

3.1 ARCHIVAL SOURCES

Desk based research has been an integral part of the search for, location of and continued recovery of the *Nuestra Senora de Atocha* and *Santa Margarita*, 1622. The initial archival sources from the Spanish Archival materials and reports are listed here, however, it should be noted that there is an enormous amount of data that has been complied in the intervening years of various aspects of these shipwrecks. These aspects utilized their own specific sources and in the following we will attempt to enumerate some of the various works that have been produced as a result of the work Motivation, Inc. and its predecessor companies have undertaken on the shipwrecks of 1622.

See our NEW On-Line Public "*Research Archives*" containing the *"Bibliography – Atocha & Margarita, 1622 – Salvage Projects"* for details on archival sources and documents located at:

https://melfisher.com/artifacts/

3.2 RESEARCH RESULTS

Research results are presented in a chronologically arranged narrative of the prehistory and history of the project areas and of the significant historical events or developments (including important individuals and institutions) which are necessary to place sites and properties in historic contexts within the project area. This information can be found in *Appendix-6* of this report, *"The Atocha & Margarita 1622 Projects Time-Line"* and is scheduled to be made available on-line in our New *"Research Archives"*.

4 RESEARCH DESIGN

Research design for continued investigations and recoveries on the Nuestra Senora de Atocha, 1622

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4.1 EXECUTIVE SUMMARY

As far as can be determined, this is the first Research Design that has been written for the *Nuestra Senora de Atocha*, *and Santa Margarita* 1622. At least under the aegis of the Mel Fisher Companies, of which the current contract holder Motivation, Inc., is one. There have been many reports (see attached appendix-8) and even a number of graduate and post graduate degrees that had as at least a part of their studies, some in-depth research on aspects of the *Atocha* and collections resulting from the recoveries. As such, this Research Design is almost a "reverse engineering" document. A few things should be kept in mind. The project to recover the *Nuestra Senora de Atocha*, 1622 represents nearly a half century of near continuous effort and work on this site. Much of the earlier work that was accomplished on these sites was done in the period before computers and digital formats were available. Much material, both artifacts and type collections as well as the archives of the project are held by the Mel Fisher Maritime Heritage Society. Motivation Inc., (https://www.melfisher.com) and the Mel Fisher Maritime Heritage Society, (http://www.melfisher.org/) have already presented reports through these web sites and the intent is, over the coming years, to make more of the studies and reports that were done before the digital age available to the public, this will be a continuing process over the next few years.

There has been no formal research design produced for the work undertaken on the *Nuestra Senora de Atocha*, or *Santa Margarita, 1622,* this is primarily due to two reasons. First, when work on the *Atocha* first started in 1969, it was strictly undertaken as a salvage operation. The aim of the operation was first and foremost the recovery of intrinsically valuable objects. And while archaeological methodologies were beginning to be employed in 1980 when the *Santa Margarita* was discovered, much that is today *Standard Operating Procedures* to record archaeological and environmental data had yet to be developed. Secondly, the requirements for production of Research Designs by the State of Florida under 1A-31 or for that matter the FKNMS Permitting system is a relatively recent development for the issuance of permits. By the time research designs had become a requirement, the recovery operations on the *Atocha and the Santa Margarita, 1622* had been ongoing for several decades. During those decades the evolution of methodologies that were employed by the salvage operation underwent drastic changes.

Archaeological precepts and methods began to be utilized in the mid-1970's the first underwater archaeologist, R. Duncan Mathewson III, was hired and analysis of materials utilizing archaeological methods was employed. The notion that had held sway for many years, that there was no good archaeological information to be had from shallow water, highly dispersed sites began to be rejected in

favor of models that were being developed in parallel by Keith Muckelroy in Australia and Duncan Mathewson on the *Atocha*. In the early 1980's the first trained conservator, Richard "Rick" Murphy was hired and began to employ more robust conservation techniques which continued to be developed through the years with input from conservators the world over.

During the 1980's the first computers combined with digital imagery were utilized to document and track artifacts recovered from the primary cultural deposit of the *Atocha and the Margarita*. On the *Margarita* site a photo mosaic of the extant hull structure was done using both a photo tower and the Rebikoff Pegasus, an early diver propulsion vehicle outfitted with his specialized underwater camera gear. (https://www.rebikoff.org/history/) Also, during the 1980's the Mel Fisher Maritime Heritage Society, a 501-c-3 Non-Profit, was formed by Mel and Dolores Fisher to safeguard the permanent collection of *Atocha* and *Margarita* artifacts. In the 1990's the pace of technological development was breathtaking, with the advent of personal computers, GPS, DGPS and WAAS location technologies replacing Loran and Del Norte readings. The efforts of the Mel fisher Groups both on the *Atocha, Margarita* and the 1715 Fleet persuaded the State of Florida's Bureau of Archaeological Research to begin using these newer technologies.

It was also on July 1, 1997 when the Florida Key's National Marine Sanctuary was established and the Programmatic Agreement with the State of Florida went into effect. The structure of the FKNMS permits that became utilized was influenced by input from groups that the Mel Fisher organizations had a hand in establishing, the Historic Shipwreck Salvage Policy Council (HSSPC) worked extensively with State and Federal officials to hammer out what was hoped to be the rules and regulations for a cooperative working agreement with both the State and NOAA.

It was only in 2009 that the necessity of having a Research Design became a part and parcel of the FBAR permits under 1A-31 and then the application of the requirements for reporting under 1A-46 were placed in the State permits. By extension the FKNMS in re-issuing a long-standing permit which seeks to combine both the *Atocha* and *Margarita* permits, and as there is currently a re-negotiation of the Programmatic Agreement between the State of Florida and the Florida Keys National Marine Sanctuary, the requirement of reporting under Florida State Statutes 1A-46 is now a part of this. So, to that end a sort of reverse engineering, of a Research Design is hereby offered.

4.2 Coastal Geomorphology and Barrier System Development

The geological foundation of the south Florida ecosystem consists of quartz and limestone with limestone predominating. The quartz element of the sand is the result of sediment drift from the north deposited on intervening troughs (intereefal flats) an ancient coral reef limestone foundation. These sediments are both terrigenous and biogenic in nature, the result of deposition by longshore currents flowing generally west to east in the Keys.

Another geologic feature of the study area coastline is a series of reefs trending more or less in an east west orientation, whose elevation in some cases rise to 3 to 6 feet below mean low water, but whose troughs may be as deep as 20 to 30 feet below mean low water. These geologic features are important factors to consider with respect to the deposition of shipwreck remains in the near shore area.

The coastal barrier shelf was formed approximately 100,000 years ago, and over time has changed very little until the twentieth century when development and stabilization of the natural coastal features as the result of inlet and harbor construction projects. During the historical era, before major settlement in the twentieth century the low-lying Florida Keys barrier shoreline naturally reconfigured in response to the forces of wind, wave and tide.

The comprehensive natural dynamics of the Keys coastal zone are as follows:

A. The foundation of this coastal geologic system consists of limestone and quartz with limestone predominating.
B. The foundation of this system is ancient relict reef.
C. The barrier system developed through the southward transportation of sand by net north to south longshore currents and deposition in a general line southward from successive tidal inlets.
D. West of the unstable, shifting sand barrier is a parallel mangrove barrier. Boring log analysis suggests that this extensive growth was periodically destroyed by storm and concomitant wash over, growing back each time in new physical configurations (Hoffmesiter, 1974).

4.3 DEPOSITIONAL ENVIRONMENTS

Similar to land archaeology, archaeologists working underwater must first understand the environmental factors which affect the cultural deposits before they can adequately interpret them in anthropological and/or historical terms. Any management decision involving shipwreck sites must first consider the benthic environments which affect the physical condition of the hull structure and associated artifacts. (Mathewson, 1991). Four major benthic habitats define varying depositional characteristics along the Keys: (Marszaiek, n.d.; Shinn, 1989)

1. Coral Reefs: Reef limestone of different relief and composition colonized by stony corals, gorgonians, sponges, algae and other reef building, benthic organisms. Reef rock rubble and fossilized hard bottom substrate often times associated on the periphery of coral reef systems usually show evidence of net loss of deposits through erosion rather than of accretion.

2. Limestone Bedrock: Exposed flat lying Pleistocene coralline limestone is composed of small corals, gorgonians, sponges, and algae. Locally covered with a thin veneer of sediment and patches of bottom sea grass. The bedrock in the upper Keys is the Key Largo limestone, while in the Middle and Lower Keys is under laid by Miami iolite.

3. Sea grass: Predominantly turtle grass (*Thalassia*) occurs on sediment of varying thickness at depths less than 10' water. Other abundant sea grasses are manatee grass (*Syringodium*) and shoal grass (*Diplanthera*).

4. Overburden Sediments: Deposits vary from thin muddy deposits to deep sand of over 15' thickness near the outer reef tract. Clean carbonate sands typically occur seaward of Hawk Channel to 60' water depths; mud deposits usually increase landward and throughout Hawk Channel in water depths between 20' to 60'.

4.4 GENERAL COASTAL HISTORY

The history of the Keys coastal area is closely linked with the wider maritime history of the New Bahama Channel, as well as the native peoples that were indigenous to the Florida peninsula, and later, the early white settlers who made South Florida their home in the eighteenth and nineteenth centuries.

4.5 THE PREHISTORIC ERA

The prehistoric peoples who inhabited the Florida peninsula exhibited a pattern of cultural continuity that evolved slowly over the past ten thousand years; then in the era three thousand - B.C.E. the culture of the pre-Columbian native people of Florida experienced a period of cultural elaboration and diversification. This period of change lasted until the sixteenth century and the arrival of European explorers, and the settlers who later established a permanent presence on the northeast peninsula at St. Augustine in 1565. A generally accepted framework for the pre- historic periods in Florida is:

- Pale-Indian Period - 10,000 to 7,000 B.C.
- Archaic, with Early, Middle and Late Periods - 7 000 to 1,500 B.C.
- Transitional Period - 1,500 to 500 B.C.
- Three Glades Periods, a Glades III from 1200 to 1566, and
- Historic Period -1566 to 1763 (after McGoun, 1993)

During the Archaic Period of native development, the prime accelerator for population growth and cultural change was the gradual warming of the continental climate at the end of the last Ice Age. In the five hundred years from 3,000 to 2,500 B.C.E., the water table rose to the point where the present contours of the Florida peninsula were established. Over this period the boundaries of the Lake Okeechobee and Everglades wetlands systems became stabilized in their present location and configuration. The expanding system of coastal estuarine wetlands situated between the present barrier islands and the Florida peninsula became a primary area of habitation for the Florida native people. The combination of increased drainage from the wetter interior, and the decrease in sea level rise led to the

formation of brackish estuaries, mangrove forests, and tropical marine meadows; a rich coastal habitat capable of supporting ecologically well-balanced animal and human communities (Widmer, 1988).

Three types of native living sites predominate in the prehistoric period. Large, multi- component cultural sites, that exhibit the remains of extensive middens, and a wider range of tools and natural resource remains are always near wetlands and denote large primary living sites or villages. These primary sites in turn are surrounded by smaller special use sites, and yet again smaller sites used by several hunters or gatherers. Examples of such Paleo-Indian sites are scattered throughout the peninsula, but their remains are generally concentrated in the coastal zone. Multi-component sites are usually located in association with shell mound complexes found at the mouths of coastal rivers, and on the barrier Islands. Examples of multi-component mound site complexes may be found at Jupiter Inlet at the mouth of the Loxahatchee River estuary system. Another good example of such a complex is Turtle Mound, on the barrier island north of Cape Canaveral (McGoun, 1993; Rouse, 1951; Widmer, 1988).

The rapid settlement of the Lower Peninsula after the turn of the century resulted in the loss of many of these mound complexes, which were utilized for road fill, or bulldozed flat to facilitate construction projects. The foundation of many local communities consists of this material; an existing example is the trailer park complex south of Jupiter Inlet. The Jupiter lighthouse, constructed north of the inlet in the mid nineteenth century, was also built on the remains of a prehistoric shell mound.

4.6 Spanish Colonial Era

In 1513, Juan Ponce de Leon during his exploration of the Bahamas, and search for the legendary Fountain of Youth made a landfall at some point along the central, or lower southeast coast of Florida. This landing, to replenish water supplies has been variously placed in what is present northern Palm Beach County, or as far north as Martin County. What is known, however, is that the landing was contested by hostile Indians, and Ponce sailed on. This encounter with the Florida natives might have been the first hostile encounter between the Spanish and the Florida natives; the beginning of a series of conflicts that would continue through the Seminole Wars of the nineteenth century (Milanich, 1995). The Spanish also came to the Americas to expand their Kingdom, spread Christianity, and explore for gold and other riches which were badly needed to finance their European wars.

The east coast of Florida saw no permanent Spanish settlement until St. Augustine was founded by Pedro Menendez de Aviles in 1565. Later in the 1560s there were two reported massacres of the Spanish by coastal natives, and in 1565 Menendez attempted to establish a garrison somewhere between Jupiter and St. Lucie Inlets. However, due to hunger, mutiny, and the hostility of the local natives, (the Jega, or Ais), this attempt to garrison the Lower Peninsula failed (Lyon, 1990). In 1517, Hernandez de Cordova sailed up the west coast of Florida on a voyage of exploration and slaving. According to a member of that expedition, Bernal Diaz, a battle ensued. The chronicle of Bernal Diaz recorded the first pitched battle between the Spanish and a warlike people that controlled the Lower Peninsula, called the Calusa. According to Diaz:

"*The Indians were very tall dressed in deerskin, and carried long bows, good arrows, lances, and a type of sword. They attacked immediately, wounding six of us and I received a small cut. We answered so quickly with sword and fire that they retreated to the aid of their companions in canoes, who were fighting hand to hand with our sailors. Our boat had been captured after four sailors had been hurt and Alaminos had been wounded in the throat. We returned their attack in water more than waist deep and made them abandon our boat. Twenty lay dead on the shore and in the water and we took three prisoners, who died of wounds on shipboard (Diaz quoted in Gilliland,* 1989). "

The Calusa of Mound Key located in Estero Bay, and their Chief Carlos were visited in 1556, by Menendez, and a strong Spanish force, guided by the shipwreck survivor Fontenada. In his chronicle published later in Spain, Fontenada describes the propensity of the coastal Indians to seek out shipwrecks:

"*I was two years among the natives*" *he writes,* "*on all the coast of which I will speak hereafter*, *there is no base gold to be found, much less pure, for that which they have is from the vessels which are wrecked in passing from New Spain, and Peru when storms overtake them (Fontenada's Journal, Centennial Folio Edition,* 1992)."

Material evidence of an artistically advanced pre-Columbian culture has been archaeologically recovered from the Key Marco area, south of Mound Key. Archaeological remains of the sophisticated Marco culture consist of ornately carved wooden figures, and a canal system dug through the key which provided water craft access to the protected interior of the key which had become much elevated through centuries of oyster shell deposits (Gilliland, 1989).

It was clear in1564 that the Calusa were the dominant group in a loose confederation of Florida natives. One clear indication of this dominance was the fact that Fontenada and other Spanish shipwreck survivors were routinely transported to the primary Calusa village at Mound Key by the politically and militarily less powerful tribes, like the Matacumbe's, who dwelled in the Florida Keys. It is unknown if Calusa dominance extended to the southeast coast, the home of the Calusa contemporaries, the Tequesta. The southeast coast Tequesta inhabited the area from the Miami River north to present Palm Beach County and Palm Beach County. It was Tequesta sites at the mouth of the New River, that Florida archaeological pioneer Irving Rouse excavated after World War II.

North of the Tequesta lived the Jega, in a major village at Jupiter Inlet. It was the Jega people that Jonathan Dickinson and the Reformation shipwreck victims encountered on Jupiter Island in 1696. In present Martin County, on the St. Lucie River were the Ais, a dominant tribe that controlled the coastal

peninsula, and Hutchinson Island north to Cape Canaveral. At the time of the Reformation shipwreck it was the Ais that dominated the Jega. Eugene Lyon describes the Ais in 1565, as encountered by Menendez.

> *"The Spaniards had also entered a very different cultural area of the Florida Indians. The people who lived in this area, (present Hutchinson Island south of the Cape) were called the Ais, had built a long and stable culture organized almost entirely around the sea. Their life was sustained by turtles, fish, and shellfish from the river, inlets, and ocean. Over twenty years of acquaintance with Spanish shipwrecks along the coast had accustomed the Indians to the taking of white prisoners and the salvage of ships. By* 1665, *they had already built a reputation for ferocity and cruelty which compelled the advancing Spaniards to move with caution (Lyon,* 1990).

During the sixteenth century, the southeast coast Tequesta may be compared in lifestyle and ferocity to the Calusa, and Jega. Their possible dominance by the Calusa of the southwest coast, and the central coast Ais, may well have had more to do with demographics and the number of warrior's individual tribes could put into the field, rather than the individual tribe's warlike nature. The ability of the various coastal estuary systems to support population growth, and the number of warriors available for domestic warfare was the key to tribal dominance.

It is safe to say that the hostile natives that Ponce de Leon encountered in 1513, Tequesta, Jega, or Ais, were as warlike as the Calusa encountered by Diaz twenty years later. In 1565, both Menendez and Fontenada bore witness to the Florida native's propensity to raid shipwrecks, and take shipwreck victims captive (Lyon, 1990). This was also true a hundred years later, at the end of the seventeenth century as supported by Jonathan Dickinson's Journal (Dickinson, 1696). What the Florida natives had learned over two centuries was that they were no match for armed Spanish forces. This was evident in the aftermath of the Spanish 1715 fleet disaster. The armed survivors of the six 1715 shipwrecks experienced no hostilities from the warlike central coast Ais (Burgess & Clausen, 1976).

By the middle of the eighteenth century, the original Florida Indians had been decimated by warfare and disease - few remained. Late in the eighteenth century the British carried out an extensive mapping survey of the Atlantic and Gulf coasts of the Florida peninsula. The Bernard Romans chart of 1774) has no annotations for any coastal sites inhabited by native people, only the shell mounds where villages had been previously constructed.

4.7 SPANISH FLORIDA ATLANTIC MARITIME ACTIVITIES

By 1568, conflicts with the French and Native Americans resulted in the destruction of all the outposts and settlements except for those at St. Augustine, San Felipe, and Carlos, renamed San Antonio. Though the southeast coast of Florida was ignored by settlers, it continued to be of keen interest to Spanish mariners. Because of climatic conditions in the Caribbean, the possession of Florida ultimately became of utmost importance to Spanish maritime intercourse in the region. The prevailing winds and currents were such that incoming vessels from Europe invariably entered the Caribbean through the Windward or Leeward Islands.

These same winds and currents, however, made exiting the Caribbean by the same route particularly arduous. The only alternatives were to beat northward and sail through the Greater Antilles to reach the Atlantic, or to continue in a northwesterly direction through the Yucatan Channel. This led to the Gulf of Mexico, where the Gulf Stream bore vessels through the Straits of Florida and into the Atlantic (Bass 1988:85). When the focus of Spanish New World activities shifted from the islands of the Caribbean to mainland Mexico in the first part of the 16th century, the latter route became preferred.

Spanish captains eventually learned how to take advantage of the prevailing winds and currents, but the early voyages were trial and error and often ended in catastrophe. Spanish seafarers frequently found themselves trapped by hurricanes in narrow cuts, tossed upon uncharted reefs, and hurled onto vast sandbars. These and other perils took a tremendous toll on Spanish shipping in the New World. As the gold *flotas* left Mexico and Havana on their yearly voyage to Spain, they sought the Florida Straits and Bahama Channel. This route connected the fleets with the prevailing westerly trade winds off the Carolinas that carried them home. The seemingly placid Caribbean environment often turned vicious and many gold-laden ships were dashed on the reefs and shoals in violent hurricanes such as that of which the *Atocha* was a part in 1622, which wrecked some 8 galleons along the Florida Keys reefs.

When Spanish ships piled up on the reef, the natives would paddle out to investigate. If there were survivors, they usually killed or enslaved them. Gradually, through contacts with fishermen from Cuba, they grew less hostile to the Spanish but remained a threat to other castaways. Fontaneda's narrative of his experiences as a captive of the Keys natives indicates that they were experienced shipwreck plunderers by the middle of the 16th century. He wrote that the natives of the Keys were "rich; but in the way that I have stated, from the sea [wrecks], not from the land." When English privateer ships under Christopher Newport stopped in the Keys for water in 1592, the natives of Matecumbe traded gold and silver items they had taken from shipwrecks for sailors' rusty knives. A French priest, shipwrecked in the Keys in 1722, concluded that the only reason the natives stayed on the barren key he landed on was to plunder shipwrecks (Viele 2001).

Due to an increase in the volume of shipping and attack from her European neighbors, Spain eventually decided to organize a convoy system - the so-called New World fleets. Beginning in 1543, Spain dispatched two major fleets to the Indies each year. One sailed in April or May destined for Vera Cruz, terminus of the treasure trail leading from the Mexican highlands. Known as the New Spain Fleet, it was accompanied by ships bound for ports in Mexico, the Greater Antilles, and along the coast of Central America. There were often as many as 30 vessels in this flotilla. The second fleet, called the Tierra Firma Fleet, sailed in August and carried goods consigned for Panama and the Spanish Main. The outward-bound

manifest of both fleets usually consisted of consignments of Old-World products - wine, olive oil, manufactured goods such as glass, books, paper, clothing, and utensils to Spanish settlers in the New World. Heavily-armed galleons or warships were stationed at the fringes of the fleet in case of attacks by privateers or pirates (Clausen 1965:5). Perhaps the best known of these fleets become notable not for succeeding in their voyages, but for their demise. The 1622, 1715 and 1733 Plate Fleets, were all destroyed by hurricanes along the Florida coast.

These are the three major losses of Spanish Treasure Fleets known in Florida waters. The Spanish, after the discovery of the "New World" quickly began to understand the weather patterns that predominated during certain parts of the year. They could not, of course, predict with any sort of accuracy the possible formation of major weather systems far out into the Atlantic basin. They relied on portents, both astrological and otherwise to determine when the best time for a Fleet to sail would be. Political and economic pressure from Spain could also determine the departure times for the fleet. Obviously, this sort of decision making was flawed from the start and given these factors it is amazing that more ships were not lost.

4.8 1622 Fleet

The 1622 fleet, after much delay, left Havana on September 4th, 1622. Disaster struck the fleet which consisted of 28 vessels at about the latitude of Miami. The Fleet was driven before a savage northeast wind for the majority of the 5th of September scattering the fleet along a line 60 miles north of the Cuban Coast. The storm then intensified into a hurricane and in the typical cyclonic motion of such storms, began to come out of the South, forcing the fleet onto the reefs and shallows of the Florida Keys. By midday on the 6th the fleet had lost 8 of its vessels including the Capitana and Almirante. Salvage efforts were put together as quickly as possible, but not before another hurricane came through the area dispersing the wreckage further. Salvage was attempted by the Spaniards utilizing the dragging of grapnel anchors, enslaved pearl divers, and diving bell apparatus for many years until they officially abandoned these efforts in 1644 after the passing of Melian.

4.9 1715 Fleet

In 1715, the New Spain and the Tierra Firma combined fleets departed Havana in July. Disaster struck as the fleet, consisting of eleven vessels, was ravaged by a hurricane in the Bahama Channel, destroying all but one of the ships. The demise of the 1715 Plate Fleet represented a tremendous loss to Spain, as the registered cargo of gold and silver totaled nearly seven million pieces-of-eight (Bass 1988:96). Salvage operations on the wrecks commenced almost immediately and continued for several years (Bass 1972:262). It is estimated that almost half of the treasure was recovered by these salvage efforts. One setback occurred not long after salvage had begun. Henry Jennings, a Bermudian captain turned pirate,

attacked the Spanish salvage camp with 300 men and carried off an estimated 350,000 pieces-of-eight (Clausen 1965:7). Official Spanish salvage was discontinued in 1719, and interest in the wrecks eventually diminished.

4.10 1733 Fleet

Disaster struck the home bound Plate Fleet a second time within two decades. Once again, the combined Spanish fleet left Havana, this time in July 1733. The newly constructed *Capitana El Rubi Segundo* led the convoy, which consisted of three other armed vessels and eighteen merchantmen (Bass 1988:96). Two days after their departure, the fleet encountered a hurricane near the Central Florida Keys, destroying eight galleons and thirteen other vessels (Bass 1972:263). As before, only one vessel, *Nuestra Senora del Rosario*, survived to report the loss to Havana.

The Spanish commenced salvage operations almost immediately, which lasted several years. Vessels not easily raised were torched and burned to the waterline so that cargoes could be removed. Documents reveal that more material was salvaged than the original register listed, an indication of contraband freight (Bass 1988:99).

By the late-18th century, the Spanish began dispatching small sloops to the southwest Florida coast to trade with the natives for seals. They used seal fat to coat the bottoms of their ship's hull to keep ever-present shipworms from devouring the hulls in the tropical waters. During the 1700s, English men-of-war in their global conflict with Spain began passing through the Straits of Florida from their bases in the Caribbean islands. Many English ships were lost in this area such as the frigate *HMS Looe*, which was lost in 1744 in a storm near Big Pine Key – now the site of Looe Key section of the Florida Keys National Marine Sanctuary. In the 1770s, Key West [originally Cayo Hueso] was a customary watering stop for ships transiting the Gulf of Mexico and the Atlantic Ocean. However, significant island settlement did not occur until after the War of 1812.

The decline of the Spain's New World Empire was a gradual process. Florida had never been the focus of Spanish activities. Nonetheless, it had acted as the northeast border of the empire for nearly two hundred years before it was finally ceded to the British at the conclusion of the French and Indian War [1756-63]. During Britain's possession, Florida increased in both population and wealth. Commerce grew and relations between Florida and the other southern colonies were established. However, with the outbreak of the American Revolution in North America Florida found itself alone in its allegiance to the crown. Great Britain also found itself once again pitted against its adversaries, France and Spain. The United States had negotiated an alliance with France in 1778, followed by a comparable document with Spain a year later. During the war, Spain captured British "West Florida," with its capital at Pensacola. The treaty executed after the war granted Spain the remainder of Florida.

Florida remained officially under Spanish hegemony until 1819, when it was sold to the United States. During this second Spanish period, Florida was heavily settled by Americans, as the Spanish offered inducements in an effort to resettle abandoned British plantations. Spanish authority in Florida slowly

waned until eventually, on 22 February, 1819 it was sold to the United States for five million dollars. The United States officially united the two provinces into a single territory and assumed control in 1821.

4.11 FORGOTTEN BY TIME

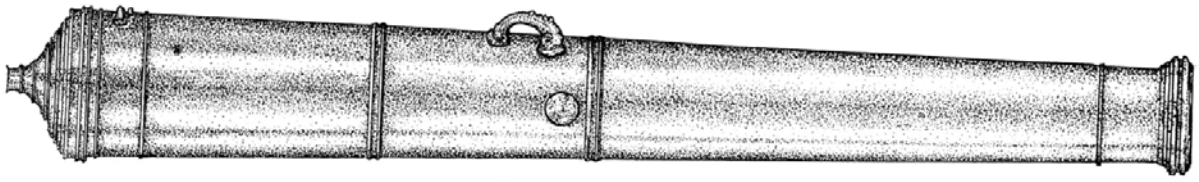
These three fleets of shipwrecks remain lost until the advent of SCUBA and metal detection equipment developed during WWII and the diligent exploration and salvage by modern day Historic shipwreck salvors. Mel Fisher was the first successful "Treasure Hunter" who began full time shipwreck salvage in the early 1960s on the 1715 Fleet, mid 1960s on the 1733 fleet, and late 1960's to date on the 1622 Fleet.

4.12 GENERAL SITE DESCRIPTIONS

4.12.1 Nuestra Senora de Atocha Site

Motivation Inc. and its predecessor company, Treasure Salvors Inc., has for nearly five decades pursued the scattered remains of the *Nuestra Señora de Atocha*, 1622. One of the fundamental questions regarding the highly-dispersed nature of this shipwreck is, "are these remains all from the same vessel?" The answer to this question lies in the wrecking processes that affected the shipwreck during the first hurricane and then the second storm. The *Atocha*, as we know from the archival documents was relatively intact after the first hurricane, sitting on the seabed in 55 feet of water. The second hurricane that took place a few weeks after the initial sinking were the causal factor for much of the scatter pattern that we see today.

The ruptured and weakened hull of the *Atocha* tore away from the bottom depositing an enormous amount of the bulk cargo that was carried at the site that is referred to as the primary cultural deposit or PCD. Without this heavy cargo and most of the ballast the *Atocha* became buoyant enough to begin a miles long track to the northwest leaving a scattered trail of material in its passage. At the base of what is referred to as the coral plateau, the hulk of the *Atocha* encountered a significant geological boundary. It was here in 1975 that Dirk Fisher discovered nine bronze cannons with markings that could



be confirmed as having been on the *Atocha's* manifest. At this point the trail of the artifacts makes a dramatic shift to a more northern direction. This was most likely due to two major factors, the lightening

of the remaining wreckage due to the cannons breaking loose and the wind shifting as the storm moved past. Across this plateau other items were recovered: four silver bars and 22 sections of a gold belt that was set with diamonds rubies and pearls. These finds led to the enormous shifting sand area known as the Quicksand's.

The "Quicksand's" are where the first evidence of the *Atocha's* wreckage was located in the early 1970's. This was in an area that the divers dubbed the "Bank of Spain". Included in these finds were thousands of silver coins, gold bars and a galleon anchor. These initial finds were of course recorded using the technology available at the time. Since then technological developments have allowed for much more precise mapping of each artifact that is recovered.

From 1972 through 1985, there was a continual search for the main section of the *Atocha*. The understanding of the wreckage pattern was a long slow process. Partially due to the fact that the *Atocha*, as we now know scattered over many miles. The initial finds in the Quicksands, led Mel Fisher, and many others to believe that the major portion of the shipwreck would be found in that area. Many of the tell-tale signs were there. Anchors and treasure of varying sorts, small weapons such as arquebus and swords, there were personal jewelry items and there was some ballast. But the major cargo, near 30 tons of silver continued to elude the teams.

Finally, in 1985, miles from the original finds in the Quicksands, the "Motherlode" would be found. the location, excavation and recovery of the primary cultural deposit or PCD of the *Atocha* was a massive undertaking, but the area of wreckage represented by the artifacts in the Quicksand's and the long-attenuated trail between them continued to be intriguing. After the inventories were completed from the PCD finds, it was discovered that there was still a significant amount of cargo missing from the listed manifest, which included approximately 50,000 silver coins, 300 silver bars, 10 bronze cannons, much of the manifested gold, an unknown quantity of personal items represented by chests brought aboard by the wealthy passengers, and at last but not least a substantial shipment religious type artifacts.

The types of artifacts associated with the Quicksand's area include gold bars, gold chains, religious artifacts, and a scattering of silver coins that have all been found along the northwest trail. The interesting thing is that from the "Bank of Spain" area of the Quicksands we seem to have two trails leading away, one of which is to the north. This trail in 1984 produced the tenth bronze cannon and two galleon anchors, one of which was broken. Very few gold and silver artifacts have been located along this trail. The northwest trail however, has produced numerous extremely valuable items, gold bars, gold chains, the bishops cross and silver coins to name a few. The overwhelming evidence is that by the time she reached the "Bank of Spain" the *Atocha* had already lost a significant amount of ballast, a number of her cannon and all of her masts and rigging when she encountered yet another geological boundary.

At this point she was driven into the shallow shifting sand bars, which is the southern edge of the Quicksands. Here the *Atocha* literally split into two sections; one being carried to the north, most likely a section of the bow and the gun deck. The remaining lower hull and stern castle, with its associated riches followed a different track and proceeded to the northwest depositing a significant but scattered trail of material along the way to its final resting place. The northerly trail has produced artifacts associated with the forward section of the ship and the gun deck. The northwest trail to the contrary has produced artifacts associated with the stern and lower decks.

When the question is asked, "how do we know that these items are part of the *Atocha*?" We must look at the overall relationships between the various parts of the site; the contextual relationships of the artifacts being recovered, and in a sense place them back aboard this vessel in areas where certain types of activities and human behaviors can be expected. Although other vessels from the 1622 fleet have yet to be found no evidence of a separate vessel has been encountered and none carried the type of cargo, we are finding in a scattered but continuous trail from the remains of the one vessel, the Nuestra Señora de *Atocha*.

NOAA and the Florida Keys National Marine Sanctuary have long recognized that the US District Court for the Southern District of Florida, in Admiralty, having retained jurisdiction to protect the valid ownership and salvage operations of Motivation, Inc., has directed Motivation to continue in its appointment as substitute custodian of artifacts yet to be discovered and recovered and retains jurisdiction to protect the valid *in rem* ownership by Motivation, of the wrecked Spanish Galleon *NUESTRA SENORA DE ATOCHA* and all her tackle, armament, apparel and cargo wherever the same may be found and that the US District Court for the Southern District of Florida, in Admiralty will adjudicate its claim to title of the property recovered on a periodic basis.

4.12.2 Santa Margarita Site

The *Santa Margarita*, *1622* like her sister ship in the fleet, the *Nuestra Senora de Atocha, 1622* represents a homogenous collection of 17th century Spanish colonial material. The Mel Fisher organization has been working on this site since the primary cultural deposit was found in 1980. Although there have been various contractors through the years the work performed has been overseen by the entities of the Mel Fisher organization and the archaeologists working with them.

The wreck of the Margarita has a similar pattern of dispersal as the *Atocha*, however, it is different in a fundamental way. Whereas the Atocha's scatter pattern is primarily the result of the second hurricane that struck the area weeks after the initial sinking, the *Margarita's* wreckage track appears to be the result of the first storm.

In 1982 during a magnetometer survey in Hawks Channel, close to where the primary cultural deposit of the *Atocha* would be found, three galleon anchors were located. These anchors were set and had full wooden stocks. The location of these anchors was, at the time, thought to indicate that they were part of the *Atocha's* wreckage. We know today that this is not the case. In fact, the three anchors were set and bearing 11 degrees. This leads right to the section of the *Margarita* found by Mel Fisher's team in 1980.

In 1998 three galleon-size anchors were found a further two miles to the north on the 11-degree line. None of these had stocks nor were they set. This would indicate that a section of the *Margarita* carried these anchors along in the final break-up of the vessel.

The 11-degree line is one that we feel represents the initial or primary scatter. The secondary scatter of the *Margarita* appears to run to the northwest on much the same track as the *Atocha's* secondary scatter from the primary cultural deposit up into the Quicksands area. Much can be interpreted from the known areas of the *Margarita* when compared to that of the *Atocha's* scatter. The bathymetry

in both areas is very similar. While the *Atocha* struck the reef and sank in Hawks Channel, the *Margarita* deployed anchors in the Channel to keep from going further north into the shallows. These anchor lines parted and the *Margarita* continued its northward progress. Towards the shallows of the Quicksands the depth decreases abruptly from 40+ feet to less than 20 and quickly thereafter to 15 feet. These sharp rises in the bottom contour are of great interest in the ongoing investigation of this wreck site.

Historic Documentation *Santa Margarita*

Historic documents are very clear that the *Margarita* broke up into a number of pieces. Salvagers of the period had difficulty due to this fact and that sand covered much of the wreck. In the archival texts we read:

"The Almirante (Atocha) sank in nine fathoms of water (54ft.) and the galleon La Margarita in five fathoms (30ft.)"

(Bib. Nac. Sec. de Mans.-Legajo 2463)

A translation from Spanish to English in 1623 related the disaster and the breakup of the Margarita:

"...so that the keel sticking fast with the gusts over great, and the billows extremely raging, the body shivered to pieces, the passengers, when it was apparent, they could not escape, saw as little mercy in the sea, as they had in the wind."

(British Museum/ "News of the Week of May 1623" London, 1623-Burney #3)

AGI – Santo Domingo 870 - 27 March 1629 - Francisco Nunez Melian to King:

"They found the Margarita broken in pieces. Her silver and other treasures mixed in with the ballast and under sand. He says that it had fallen into the quartel and was impossible to recover."

According to estimates by Dr. Eugene Lyon, there is still a sizable amount of intrinsically valuable cargo remaining on this site. His estimates are for registered cargo only – Much more may remain in the form of contraband material. Dr. Lyon estimates that there are some 80,000 silver coins, 169 silver ingots, 4 bronze cannons remain and as quoted from his cargo report: "Note: No gold chains were manifested aboard the *Margarita*; the gold chains found on both wreck sites were clearly private funds, for they were all from the Spanish mints." If this is the case with the registered treasure, there is likely also an important collection of artifacts representing the life-ways of all the classes of people who sailed aboard this galleon.

4.13 PREVIOUS WORK ON THE SITES

As previously stated there has been near continuous investigative and recovery operations aimed at the *Atocha and Margarita* for decades, 50 years on the *Atocha* and 38 years on the *Santa Margarita*. This has been an evolutionary process that has developed into today's model wherein the recovery of all data associated with the *Atocha and Margarita*, environmental, cultural and historical is gathered. The careful recording and the use of digital data has allowed for the development of GIS programs that enhance our understanding of the site. While the wrecking process is understood in more complete ways, there is still an enormous amount missing from the known cargo and equipment carried aboard the *Atocha and Margarita* that has yet to be found. Previous reports to the FKNMS have detailed the operations of Motivation through the years. Attached as an appendix, is a preliminary timeline of events, finds and other situations that were part of the story of the *Atocha* and *Margarita*. Both the *Atocha* and *Margarita* recoveries are a work in process, this timeline includes information from documents, and also input from individuals who were directly involved in the events. Documents, oral histories, film documentation are all source material for the development of this timeline (Appendix-6).

4.14 OBJECTIVES & 5-YEAR PLAN

The objectives of Motivation Inc., as with its predecessor companies it to comply with the Federal Court Orders to recover, conserve and protect the site and objects/artifacts/treasures associated with the *Nuestra Senora de Atocha* and *Santa Margarita*, 1622. Motivation, Inc. will continue to act as substitute custodian of the Court and to do its "due diligence" in all of these efforts as we have done that for the last 5 decades. It is our intention to continue to do this work as long as the *Atocha* and *Margarita* continue to reveal more of their history to us through such work. The *Atocha*, was awarded to Mel Fisher and his company, in 1982 by the US Supreme Court, effectively recognizing that Mr. Fisher was not only the finder of the *Atocha* but also the owner of the *Atocha*. The same holds true for the *Margarita*. Motivation is committed to acting as the Court has ordered and to do so in a "best practices" way going forward.

The 5-year planned objectives for these projects is to map and salvage all of the *Atocha* and *Margarita's* tackle, armaments, apparel and cargo as directed by the United States District Court for the Southern District of Florida, in Admiralty. This will include manifested artifacts as well as contraband cargo and artifacts that are believed to have been on board these two ships. Based on the ships manifests and the research work done by the Fisher Family, Dr. Eugene Lyon, Dr. Corey Malcolm, Manuel Marcial, Gary Randolph, James Sinclair, Duncan Mathewson and others, is a list of the approximate armaments and cargo that are yet to be recovered.

Atocha:

- 10 Bronze Cannons
- 4 Tons of Cannon Balls
- 264 Silver Bars
- 45,000 – 65,000 Silver Coins

- 111 Gold Bars / Disks
- 140 Copper Ingots
- 60 lbs. Rough Colombian Emeralds
- An untold number of other artifacts and smuggled items

Santa Margarita:

- 80,000 Silver coins
- 169 Silver Bars
- 4 Bronze guns
- 22 Copper Ingots
- An untold number of other artifacts and smuggled items

4.15 METHODOLOGY

The methodologies that are used have been developed through the years. These have changed in many ways. From the way that data is collected to how the collected data is utilized has undergone and still undergoes evolution as computer technology and the software associated continue to develop. These are covered in other sections of this permit report and request, however and more importantly perhaps at this juncture are the methodologies used to both locate and recover the scattered remains of this important shipwreck. We continue to refine the various remote sensing surveys that have been done in the past by re-confirming reading in areas of interest with magnetometery and side-scan sonar. We are also developing a hybrid vehicle known as "Dolores" named for Delores Fisher, Mel Fisher's wife. This hybrid vehicle is semi-autonomous, and has been tested utilizing a non-ferrous detection device that has the potential to locate the non-ferrous remains of the *Atocha* and *Margarita* in a more efficient manner.

The excavation techniques for accessing the potential artifacts vary with environmental situations. These range from surface visual inspection, to a variety of excavation methods.

- Hand fanning
- Water jet
- Water induction dredge
- Airlift
- Propwash deflection (mailbox)

Each excavation method is useful in various areas across this widely dispersed site. The one that garners the most attention (albeit negative) is the prop wash deflection method. The fact is that in much of the area of the *Atocha* and *Margarita*, this method is the only rational choice. Where artifacts are scattered not just by a matter of feet but often hundreds of yards and buried in shifting sand, this method has proven time and again to be the best choice. If an area of concentrated remains such as the PCD (primary cultural deposit) were to be encountered again, this of course would not be the method used. And more "traditional" recovery methods would come into play. The concern of some individuals and

entities, while perhaps not entirely unfounded is based mostly on hearsay and conjecture. Prop-wash deflection technique is a tool. One of many, but often it is the correct tool for the recovery of this sort of scattered and buried shipwreck material.

Out of a desire to make it clear that there is little to no damage from this method as utilized by Motivation, Inc. and its sub-contractors and guided by our prop-wash table as shown below, in consultation with FKNMS staff, we have agreed to do testing so that a number of parameters can be assessed that should alleviate any concerns. The intent is to conduct these tests over the next permit period (we have asked for a 5-year permit) that should give ample opportunity to allow for these tests to be conducted, results gathered and analyzed, and any further concerns addressed or mitigated.

TABLE 1

PROP-GROUPS

Designed by Captain Gary Randolph at Motivation, Inc.

WATER DEPTH	PROP SIZE (inches) 12"-24"	25"-36"	37"-48"	48"-up
0'-10'	P-1	P-5		
11'-25'	P-2	P-6	P-11	
26'-35'	P-3	P-7	P-12	P-17
36'-45'	P-4	P-8	P-13	P-18
46'-55'		P-9	P-14	P-19
56'-65'		P-10	P-15	P-20
66'-plus			P-16	P-21

Choose your prop size along the top.
Choose your working depth along side.
This gives you your prop-group rating.

Apply your prop-group to Table 2 for Maximum Time/RPM range for the bottom conditions on your site.

TABLE 2

TIME/RPM GROUP MAXIMUMS

TIME in minutes

Example: 35/1000
Dig 35 minutes at an RPM of 1000

PROP GROUP (table 1)	Sea Bottom Conditions: Hard Bottom Comm. w/ 0'-0.5' overburden		Sand or Unconsolidated Mud 0.5'-2'	2'-4'	4'-8'	8'- more	Consolidated Mud * 0'-0.5'	0.5'-1'	1'-2'	2'- more
P-1	4/800	10/800	4/1200	10/1200	30/1500	50/1500	42/1500	42/1500	42/1500	42/1500
P-2	4/1000	10/1000	10/1200	20/1500	50/1500	70/1500	55/1500	55/1500	55/1500	55/1500
P-3	10/1000	20/1000	20/1200	40/1500	70/1500		65/1500	65/1500	65/1500	65/1500
P-4	20/1000	30/1000	20/1500	60/1500			75/1500	75/1500	75/1500	75/1500
P-5	2/800	5/800	2/1200	5/1200	15/1500	25/1500	22/1500	22/1500	22/1500	22/1500
P-6	2/1000	5/1000	5/1200	10/1500	25/1500	35/1500	35/1500	35/1500	35/1500	35/1500
P-7	5/1000	10/1000	10/1200	20/1500	35/1500	45/1500	45/1500	45/1500	45/1500	45/1500
P-8	10/1000	15/1000	10/1500	30/1500	45/1500	60/1500	55/1500	55/1500	55/1500	55/1500
P-9	10/1200	15/1200	20/1500	40/1500	55/1500		65/1500	65/1500	65/1500	65/1500
P-10	10/1500	15/1500	30/1500	50/1500			75/1500	75/1500	75/1500	75/1500
P-11	2/800	5/800	2/1200	5/1200	15/1500	25/1500	12/1500	12/1500	12/1500	12/1500
P-12	2/1000	5/1000	5/1200	10/1500	25/1500	35/1500	25/1500	25/1500	25/1500	25/1500
P-13	5/1000	10/1000	10/1200	20/1500	35/1500	45/1500	35/1500	35/1500	35/1500	35/1500
P-14	10/1000	15/1000	10/1500	30/1500	45/1500	60/1500	45/1500	45/1500	45/1500	45/1500
P-15	10/1200	15/1200	20/1500	40/1500	55/1500		55/1500	55/1500	55/1500	55/1500
P-16	10/1500	15/1500	30/1500	50/1500			65/1500	85/1500	85/1500	85/1500
P-17										
P-18										
P-19										
P-20										
P-21										

NOTES:
*Digging in consoladated mud must be done at a maximum per dig depth of 0.5' before being checked for artifacts in each layer.

Motivation, Inc. Prop-Wash Table

4.16 ARCHAEOLOGICAL & CONSERVATION GUIDELINES AND PROCEDURES

Motivation, Inc. *v2018-12-13*

Archaeological Guidelines and Procedures for the
Recovery and Conservation of Artifacts from the
***Nuestra Senora de Atocha* and *Santa Margarita* Wreck Sites**

The following guidelines have been prepared by Motivation, Inc. for its salvage crews and sub-contractors working under US District Court - Southern District of Florida Court Orders regarding the *Atocha*, i.e., USDC-SDF Case No. 75-1416-Civ-King and related Court Orders and US District Court - Southern District of Florida Court Orders regarding the *Margarita*, i.e., USDC-SDF Case No. 79-1381-Civ-King and related Court Orders, within the Florida Keys National Marine Sanctuary (FKNMS) as described in the FKNMS Programmatic Agreement with the State of Florida (SOF) whereby the FKNMS adopted the SOF Rules for Commercial Salvage as currently stated in F.A.C. Chapter 1A-31 "Procedures for Conducting Exploration and Salvage of Historic Shipwreck Sites."

These guidelines are also based on the long-standing guidelines had been prepared in accordance with the Settlement Agreement of June 3, 1983 between the Florida Department of State and Treasure Salvors, Inc., Cobb Coin Company, Inc., Salvors, Inc. and its successor, the Mel Fisher Center, Inc. They specify salvage methods and techniques which will guide collection of archaeological information of wreck sites covered in the salvage agreements with the State of Florida.

The purpose of these guidelines is to establish minimum recording standards in order that sound archaeological provenience information can be made available to Motivation, Inc., the FKNMS, the State, and eventually the general public. Generally, the Guidelines are concerned with recording location of excavation activities; provenience of recovered or recorded artifacts; mapping of wreck sites at broad and detailed scales, as appropriate; artifact tagging, handling, security and conservation; and diver safety.

1. **DGPS Positioning of Excavations & Recoveries**

No wreckage will be salvaged until each vessel involved with excavation or artifact recovery is equipped with a differential GPS (DGPS) capable of, and calibrated to, receive a three meter or better (less than three meter) geographic positioning accuracy. The DGPS should be using the 1983 North American Datum (NAD83). Motivation, Inc. recommends the use of the US Coast Guards differential beacon located in Card Sound, Florida for the acquisition of real-time differential position corrections. DGPS readings should be taken in degrees, and decimal minutes to the third decimal place (i.e. xx° xx.xxx).

2. **Data Records**

Each boat must have on board at least one person approved by Motivation, Inc. to perform the following tasks:

a. How to use and take accurate readings from a DGPS positioning unit.

b. Understand and use Motivation's approved artifact tagging system, which will allow identification and provenience of all recovered artifacts to be maintained. Use tags in numerical order and affix them properly to each artifact.

c. Understand and use Motivation's approved data recording system and fill out their Daily Ships Log sheets, which will provide an accurate record of boat location, salvage activities, artifacts recovered by tag number and location, and other useful information.

d. The Motivation, Inc. conservation & curating staff will conduct a training workshop at the beginning of any new salvage vessel and crews' season to instruct captains and crew members in these areas and will be further available throughout the field season to instruct new data recorders, provide refresher training when necessary and assist in data recording.

3. **Recording Excavation Locations, Contents and Other Significant Bottom Features**

Locations of excavations and other large bottom features will be determined by DGPS position finding equipment. To ensure accuracy of recording excavation locations, the DGPS satellite receiving antenna will be mounted in a standard location on each boat as near to, or preferably over top of the prop-wash deflectors (mailboxes) as possible. DGPS readings are to be collected while the excavation is in progress. Each salvage boat will have and use DGPS. On the Daily Log Sheet form, brief descriptions and tag numbers of all artifacts will be recorded for each excavation unit so that the tag number is sufficient to determine the provenience of any artifact. Representative and all unusual excavation area profiles will be recorded noting the general order and thickness of recognizable sediments and the location of artifacts, fossils or other useful information. Profiles, which indicate that an earlier excavation is being reopened, should be noted. When possible a more accurate location description for important artifacts should be recorded, for example, in which quarter of the excavation unit and from what sediment. Finally, any interpretations of stratification or association which might be useful in understanding the process of artifact scatter and disposition should be noted.

4. **Large Non-Structural Artifacts**

Large objects like cannons and anchors will be tagged, left in place on the bottom and their geographic location in Latitude (N) and Longitude (W) recorded so that they may serve as a mapping and location references in future work unless otherwise directed by Motivation, Inc. Director of Operations. If such large objects interfere with underwater metal detector survey they may be moved to another location on the site with the approval of Motivation, Inc. Director of Operations providing the original and new locations are recorded on the Daily Log sheets and properly mapped & recording of their

in-situ orientation is recorded on a cannon or anchor data sheet. Cannon, anchors, wood structure and other large objects will not be removed from the site unless transfer, storage, and conservation facilities approved by Motivation, Inc. are available and such activity is approved by Motivation, Inc.

5. **Structural Remains and Major Artifact Clusters**

Because structural remains and major artifacts clusters have more important association than scattered material, greater care is required in recording provenience and direct supervision of all activities around such remains will be conducted and supervised by Motivation, Inc.'s Senior Archaeologist. Structural remains will then be photographed when possible, and mapped on base maps supplied or approved by the Motivation, Inc. to show positions of all wooden structural members, spikes, and other artifacts as well as details of construction if visible. Detailed maps must specify the coordinate system (latitude/longitude) and North American Datum (NAD 83) used for compilation. DGPS coordinates (as specified in section 1 above) should be taken as nearly as possible on top of taut buoy lines, which mark mapping reference points (datum's) on the bottom. Structural remains will not be moved or undermined unless mapping results have been approved by Motivation, Inc.'s Senior Archaeologist and unless transfer, storage, and conservation facilities approved by Motivation, Inc. are available.

Artifact Tagging

All recovered artifacts will be tagged individually or as a group when from a single excavation unit except as outlined below. Anchors and cannon recorded and left in-situ will also be tagged. Tags will be plastic with permanent imprinted numbers and affixed to artifacts or bags of grouped artifacts by strong rubber bands, plastic wire ties, or if left in-situ use high test, monofilament, fishing line.

For small or delicate artifacts, the tag may be placed in the same sealed protective container as the artifact. Large objects will be individually tagged. Small objects will be individually tagged if they are unique or have special value. Common objects such as small pottery sherds, barrel hoop fragments, musket balls or lead sheathing can be bagged as a group and assigned a single tag number when from the same excavation unit. Bags will be sufficient strength that they will not tear or break in handling or rot in storage before processing; strong freezer type plastic bags are recommended.

6. **Artifact Handling**

<u>ALL RECOVERED ARTIFACTS</u> WILL BE KEPT WET AND MUST NOT BE ALLOWED TO DRY OUT WHILE ONBOARD AND IN TRANSIT TO THE STORAGE AND PROCESSING LABORATORY AS DAMAGE TO THE ARTIFACT MAY OCCUR.

<u>GLAZED OR BLUE & WHITE TYPE CERAMIC VESSELS OR SHERDS, ORGANIC MATERIALS SUCH AS PEARLS, SMALL WOODEN ARTIFACTS SUCH AS EBONY RAZOR SHEATHS</u> SHOULD BE KEPT IN SALT WATER UNTIL THEY REACH THE CONSERVATION LAB TO PREVENT DAMAGE THAT SUDDEN FRESH WATER IMMERSION MAY CAUSE.

Artifacts may be divided into four categories; large objects, such as anchors, cannon, and hull structure; miscellaneous encrusted objects (E.O.'s); miscellaneous small identified non-precious artifacts; and identified unique or precious artifacts. After tagging and recording, artifacts in each category will be treated as follows:

a. <u>Large Objects</u>: These will be left in place on site until removal is approved by the Motivation, Inc. and wet storage facilities are available. Once removed, they should be handled so as to minimize damage and should be kept moist until they reach a permanent wet storage tank.

b. <u>Miscellaneous Encrusted Objects</u>: These fall into two categories:

   i. General identifiable non-fragile EO's. This category will generally include spikes, hull pins, cannon balls or other general ship's hardware.

   ii. Interesting or fragile EO's. This category includes swords, knives, small tools, keys and other implements. EO's will not be broken open on board; instead they will be processed on shore at the storage and laboratory facility.

c. <u>Common Miscellaneous Small Identified Non-Precious Artifacts</u>: These include such items as pottery sherds, barrel hoop fragments, musket balls, and lead sheathing. These may be bagged as a group from each excavation unit.

d. <u>Identified Unique or Precious Artifacts</u>: These would include such things as emeralds, any gold artifacts, silver coins, intact tableware, religious artifacts, intact ceramic artifacts, etc. These will be assigned individual tags, unless they are a cluster of silver coins, and placed in individual small plastic bags or protective jars to prevent damage. Unique and precious objects will be immediately turned over to the ship's captain and be secured in the captain's cabin and/or safe on board until transported wet to the conservation lab.

7. **Artifacts Processing, Stabilization and Conservation**

All artifacts recovered from site are to be conveyed to Motivation's conservation lab and stabilization facility. This facility will provide sufficient security to ensure the protection of the artifacts, which it receives. All artifacts will be checked-in to the lab by the conservator or curator and logged into the master database. Pre-conservation photographs and measurements will be done before conservation begins. Once compete, each artifact will be treated based on its composition and the Texas A&M Conservation Manual will guide all conservation efforts. Unique artifact concretions will be retained for items that we don't already have an intact example of and will be put in the "casting projects" storage area to be cast. Final records and inventories of identified artifacts from each site and excavation unit will be prepared for each vessel's activities and artifact overlay maps compiled at this facility so that results may be available to guide further salvage activities. Copies of all field records will be maintained at this facility during the salvage season and log sheet copies will be digitally submitted to the FKNMS staff at the requested intervals. Access to conservation data can be done via Motivation's Public Artifact Database located at https://www.melfisher.com/MOBILE/site/Research.html.

8. **Project Senior Archeologist Supervision**

In order to ensure that the quality of information recorded is adequate and that the information is consolidated and interpreted in a professional manner, Motivation, Inc. will provide its professional senior archaeologist when significant archaeological deposits or hull structure are located and also requires sufficiently trained archaeological assistants on each vessel used in exploration and salvage activities.

9. **Reporting Requirements**

Motivation, Inc. will prepare a recovery report on each site salvaged for the Adjudication of Title by the Admiralty Court as soon as possible after each year's salvage activity. Motivation will also supply the annual artifact recovery reports requested by the FKNMS.

4.17 PROTOCOL FOR REMOVING MUNITIONS / MUNITION COMPONENTS

Motivation, Inc. *v2019-01-14*

Protocol and Procedures for the
Removal of military practice bomb fragments from the
***Atocha* and *Margarita* Wreck Sites**

During the 1940's and 1950's areas west of Key West and in the general vicinity of the Marquesas Keys was used by the US Military as a bombing and strafing practice range. This live-fire activity has since been cancelled but there still remains a vast amount of unexploded ordinance as well as fragments of exploded ordinance in the areas of the *Atocha* and *Margarita* wreck sites.

In the past, when Motivation, Inc. salvage crews have encountered these types of materials and contacted the US Military or US Coast Guard here in Key West the response has been generally the same. In the case of potentially unexploded ordinance, they take the information on its location and instruct us to leave it alone. In the case of exploded bomb fragments, they didn't care if we picked them up and discarded them properly as trash.

Therefore, Motivation, Inc. has established the following protocol and procedure for dealing with these objects.

Potentially unexploded ordinance:

When an object is located on or buried in the seabed, is within the *Atocha* or *Margarita* Admiralty claim, do the following:

1. Leave the object in place and do not disturb it any further.
2. Document its location & description on the Daily Vessel Log Sheet.
3. Take underwater photos or video if possible and submit them to Motivation's conservation staff during artifact check-in.
4. Notify Gary Randolph at Motivation, Inc. of the items located and he will send an email notification the FKNMS staff at FKNMSPermits@noaa.gov so they can notify any other agencies or the US Military as needed.

Exploded Ordinance (inert bomb fragments):

When these types of objects are located on or buried in the seabed, is within the *Atocha* or *Margarita* Admiralty claim, do the following:

1. Recover the object to the salvage vessel.
2. Document its location & description on the Daily Vessel Log Sheet.
3. Place objects in bucket or container to be taken back to shore for disposal.
4. Once back in port dispose of objects properly in marina dumpster.
5. These will be entered into our database as Description: "Bomb Fragment"

4.18 POLICY FOR THE UNINTENDED EXCAVATION OF NON-ATOCHA / MARGARITA ARTIFACTS

Motivation, Inc. *v2019-01-14*

Policy and Procedures for the
Unintended Excavation of Non-Atocha / Margarita Artifacts

During the search and salvage of historic shipwreck artifacts from the Atocha and Margarita wreck sites it is quite possible to encounter artifacts from other, primarily 1800's period shipwrecks. Motivation, Inc. has no active Admiralty claim or interest in recovering these items and it is our policies to have our crews follow the procedures outline here.

If the Captain of the salvage vessel and the assistant archaeological data recorder are absolutely sure that an artifact that has been located on the bottom or recovered to the deck of the salvage vessel is NOT an Atocha or Margarita artifact, they will;

1. Record the non- Atocha / Margarita artifact on the ships Daily Log Sheet as such with a short description of the artifact.

2. Take a photo if possible, with a dive slate showing the date & name of recover vessel (to later be given to the Motivation conservation staff.

3. If recovered to deck, it will then be returned to the seabed where it was found and buried in-situ.

4. The immediate and appropriate disposal of all the ultra-modern obvious trash such as beer cans, fishing gear, engine parts, tools, etc. is approved to continue the effort to promote a clean marine environment.

If the Captain of the salvage vessel and the assistant archaeological data recorder are **NOT** absolutely sure that an artifact that has been located on the bottom or recovered to the deck of the salvage vessel is an Atocha or Margarita artifact, they will;

1. Recover the artifact and tag it.

2. Log it as usual on the ships Daily Log Sheet.

3. Bring it in with the rest of their artifacts to Motivation's conservation lab for analysis by the senior conservator and review by the Senior Archaeologist.

4. It will then be entered into the artifact database, pre-conservation photograph taken.

5. If after this point it is determined to be a non-Atocha / Margarita artifact it will be recorded in the database in the "Wreck Site" field as either "Intrusion - Atocha" or "Intrusion – Margarita" and will be returned to the location it was found. As it had a tag number assigned to it, it will be included in the conservation lab reports under these Wreck Site descriptions.

4.19 Notes on Human Remains

To the best of our knowledge no human remains have been found or recovered from the wrecks of either the *Nuestra Senora de Atocha* or the *Santa Margarita*, 1622. The reason for this is rather obvious, human remains are notoriously fragile and their survivability in the warm biologically active waters of the Florida Keys is unlikely. Our working theory is that human remains are too fragile to survive in the past and current environments (warm water, high energy environments) associated with these shipwreck sites. The other factor for the *Atocha* site that nearly obviates the presence of human remains is the timing of the wrecking process. We know for the documents and the testimony of the 5 survivors as well as the divers who reported the condition of the *Atocha* immediately after the sinking. We know from the testimony of the survivors that the passengers and most of the crew had gone blow decks and had battened the hatches effectively locking themselves into the interior of the ship. The divers from the vessel that picked up the survivors reported that the hatches were battened down and they could not gain access to the inside of the ship.

Approximately 2 to three weeks later, while preparations were being made in Cuba to mount a full-scale salvage operation on the *Atocha*, another hurricane would ravage the area. We know from the debris trail that the *Atocha* began to break apart. We also have a fairly good idea of what happens to human remains in warm ocean water over the course of weeks. As the *Atocha* opened up the cadavers now filled with decomposition gas were released into the hurricane induced wind waves and currents. That those remains were highly dispersed and subsequently further decomposed by animal life of both larger and smaller biota is likely without question. While some osteological remains of animals have been found these are usually larger species of mammals, i.e. cow pig and horse. *(Please see the "Faunal Analysis" report added to our Research Archives at https://melfisher.com/artifacts)*

And many of these appear to have been the victuals both preserved and on the hoof of the passengers and crew of the doomed vessel.

If, however, in the unlikely situation that identifiable human remains were encountered, we would follow the protocols laid out under Title XLVI Florida Statute 872.05. To wit:

(5) DISCOVERY OF AN UNMARKED HUMAN BURIAL DURING AN ARCHAEOLOGICAL EXCAVATION

> *(a) When an unmarked human burial is discovered as a result of an archaeological excavation and the archaeologist finds that the unmarked human burial represents the burial of an individual who has been dead less than 75 years, the archaeologist shall notify the district medical examiner, and all activity that may disturb the unmarked human burial shall cease until the district medical examiner authorizes work to resume.*
>
> *(b) If such unmarked human burial represents the burial of an individual who has been dead 75 years or more, archaeological activities may not resume until the State Archaeologist has been notified of the unmarked human burial.*
>
> *(c) Within 15 days after the discovery of an unmarked human burial, the archaeologist conducting the excavation shall report to the State Archaeologist his or her opinion regarding the cultural and biological characteristics of the unmarked human burial and where human skeletal remains and associated burial artifacts should be held prior to a final disposition. The division*

may assume jurisdiction over and responsibility for the unmarked human burial pursuant to subsection (6).

(6) JURISDICTION; DUTIES OF THE STATE ARCHAEOLOGIST

The division may assume jurisdiction over and responsibility for an unmarked human burial in order to initiate efforts for the proper protection of the burial and the human skeletal remains and associated burial artifacts. Whenever the division assumes jurisdiction over and responsibility for an unmarked human burial, the State Archaeologist shall:

(a) Determine whether the unmarked human burial is historically, archaeologically, or scientifically significant. If the burial is deemed significant, reinternment may not occur until the remains have been examined by a human skeletal analyst designated by the State Archaeologist.

(b) Make reasonable efforts to identify and locate persons who can establish direct kinship, tribal, community, or ethnic relationships with the individual or individuals whose remains constitute the unmarked human burial. If possible, the State Archaeologist shall consult with the closest related family member or recognized community leaders, if a community or ethnic relationship is established, in determining the proper disposition of the remains found in the unmarked human burial.

(c) If he or she is unable to establish a kinship, tribal, community, or ethnic relationship with the unmarked human burial, determine the proper disposition of the burial and consult with persons with relevant experience, including:

1. A human skeletal analyst.

2. Two Native American members of current state tribes recommended by the Governor's Council on Indian Affairs, Inc., if the remains are those of a Native American.

3. Two representatives of related community or ethnic groups if the remains are not those of a Native American.

4. An individual who has special knowledge or experience regarding the particular type of the unmarked human burial.

If the State Archaeologist finds that an unmarked human burial is historically, archaeologically, or scientifically significant and if the parties with whom he or she is required under this subsection to consult agree, the human skeletal remains and the associated burial artifacts thereof shall belong to the state with title thereto vested in the division.

(7) REPORT REQUIRED

The archaeologist and human skeletal analyst involved in the archaeological excavation and scientific analysis of an unmarked human burial shall submit a written report of archaeological and scientific findings as well as a summary of such findings, in terms that may be understood by laypersons, to the State Archaeologist within 2 years after completion of an excavation. The division shall publish the summary within 1 year after its receipt and shall make such report available upon request.

We at Motivation Inc. would most certainly want to see any potential human remains treated with the reverence and respect that they deserve.

4.20 References

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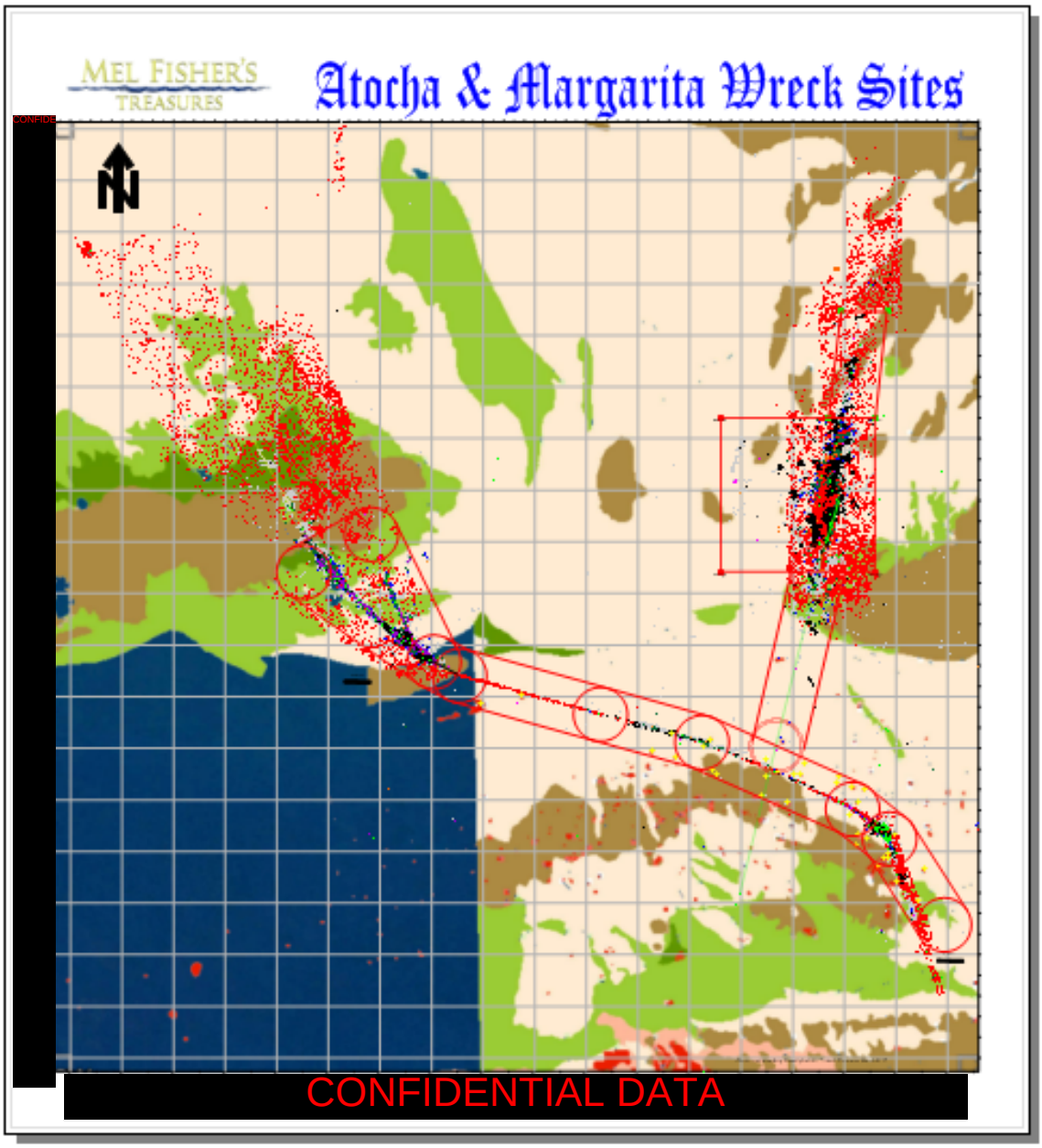
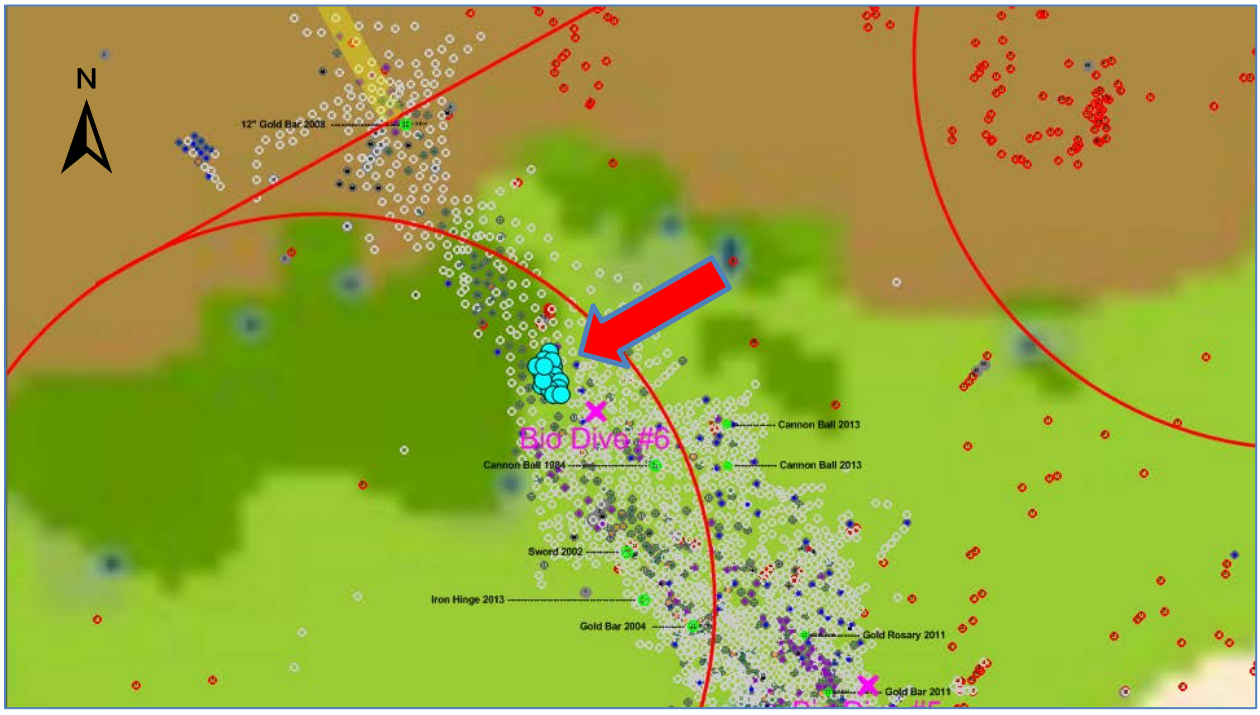
5 ARCHAEOLOGICAL FIELDWORK

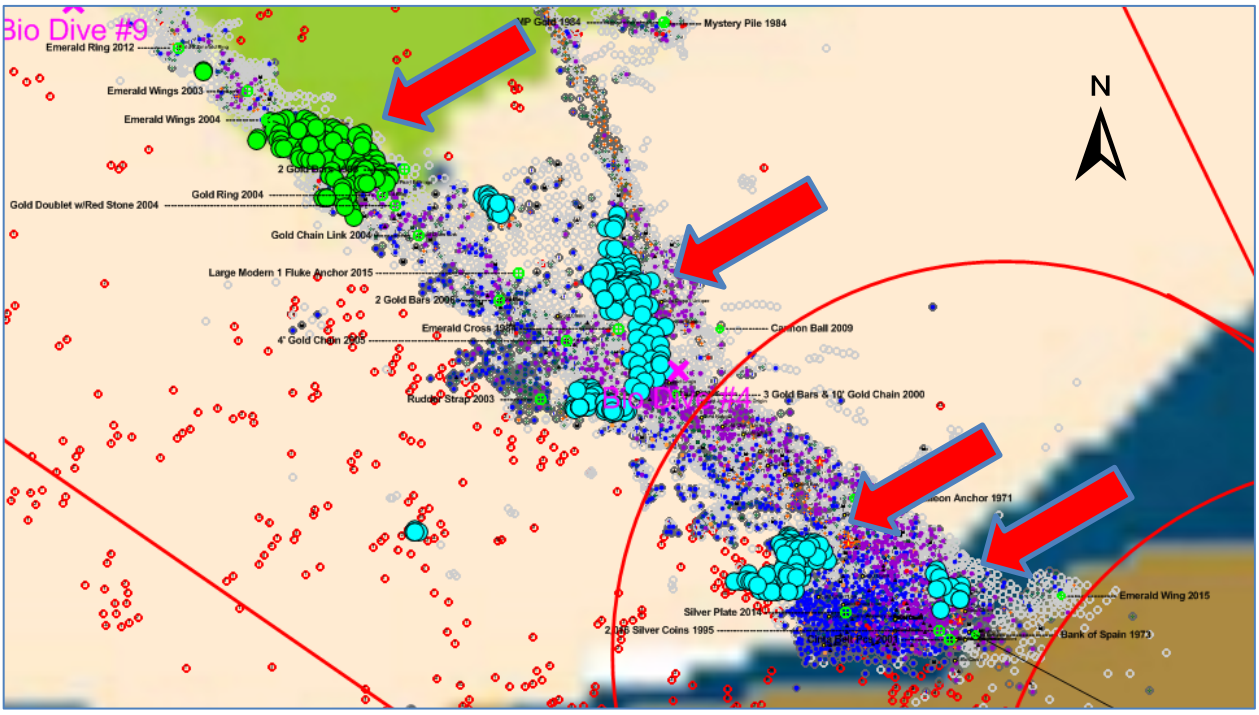
The following section will show a representative sample of the full-size master chart of the *Atocha* and *Margarita* sites with the areas of activity during the last permit period shown in the zoomed-in views of the master chart to make them discernable.

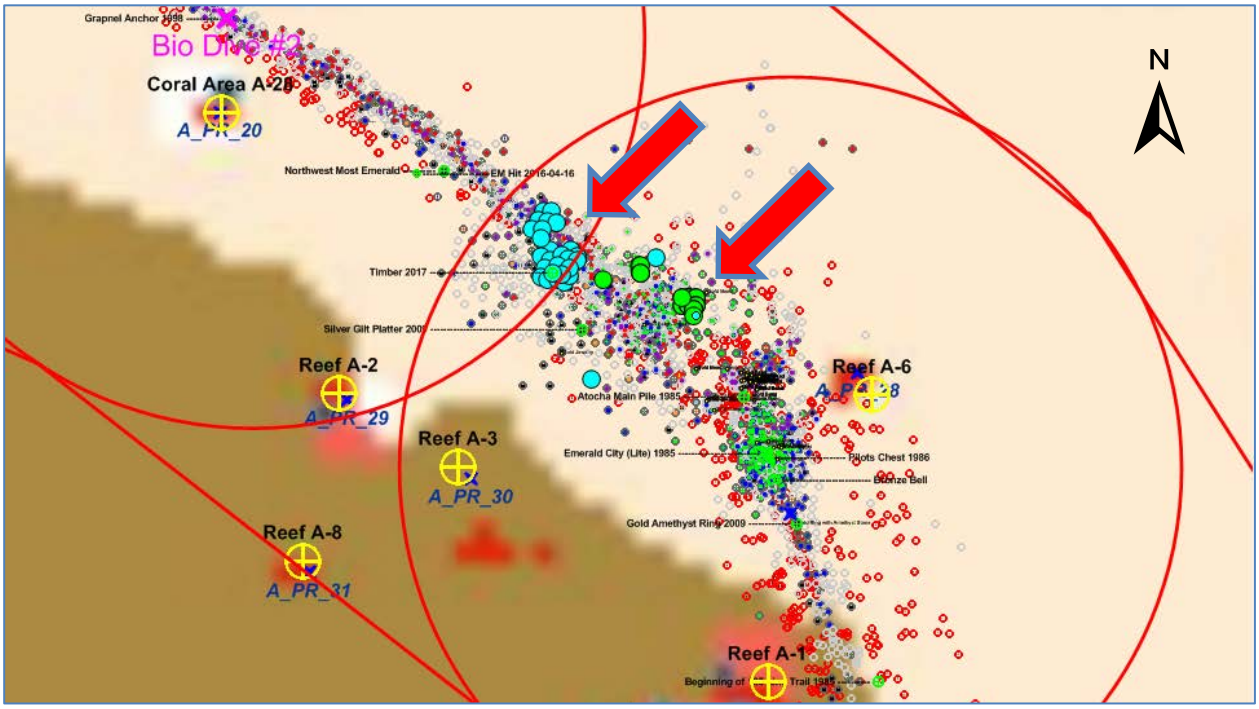
5.1 MASTER ATOCHA & MARGARITA SITE ACTIVITY CHART



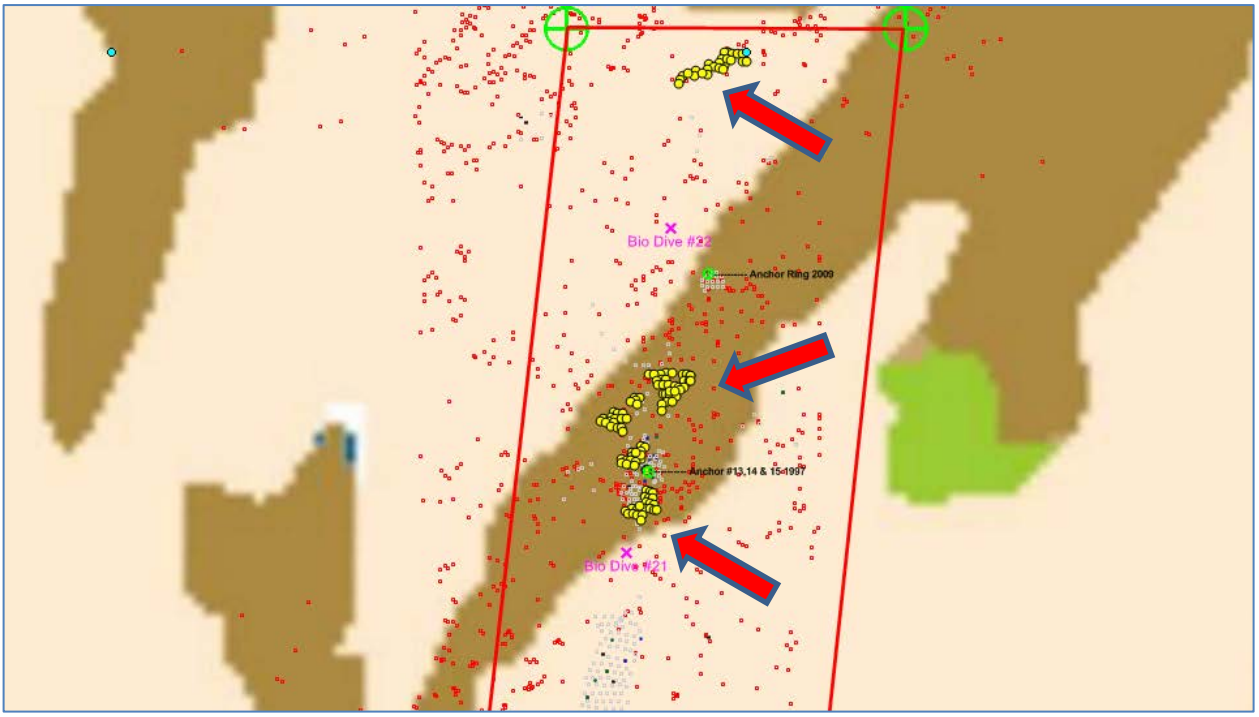
5.2 2017-2018 *ATOCHA* EXCAVATION AREAS – ZOOM VIEW

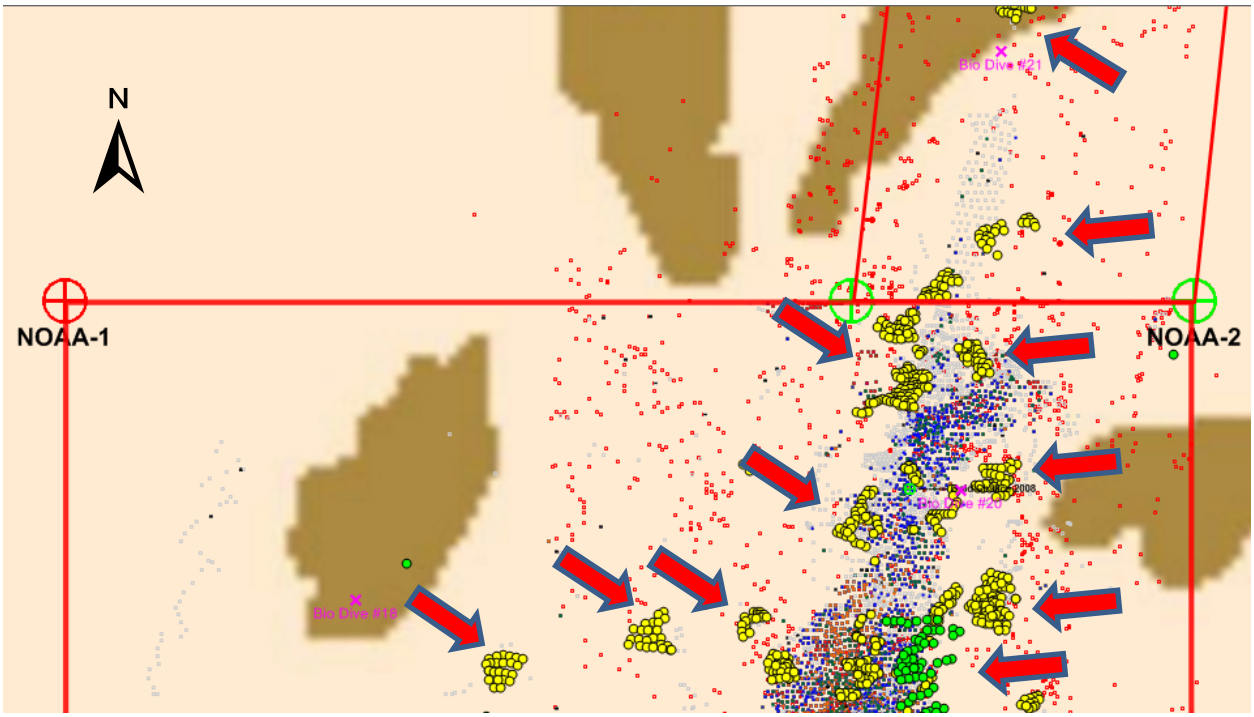


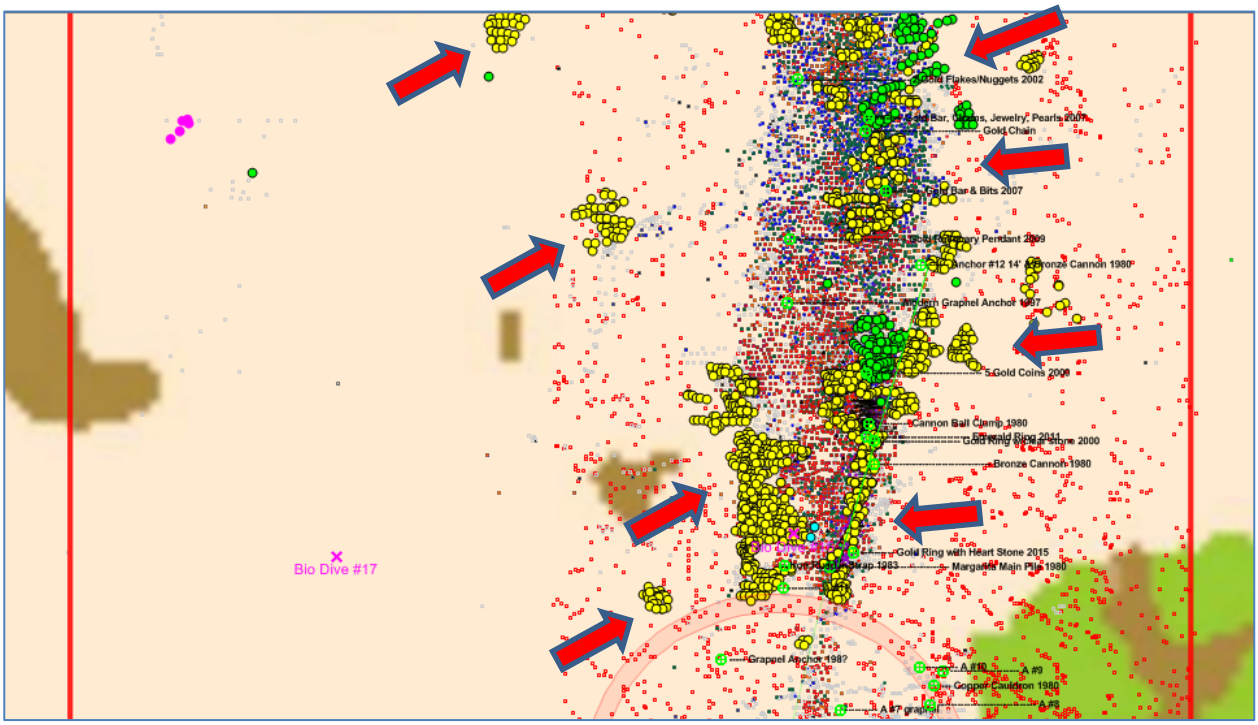


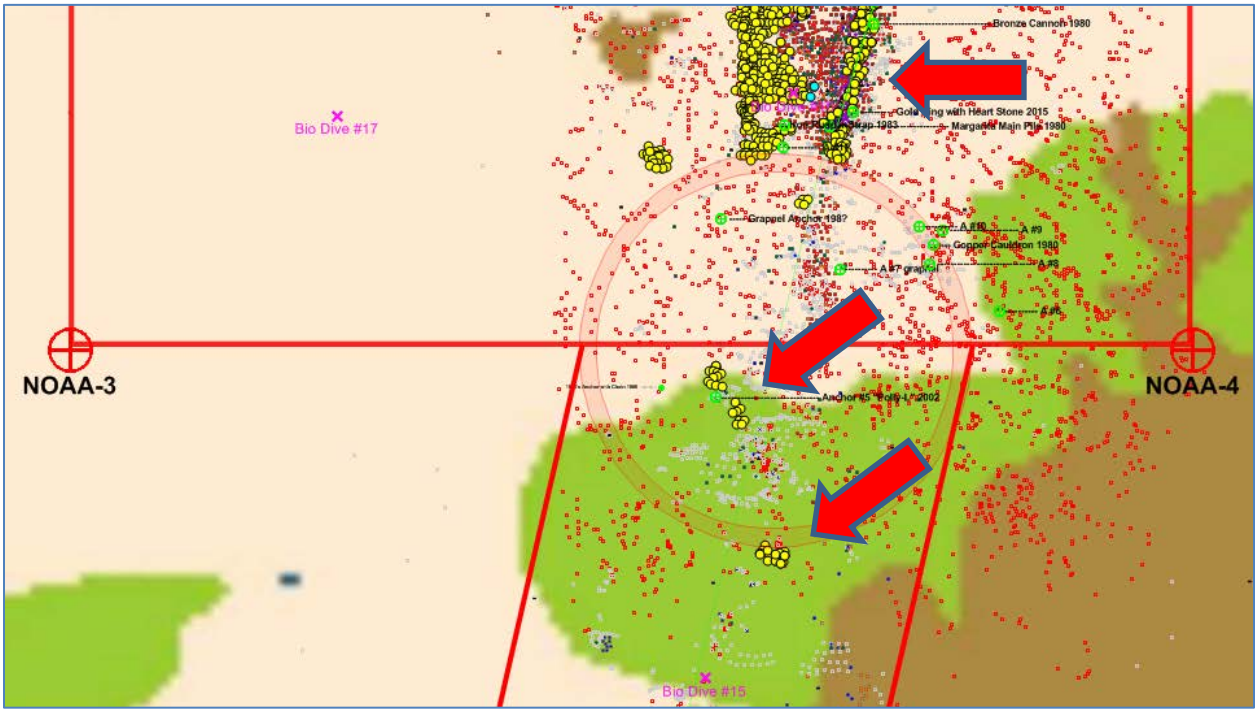

Grapnel Anchor 1988
Bio Dive #2
Coral Area A-20
A_PR_20
Northwest Most Emerald
EM Hit 2016-04-16
Timber 2017
Silver Gilt Platter 2009
Reef A-2
A_PR_29
Reef A-3
A_PR_30
Reef A-8
A_PR_31
Atocha Main Pile 1985
Emerald City (Lite) 1985
Pilots Chest 1986
Bronze Bell
Gold Amethyst Ring 2009
Reef A-6
Reef A-1
Beginning of
Trail 1985
N

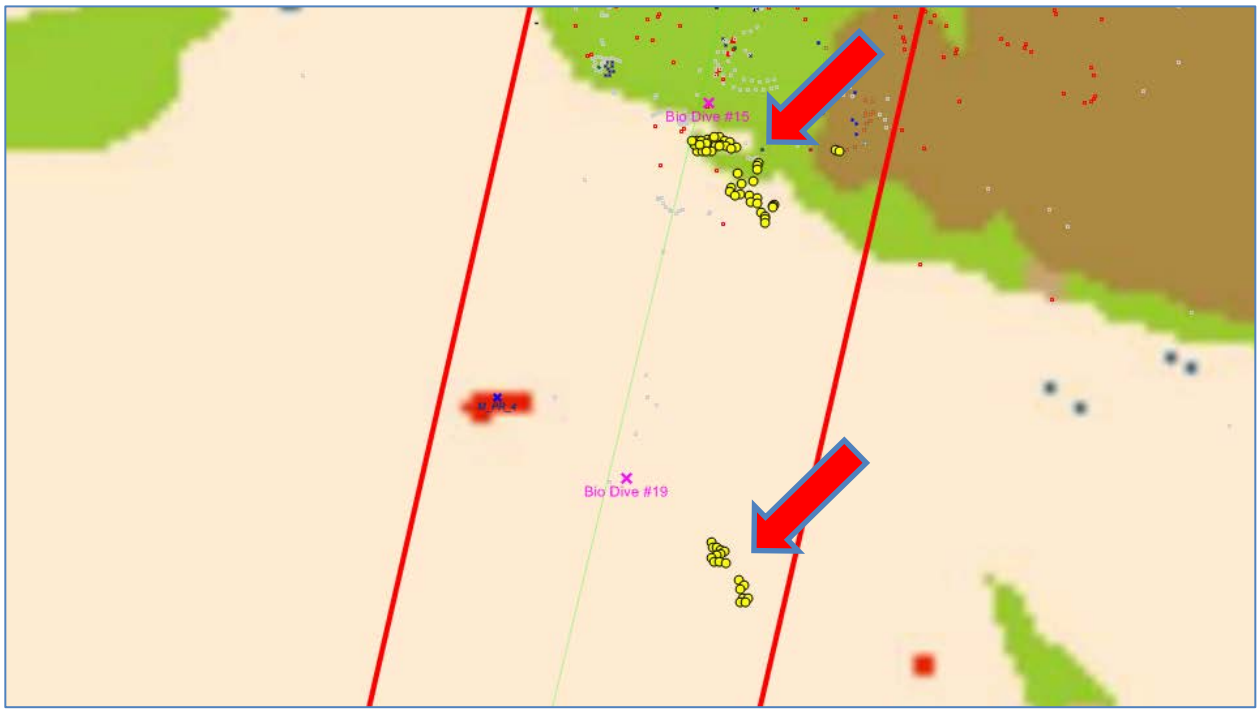
5.3 2017-2018 *MARGARITA* EXCAVATION AREAS – ZOOM VIEW






Gold Flakes/Nuggets 2002
Gold Chain
Gold Bar & Bits 2007
Anchor #12 14' Bronze Cannon 1980
Gold Coins 2008
Cannon Ball Clamp 1980
Bronze Cannon 1980
Gold Ring with Heart Stone 2015
Bio Dive #17
Grappel Anchor 198?
Copper Cauldron 1980


Bronze Cannon 1980
Gold Ring with Heart Stone 2015
Bio Dive #17
Grappel Anchor 198?
Copper Cauldron 1980
NOAA-3
NOAA-4
Bio Dive #15


Bio Dive #15
Bio Dive #19

5.4 *Atocha* & *Margarita* Site – 2017 Days at Sea & Excavation Logs

Vessel	Days at Sea	Atocha Excavations	Margarita Excavations
Magruder	58	142	0
Dare	45	118	0
Sea Reaper	48	0	1469
Sea Trepid	0	0	0
Sea Hunter	0	0	0
Polly-L	0	0	0
Totals	151	260	1469

5.5 *Atocha* & *Margarita* Site – 2018 Days at Sea & Excavation Logs

Vessel	Days at Sea	Atocha Excavations	Margarita Excavations
Magruder	53	19	180
Dare	72.25	203	8
Sea Reaper	37	0	601
Sea Trepid	1	0	5
Sea Hunter	4	0	0
Polly-L	5	0	32
Totals	172.25	222	826

5.6 OTHER HISTORIC WRECK SITES ENCOUNTERED AND EVALUATED

During the last permit period there hasn't been any new significant non-Atocha or Margarita historic shipwreck sites located. Over the last 50 years of work in this area Motivation has encountered other shipwrecks and historical resources which have been reported to the FKNMS staff and are summarized in Appendix-4 of this report.

Please also see the report done in 2002 by James Sinclair regarding the most significant wreck located in our Atocha search area since the mid-1990's, included as Appendix-5, titled:

PRELIMINARY ARCHAEOLOGICAL ASSESMENT

OF A LATE 19TH CENTURY SAILING VESSEL IN THE FLORIDA KEYS NATIONAL MARINE SANCTUARY

Assessment conducted by

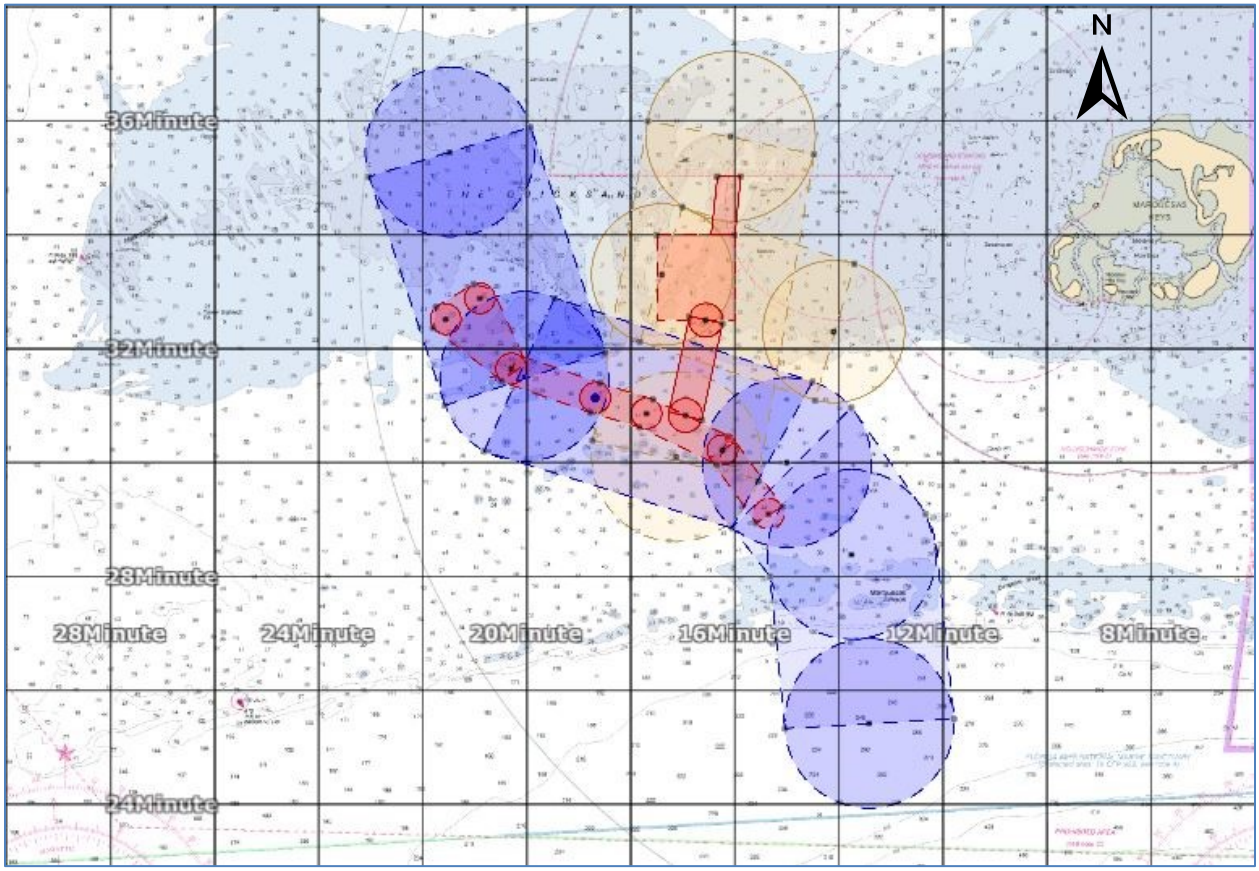
James J. Sinclair, MA, Senior Archaeologist
SeaRex Inc.
15 Marlin Dr.
St. Augustine, FL 32080

Performed for

Motivation Inc.
200 Green Street
Key West, FL 33040

5.7 BOUNDARIES OF THE AREA INVESTIGATED

"NOAA Chart showing Atocha (purple) & Margarita (orange) Admiralty Claims and NOAA / FKNMS Permit Areas (red)"



See the detailed coordinates for the *Atocha* & *Margarita* areas on the following page.

5.7.1 Current *Atocha* Site Admiralty Claim Area

The current coordinates for *Atocha* admiralty claim #75-1416 CIV-ARONOVITZ (KING) are as follows:

3,000 yards from any point on a line created by the following five points:

Point No.	Latitude	Longitude	
1	CONFIDENTIAL DATA	CONFIDENTIAL DATA	Northern Extension Point, 1999
2	CONFIDENTIAL DATA	CONFIDENTIAL DATA	9 Bronze Cannon Area
3	CONFIDENTIAL DATA	CONFIDENTIAL DATA	Main Pile Area
4	CONFIDENTIAL DATA	CONFIDENTIAL DATA	Amended Extension Point, 2006
5	CONFIDENTIAL DATA	CONFIDENTIAL DATA	Additional Extension Point, 2006

5.7.2 Current FKNMS *Atocha* Permit Area:

1. Within 600 yards of the axis created by connecting the following points:

Point No.	Latitude	Longitude
1	CONFIDENTIAL DATA [redacted]	[redacted]
2	CONFIDENTIAL DATA [redacted]	[redacted]
3	CONFIDENTIAL DATA [redacted]	[redacted]
4	CONFIDENTIAL DATA [redacted]	[redacted]
5	CONFIDENTIAL DATA [redacted]	[redacted]
6	CONFIDENTIAL DATA [redacted]	[redacted]
7	CONFIDENTIAL DATA [redacted]	[redacted]
8	CONFIDENTIAL DATA [redacted]	[redacted]
9	CONFIDENTIAL DATA [redacted]	[redacted]

2. Within 500 feet of the point located at:

Point No.	Latitude	Longitude
1	CONFIDENTIAL DATA [redacted]	

Note: This area #2 south of Stock Island is a near shore equipment and remote sensing test area designated by the FKNMS for the temporary placing of targets on sand bottom and testing tethered HAUV, ROV and other remote sensing equipment.

5.7.3 Current *Margarita* Site Admiralty Claim Area

The current coordinates for *Margarita* admiralty claim #79-1381 Civ-JLK are as follows:

2,500 yards from any point on a line created by the following two points:

Point No.	Latitude	Longitude	
1	CONFIDENTIAL DATA		Original claim, 1979
	CONFIDENTIAL DATA	[redacted]	
2	CONFIDENTIAL DATA		Original claim, 1979
	CONFIDENTIAL DATA	[redacted]	

3,000 yards from any point on a line created by the following two points:

3	CONFIDENTIAL DATA		Amendment, 2002
	CONFIDENTIAL DATA	[redacted]	
4	CONFIDENTIAL DATA		Amendment, 2002
	CONFIDENTIAL DATA	[redacted]	

5.7.4 Current FKNMS Margarita Permit Area:

1. Within a box bounded by the following coordinates (box 1):

Point No.	Latitude	Longitude
1	CONFIDENTIAL DATA [redacted]	[redacted]
2	CONFIDENTIAL DATA [redacted]	[redacted]
3	CONFIDENTIAL DATA [redacted]	[redacted]
4	CONFIDENTIAL DATA [redacted]	[redacted]

2. Within a box bounded by the following coordinates (box 2):

Point No.	Latitude	Longitude
1	CONFIDENTIAL DATA [redacted]	[redacted]
2	CONFIDENTIAL DATA [redacted]	[redacted]
3	CONFIDENTIAL DATA [redacted]	[redacted]
4	CONFIDENTIAL DATA [redacted]	[redacted]

3. Within 600 yards on either side of a line created by connecting the following coordinates:

Point No.	Latitude	Longitude
1	CONFIDENTIAL DATA [redacted]	[redacted]
2	CONFIDENTIAL DATA [redacted]	[redacted]

5.8 FIELDWORK METHODOLOGY AND THE RATIONALE FOR ITS SELECTION;

In an effort to conform to the requirements that we adhere to the reporting requierments as stated in 1A-46 of the Florida Administrative Code, we redirect reviewers to what has been previously covered in this report in sections 4.14 -4.21 inclusive.

We would like to, once again point out that we are odered by the US Federal Admiralty Court of the Southern District of Florida, to diligently recover the remains of the Atocha and the Santa Margarita, 1622, until such time that salvage is no longer practical.

While this is the case law and orders that we operate under we have sought to always comply with both the best practices of archaeology and with input and guidence from the Florida Keys National Marine Sanctuary, adopt methodologies that would minimize any potential environmental impacts during the course of our activities. We believe that we have been successful and this seems to have been bourn out by the fact that for the last 20 years we have had permits issued to us and conformed to said permits.

Please see sections 4.14 through section 4.12 of the document for a more complete review of methodologies employed by Motivation Inc. in the ongoing investigations and recovery of the remains of the two important historical vessels.

The rational for the selection of methodologies employed on these shipwrecks is relatively straight forward. The methodologis are predicated on the scattered nature of these shipwreck remains and the depositional envrionment. The recovery methods we employ are proven methodologies that have resulted in the success of both of these projects, as evidenced in the amounts and types of material recovered. The methodologies are used in a judicious manner dependant on the enviorment and the bottom composition.

5.9 THE CHARTED LOCATIONS OF ALL EXCAVATIONS, ARTIFACTS, SIGNIFICANT DISCOVERIES, SITE BOUNDARIES AND SURVEY TARGETS

"Charts of the *Atocha* Site" which shows a graphical representation of all ecavation areas to date. All ecavations are recorded on each ships "Daily Log Sheet" and entered into Motivation's master database.

Charts of the *Atocha* Site

By Gary Randolph

NOAA Chart showing Admiralty Claims and NOAA Permit Areas (red)

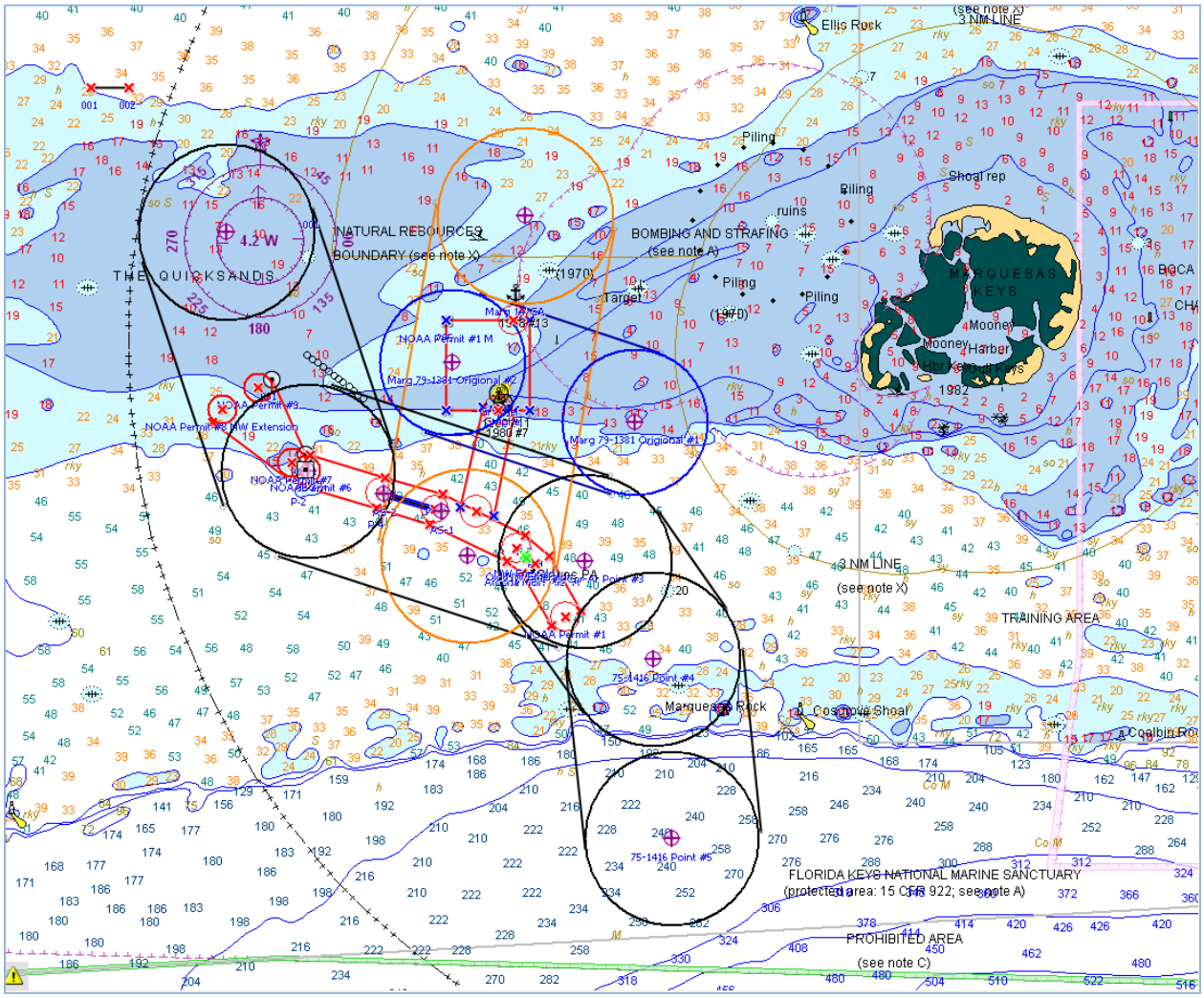
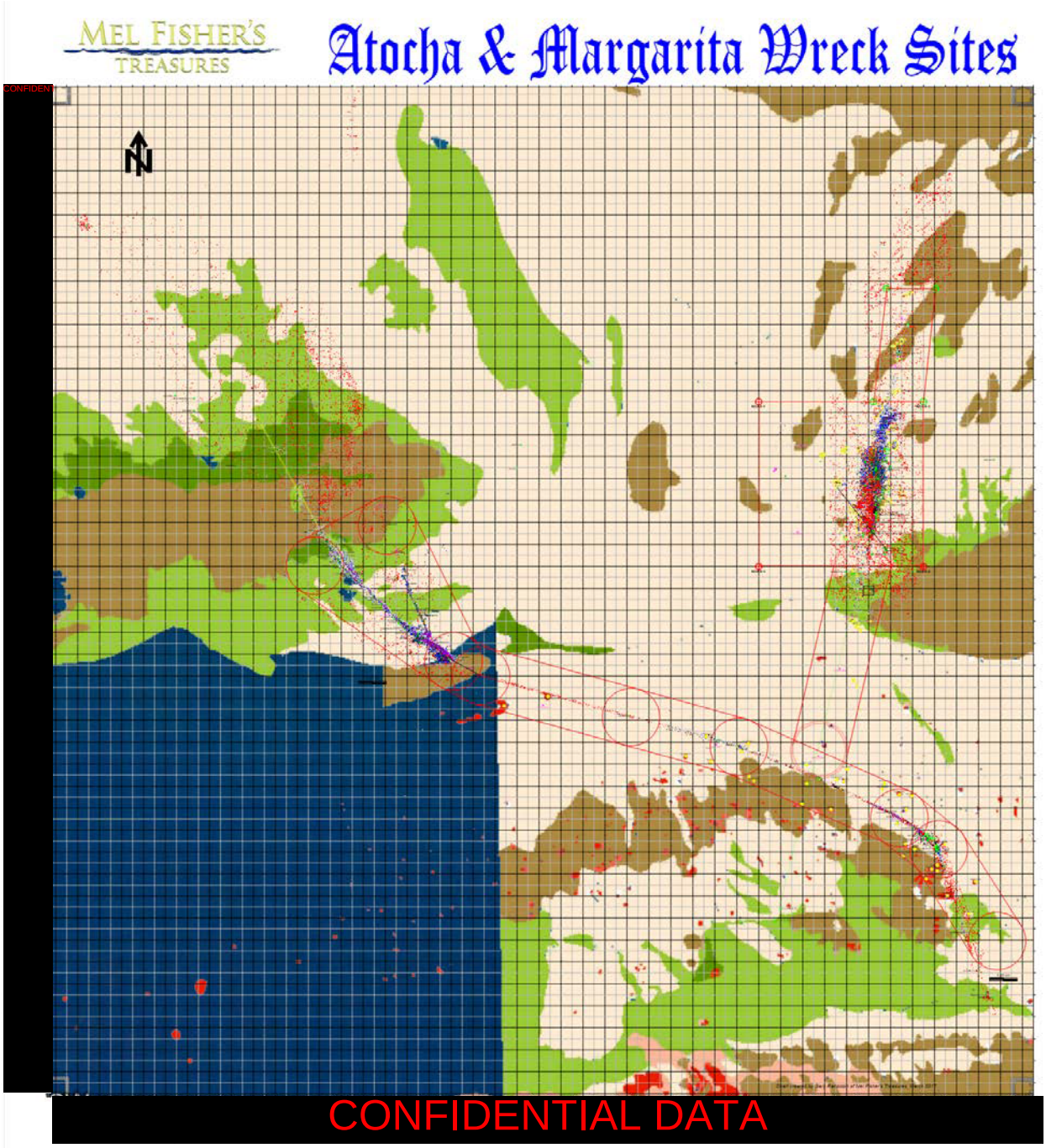
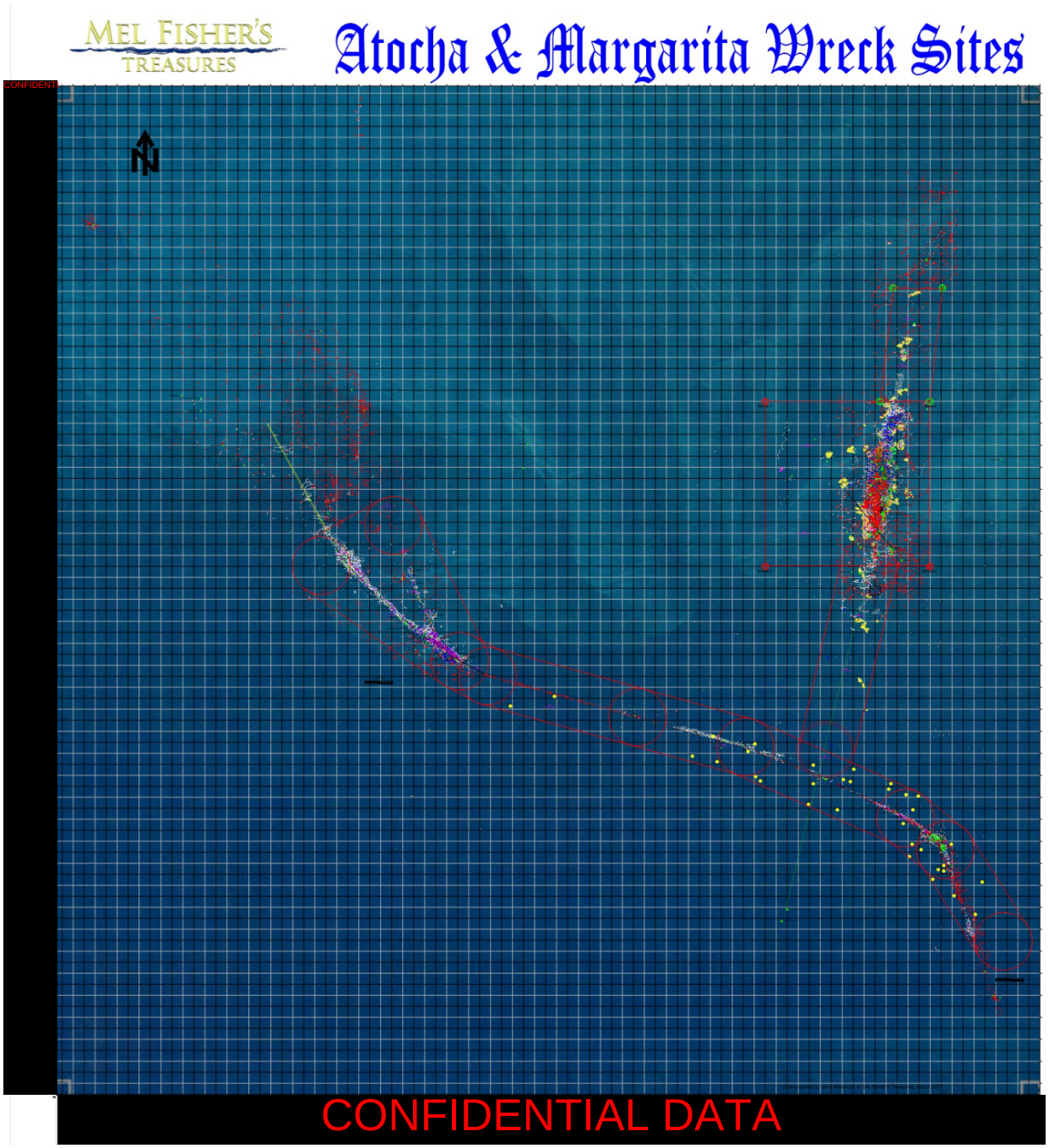


Chart Name:	U11439
Description::	UNITED STATES - GULF COAST. FLORIDA. SAND KEY TO REBECCA SHOAL.
WF Issue:	24
Source Scale:	1:80000
Horizontal Datum:	WGS-84

5.9.1 Overall Site Chart with All artifacts, excavations, magnetometer targets, FWC benthic habitat layer:

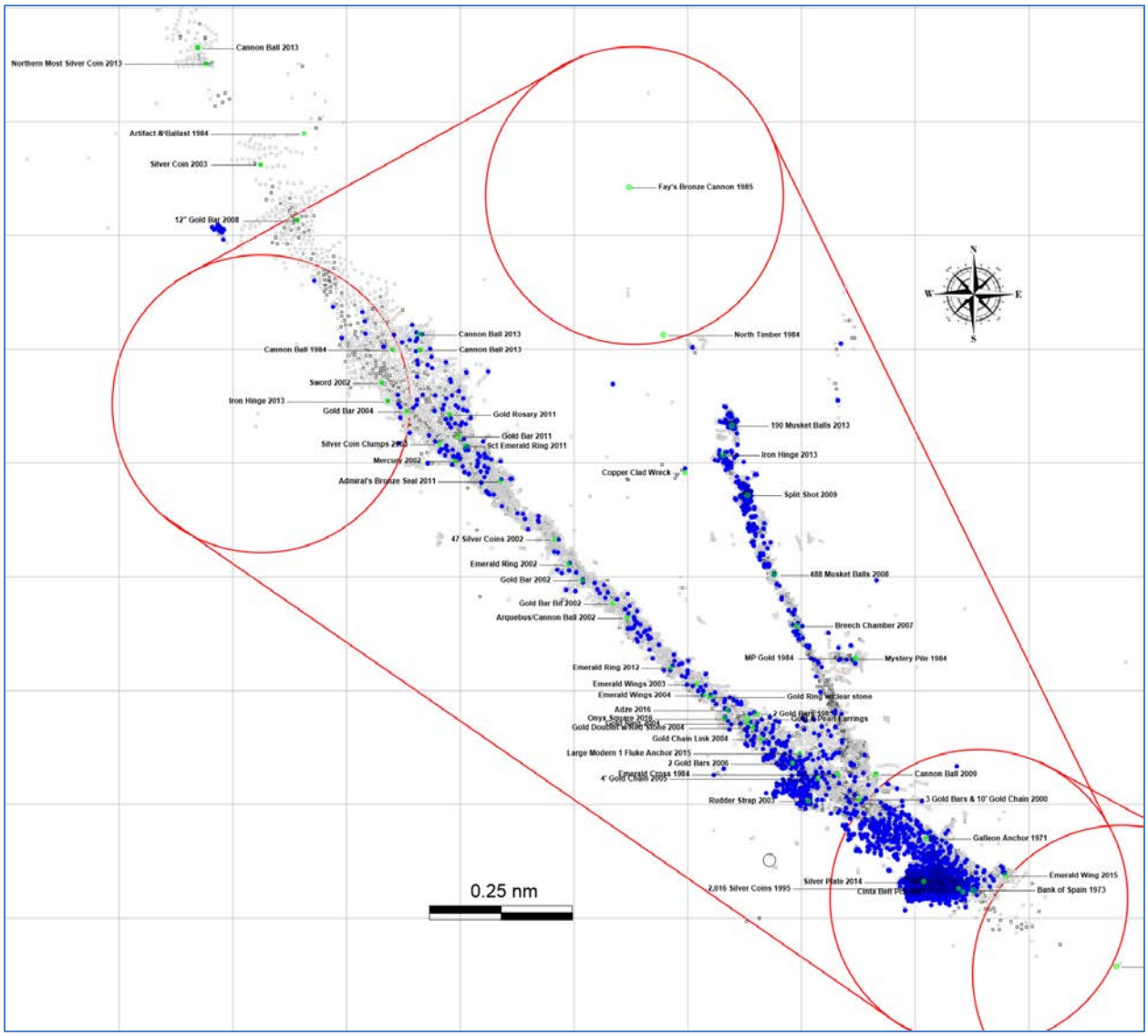


5.9.2 Overall Site Chart with All artifacts, excavations and magnetometer targets, Google Earth image showing Quicksands areas:

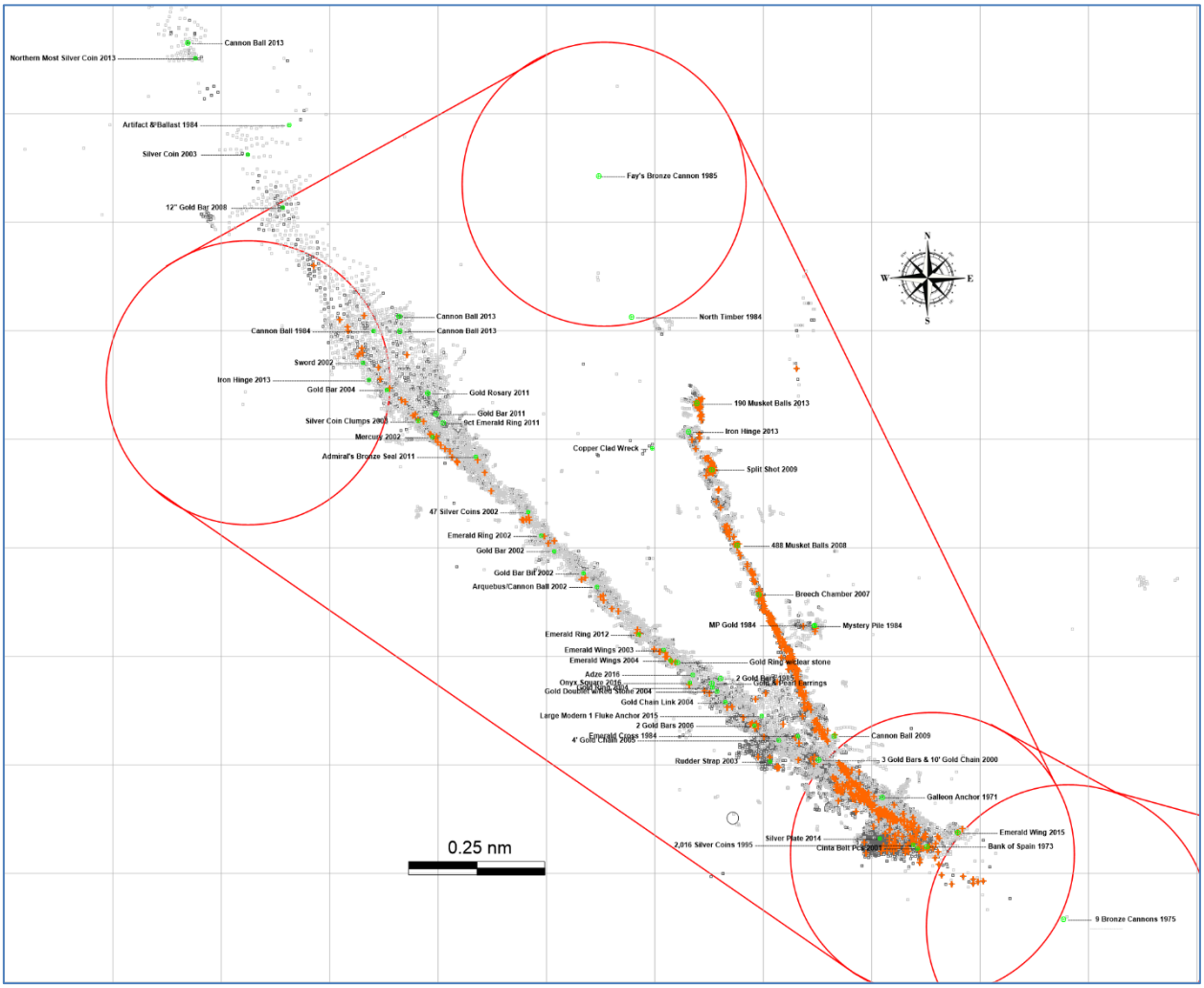


The following charts show the various artifact "types" and their scatter and dispersal patterns within the *Quicksands* area of the *Atocha* wreck site.

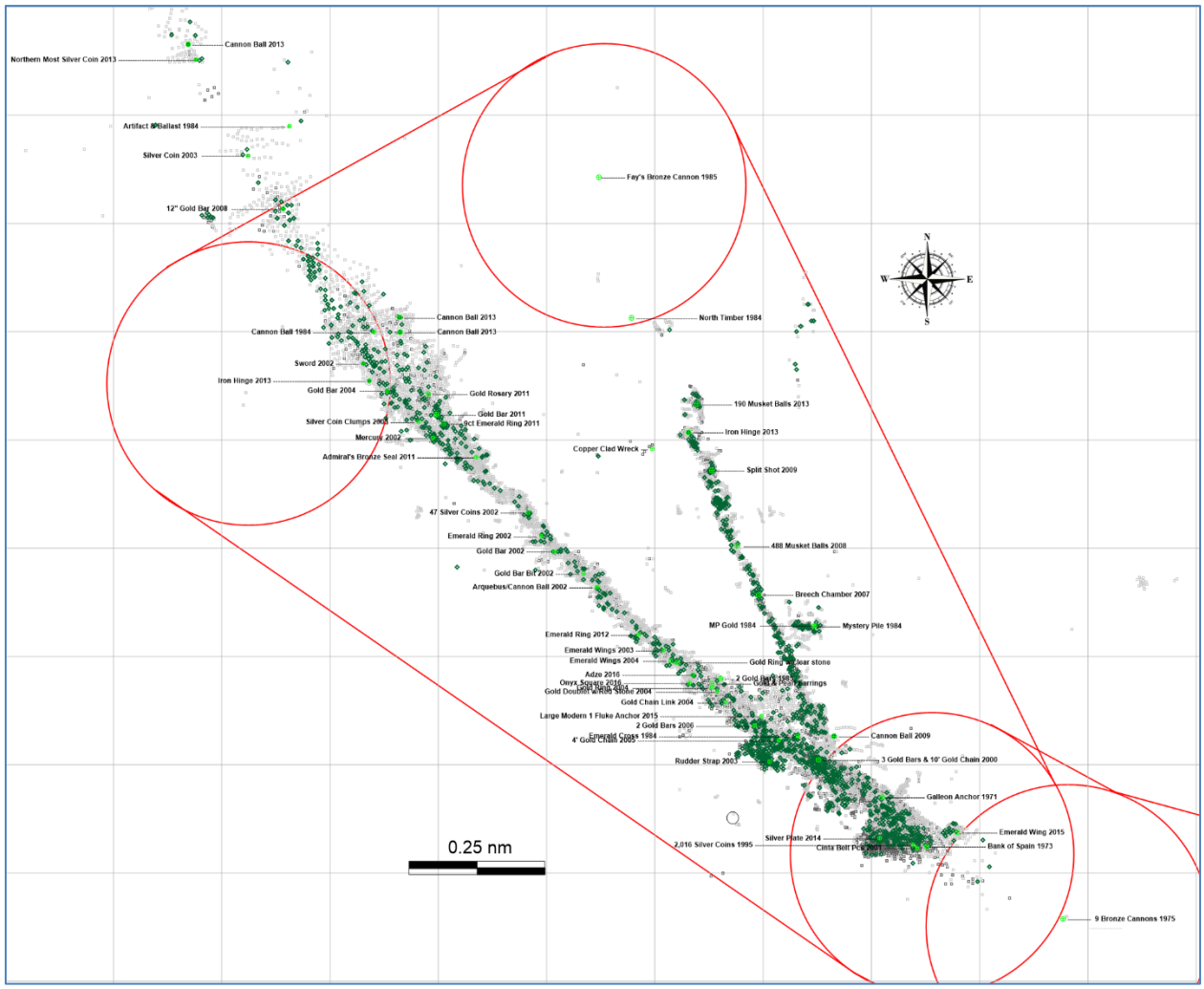
5.9.3 Atocha Ceramic Artifacts



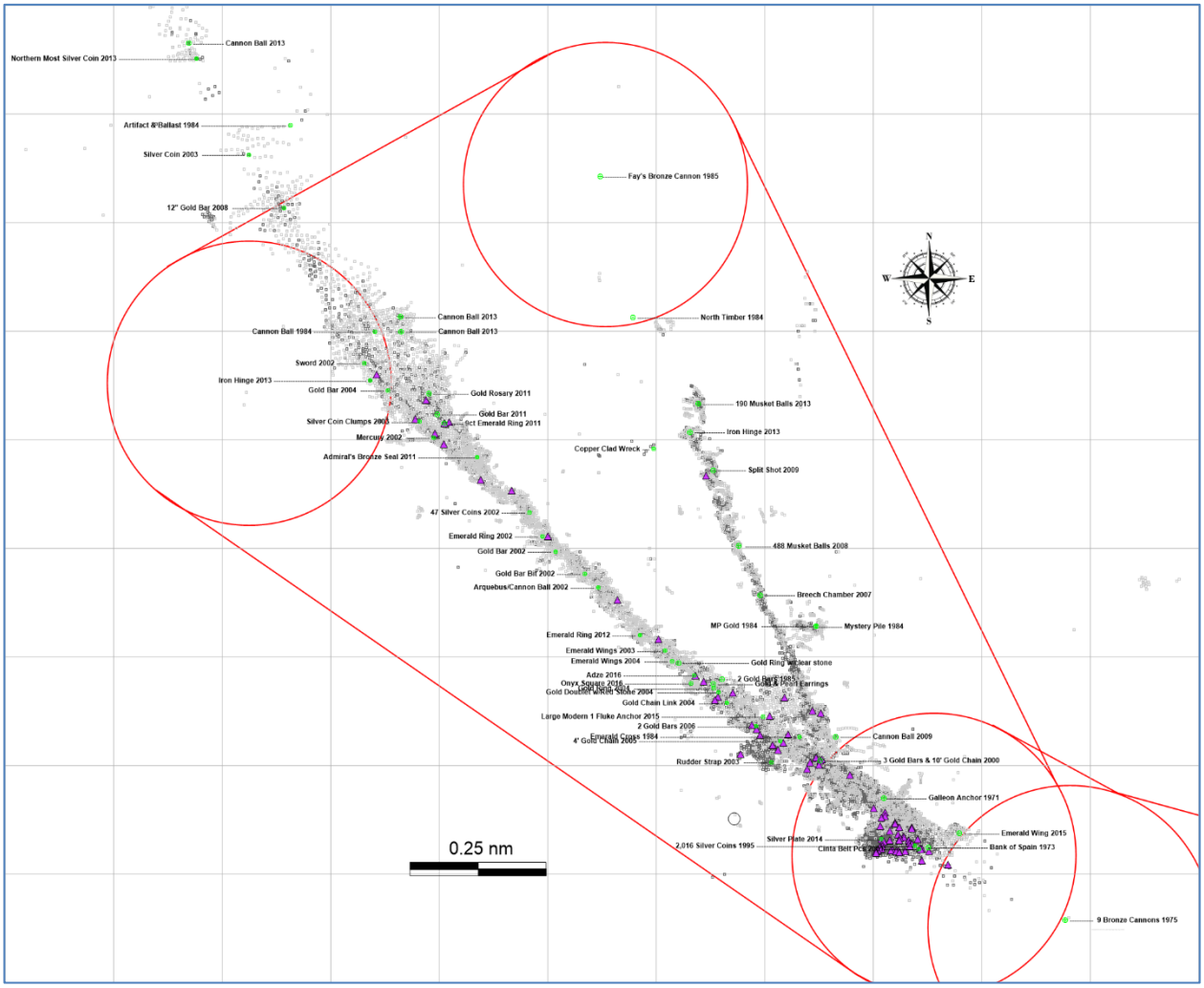
5.9.4 Atocha Lead Artifacts



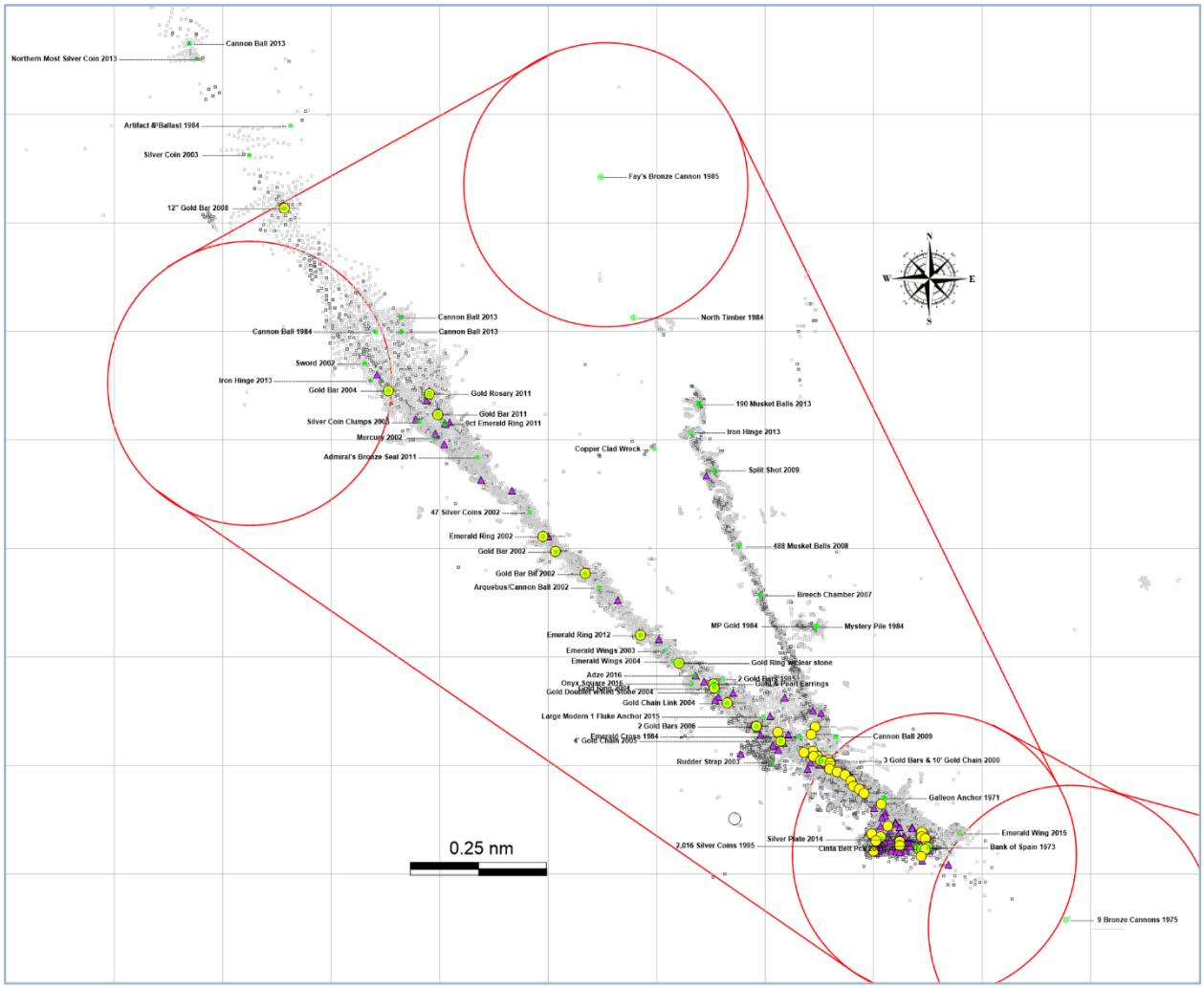
5.9.5 Atocha Iron Artifacts



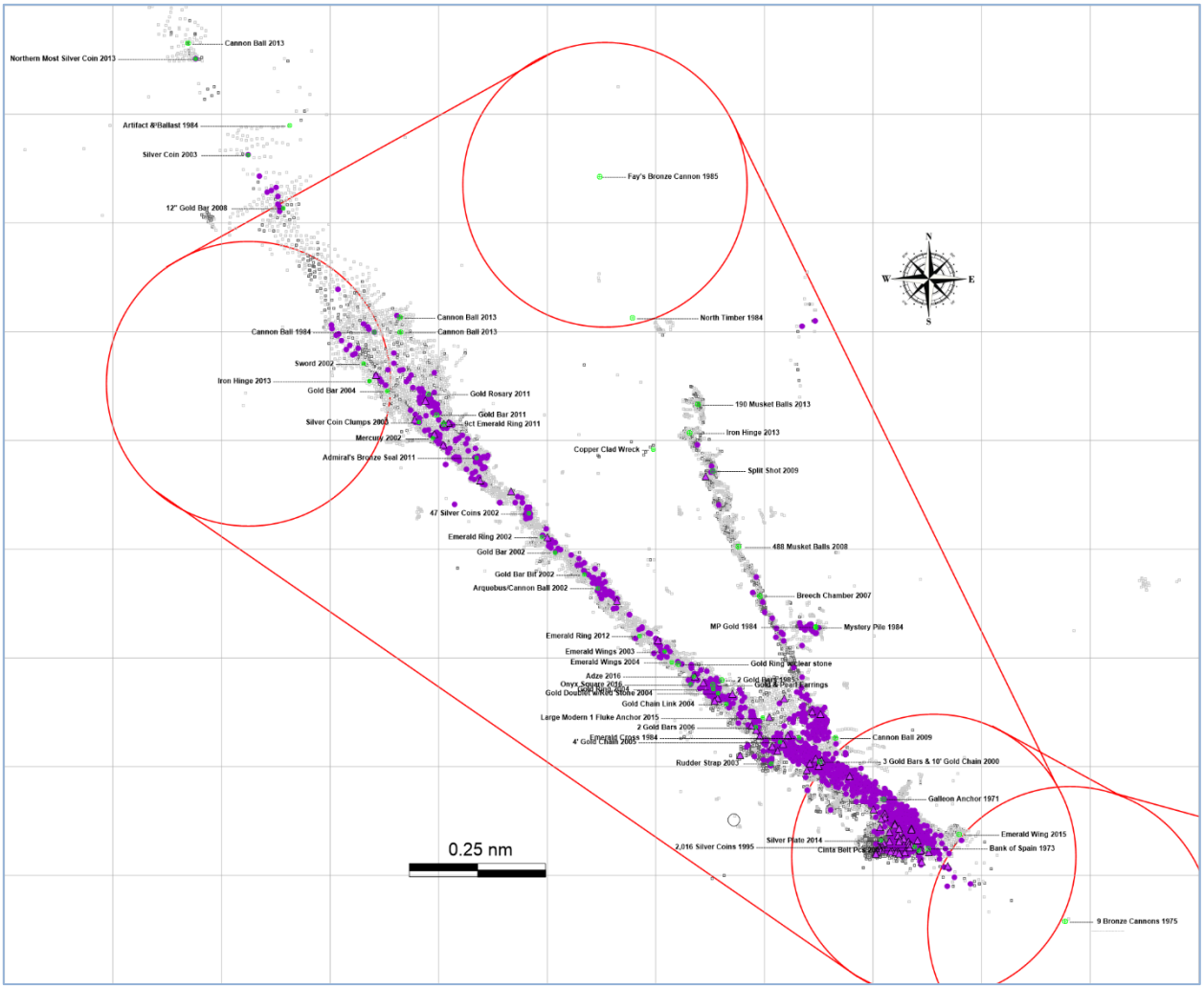
5.9.6 Atocha Silver Artifacts



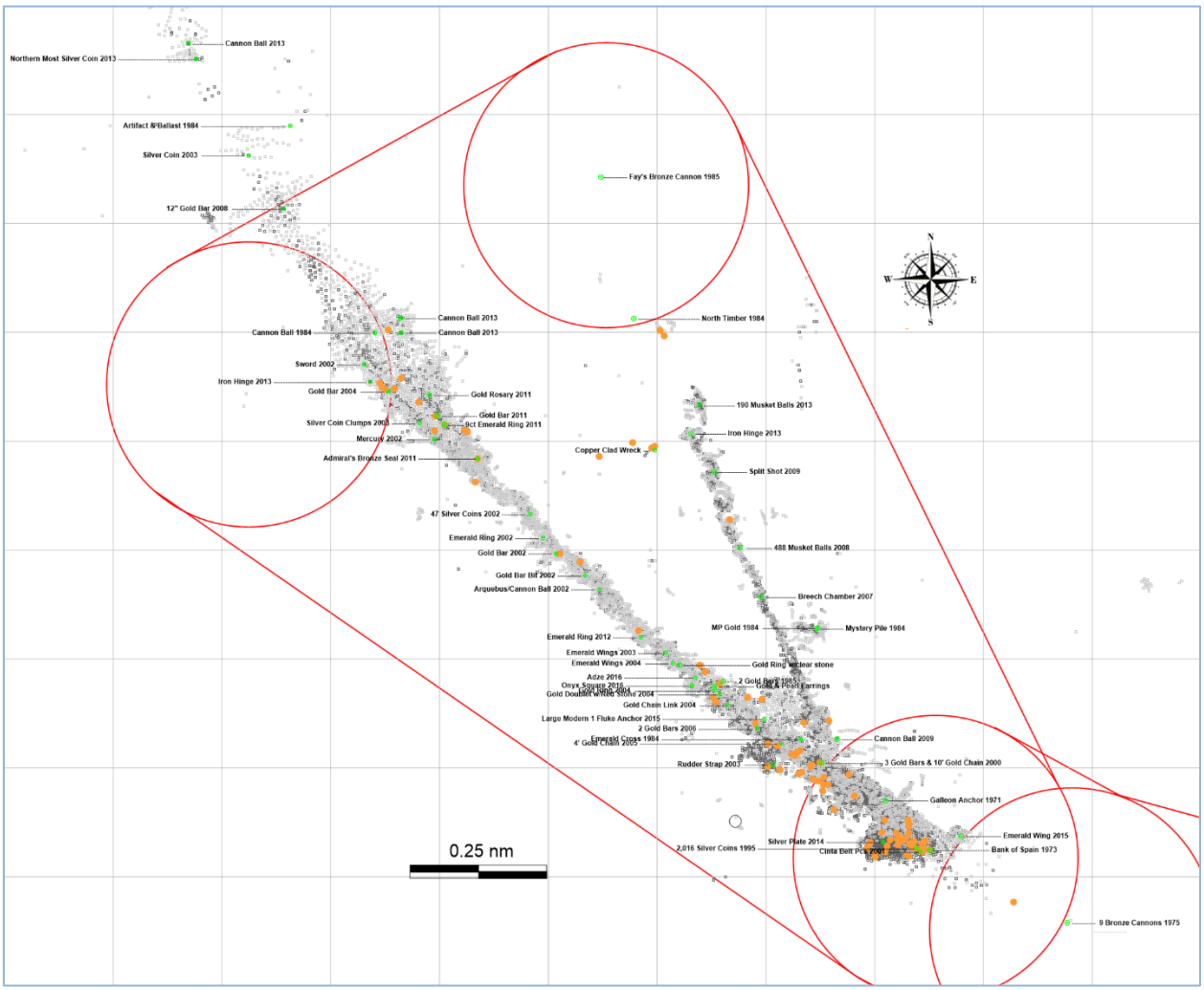
5.9.7 Atocha Gold Artifacts



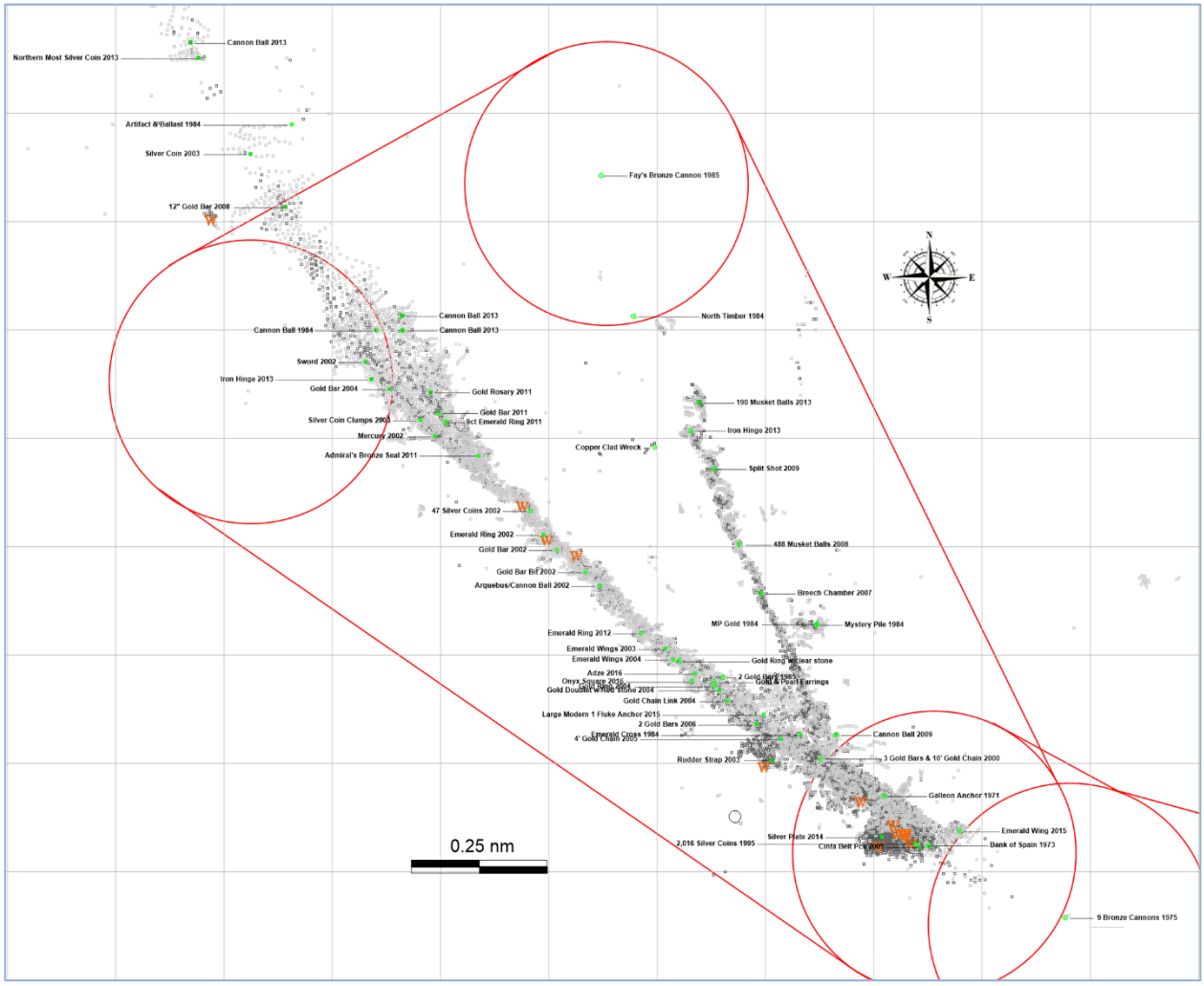
5.9.8 Atocha Silver Coins



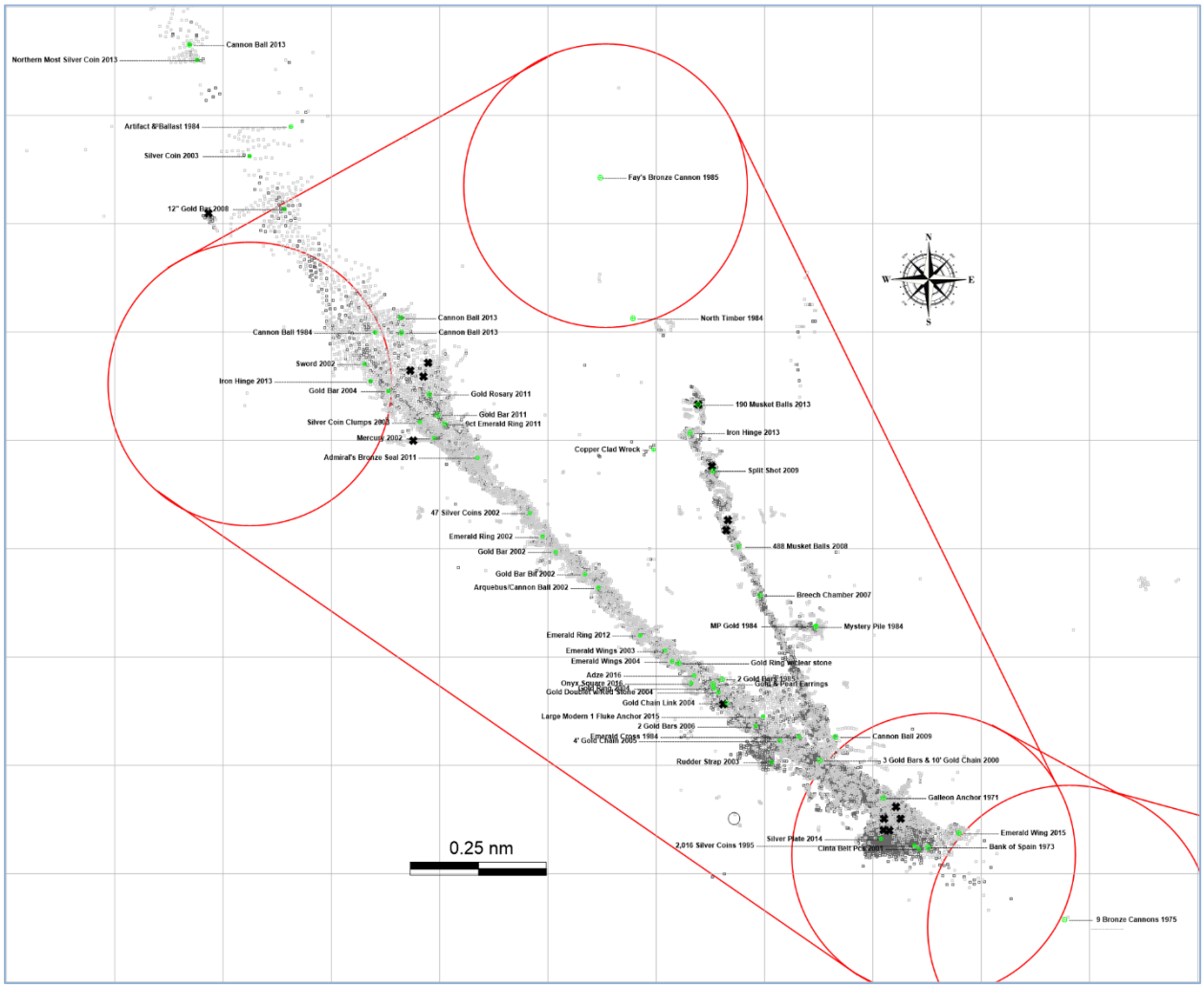
5.9.9 Atocha Copper Artifacts



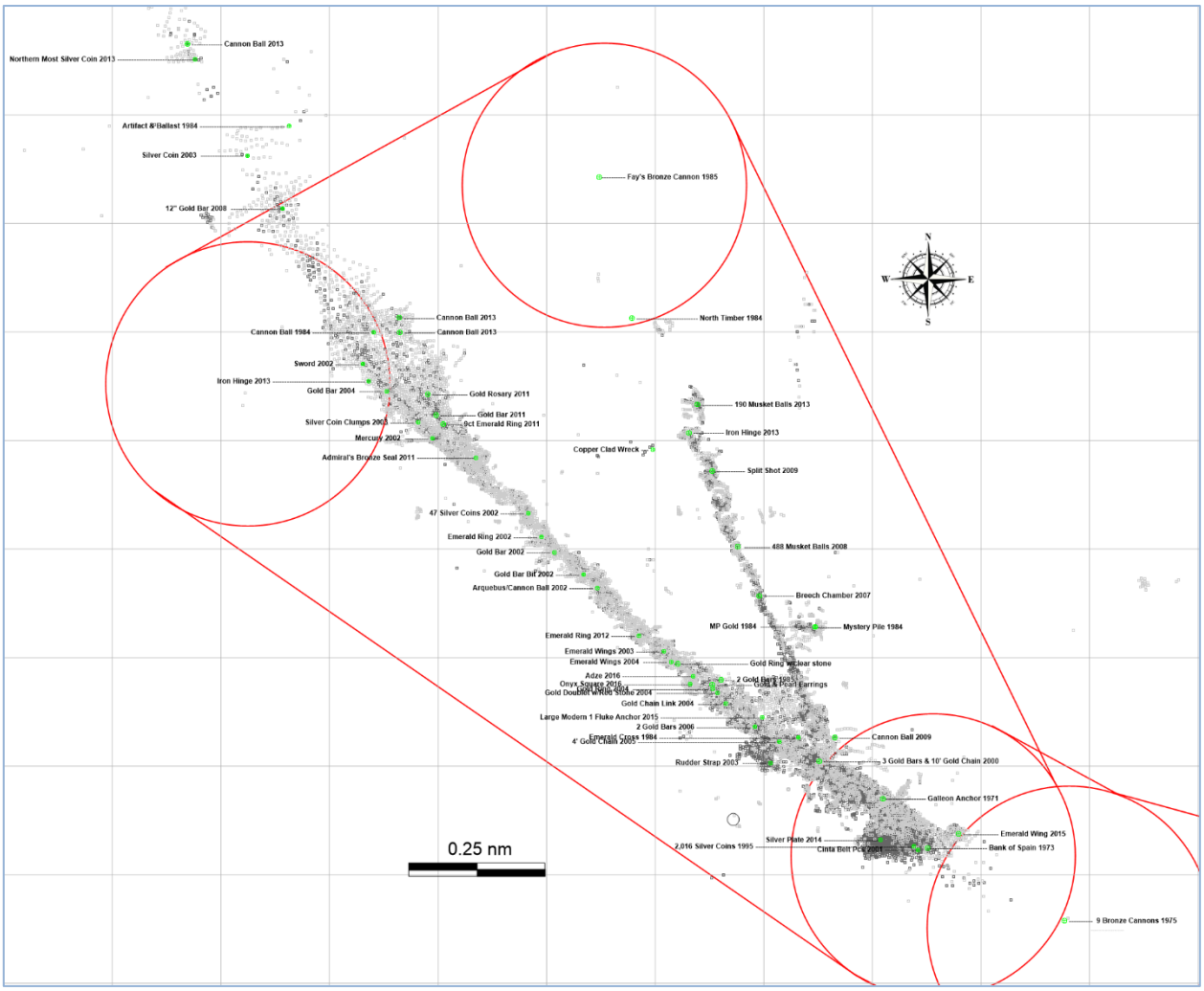
5.9.10 Atocha Wood Artifacts



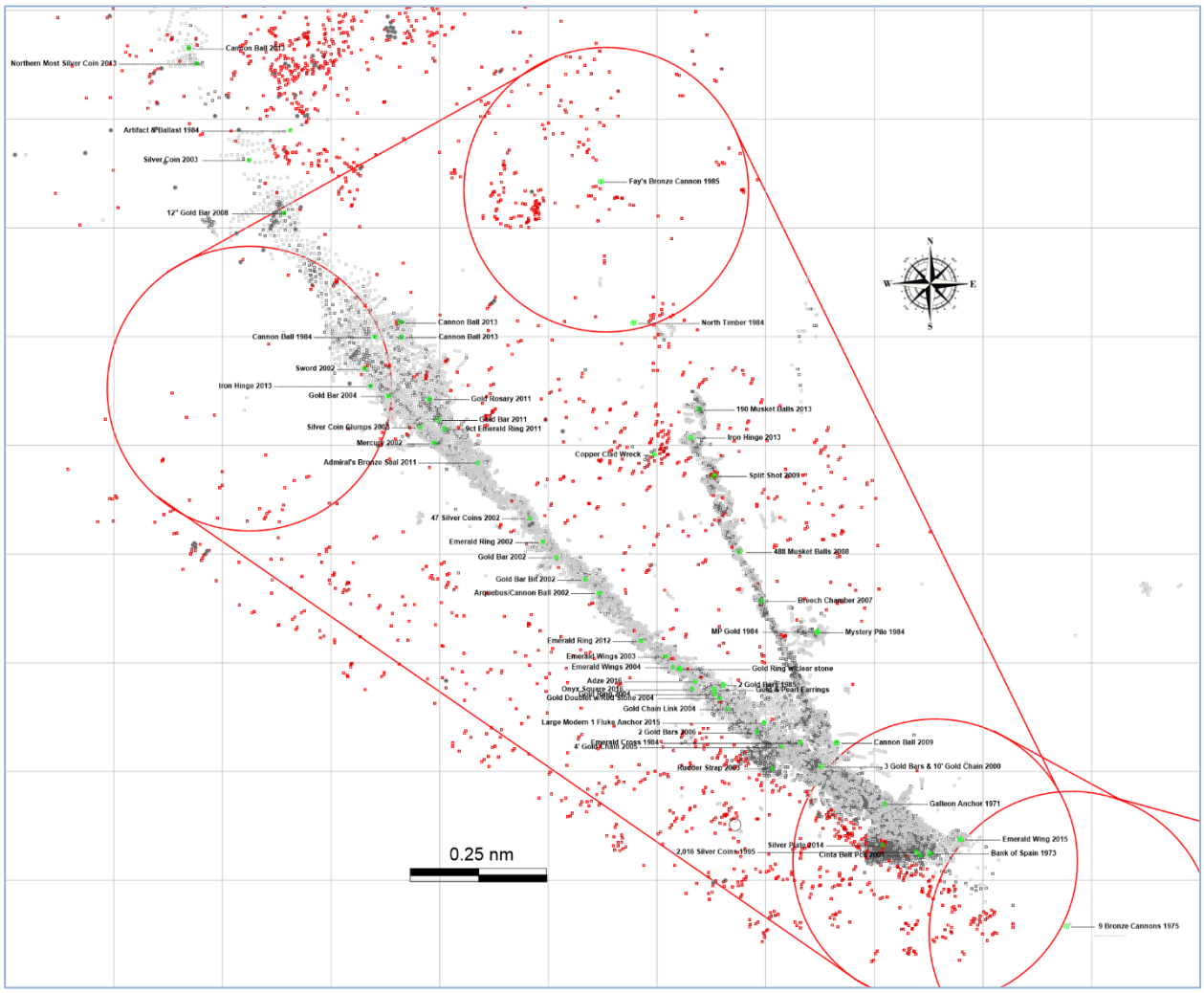
5.9.11 Atocha Animal Bones



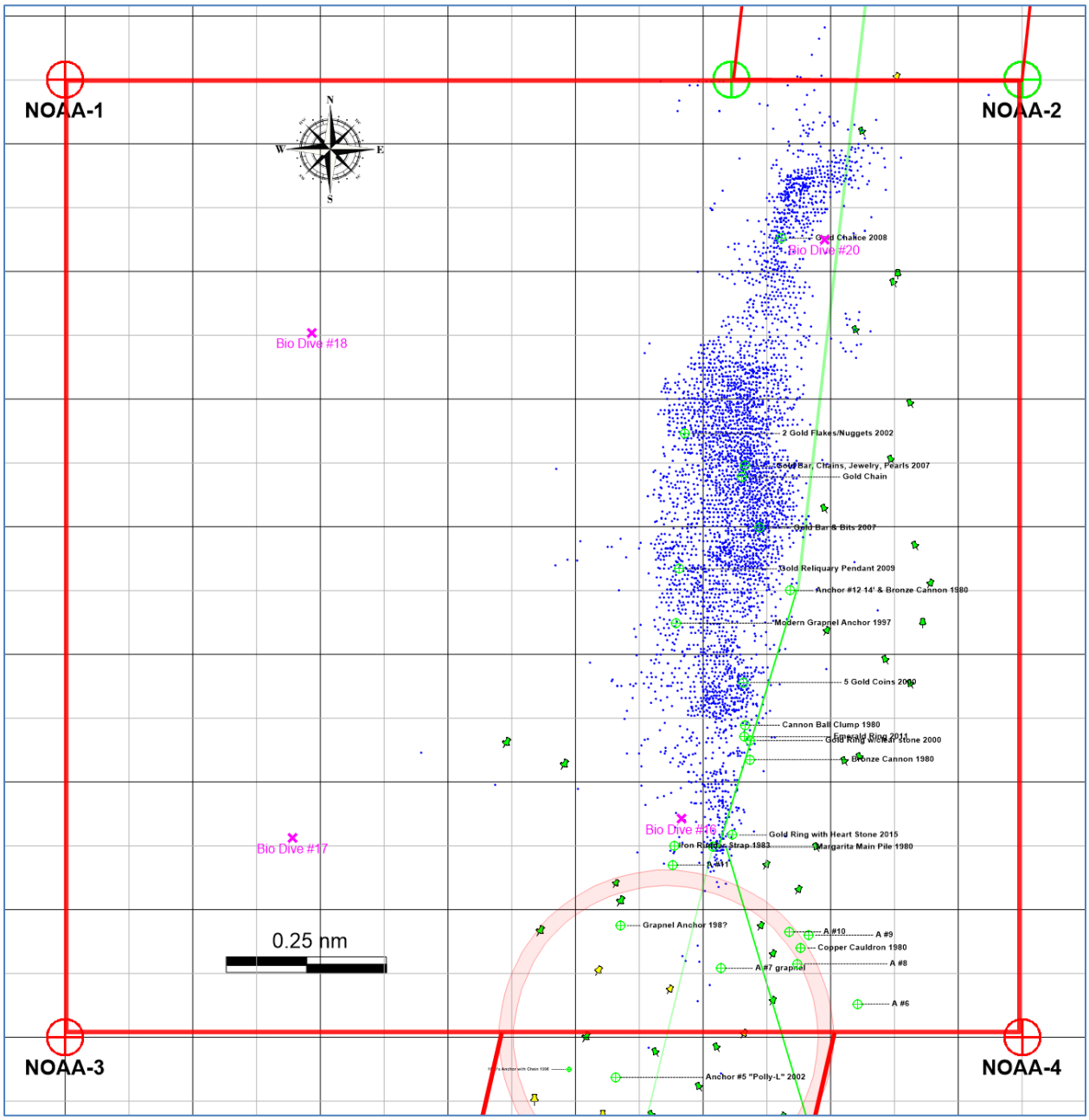
5.9.12 Atocha Excavation Areas Only



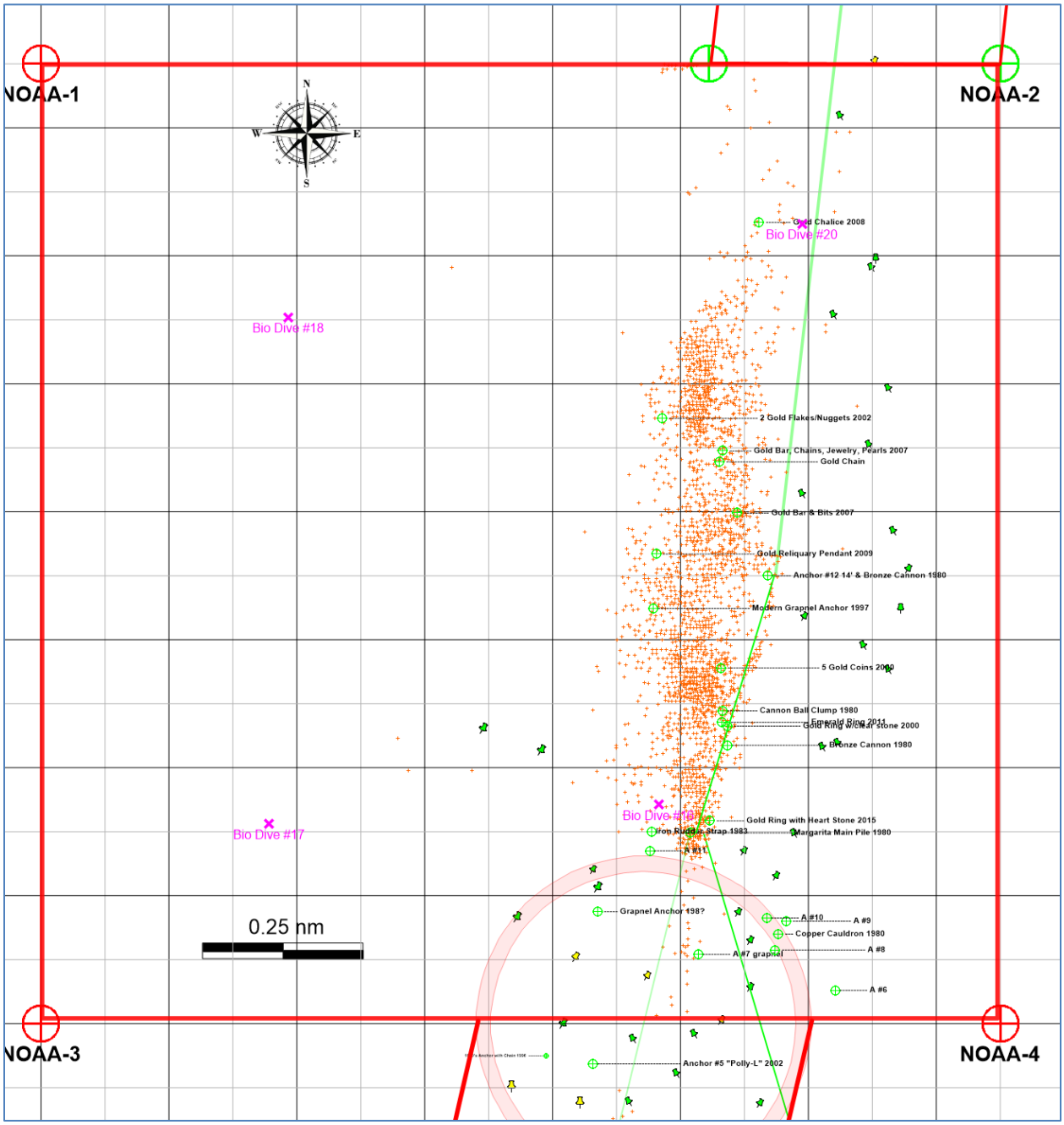
5.9.13 Atocha Magnetometer Targets - *Quicksands*



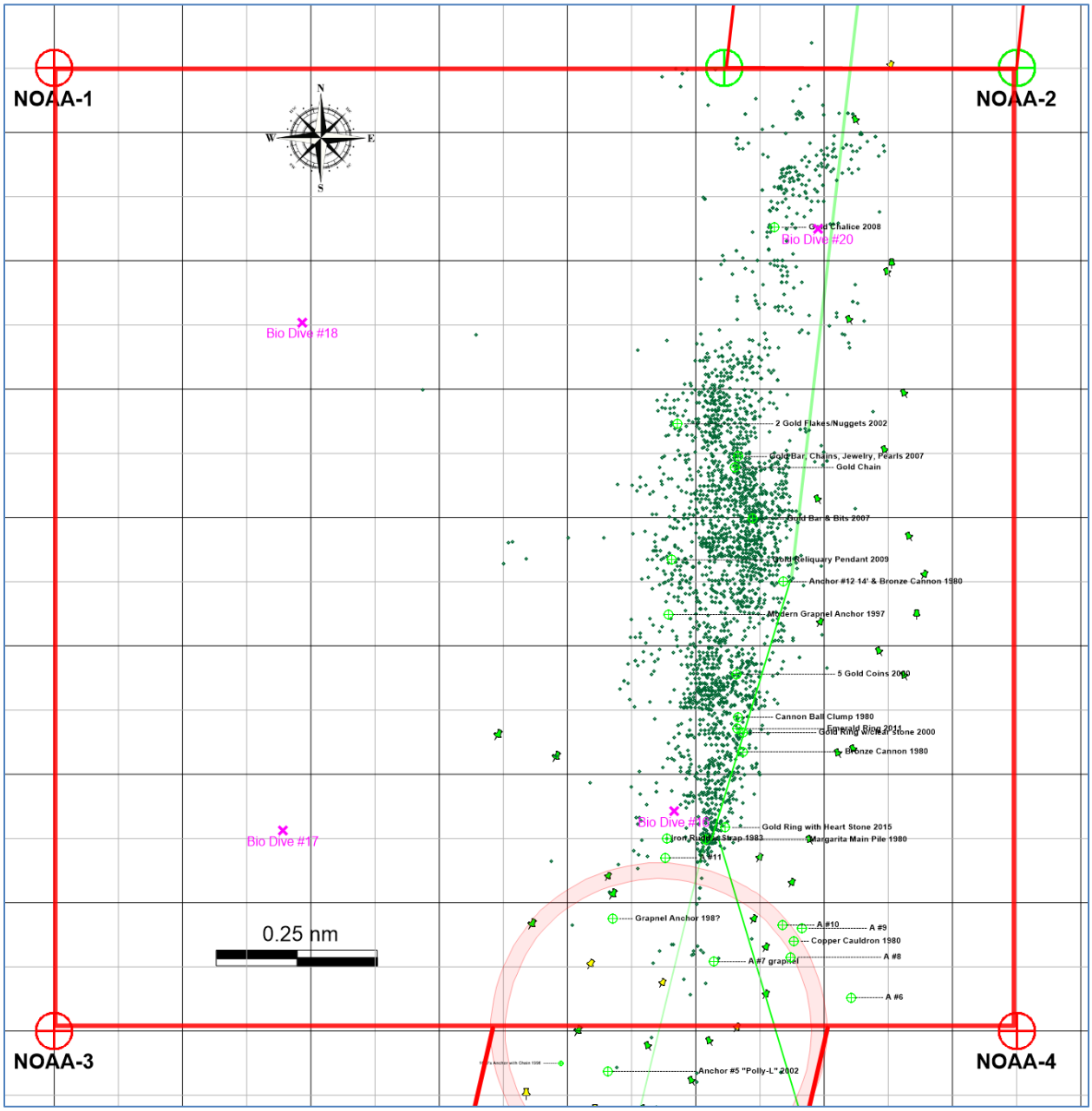
5.9.14 Margarita Ceramic Artifacts



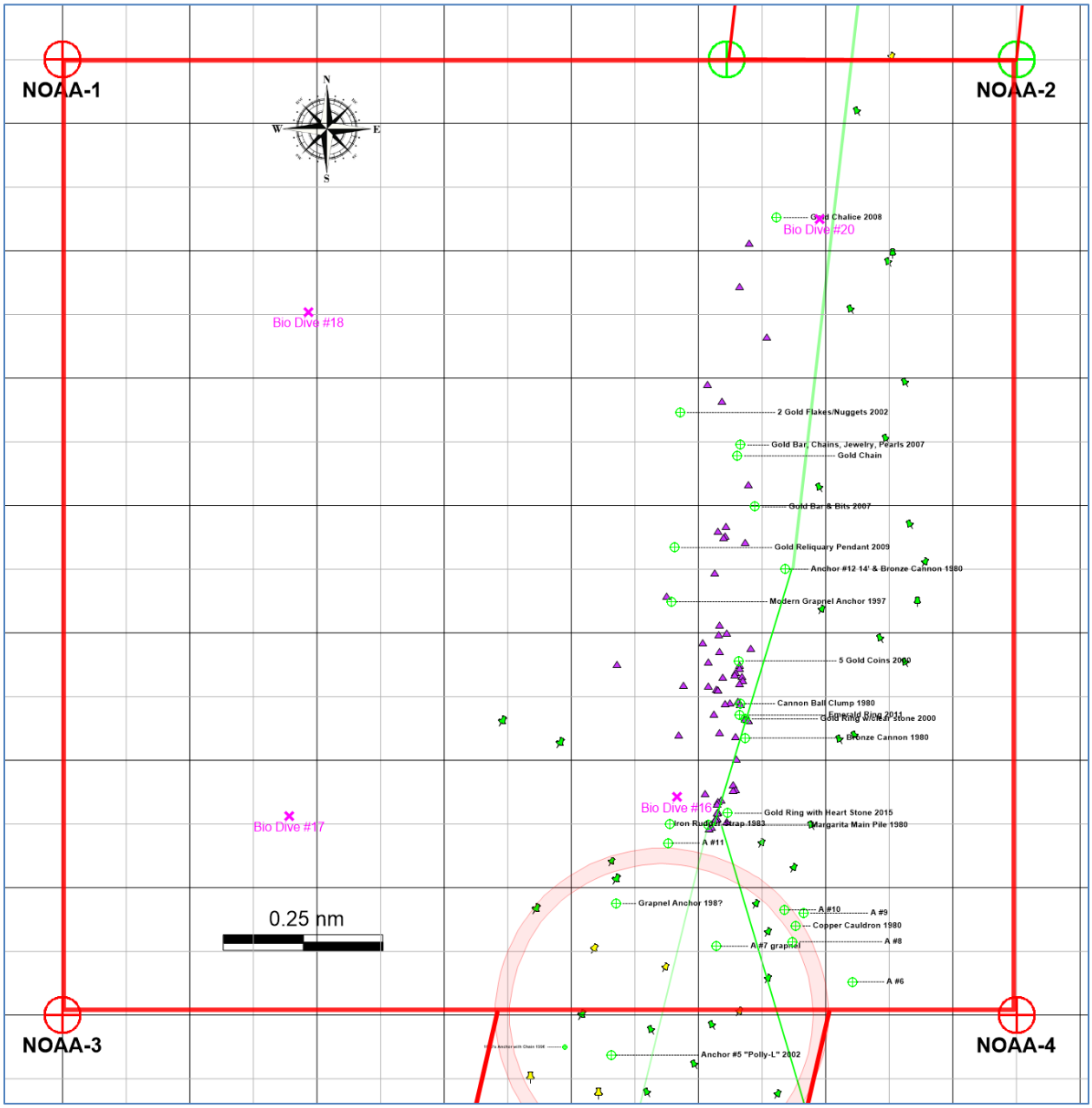
5.9.15 Margarita Lead Artifacts



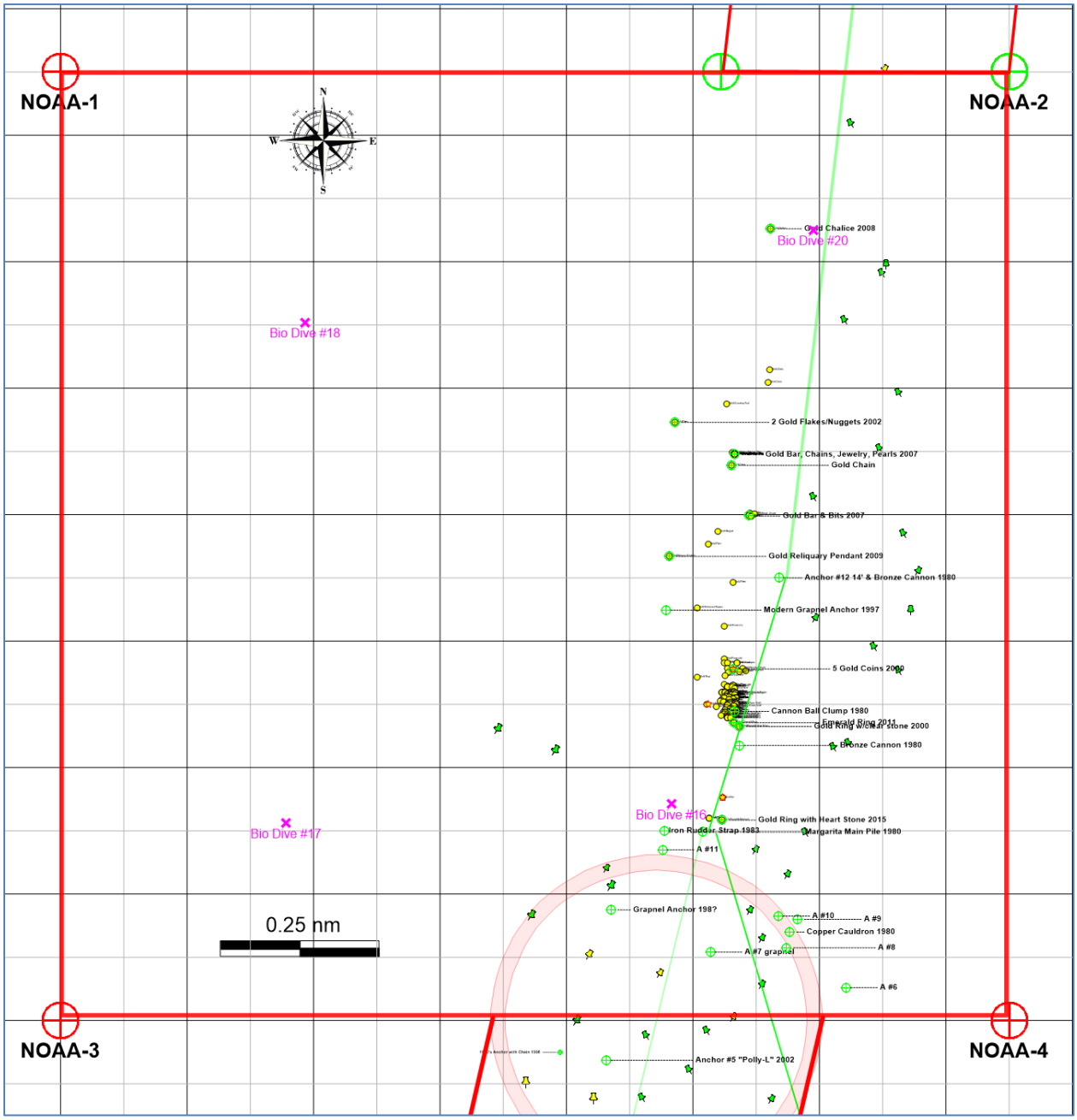
5.9.16 Margarita Iron Artifacts



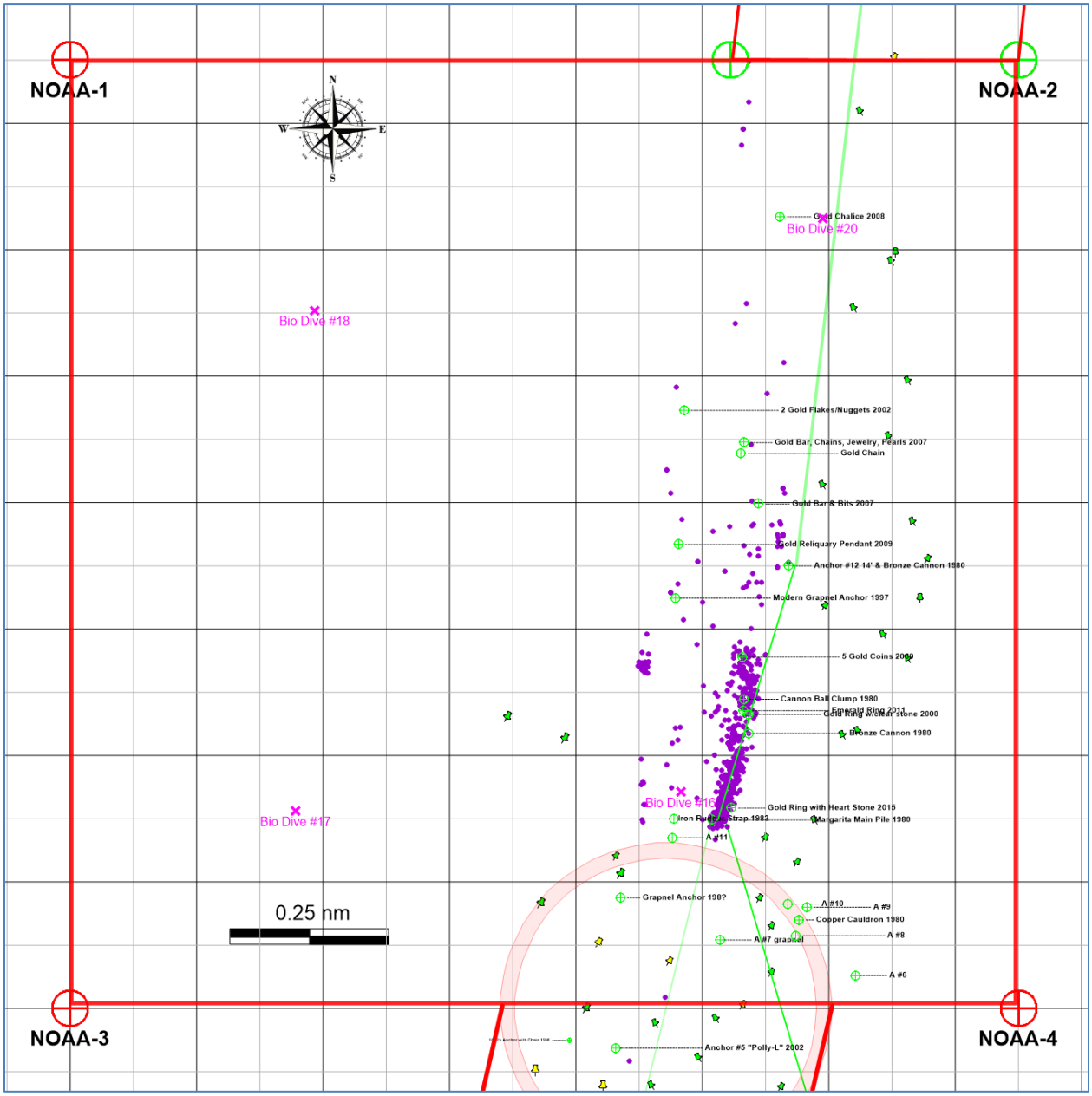
5.9.16 Margarita Silver Artifacts



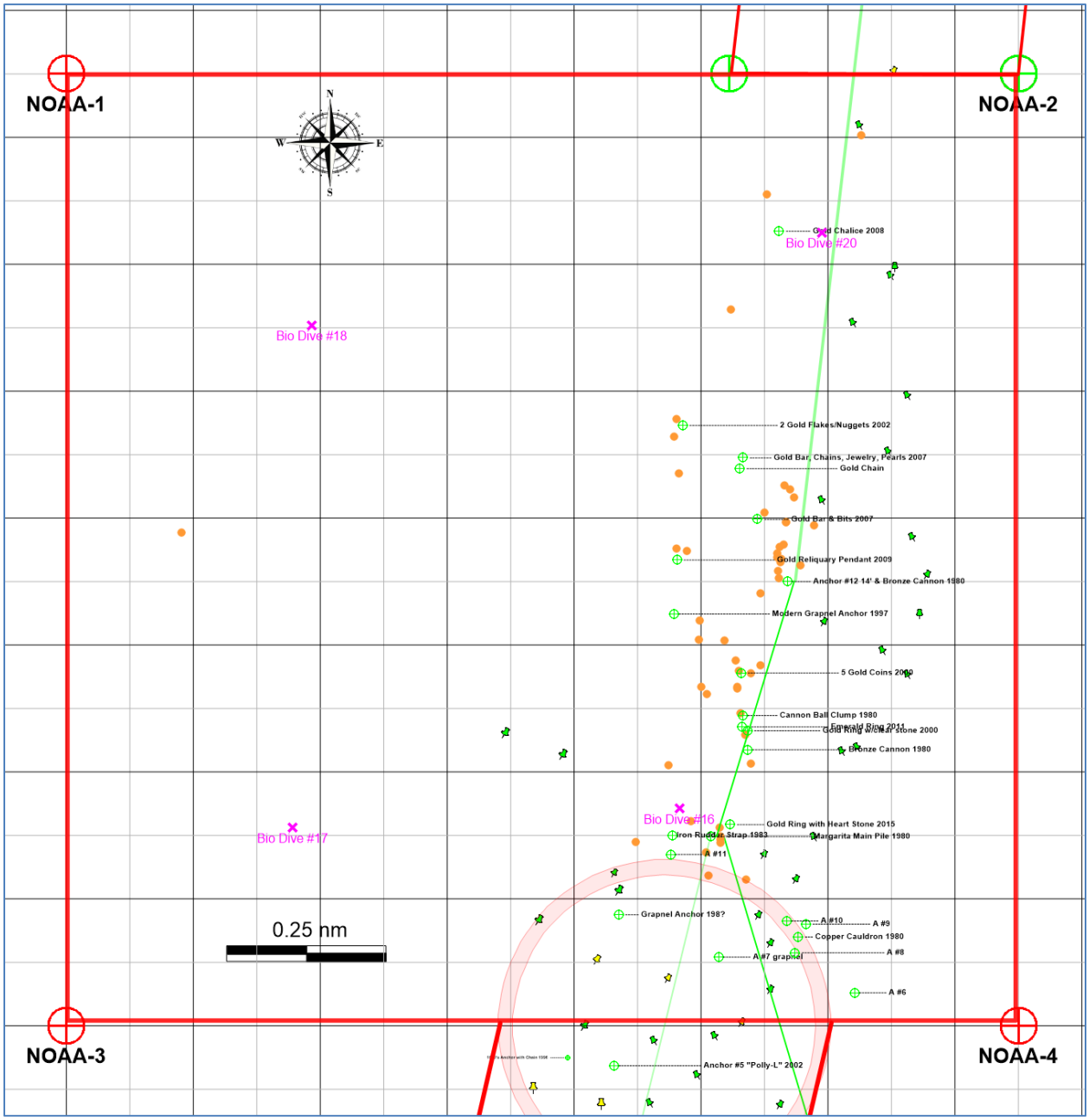
5.9.17 Margarita Gold Artifacts



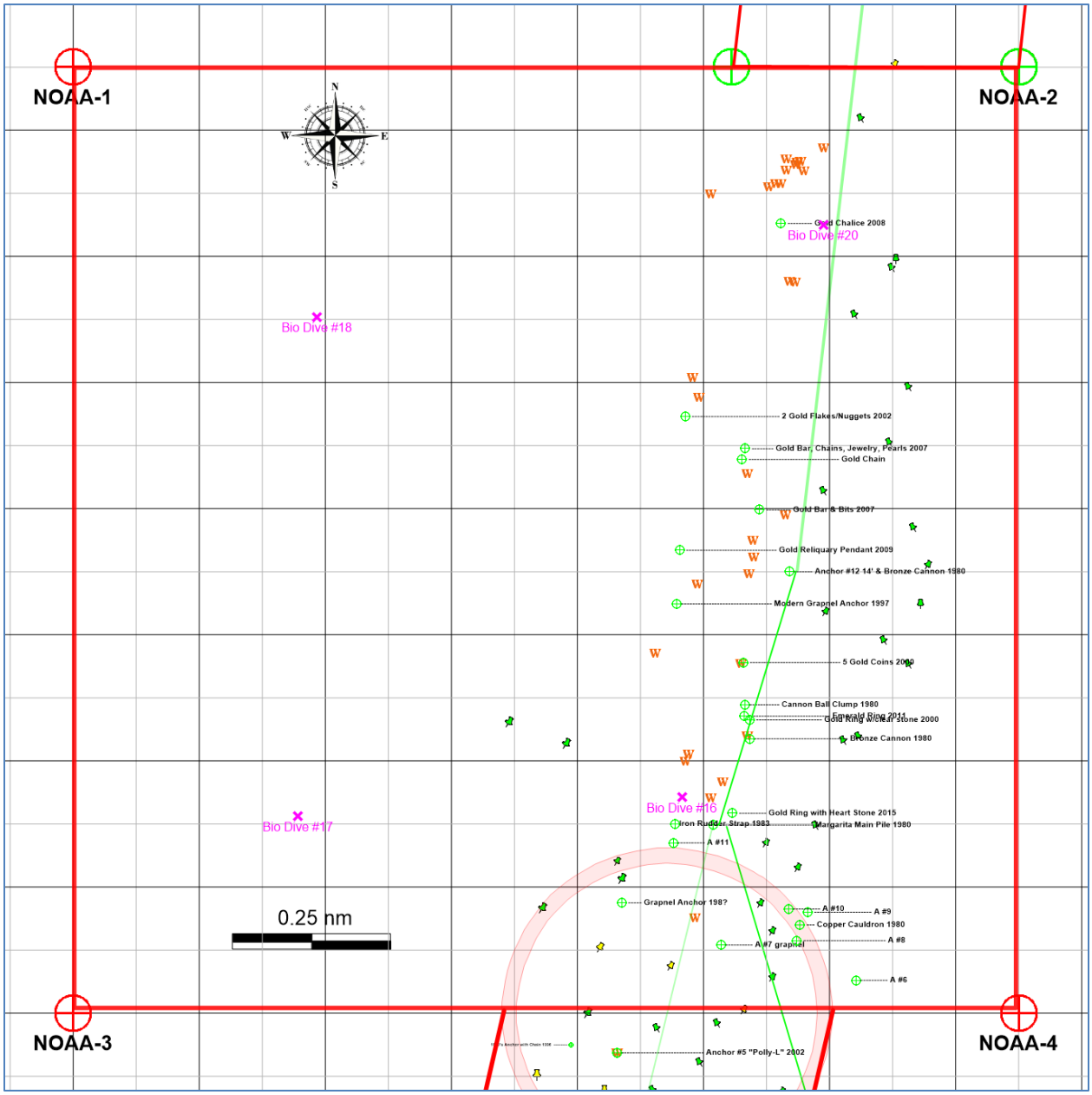
5.9.18 Margarita Silvr Coins



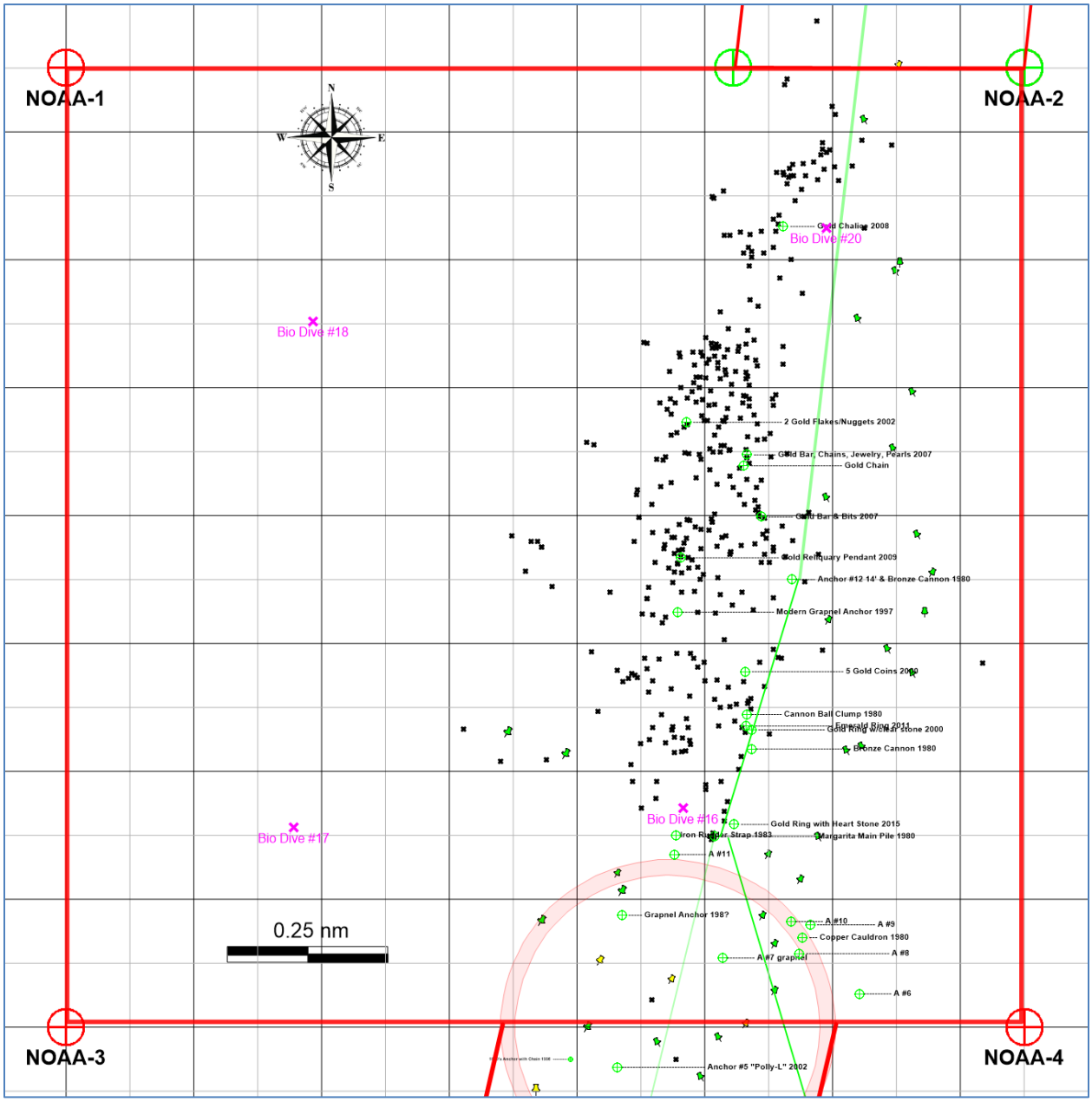
5.9.19 Margarita Copper Artifacts



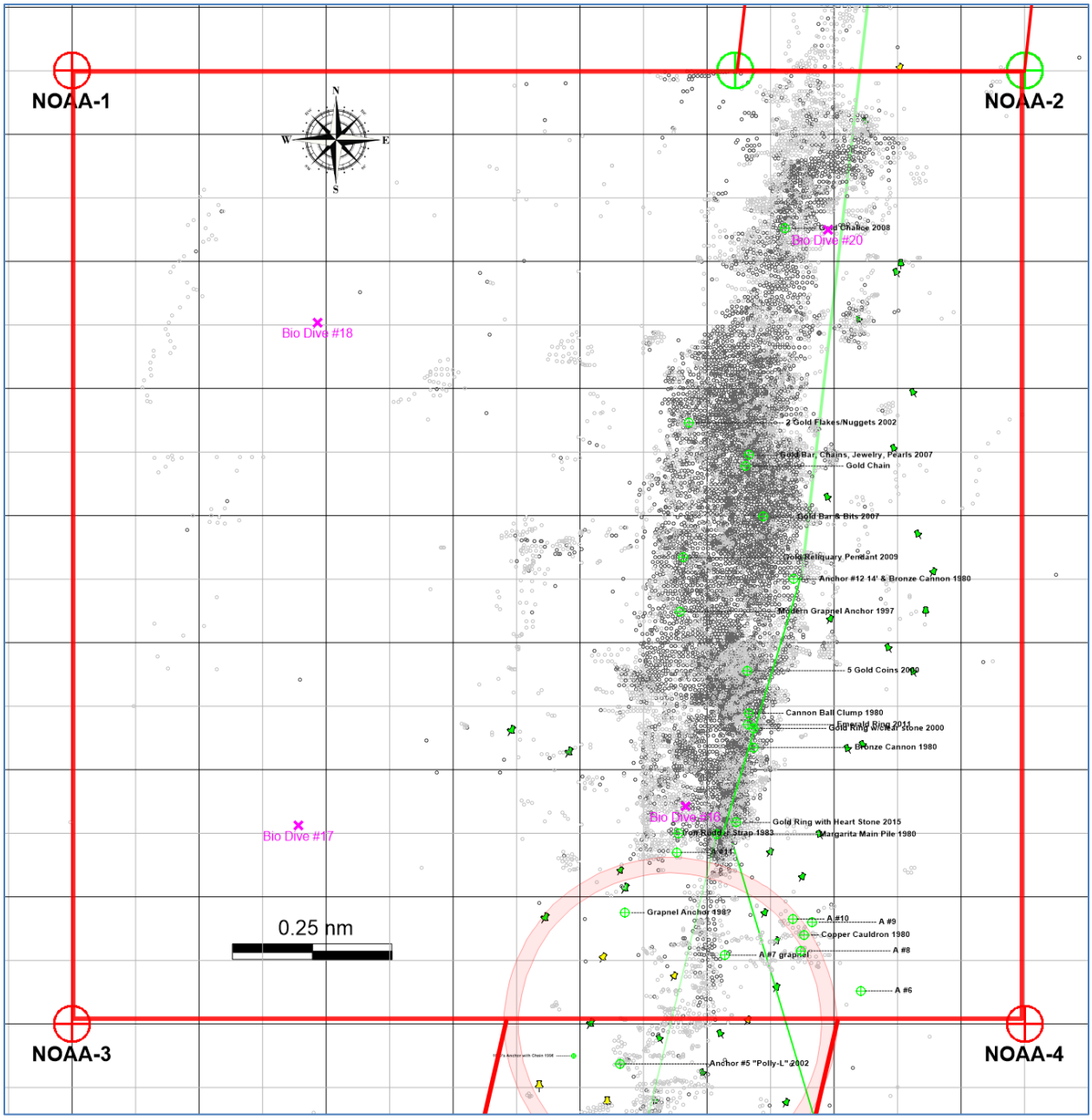
5.9.20 Margarita Wood Artifacts



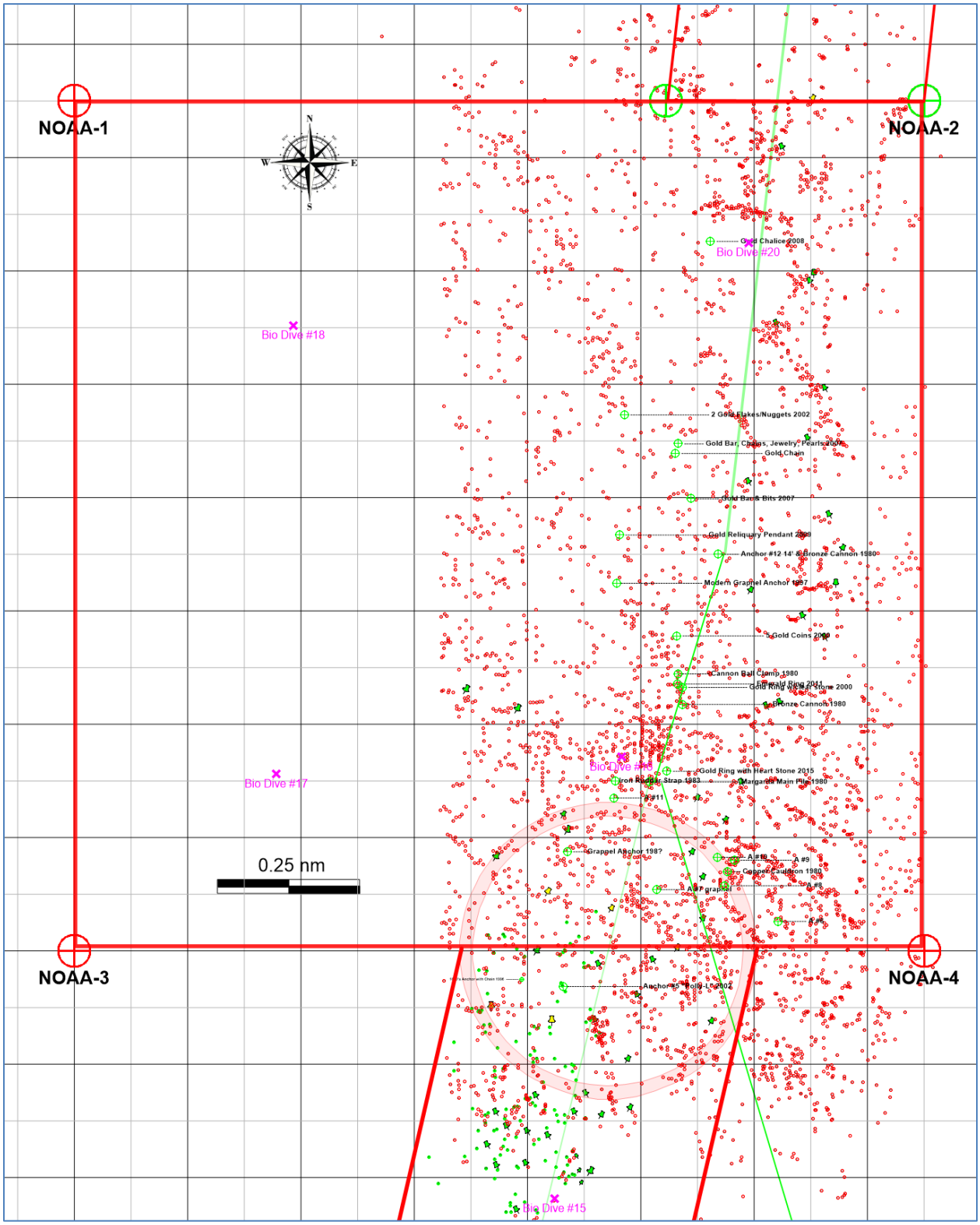
5.9.21 Margarita Animal Bones



5.9.22 Margarita Excavation Areas Only



5.9.23 Margarita Magnetometer Targets



5.10 Portions of the Project Area or Identified Sites Not Investigated

The *Atocha* site is over 9 nautical miles long, most of which has been searched over the nearly 5 deacades of salvage opearations. As technologies develop, further investigation of areas already searched will be conducted to attempt to locate previously undetectable artifacts. The etent of the site will be systematically increased as the trail of artifacts develop.

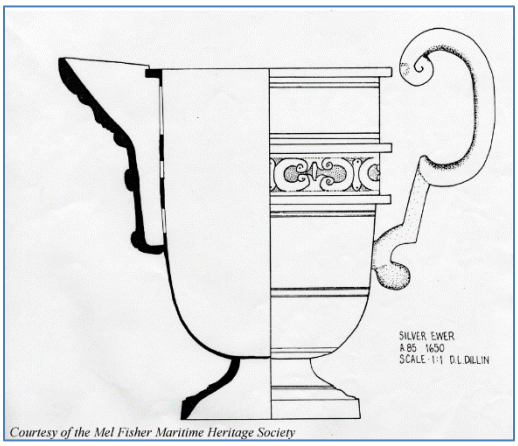
5.11 Photographs of Each Site

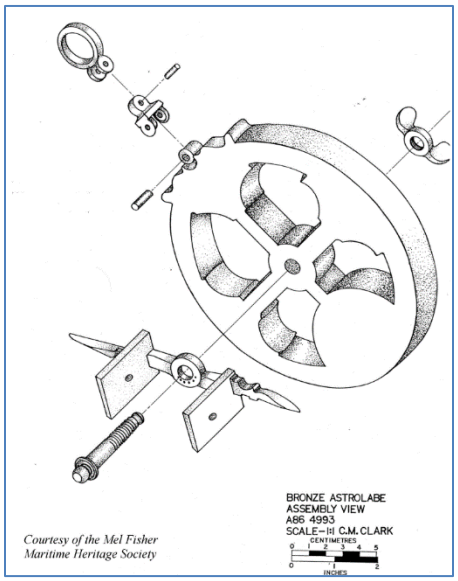
As these are widley scattered underwater wreck sites, it is imposible to photograph them as you would a terrestrial site.

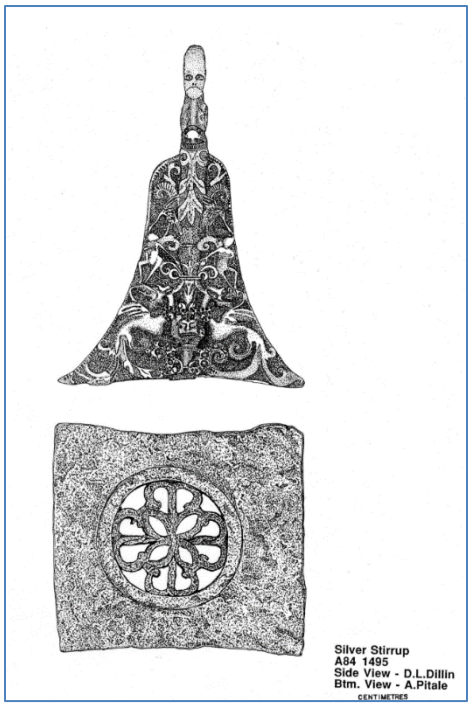
5.12 Artifact Illustrations

During the many decades of work on the *Atocha*, *Margarita* and 1715 Fleet wreck sites there have been many artifacts that have been drawn by various artits and archaeologists. Many of these illustrations have been donated to the Mel Fisher Maritime Museum's collection by Motivation, Inc. and its predecessor salvage companies. The majority of these hand drawings have been made available to the general public by Motivation, Inc. through our on-line research database at https://www.melfisherartifacts.com/

In the Main Menu, choose "Illustrations" to see the various caatagories available.







5.13 Special Survey Techniques & Equipment

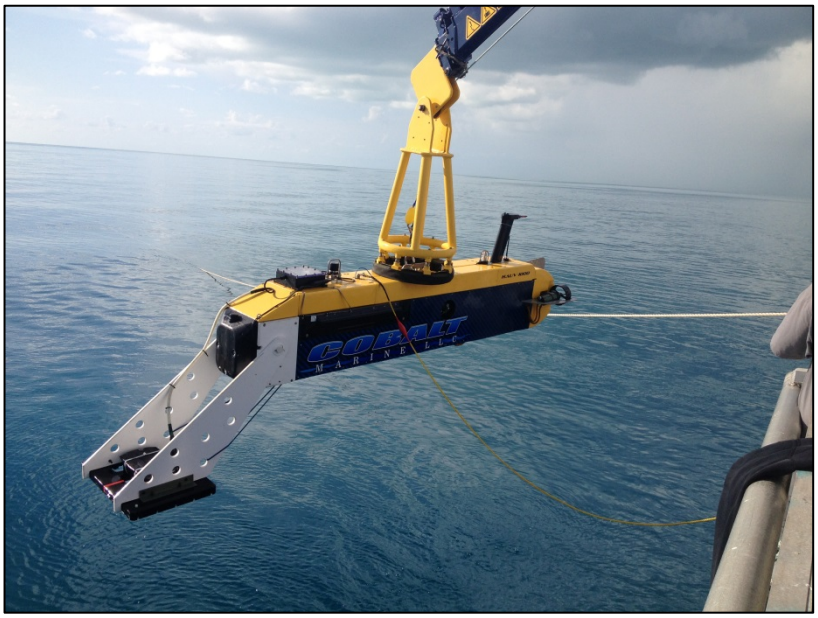
5.13.1 Developing Technologies in Historic Shipwreck Search & Recovery Operations

By Gary Randolph

Mel Fisher's enters the Age of Autonomy!

For the past four years, the Mel Fisher team has been working with a number of the world's most advanced marine equipment manufacturers to bring together the highly-specialized components required to assemble the most technologically advanced historic shipwreck survey & identification vehicles ever used. We are very proud to introduce you all to "Dolores", our Hybrid Autonomous Underwater Vehicle (HAUV) named in honor and memory of Mel Fisher's wife *Dolores Fisher*.

Mel Fisher's Expeditions has been testing "Dolores" in hybrid mode (HAUV mode, attached to fiber optic umbilical) to conduct preliminary side scan sonar, magnetometer and electro-magnetic (EM) surveys on the *Atocha* wreck site. This will be the first submersible of its kind used in our industry. For those who are not familiar with AUV's and HAUV's, an Autonomous Underwater Vehicle (AUV) is a submersible unmanned vehicle with survey capabilities that eliminate the need for a tethered towed survey system. In the future, will have the ability to program a search grid into the HAUV and deploy it into the water where it will go and do a complete survey of that grid. It will then return to the boat on its own using a state-of-the-art inertial navigation system. Once back on board the vessel, the survey data can be downloaded to our topside computers through a high-speed Wi-Fi network connection while the batteries recharge, and then she can be launched again to continue with another 12-16 hours of survey.



Dolores *HAUV being deployed with EM system attached*

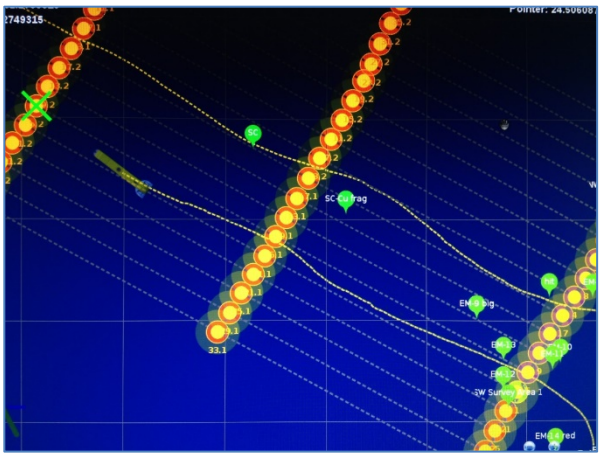
One of the main differences between "Dolores" and other AUVs available today is the ability to quickly transform from AUV mode to ROV mode (HAUV). Once "Dolores" has done its survey and targets have been acquired, she can be attached to a fiber optic tether and remotely controlled from the ship. This gives us the ability to use her as an "eyeball" ROV and to hover over targets and identify them efficiently. This will be the first HAUV used in the historic shipwreck recovery industry. For our shallow water wreck sites in the FKNMS such as the *Atocha* and *Margarita* we will be using "Dolores" in hybrid-tethered mode for testing and real-time data collection.

"Dolores" is able to search in depths up to 1000 meters (roughly 3300 feet). She has interchangeable, cutting edge electronic survey equipment. "Dolores" has the ability to do both dual frequency side-scan sonar and magnetometer survey work independently or together. This will be especially helpful when we are doing long range sonar runs with the vehicle running 80'-100' above the sea floor. By having the capability to run a magnetometer at the same time, we eliminate the possibility of missing a target that may be in the nadir, the blind spot directly below the sonar. It will also give us the ability to know if there are any ferrous metals on a target when doing high resolution runs closer to the sea floor. This will help reduce the number of geological targets we have to check as most geological targets will not read on a magnetometer. Using multiple video cameras, high powered LED lights, and forward-looking sonar, "Dolores" will be able to locate and identify the targets from her survey quickly and efficiently eliminating the need for very dangerous and time-consuming deep-water technical dives.

Dolores control center in operation

We have completed quite a bit of upgrade work on the M/V Dare so that she can support "Dolores". As we move into the future of our business, we will continue to improve our technology wherever possible. "Dolores" is only the beginning of a new chapter for our organization; using the most advanced cutting-edge technologies available to help us use non-invasive methods to located and recover the amazing artifacts from the *Atocha* and *Margarita* sites.

Go to the below web link to see a video segment we put together to better describe the capabilities of our HAUV "*Dolores*".



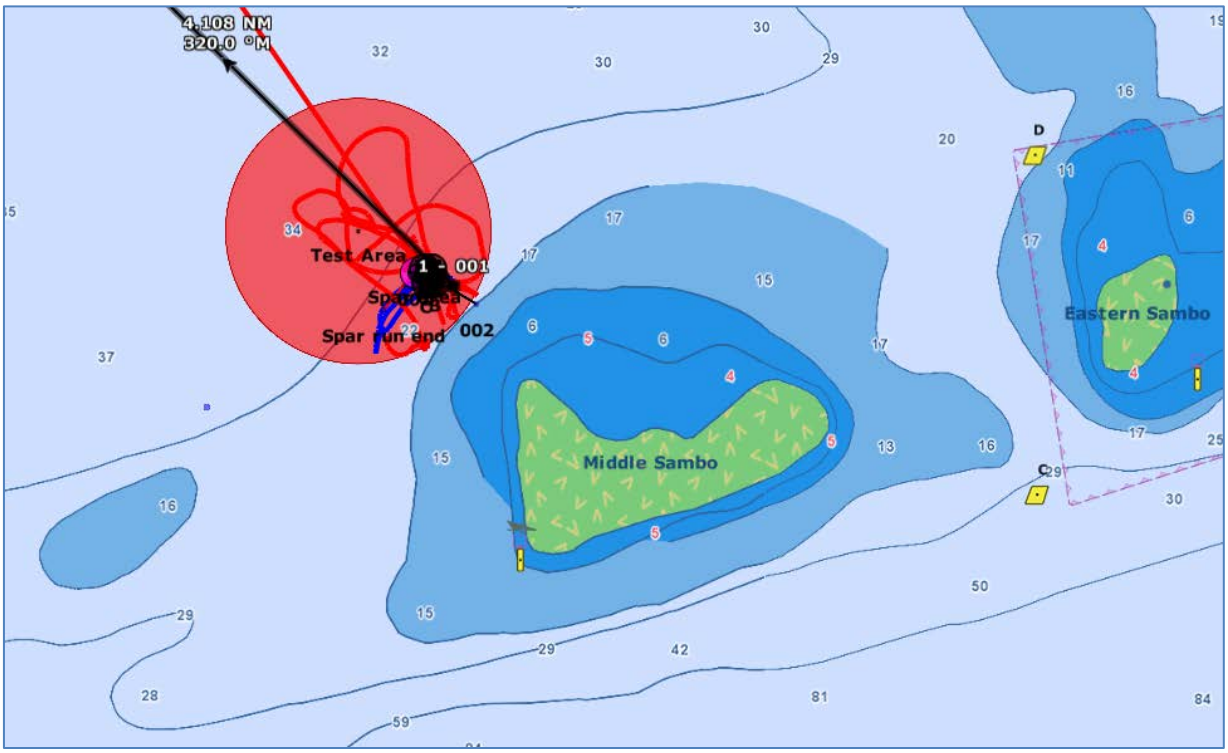
EM system testing

https://www.youtube.com/watch?v=YxcSICeVZhk

Developing Advanced Sensors & Detection Capabilities

In 2015 our team partnered with the developers of a highly advanced EM (electromagnetic) detection system to test its capabilities with our HAUV for both unexploded ordinance detection and historic shipwreck artifact detection. This group is focused on advancing UXO detection for the US military using SBIR funding programs and have partnered with us because of our marine operational experience and that fact that "Dolores" is the most advance and stable vehicle they've been able to identify to fly their EM coil systems very close to the seabed. This combined with the fact that the targets that we are looking for have similar target profiles and our mutual overall goals for advancing EM capabilities in a marine environment are aligned, we felt that this relationship was a perfect match. Since we needed to do this testing and development work in shallow water with good visibility, we requested the FKNMS to amend our *Atocha* permit to include a vehicle testing area inside the outer reef in a flat sandy area south of our vessel operations base on Stock Island, Florida. This testing area will facilitate day trips to the testing area and allow us to process our data every night when we return to shore.

This test area was approved and our permit was amended to include the following test area highlighted in red.

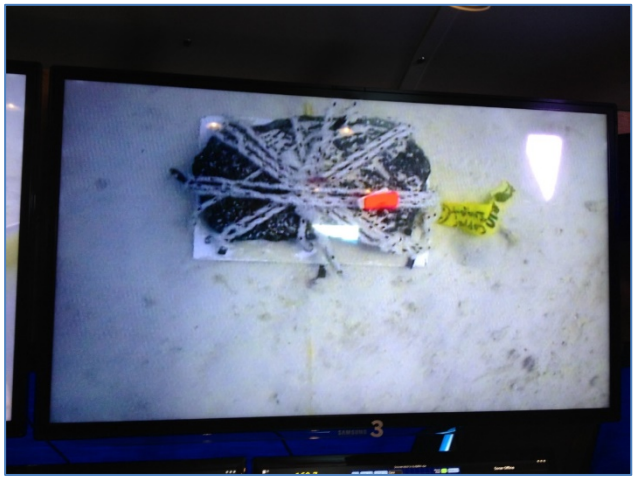


Here you can see our teams laying out dummy bombs, iron chain, silver bar, copper ingot, ballast stone targets and our testing grid in a local park in preparation for underwater testing.

Atocha silver bar and copper ingot targets being prepared for deployment in the test area

Practice bomb target view from control room monitor

Modern practice bomb targets along with an old bomb fragment found on the wreck site



Copper ingot captured in Dolores' downward camera as seen from control room monitor

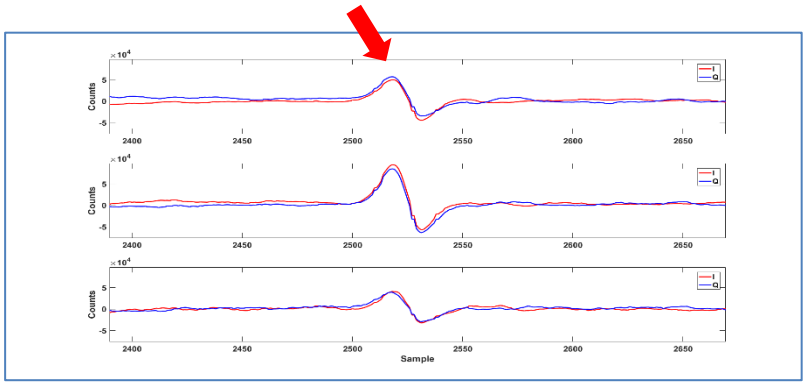
EM Target Testing & Analysis

One of our goals in the EM system development is to be able to locate and identify all metallic objects, ferrous and non-ferrous. Here is an example of how that it done.

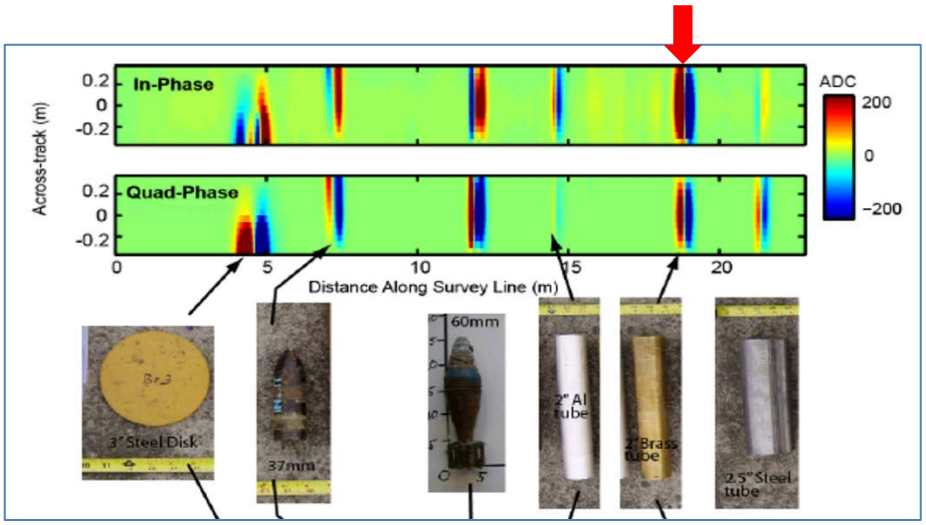
From our EM/Geophysical development partners:

"I looked at the raw data and by comparing the "I" and "Q" values of this anomaly it appears NON-Ferrous (I and Q values are correlated). I have attached a zoom-in of the I/Q values for this anomaly in all three coils. Also attached is a slide that we've briefed in the past showing I/Q values over various non-ferrous and ferrous items. If you look at the data in this slide you can see "I" and "Q" are correlated for non-ferrous items and anti-correlated for ferrous items."

This image shows hit #683's signature in the 3 receiver coils with the plot for the I & Q values matching up on top of one another which is a very good indicator that this target is NON-Ferrous!



This image shows the EM signature of a few ferrous and non-ferrous test targets. You can see on the aluminum and brass pipe targets that the "I" (in-phase) positive red and negative blue signals line up in the same order as the "Q" (quad-phase) signals below indicating a non-ferrous target.



5.13.2 HAUV and ROV-Based Underwater Electromagnetic Array Technology – Lessons Learn and Future Development

By Gary Randolph

Objectives

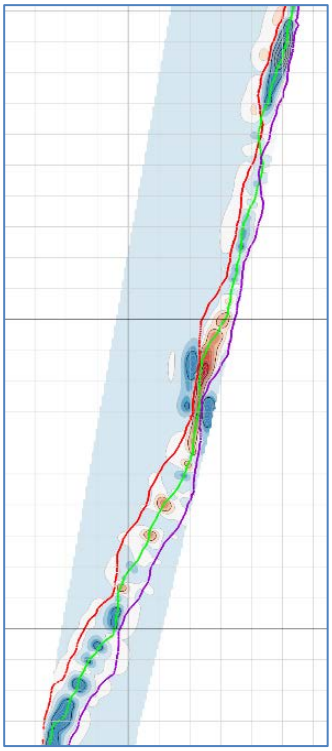
HAUV Dolores with Gen-1 EM array

Current methods for detecting and characterizing deeply buried historic shipwreck artifacts rely heavily on trained divers for visual inspection and handheld metal detector surveys which can be a very slow and expensive process. While autonomous underwater vehicles (AUVs) provide an alternative, those currently available for marine archaeological operations require well-trained operators and do not allow for real-time awareness of the marine environment in which they operate. Also, the hydrodynamics and propulsion configurations of commercial AUVs do not allow for hovering to enable detailed inspection of targets very near to the sea floor. Our objectives over the past few years of this project have been to develop innovative technologies and the underwater vehicles required for deploying underwater electromagnetic induction (EMI) sensors from our custom-built hybrid autonomous underwater vehicle (HAUV) "Dolores".

HAUV Dolores control center camera shwing Gen-1 EM array being flown over the seafloor

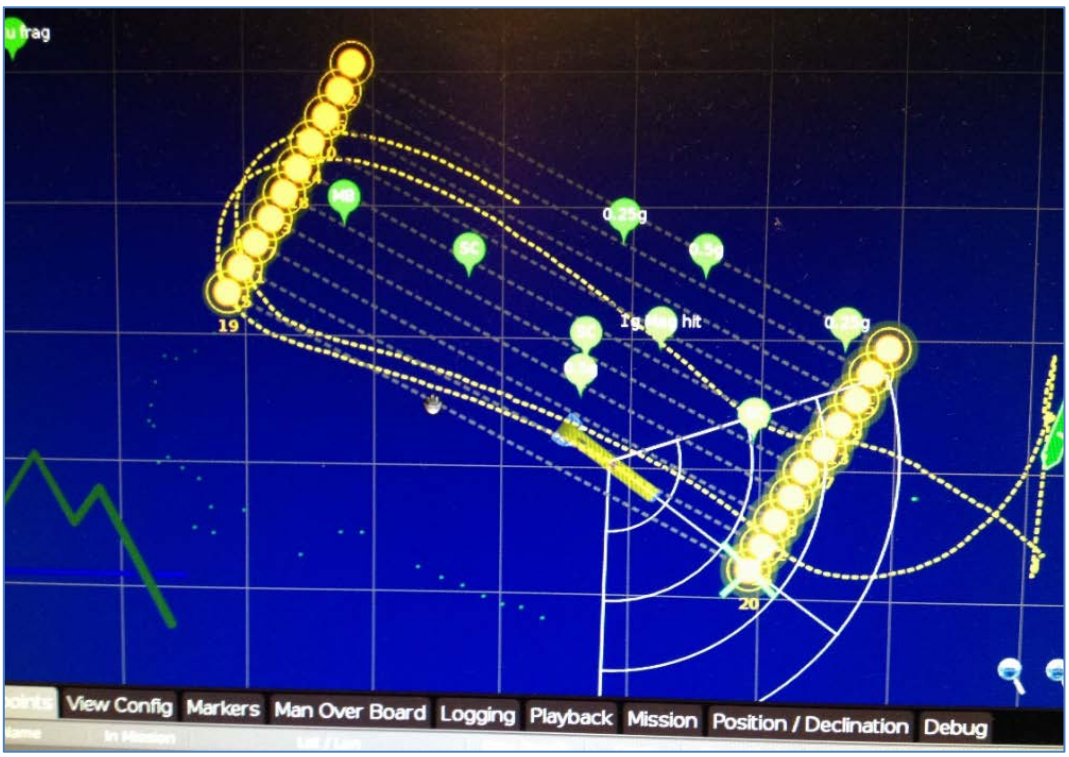
The integration of these highly accurate sensors, USBL tracking systems, inertial navigation and control systems, and a high-resolution electromagnetic array can overcome limitations of current diver-deployed, towed, and unmanned integrated underwater detection systems. Specifically, HAUV or ROV based sensing platform enables us to perform wide area surveys with very accurate altitude control of the array as well as the ability to interrogate targets of interest and position the array-based sensors directly over these targets. This first Gen-1EM array consisted of one transmitter coil and three receiver coils. During our testing we tracked the position of each of the three receiver coils to develop very high-resolution target profiles.

During our 2016-2017 testing and development in the field on the *Atocha* wreck site we've identified a few challenges that needed to be addressed moving forward. The first was that *Dolores* had difficulty staying on the survey track line due to currents that pushed the vehicle off course during slow speed survey operations which can be seen in the image here. The three receiver coil track lines are shown creating an arc type track rather than a straight line. This "arc" pattern creates a challenge to achieve 100% coverage of the survey area.



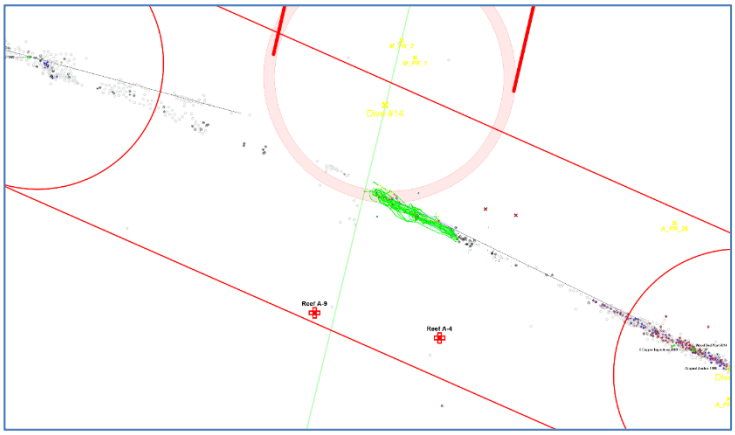
One of the other issues resulting from the strong currents is that the vehicles control system tries to compensate for the current by attempting to steer the vehicle at a sharp angle in an effort to return to the track line. This "crabbing" angle also caused the EM array to "crab" at a sharp angle which squeezes the data together also shown in the image here.

We also came to the realization that this type of survey generates a massive amount of data which needs to be processed in order to identify small, deeply buried historic shipwreck artifacts. We worked with our third-party EM partners to develop automated data processing procedures to smooth the data and begin to automatically pick targets from the dataset.



1Survey grid lines, vehicle tracks showing "arc" pattern

Most of our EM system testing work to date has been either in our near shore test area off Stock Island or on the *Atocha* trail just to the northwest of the *Main Pile* area. This area of the *Atocha* trail hasn't been worked very hard in the past. Mostly due to the artifacts being deep down in the hard-packed mud and beyond the reach of diver hand-held metal detectors even after excavation with prop-wash deflectors. In this chart, you can see some of the EM track lines plotted in green.

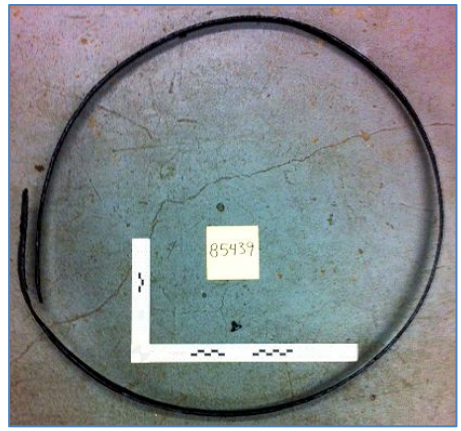


One of the very positive results of our work has been that we've been able to detect very small targets such as barrel hoops and even ballast stones in the deep mud. In this picture you can see one of our divers excavating an EM target with a portable airlift. The target was more than 3 feet below the seabed and turned out to be an intact barrel hoop resting at an angle in the hard mud. It took the divers a few hours to carefully excavate and recover this delicate artifact without damaging it.

The video clip is available online here: https://www.youtube.com/watch?v=w-W-rylDTpU

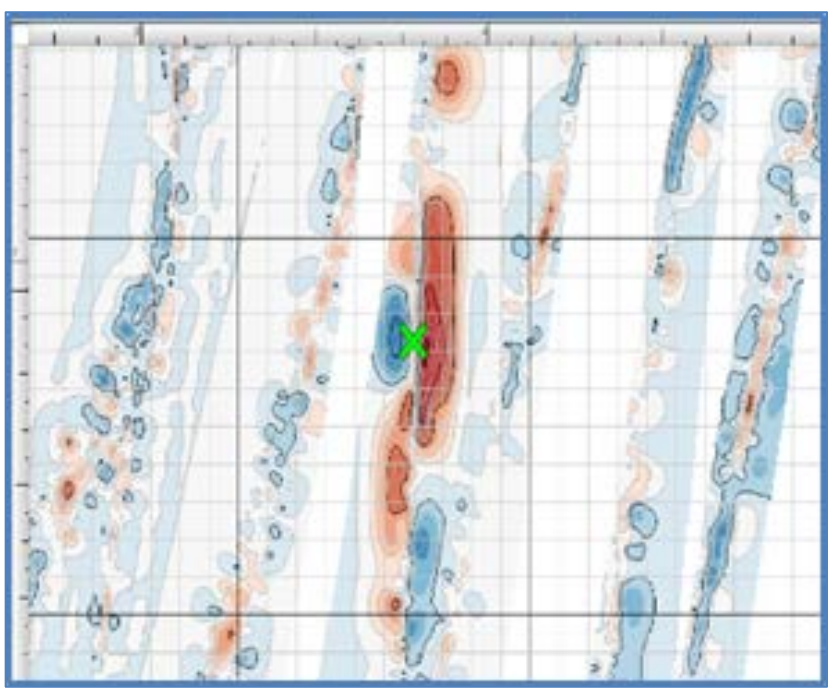
In this picture you can see the barrel hoop being uncovered by the airlift.

Barrel hoop #85439 before conservation



Barrel hoop #85439 after conservation

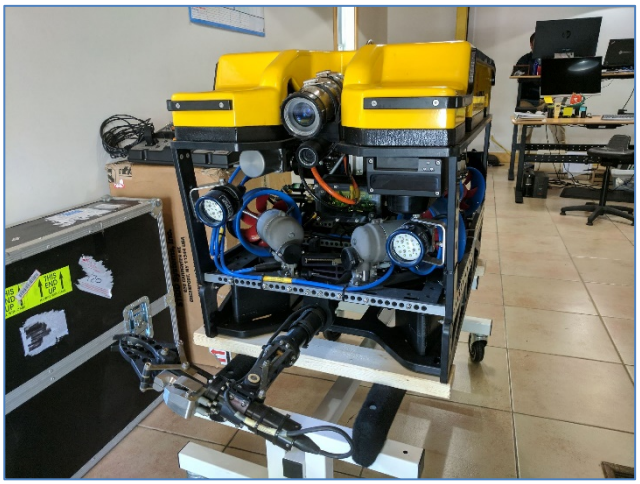
Here you can see the barrel hoop as it arrived in our conservation lab and the finished product after months of conservation work had been completed.



EM target area with magnetic field contours, identified as a group of deeply buried Atocha ballast stones

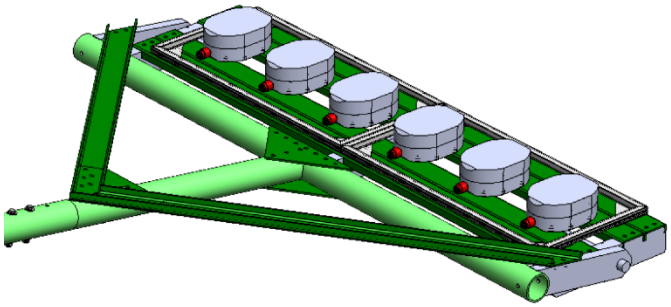
New ROV & Gen-2 EM Flex Array Technology Development

Moving forward, we have made the decision to acquire new Sub-Atlantic Mojave ROV to fly our next generation EM array. This traditional style ROV has very strong vectored thrusters for better line following and tracking capability. We will be installing our inertial navigation system with fiber-optic gyro and USBL tracking system from *Dolores* on this new ROV during the winter of 2018-2019. We are also making provisions for adding our dual frequency Marine Sonics Technology side scan sonar and Geometrics magnetometer to this vehicle. This new ROV will plug directly into our current *Dolores* command / control center on the *Dare*.

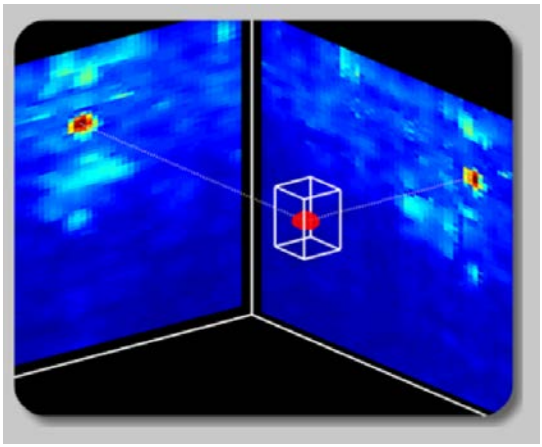


The new EM Flex Array will utilize six differential receivers, two rectangular transmit coils. We are also looking into installing a number of newly developed micro-magnetometer sensors on this array to help in the discrimination of ferrous and non-ferrous targets as well as estimating target depth. This new EM system will be mounted directly to the front of our new Mohave ROV system containing our advanced inertial navigation and control system. This ROV provides a stable operating platform for deployment of the marine EM Flex array and is capable of highly accurate positioning and close and well-controlled standoff from the sea floor.

This image is one of the designs being tested by our partners. We have done some system development, silver bar, copper ingot and iron spikes target testing in their shop during the month of October-2018. We will also define the final design for the mounting system to the new ROV platform during the coming months.



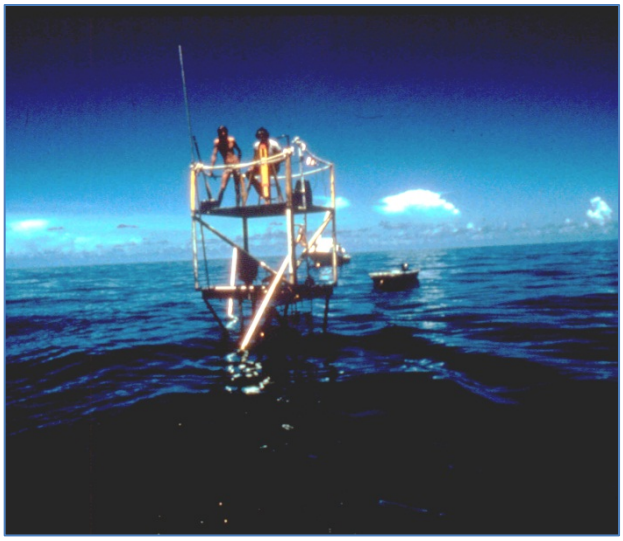
We are planning to begin testing of this new system in early 2019. The project team anticipates that this new vehicle and EM Flex array system will provide the critical capabilities of precise vehicle positioning, line following, bottom / altitude tracking, target depth estimate and high probabilities of detection for deeply buried historic shipwreck artifacts located on the *Atocha* trail.



6 HISTORICAL FIELDWORK

6.1 OUT OF SIGHT! SEARCH FOR THE *ATOCHA*…

In 1971 after Eugene Lyon, PhD provided Mel Fisher with a vital historic clue found in the archives in Spain the search for the *Atocha* was shifted to West of the Marquesas Keys area - well out of sight of any land. There was nowhere to erect beach markers so positions had to be fixed in another way. At the time vessels operating out of sight of land were using a system known as LORAN-C. This was a system that used radio beacons from towers erected along coastlines. A receiver aboard vessels could pick up a number of these towers and calculate the time differentials from each tower known as "TD's." The accuracy, however, was never much greater than about 100 meters. If you were looking to get back to a specific dig site you had to have left a buoy marking the spot and if you got within 100 meters the assumption was you could then find the buoy.



Atocha Site 1970's Theodolite Tower

A new more advanced system capable of much greater accuracy was sorely needed to conduct long range, systematic remote sensing surveys using magnetometers, side scan sonar and sub-bottom profilers. Mel erected two towers one on the East side and one on the West side of the *Atocha* search area, atop each of these towers was a platform. Daily, two men would be dropped off on the platforms. They had with them survey instruments known as theodolites, radios, water and large straw hats. These hardy (and very tanned) folk became lovingly known as the "Fry Boys". From each of these towers they could keep in contact with the vessels conducting the search and using the theodolite, keep them driving on a straight line (to a degree). Buoys were still deployed on every hit and over the years over thirty thousand anomalies or magnetic targets were recorded in this manner. Early finds such as the area of the Bank of Spain, the Galleon Anchor and the 9 Bronze cannon feature were all initially recorded using this method.

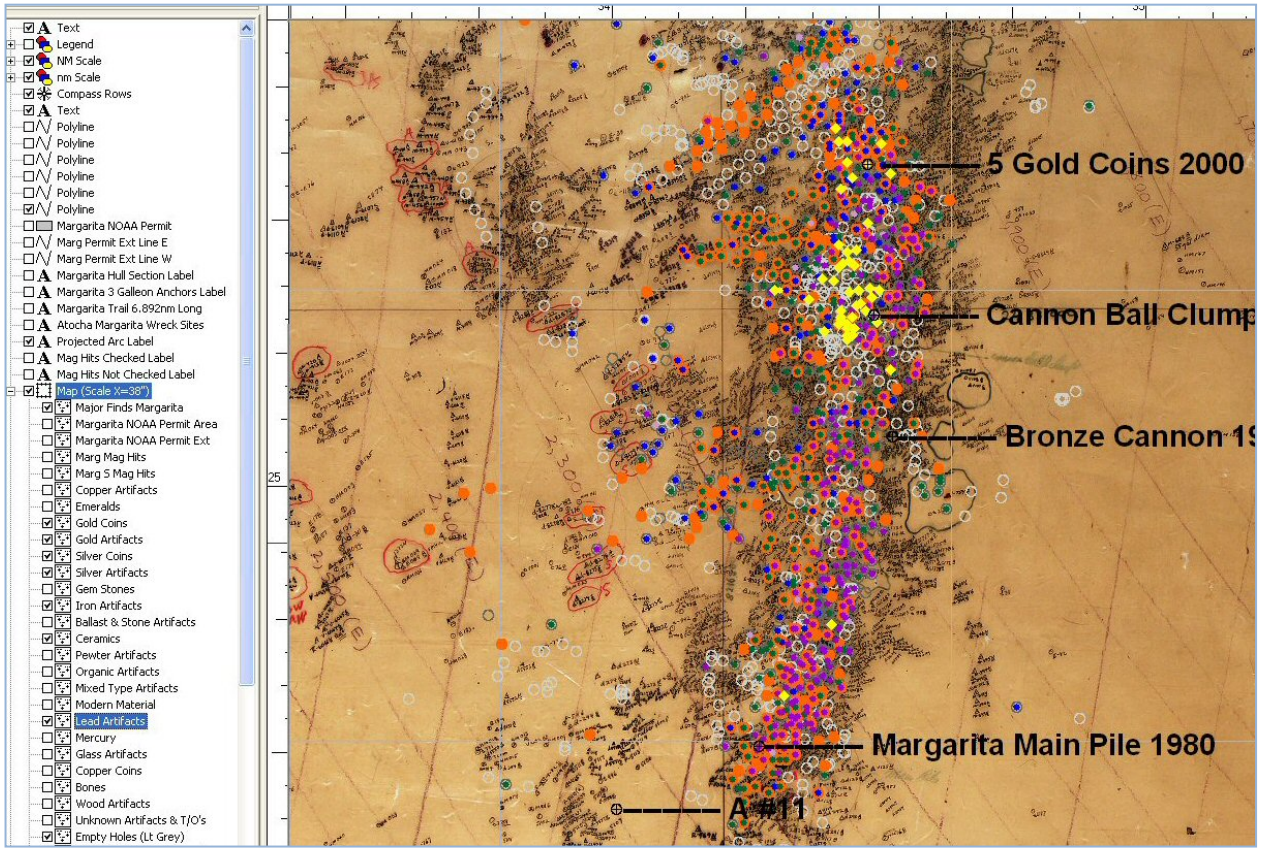
Atocha Main Pile Timbers, 1985

In about 1980 technology was progressing and a new tracking system was brought on line. This system was known as the Del Norte system. This system consisted of two microwave transmitters that broadcast microwaves from base stations and transponders aboard each vessel. The microwave broadcasting base stations were placed on the old towers and the transponders on the

vessels read distance in meters from each tower with great accuracy. This in effect allowed the vessels and the "cartographer" to track each dig on the now two sites being worked the *Atocha* and the newly discovered remains of the *Santa Margarita*, the sister ship to the *Atocha* and lost in the same hurricane.

The "Fry Boys" were out of a job! Utilizing the Del Norte systems, teams from Treasure Salvors Inc. would recover wonderful treasures from the site of the *Santa Margarita*. Five years after that discovery, and sixteen years after the quest for the *Atocha* began, the "Main Pile" or the "primary cultural deposit" (PCD) of the *Atocha* was found. Mapping on the PCD was accomplished in a fairly low-tech way. This technique is known as baseline offset measurements. The site has a measured baseline stretched along its long axis with each end being a "datum point" that would remain constant. As objects were recovered, they were each measured both up the baseline and then the offset measurement with compass bearing was made to the object, and they were hand plotted on in house developed paper and mylar charts. This system was simple, accurate and efficient but unfortunately not perfect. However, we recorded a massive amount of data in the midst of one of the greatest treasure finds of modern times.

The technique stayed basically the same for mapping the site for the decade of the 1980's and into the early 90's but things were rapidly changing with data management in general and specifically with the advent of personal computers. While we had employed computers and even an early form of digital image recording for the cataloging and curation of the finds from the PCD this produced mixed results. For those of you who are old enough, most of our data was archived on 5½ inch floppy disks! While at the time, this was "state of the art," I can assure you that 20 years later, extracting some of that old information required contacting a computer museum and some expert help!



Meanwhile, (and for quite some time) unbeknownst to us the military was launching satellites that were to be used for mapping and tracking planes, ships and other vehicles. These satellites, once declassified, offered a new way to plot a position through satellite technology – GPS, or if you prefer the full name "Global Positioning Satellites". At first, if you could plot a spot within 60 feet you were considered pretty accurate. Then, towers were erected along the coast to provide a land-based signal or differential signal from which you could get to within a meter or two (approximately 6 feet), this system was known as DGPS. Now, the differential towers have been replaced with more satellites that are spread across the sky at different angles and we now use WAAS technology or Wide-Angle Augmentation System. This still offers a degree of accuracy that is often less than one meter. We now have these units being placed in cars that allow computers to give verbal directions for various addresses across the country and the world. Things have certainly changed. As the actual technology for mapping was changing the software for plotting the remote sensing surveys and artifact finds was also changing, gone were the days of the "three-armed protractor and the metal compass." (Although if one is navigating on the world's oceans, it is good to have these instruments and the knowledge of how to use them as a backup!). Now hardware and software were beginning to speak to each other in ways which only a few years before we could only dream of. Today with digital mapping technology we can now go into the survey data, find an interesting area, examine the recoveries from this area, choose and artifact, view the pre and post-conservation photos, check the laboratory's conservation methods, analyze the results (photos and graphic drawings – even 3D photos) of each find. This has created a way of looking at the sites and areas of recoveries that we did not previously have. We can turn layers of artifacts on and off over a base map, showing dispersal across the sites of various classes of artifacts, (such as silver and gold, lead musket balls or pottery). While this may seem to the uninitiated an interesting but obscure feature, let me assure you that with such capabilities we can now put forward predictive models of where more treasure is likely to be found, what areas of the ship we are likely working with and what sorts of human behavior can be assigned to each of these areas based upon the sort of artifacts being recovered. Wonderful capabilities indeed!

The current computer applications have given us two wonderful tools. These are a GIS (Geographic Information System) program capable of accomplishing some of the aforementioned tasks and a "virtual archive" of all of the wonderful finds from the Ships of the 1715 Fleet, and those of the Nuestra Senora de *Atocha* and the *Santa Margarita*, 1622. As most of you reading this know, much of the treasure recovered from these sites is placed back into the stream of commerce to fund ongoing research and expeditions. In essence, what we can now accomplish is a virtual collection of all recovered artifacts that can be reviewed and manipulated even if these artifacts are no longer in our possession.

6.2 MAPPING THE FLEETS

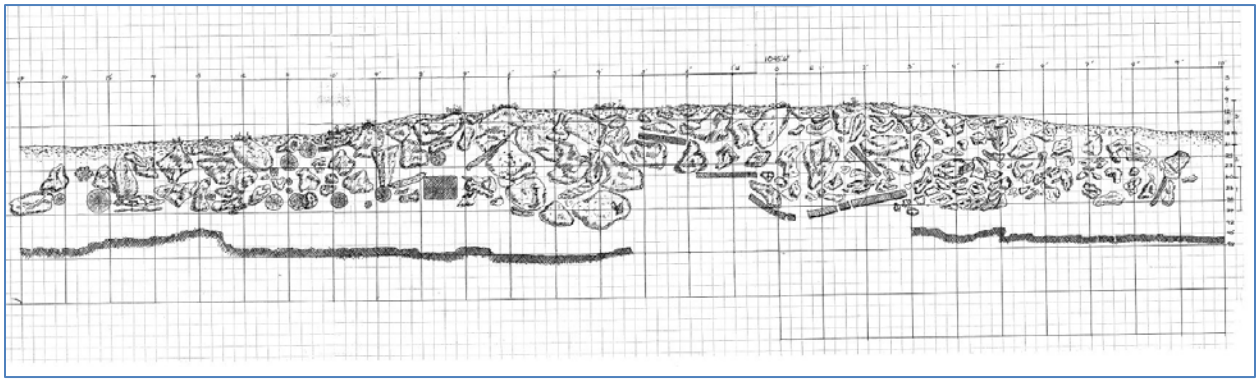
By James Sinclair

As any archaeologist can tell you maps are very important. We (archaeologists and historic shipwreck salvors) love maps on lots of different scales; large ones that show where sites are located across a "landscape" or "seascape" down to small ones of specific archaeological sites that are called "site plans." These site plans are used by archaeologists and salvors to show where and how recovered artifacts are related to each other. On land sites there are usually many layers representing different time periods on a particular site. The trick is to excavate and to capture the three-dimensional information so that relations across the site can be seen. These associations then can be compared to other sites from similar time periods. This sort of mapping captures what is known as the "vertical stratigraphy" of sites. On highly scattered dispersed shipwreck sites we are trying to capture the stratigraphy on the horizontal plane. These sites can be miles long so "seeing context" from them can be a challenge. The hope is to begin to see where other likely areas on the site may be found and to answer larger social and cultural (anthropological) questions as well as from the salvor's perspective of where items of intrinsic value may be.

One Section of the Atocha Main Pile Area Charts, Syd Jones 1985

Much of this sort of archaeological work in the past was done on prehistoric (preliterate) culture groups that left no written documentation. Of course, there are whole specialized fields of archaeology dedicated to both Egyptian studies and Classical studies (generally thought of as Greek and Roman). In fact, there are specialists in almost every area of the world where people have lived in the past. Archaeologist until relatively recently (post WWII) were not all that interested in items or sites considered "historic." This has certainly changed as our awareness of history and culture began to develop and evolve. Efforts to protect historic areas such as Mt. Vernon, and Colonial Williamsburg, helped to increase our awareness here in America of the importance of the historic past and helped to enact laws aimed at such protection.

It wasn't until the late 1960's and 70's that archaeologists as a larger group began to realize the importance of shipwrecks and begin to seriously work underwater. In fact, even after such work began many archaeologists did not believe that in shallow water highly scattered sites, there was any meaningful archaeological information to be retrieved. This began to change with the work of Duncan Mathewson on the Nuestra Senora de *Atocha*, who first proposed that even highly scattered shipwrecks had much in the way of archaeological data if one could map out the scatter to a fine degree. Others with similar ideas, building on what Mathewson first proposed, further developed models that assist in the interpretation of these sites, however it still comes down to mapping out where objects are found and their relation to each other.



Atocha Main Pile Area Stratigraphic Chart, Syd Jones 1985

7 ARCHAEOLOGICAL & HISTORICAL RESULTS AND CONCLUSIONS

The description of the results and conclusions of the archaeological resource investigations addresses the following:

1. Laboratory methods used to analyze artifacts and other site materials recovered during the archaeological investigations in the project areas;

During the course of the *Atocha* and *Margarita* Projects, Motivation Inc. and its predecessor companies have utilized various laboratory methods as well as specialist assessments to more fully understand the sites, the collection of materials from those sites, and the context of the materials recovered. A few of these have included Atomic Absorption Spectrometry, XFRF, as well as specialist analysis of artifacts such as Alan Stimpson and the Mariners Astrolabe, Pricilla Mueller of the Hispanic Societies Museum of America assessed the collections of Jewelry recovered from the Atocha and Margarita, Mendel L. Peterson of the Smithsonian Institute, Specialists from the Metropolitan Museum of Art, NYC in conjunction with an exhibition there reviewed the objects recovered from the *Atocha* and *Margarita* that that had mestizo artistic elements. Silverwares were examined and assessed by specialists from Christies as well as local silver expert, Col. Alan Green. Hull structure analysis has been conducted by David Moore, MA, (*Atocha*) and William Muir, (*Margarita*). Reconstructions of the 1622 hurricane were undertaken by Cmdr. John Cryer, USN (Ret.). The Historical aspects of the *Atocha* and *Margarita* were reviewed and reported on by Dr. Eugen Lyon, and the construction of the *Atocha* was covered by Carla Rahm Phillips in her book, *Six Galleons for the King of Spain*. (For more complete records of some of the wide varieties of studies please refer to our on-line project bibliography in our **Research Archives** available at:

https://www.melfisher.com/MOBILE/site/Research.html

2. The curation location of artifacts and project records;

The curation of the permanent collection of materials recovered from the *Atocha* and *Margarita* are held by the 501C3, Mel Fisher Maritime Heritage Society, who received fairly regular contributions of materials by Motivation, Inc.'s salvage operations and its investors as well as bequests of former supporters of the projects. Other museums, like that of the Delaware Technical Institute and other repositories around the nation and the world hold parts of the important collections of material recovered from the *Atocha*.

Motivation, Inc. displays its unique finds to the general public during any particular salvage season in its 200 Greene Street retail sales area in its "Recent Find's display cases. Motivation also has tours available to the general public of its conservation lab area and some of the more delicate artifacts that need a more controlled display environment and lab staff attention.

The Fisher Family also has a privately-owned public museum and exhibits of their *Atocha* and *Margarita* artifacts in Sebastian, Florida.

These public exhibits and displays along with Motivation, Inc.'s public on-line Research Archives allows for the general public to enjoy and interpret the wonderful artifacts as they are recovered from the *Atocha* and *Margarita* wreck sites.

3. Findings in relation to the stated objectives of the investigations;

There have been so many findings from the *Atocha* and the *Margarita* over the decades that these sites have been worked, it is often hard to grasp the enormity of both the project and the amount and level of effort expended. Of necessity, it must be understood that the "Stated Objectives" of the project were, are and will remain the orders of the Federal Admiralty Courts which govern our activities and to whom we are ultimately answerable to. All of the various studies, resultant reports, books and other documentations have been done as adjuncts to the primary court order, or primary objective of the investigative effort. (Please see extensive bibliography and timeline of the project for further detail). While not specifically required by the Federal Court Order, the efforts of Motivation and its predecessor companies have resulted in a substantial and substantive body of work.

4. An assessment of the site's integrity;

As stated in previous reports submitted to the FKNMS, the Federal Admiralty Courts as well as popular books, articles and documentaries. The *Atocha* and *Margarita* site are represented by highly scattered and dispersed ships wreckage. While much material was recovered in around what was referred to as "primary cultural deposits" (PCD's) or Main Pile areas neither of these areas taken in and of itself is representative of the variety and richness of the collection of materials found throughout the years on the dispersed tracks of wreckage. It goes without saying that there has been enormous loss of material through the years. This is both a natural occurrence due to the initial wrecking process, the extremes of the depositional environment over the course of centuries (biological, chemical and electrochemical processes) as well as anthropogenic causes, (salvage on the *Margarita* wreckage contemporaneously or shortly after their loss). While site integrity is poor for either site, and modern intrusions often occur, both sites and recoveries therefrom represent homogenous collections of Spanish Colonial artifacts that are representative of social structure, cultural norms and technology of the time period.

5. Methods used to apply National Register criteria for a determination of eligibility and historic context as contained in 36 C.F.R. 60 ("National Register of Historic Places"), herein incorporated by reference;

Since title to both the *Atocha* and the *Margarita* were awarded to Motivation Inc. and/or its predecessor companies this particular question is not applicable.

6. Discussion of completeness of project efforts and the need for any additional identification, evaluation or documentation efforts;

While many conclusions and analysis have been extracted on numerous aspects of these sites, under the Federal Court Orders neither site is complete in the sense that is being asked here. A wealth of data, reports based on that data, books, articles, studies, thesis, dissertations, documentaries, etc., have at their base, work on these two iconic shipwrecks. (Please refer to bibliography) However, much work and investigation is still ongoing and being undertaken on these sites, based on current efforts. The use of GIS programs, the use of new remote sensing technology, autonomous underwater vehicle usage and remotely operated vehicle usage on these shallow water sites is both new and exciting moves into new technologies that promise to reveal more about these very important and historically rich shipwrecks.

7. Bibliography of those sources utilized.

Please see attached bibliography

7.1 ARCHAEOLOGICAL RESEARCH QUESTIONS

By James Sinclair

In our last permit request, we set out a number of archaeological questions that we hoped to at least partially answer in the intervening three years. While we have met with some success it must be stated that these questions are aimed at answering anthropological questions and are by their nature evolutionary. This means that as more evidence is collected some of these questions may be answered more fully or that the answers may change. However, we feel that we can make at least partial answers to some of our posed questions. There were four questions that we posed, the first and third questions we have found can be rolled into one answer which follows.

As was stated in our last permit request we are looking at the wrecking process, keeping in mind the various biases (gender) of the assemblage as well as the filtering effects on the artifact scatter. We are attempting to utilize what R. Duncan Mathewson, III has termed the "Galleon Matrix". In fact, what this matrix attempts to do is assign activity areas to parts of a Spanish Galleon. These activity areas would in turn indicate specific human behaviors. The "Matrix" concept acts as a spring board from which the scattered remains of the *Atocha* can be interpreted and middle range anthropological theories can be approached.

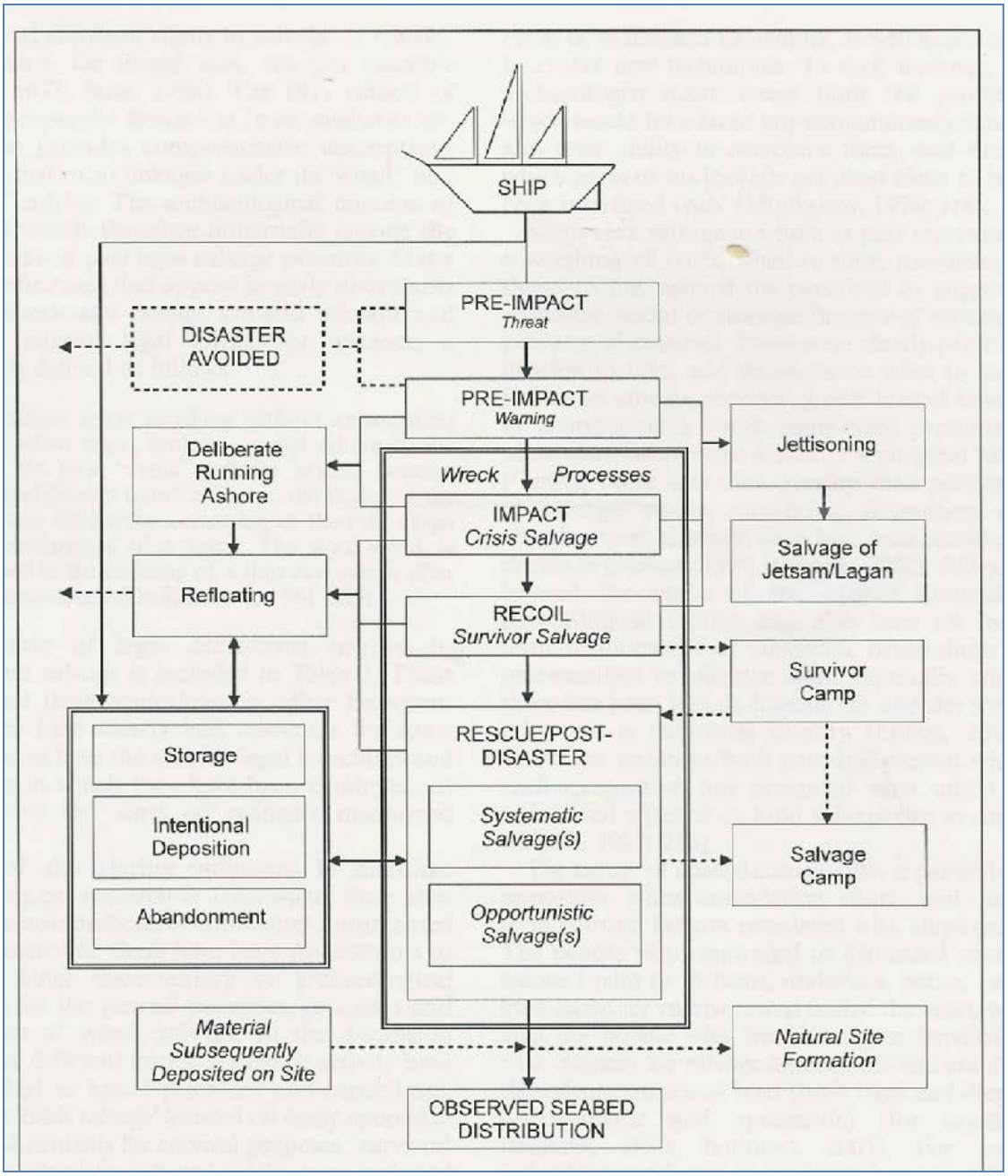
Middle range theory was described very well be Lewis Binford in the 1970's as follows:

> *"Middle range theory building provides an accurate means of identification, and good instruments for measuring specified properties of past cultural systems. We are seeking reliable cognitive devices; we are looking for "Rosetta stones" that permit the accurate conversion from observation on statics to statements about dynamics. We are seeking to build a paradigmatic frame of reference for giving meaning to selected characteristics of the archaeological record through a theoretically grounded body of research, rather than accepting folk knowledge – let alone implicit folk knowledge – as the basis for describing the past". (Binford, 1977, Pp. 1-10)*

The hope then is that by utilizing our GIS program (the means and the instruments that Binford mentions) for detailed location and artifact information, and filtering this through the lens of the "Galleon Matrix" as described by Mathewson, the static remains (artifacts) that we observe on the seabed and analyze in the laboratory can then become a way of observing past cultural behaviors and social dynamics.

First a review of the dynamic sorts of behaviors one might expect from a shipwreck context the following is from Gibbs, 2006:

Recently Martin Gibbs (IJNA, 2006) has put forward a schema that incorporates more and varied human behaviors that affect the assemblage of materials observable on the seabed.



This modified flow chart is a good beginning at ways to look into the cultural behaviors that could affect the various extracting filters/mechanisms as well as the mixing or scrambling devices described in Muckelroy's earlier work.

Table 2. *Responses during shipwreck crisis (after Leach, 1994)*

Stages	Examples of strategies, options and actions	Examples of physical and archaeological signatures/consequences
Pre-impact Threat phase	**Long-term** Collection of information on potential threats. Decisions to take/avoid routes, develop sailing instructions and seasonal restrictions Design or modification of vessels and equipage suitable to overcome potential threat Selection or training of crew **Short-term** Changes to course, increased awareness for lookouts, preparation or stowage of equipment	**Pre-depositional.** If strategies to avoid impact are successful, this may result in there being no archaeological evidence. Where archaeological remains do exist, these may exhibit evidence of Pre-impact strategies to diminish or negate risk.
Pre-impact Warning phase	Radical changes to course or attempts to slow, stop or turn, including dropping anchor. Jettisoning of some items. Running ashore to avoid catastrophic impact. Pre-impact abandonment possible but unlikely. Possible intervention by external sources.	**Pre-depositional.** Effective Pre-impact behaviours may result in no arch evidence, or a debris trail of jettisoned items, but no wreck. Disposition of wreck and presence/absence of materials may be indicative of pre-impact awareness, preparedness and response.
Impact	Strategies and actions dependent upon the nature of Impact (catastrophic v. low-intensity). **Decision to remain aboard** Club-hauling (use of anchors) to pull off, or driving over obstacle. Jettisoning heavy items or cutting away masts in order to re-float or save the structure. Patching leaks until repairs can be made. **Decision to abandon a vessel** Lowering of the ship's boats or lifeboats, securing a line to shore, removal of people. Rapid selection and removal of primarily survival-oriented materials ('Crisis Salvage'). Initial post-disaster survivor landing site.	**Depositional** If Impact is negated, the vessel may be recovered, resulting in no archaeological remains or jettisoned materials only. If unsuccessful, site may include ship's structure, cargo and human fatalities.' Crisis Salvage'—absence of primarily survival-oriented materials, including boats from the wreck-site, or evidence of the same at land sites (easily accessible contents and cargo, fixtures and fittings). Discard of human remains resulting from post-impact mortality.
Recoil	Establishment of survivor camp Establishment of authority structure and possible re-organization of population. Organization of subsistence and rescue strategy. Further selection and removal of materials ('Survivor Salvage'), assuming that a return to the vessel is possible. Limited by available labour and equipment. Repair and re-floating.	**Post-depositional** Establishment of survivor camp. Site structure reflecting survival strategies. 'Survivor Salvage' (cargo, fixtures, minor structural) materials absent from wreck site or located within land site. Adaptation of materials and foraging behaviour. Evidence of human fatalities may indicate unsuccessful strategies. Possible removal of vessel.
Rescue and Post-Disaster	Complete abandonment of wreck and contents. Salvage depends upon accessibility of sites and benefits versus cost, effort and time required. **Opportunistic salvage**: short duration and intensity, resulting in focus on particular types of material. Legal rights to salvage unlikely. **Systematic salvage**: over an extended period with access to increased equipment and labour, including recovery of all or part of the cargo, fixtures/fittings, minor and major structure, or complete recovery. Legal owner or agents of the wreck and materials.	**Post-depositional** Establishment of salvage camp for storage of salvaged materials and habitation of salvage crew. Evidence of removal or non-removal of materials from wreck and land sites. Removal of vessel. Removal of cargo and fittings, through to 'Breaking' and removal of minor and major structural elements, leaving only residual elements.

Mathewson's Galleon Matrix or ship matrix deserves to be reviewed also:

7.1.1 Galleon Matrix

Mathewson in his work on this matrix proposed the following as a way of approaching mid-range or mid-level anthropological theory utilizing shipwreck assemblages as a basis for building these theoretical constructs:

> *"The building of mid-level anthropological theory is dependent upon the development of direct interrelationships between physical characteristics and archaeological interpretations of cultural material (Leon, 1988; Schiffer, 1975). Artifact contexts on historic period shipwreck sites can provide a wide range of data in support of theories concerning human behavior and life under sail. The Testing of working hypothesis can best be done by breaking the ship (in the case a galleon) into six specific activity areas (Mathewson, 1975, 1977). Each area of the ship is characterized by a mosaic of different types of artifacts which reflect varying shipboard activities and behavior patterns. By linking human behavior patterns with particular artifacts, each part of the vessel can provide anthropological insight about life at sea hundreds of years ago".*

A seventeenth century Spanish Galleon mosaic model was proposed by Mathewson that had six different activity areas. Each area had associated activities and hence human behaviors varied in each different area.

(Mathewsc

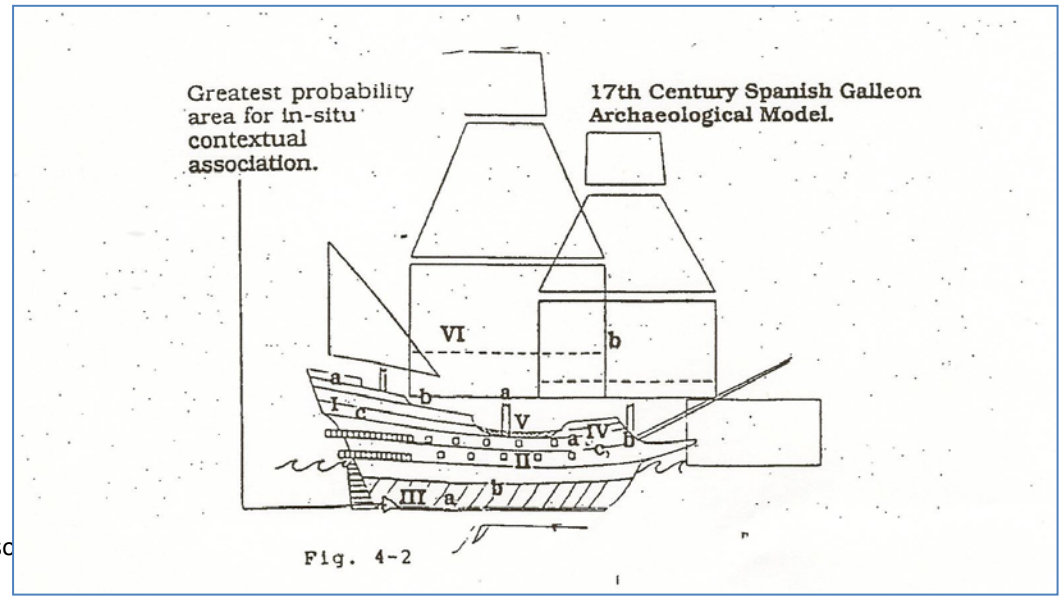


Fig. 4-2

	Activity Area	Matrix Artifact Assemblage	Behavior Patterns
I.	**Stern Castle**		Upper class life styles; Smuggling; Nautical Science; Personal adornment fashions; Anti-boarding defense; Aristocratic value system; Religious beliefs.
	A. Poop Deck	Swivel guns; Laterns	
	B. Quarter Deck	Swivel guns;Whip staff & tiller, Ship's bell	
	C. Ships Officers & Passengers Quarters	Navigational instruments; Personal possessions; Jewelry; Gold coins; Contraband; Rapiers; Daggers; Eating utensils; Majolica Porcelain; Religious objects; Gold bullion.	
II.	**Lower Decks**	Cannon; Gun carriages; Artillery accoutrements; Side arm weaponry; Crew possessions.	Science and technology of ship board artillery and small arm weaponry; Lower class life-styles.
III.	**Cargo Hull**		Ship design and construction ship board armaments; Cargo storage; Rock ballast composition and placement; Merchantile trade; Food and water storage; Ships supplies; Nautical science; Crafting skills; Metal working; Numismatic trade.
	A. Bilge	Lower hull timbers; Dunnage; Drift pins; Bilge pump; Nails; Spikes; Lead sheathing; musket balls; cannon shot; rock ballast; Granel ballast; Barrel hoops; Ship refuse; Silver coins; Rudder straps; Cargo items; Pintles & Gudgeons; Silver ingots; Copper ingots; gold bullion.	
	B. Orlop Deck	Storage pottery; ship's supplies; Sheet; Anchor; Religious objects.	
IV.	**Fore Castle**		Food preparation; Ground tackle; Ship's supplies; Smuggling; Lower class life-styles; Religious beliefs.
	A. Galley	Fire brick; Cook stove; Galley metal wares; Pottery; Glass.	
	B. Beak Head	Bower anchors & cable; Figure head.	
	C. Crew's Quarters	Contraband; Knives; Bosun supplies; Religious items.	
V.	**Weather Deck**	Long boat; Grapnel anchors;Stream anchors, Cargo items; Scuppers.	Ground tackle; Deck cargo; Ship design and construction.
VI.	**Sail Rigging**		Ship design and construction; Nautical Science.
	A. Standing Rigging	Masts; Dead eyes; Blocks; Sheaves; Line; Chain Plates.	
	B. Running Rigging	Yards; Dead eyes; Blocks; Sheaves; Line; Sail Cloth.	

7.1.2 Questions # 1 and #3

The first question we posed in our previous permit renewal request goes to the heart of our attempts to posit human behaviors from the static collection of artifacts found on the seabed and their various associations. Utilization of the GIS system which is inclusive of all of our mapping protocols as well as the artifact data base is integral to this effort.

Question #1

"Using the current GIS Program and associated technologies and the "Galleon Matrix" can we assign activity areas aboard the Nuestra Senora de Atocha and relate them to the scattered trail of artifacts? If so, can we assign human behaviors to areas along the scatter which relate to pre-wreck areas and behaviors on board the vessel?"

And this is question #3

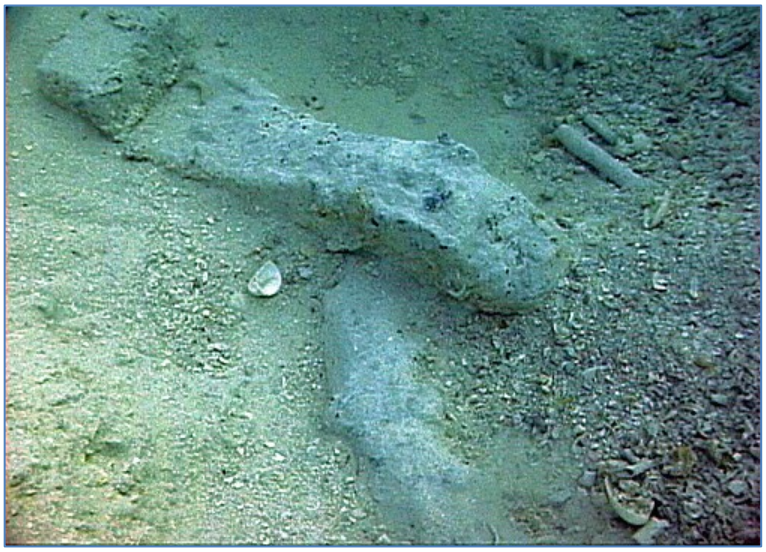
"Do the archival documents, GIS and Artifact database developed from the Atocha allow us to make assumptions on any human behaviors associated with the wrecking process and subsequent site formation processes on the extant site?

How does one begin to approach these questions? Where does one start. I have chosen to start at the beginning of the trail and to incorporate some of the "wrecking process schema" developed by Gibbs in 2006 (Gibbs, IJNA 2006) and Mathewson's "Galleon Matrix."

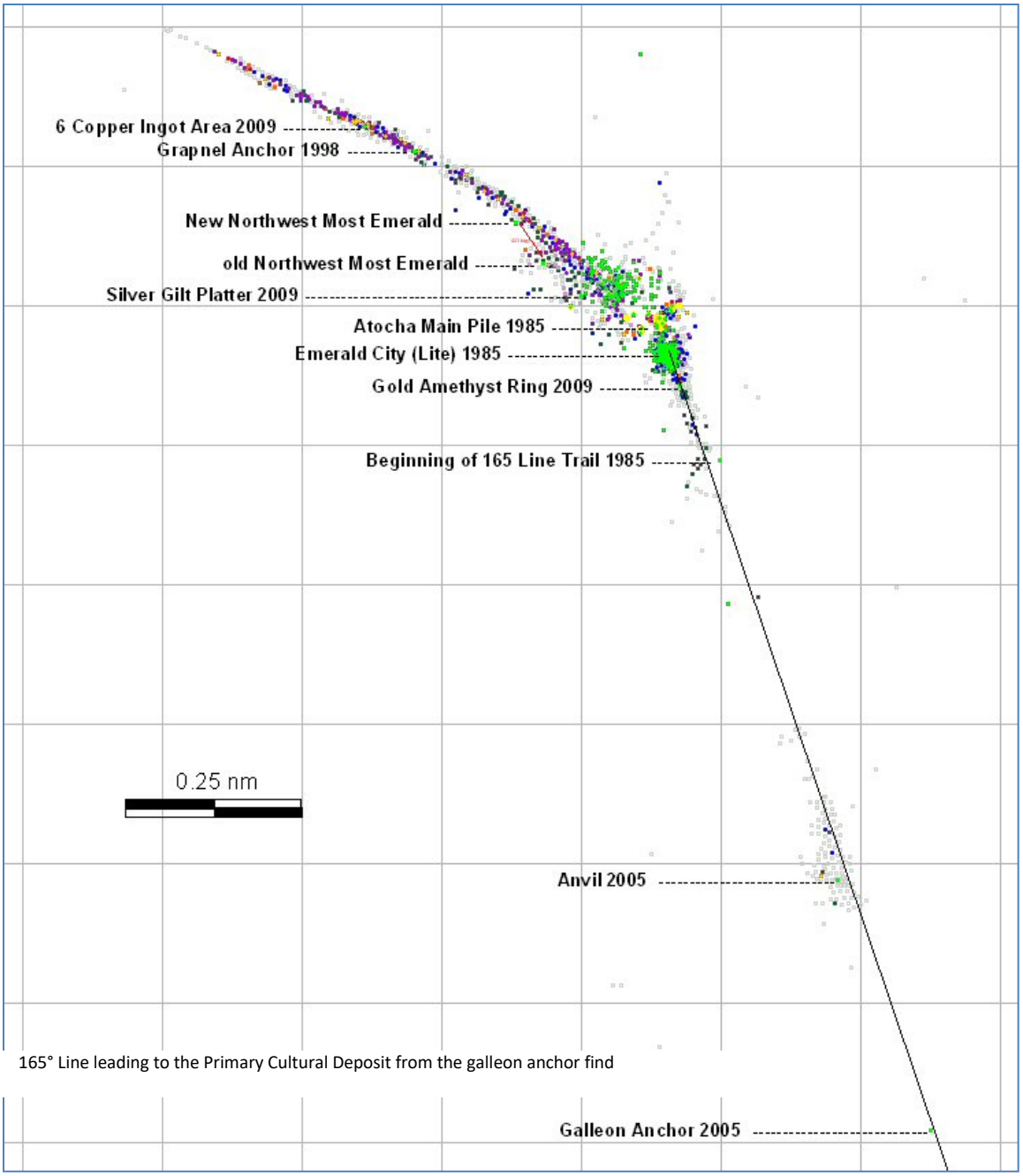
7.1.3 Southernmost Anchor

When one looks at the scatter of the *Atocha* it appears to "start" at the remains of an anchor (tag #72024) with wooden stock found 1 mile to the south of the "main pile" or Primary Cultural Deposit" of the *Atocha*. This anchor located by Capt. Gary Randolph in 2005 represents efforts of those aboard the *Atocha* to save themselves from the peril they were so clearly in. This artifact would fit into the Gibbs Schema under the "Pre-impact Stage" with attempts to stop or turn including "dropping the anchor" and into Mathewson's Matrix in the number four area or the forecastle.

That the anchor is without the flukes or arms and has clearly been snapped along the shank speaks to the huge hydraulic stress the ship was under at the time. The vessel at this point has already crashed into the reef and is rapidly filling with water. The anchor having been deployed on the other side of the reef snaps and the *Atocha* is pushed in the direction of the winds and wind driven waves.



This line of material runs at 165° from the North to the South and represents the area and temporal period when the majority of the passengers and crew (260 in number) would have been losing their lives. At this point we can assume many sorts of behaviors aboard the *Atocha*, from the stern castle and the wealthy passengers to the sailors and slaves housed between decks were all of the same type - most humans will exhibit the same sorts of behaviors when faced with imminent death (in extremis). The visions this produces are not ones that need much description – indeed it would be in bad taste to dwell here. We do know from archival documentation that the priests who were on board had begun to administer the "last rites" to those they could. Many would have craved this action as it was to save their immortal soul. We also know that the officers who were in charge of the ship had ordered the hatches be battened down. This had the effect of "locking" everybody into the interior of the site.

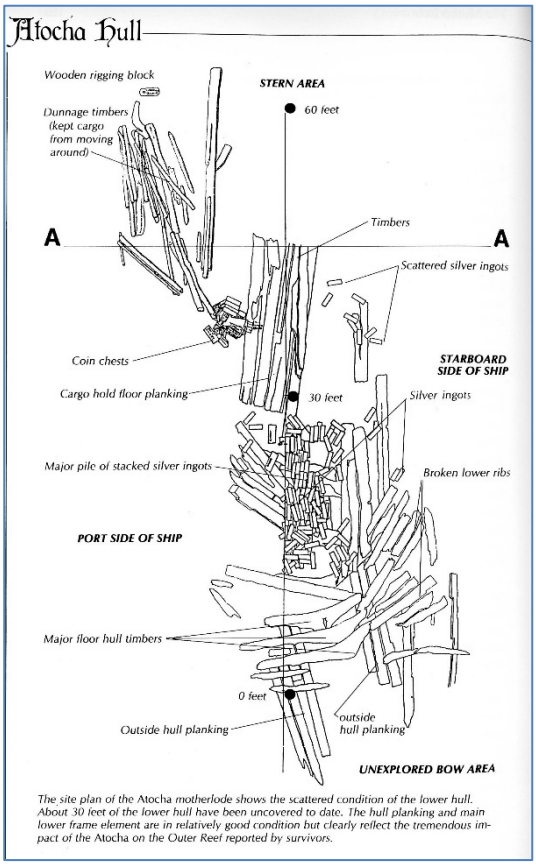


165° Line leading to the Primary Cultural Deposit from the galleon anchor find

One may imagine all sorts of brave and cowardly actions happening along this line, but this forms the extant evidence, the rest remains only conjecture. The fact is that the next great feature of the scatter of the *Atocha* is the Primary Cultural Deposit (PCD), or what the salvagers called the "main pile".

7.1.4 Primary Cultural Deposit

This area with its mass of intrinsically valuable cargo is indicative of a higher order of social activities and human behavior. Both institutional and mercantile/commercial activities are represented in this area. Objects found such as silver bullion bars link certain individuals or families to business interests that were global in their reach. A percentage of this cargo would have gone to the Catholic Church to support their activities that were increasingly of a worldwide nature. The human behaviors that can be associated with these objects, from their harsh origins in the mines of South America to the payment of armies fighting across Europe to builders that were erecting magnificent cathedrals using these funds.



As shown on page #106 of Treasure of the Atocha by Duncan Mathewson

Some classes of artifacts found in and around the PCD show behaviors that are less than legal. The discovery of large numbers of un-manifested emeralds is a direct link to the level of smuggling that was occurring during the colonial period.

We know from archival documentation that the only five survivors of the sinking were found at this spot they had lashed themselves to the stump of the mizzen mast, all that was left above the water of the *Atocha*. This survival strategy well fits into the impact stage of the Gibbs schema (see above). This is also the area that Mathewson classes as number 3 or the "Cargo Hull."

Mel & Taffi Fisher-Abt with peanut jar of Atocha emeralds

Archival documents also show that when the first vessels arrived at the scene of the disaster and rescued the survivors, "divers" were sent to the hulk below. They described the *Atocha* as resting in 55 feet of water and basically intact, she had been holed in the bow and was being covered with sand, she rested on the starboard side. At this juncture and without the tools or manpower necessary to begin salvage a few small rail guns were retrieved. A buoy was left on the site for the salvage crews when they arrived. This retrieval of the small guns and assessment of the site for future salvage work fits into the Gibbs schema under the "Recoil" stage. It also loosely fits into the "rescue and post-disaster stage" in that opportunistic salvage was undertaken.

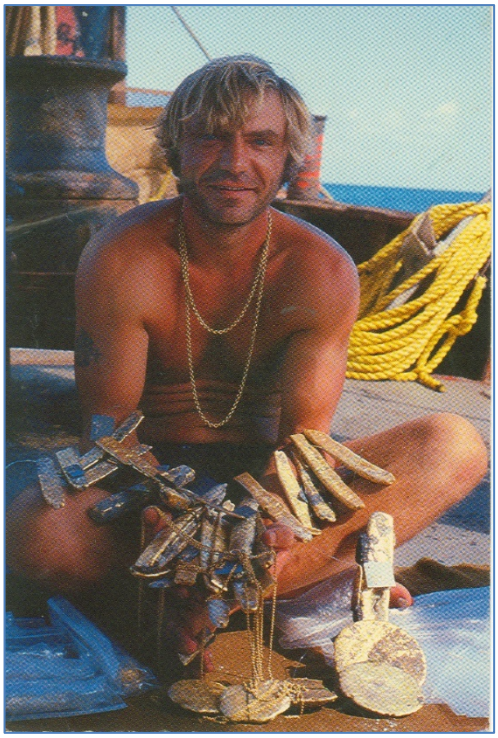
It is at this point from all of the available archival documentation that human activities on the wreck of the *Atocha* end. This would be the case until the last quarter of the 20th century

when the search and eventual discovery of the *Atocha* took place under the auspices of Mel Fisher's Treasure Salvors Inc. and related companies.

It is also at this point where Mathewson's Galleon Matrix comes into play in a more vibrant way for it is from the scattered trail and the classes of artifacts recovered along it that we can begin to interpret the assemblage in reference to varieties of human behaviors.

The Scatter of the *Atocha* wreckage away from the PCD area toward the Quicksand's area is the result of a 2nd hurricane that struck the area approximately two weeks after the initial sinking. This storm broke the upper structure of the galleon away from the ballast, silver, personal bulk cargo, copper ingots and other associated items and dragged it along the bottom in a 330° heading through the "Hawks Channel" - dropping items along the way.

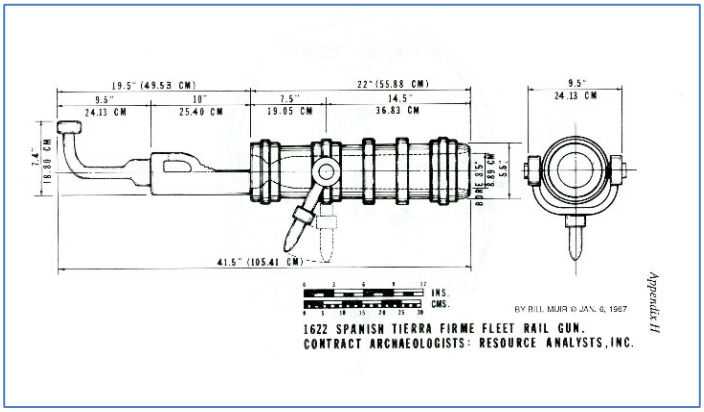
Atocha *coin chest being measured in for site chart. Photo by Don Kincaid*



Bill Moore with 77 gold bars and disks found just west of the Atocha *Main Pile area in 1985*

7.1.5 Scatter of the Nuestra Senora de *Atocha*

We can reasonably assume that for much of the attenuated trail the items being recovered where dropping out of the broken lower hull section. From the evidence and analysis of the remaining artifacts, we know that there must have been a significant hole in the hull leaving her open to the sea. The amount of structure recorded under the PCD accounts for approximately 13% of the lower hull on the starboard side and most of the materials recovered seem to have their origins in the lower hull.



A notable exception to this track of material and found somewhat to the west of the axis of the wreckage was a small cannon. According to the archival documents, Bernal de Lugo a survivor from the *Santa Margarita* marked the area of the wreckage of both the Nuestra Señora de *Atocha* and the *Santa Margarita* with a spar buoy attached to a small cannon.

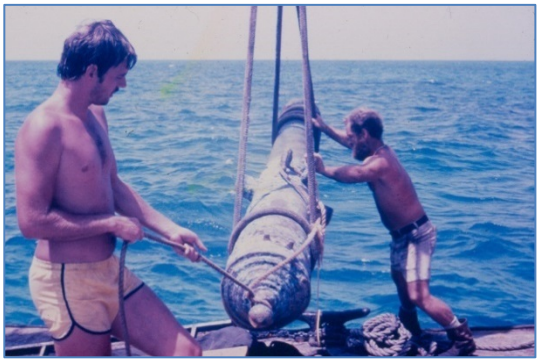
This we believe is the small breech loading swivel cannon that was discovered to the East off the track of the *Atocha*'s scatter in 1985. This alone is a correlation with the archival documents, however we also know that in the second hurricane the *Atocha* began to scatter along a much-attenuated track. The highly dispersed and buried nature of this track accounts for the futility attested to in the extant archival documents in the subsequent searches for any traces of the *Atocha*. The majority of the archival documents regarding the *Atocha* have to do with the inability to locate any remains of the vessel. This form of negative information fits in very well with what we know from the evidence on the seabed; i.e. that given the known distribution of artifacts on the scattered trail of the *Atocha* it would have been impossible for the Spanish, given the primitive technology of the time, to track the remains over so long a distance. Here again we have a place where the post disaster (Gibbs "impact stage") behaviors are predictable at least to some degree.

Also, along this attenuated trail is what became known as the Memorial Day find. In this find over 2000 silver coins were recovered as well as 60 pieces of emerald jewelry and 12 gold bars. This was obviously the remains of a wealthy passenger's personal material that was ejected from the lower hull as it was dragged along the bottom. However, this may also represent an early discharge of material from the stern castle and the personal possession of the wealthy passengers and officers that were stored there. This may be the case because in this area a short section of mast was found that was tentatively described as a "boomkin", a small stay for the lanteen rigged mizzen sail that protruded from the stern.

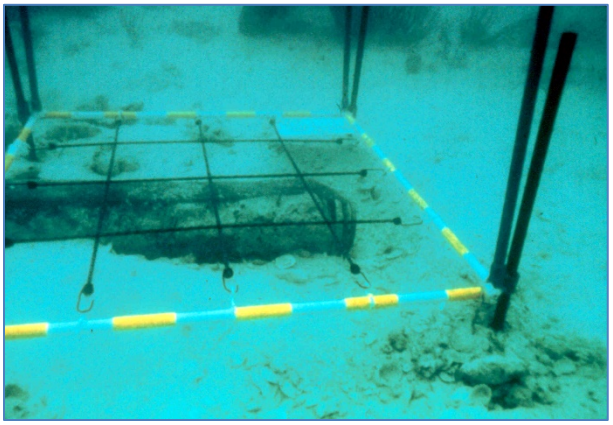
At the stern of this model a "boomkin" can clearly be

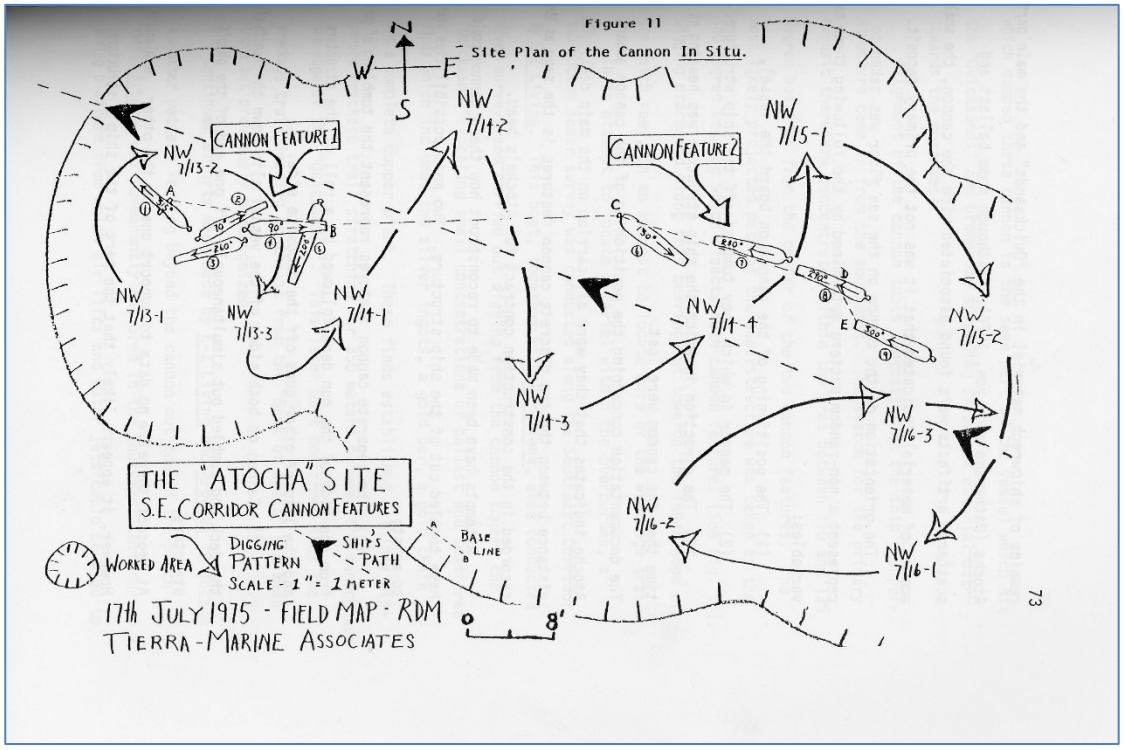
7.1.6 9 Bronze Cannons

The next major feature along the *Atocha* trail is undoubtedly the cannon feature at the edge of the coral plateau. It was here on July 13, 1975 that Captain Dirk Fisher and his crew discovered nine bronze cannons. These were in two groups; one group of five, and 30 feet away another group of four. The *Atocha* was 30 feet on the beam so it would appear that at this spot (which is a rise out of the Hawks Channel and represents a significant hydraulic barrier) that the hulk of the *Atocha* held for a time and was thrown side to side to the degree that 9 of its 20-bronze cannons were ejected from the gun deck and at almost the exact width of the *Atocha*'s hull.



Kim Fisher and Tom Ford recovering Atocha *cannon*

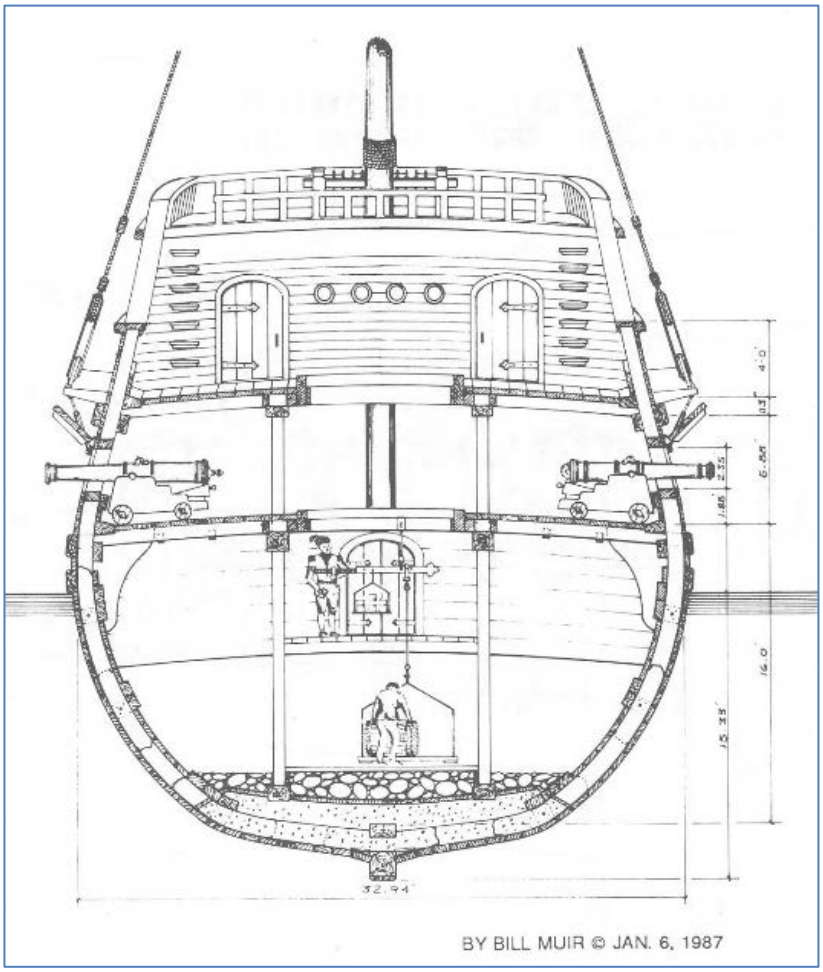




As shown on page #73 of Archaeological Treasure: The Search for the Nuestra Senora de Atocha by R. Duncan Mathweson III

The gun deck can be viewed through the "Galleon Matrix" Activity area Number 2 as the site of many sorts of human behaviors. The efforts to protect the ship and/or take offensive action against an enemy were centered here. Gun crews trained long and hard to be able to move, load, aim and fire these massive pieces of artillery. But much more than this took place along this deck. Much of the crew and the soldiers that were on-board the *Atocha* were most likely housed along this deck, food was served to the various watches on this deck, sleeping and socializing among the crew also took place along here. While a whole host of human behaviors are potentially represented on this deck the cannon area yielded little else aside from the cannon themselves. The *Atocha* now minus the weight of much of the ballast and now the loss of the nine bronze cannon became light enough to be forced up and over the "Coral Plateau" area.

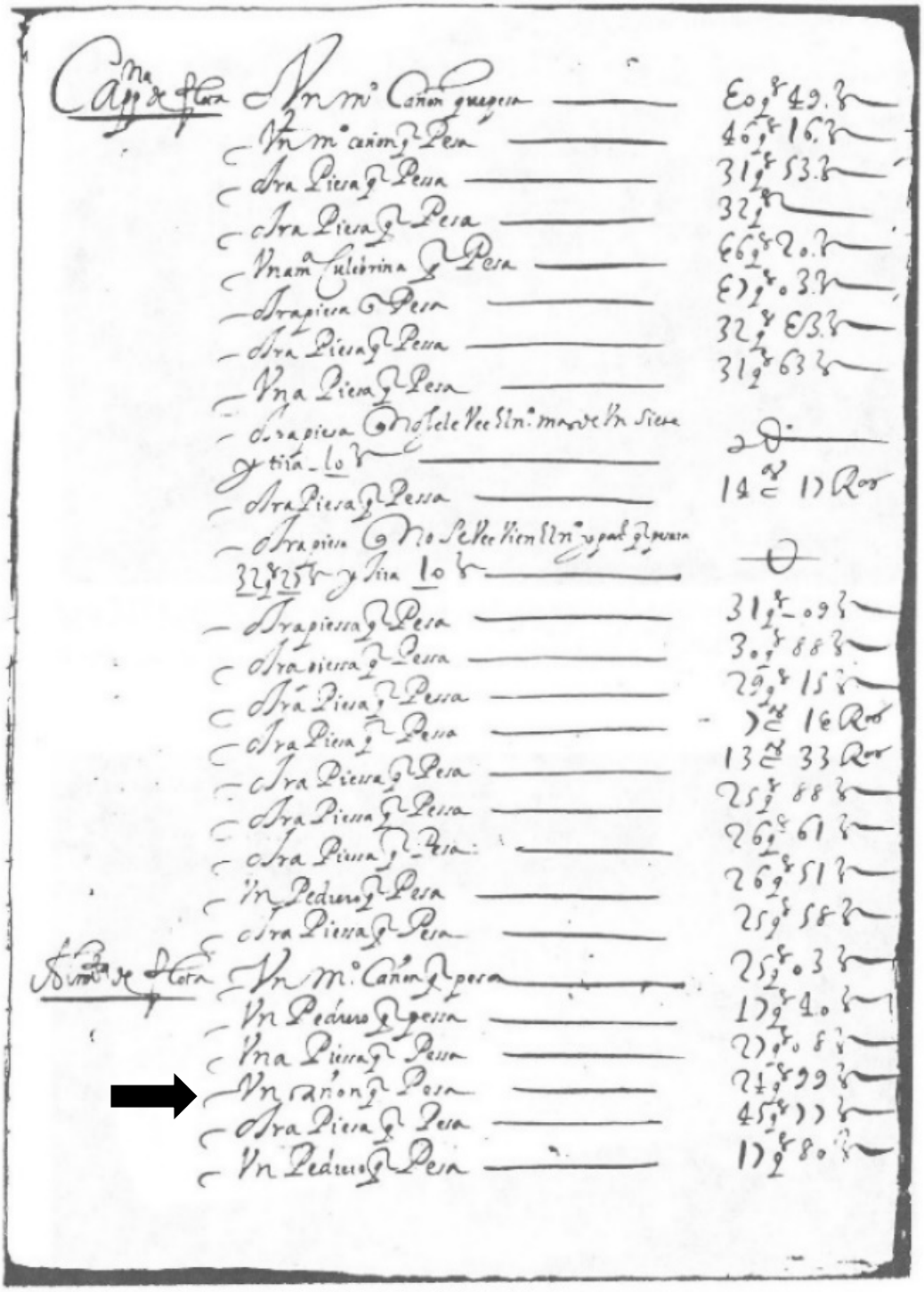
Mel Fisher & Eugene Lyon identify Atocha *bronze gun #2499*



As shown in Appendix II of
The Search for the Atocha by Eugene Lyon

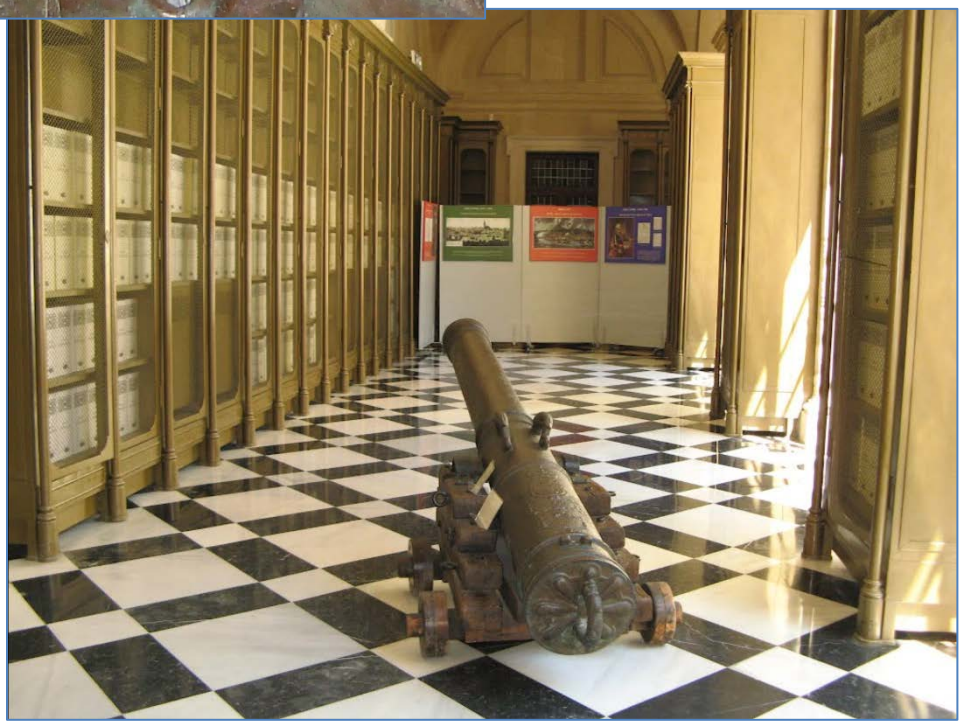
Appendix II

Cannon 2499 Nuestra Senõra de Atocha discovered in July, 1975 and identified from Atocha's gun list.



AGI Indiferente General 1,144 page 1 gun list of Nuestra Senōra de Atocha. (see no. 24q99L) This is the gun that was donated by Mel Fisher to Queen Sofia of Spain. It is now in the Archives of the Indies, Seville, Spain.

Mel Fisher presenting the finest Atocha *bronze cannon #2499 to Queen Sofia of Spain at the National Geographic Society in Washington, DC.*



Atocha *bronze cannon in the Archives of the Indies in Seville Spain*

Bronze Cannon on the *Santa Margarita* and the *Nuestra Señora de Atocha*

by Eugene Lyon
circa 1980's

On 12 December 1621, in Seville, Toras Velazquez de la Cueva, Supply-keeper for the avería administrators received the bronze cannon issued by the Mayordomo of Artillery for the several ships of the Guard Fleet under the Marqués of Cadereita which was to go in 1622 to Tierra Firme and to guard the Tierra Firme fleet.

It was after this date that the accident to the Capitana San Francisco occurred upon leaving the San Lúcar bar. Her guns were doubtless re-distributed among the other vessels, but the 12 December list, from AGI Indiferente General 1144, is the latest extant. The cannon list for the two ships follows, with an 'X' beside those guns salvaged by Francisco Nunez Melian or Treasure Salvors, Inc., as the case might be:

Nuestra Señora de *Atocha*

Medios Cañones
2,503 lb.
3,022 lb. X – Treasure Salvors

Medias Culebrinas
4,252 lb.

Cañon
2,652 lb.
2,499 lb. X – Treasure Salvors

Piezas
2,708 lb.
4,577 lb.
3,157 lb.
3,245 lb.
2,711 lb. X – Treasure Salvors
1,354 lb.
1,352 lb.
3,307 lb.
3,289 lb.
3,078 lb.
3,110 lb. X – Treasure Salvors

6-lb. Sakers
2,214 lb.
2,000 lb. (no number but has shield and was made in Genoa)

Pedreros
1,780 lb.
1,740 lb.

Note: Five other bronze cannons were found associated with the four captioned above, at the same site, but those were worn smooth and exhibited no number markings. It is apparent that the designations on this list do

not correspond with the general type-weight categories of Spanish guns. The name "pieza" which simply means "gun," has no meaning among the typology of Spanish cannon; this is borne out by the range of weights listed under that category. This writer has the cannonball silhouette diagrams from the Simancas archive, and suggests that the balls found to date be correlated as to estimated original diameter. These then tie to the several known gun types.
Santa Margarita

Medios Cañones
3,244 lb. X – Nunez Melian
3,149 lb. X – Nunez Melian
3,854 lb.
3,077 lb.

Pieza
2,409 lb.
2,749 lb. X—Nunez Melian
2,706 lb.
2,910 lb.
2,625 lb.
2,364 lb.
4,313 lb.
2,944 lb.
2,601 lb.
2,567 lb.
2,397 lb.
2,331 lb.

Portuguese Pedrero
2,000 lb. (with aldavas and 2 tangetas without number or weight)
NOTE: this maybe the pedrero recovered by Melian and listed at 1,608 lb.

1,228 lb. NOTE: this may also have been recovered by Melian; on 2 June 1627 his divers brought up another pedrero without markings.

The Melian salvage of cannon is described in AGI Contaduría 1,112. Gaspar de Vargas is variously described as having salvaged two or four guns in the interim between the two hurricanes of September and October, 1622 ("Having salvaged two pieces of artillery, since he did not find any more above the main ((gun)) deck, he buoyed the galleon with a cable---"from Marques de Cadereita to the Crown, Havana 10 January 1623, AGI Santa Domingo 132). Governor D. Francisco Venegas states that Vargas recovered "four bronze cannons" from the *Atocha* ("Demand of Captain Gaspar de Vargas," Havana, 5 April 1624, AGI Contratacion 2,988).

Melian also salvaged six cannons in addition to those listed: Nos. 4900 (a very heavy gun), 2314, 2627, 3000, 2299, and 2312.

Treasure Salvors, Inc. has salvaged from the *Santa Margarita* site two heavy bronze guns. One of those weighed out close to 4,313 lb., but neither bear shield nor weight marking that are legible enough for identification. It is doubtful that the *Santa Margarita* exceeded the size of the *Atocha* enough as to permit the mounting of the eighteen guns on the original list plus the six additional one's salvages on the site by Melian, although this is possible. There may therefore have been other substitutions of guns before the sailing of the vessel.

The word aldavas probably meant aldabones---handles or lifters.

The Genoese saker described on the *Atocha* list seems typical of guns from that foundry; another without weight mark, a twelve-pounder, is described in AGI Contratacion 3,893; the Portuguese pedreros are also listed there. In that same document bundle, an audit of guns founded or present at Seville, a metal shortage of an average of seventy pounds was found in 105 guns.

The arms lists (see above) for the Guard galleons note that the stone cannonballs, several of which have been found at each of the two sites, were intended for use in the pedreros. It is thus clear that this word did not mean a gunwale-mounted swivel guns but rather a wide-bore deck gun. There is a sample of the 17th century bronze pedrero in the Museo de Artilleria, Madrid. The forgoing is not intended to be an exhaustive study of the guns. Further work will involve tracing the guns found onsite with weight numbers and other identifying markings to the foundry records in Seville. For purposes of hull reconstruction, however, this material has been furnished. The reader is further directed to the following:

R. Duncan Mathewson, "The Guns of the *Nuestra Senora de Atocha*," typescript, 1976.

Albert Manucy, "Preliminary Study of Artillery at the fort of St. Augustine in 1580," typescript, St. Augustine, Florida, 1975.

_____, Artillery Through the Ages. Washington, U.S. Government Printing Office, 1949.

Paul E. Hoffman, "Report on Artillery (Seven Parts), "typescript, St. Augustine, Florida, 1976.

I have included a Xerox of the later Manucy report because of its clarity and its application to Spanish guns; this last is often lacking in other works on colonial cannon.

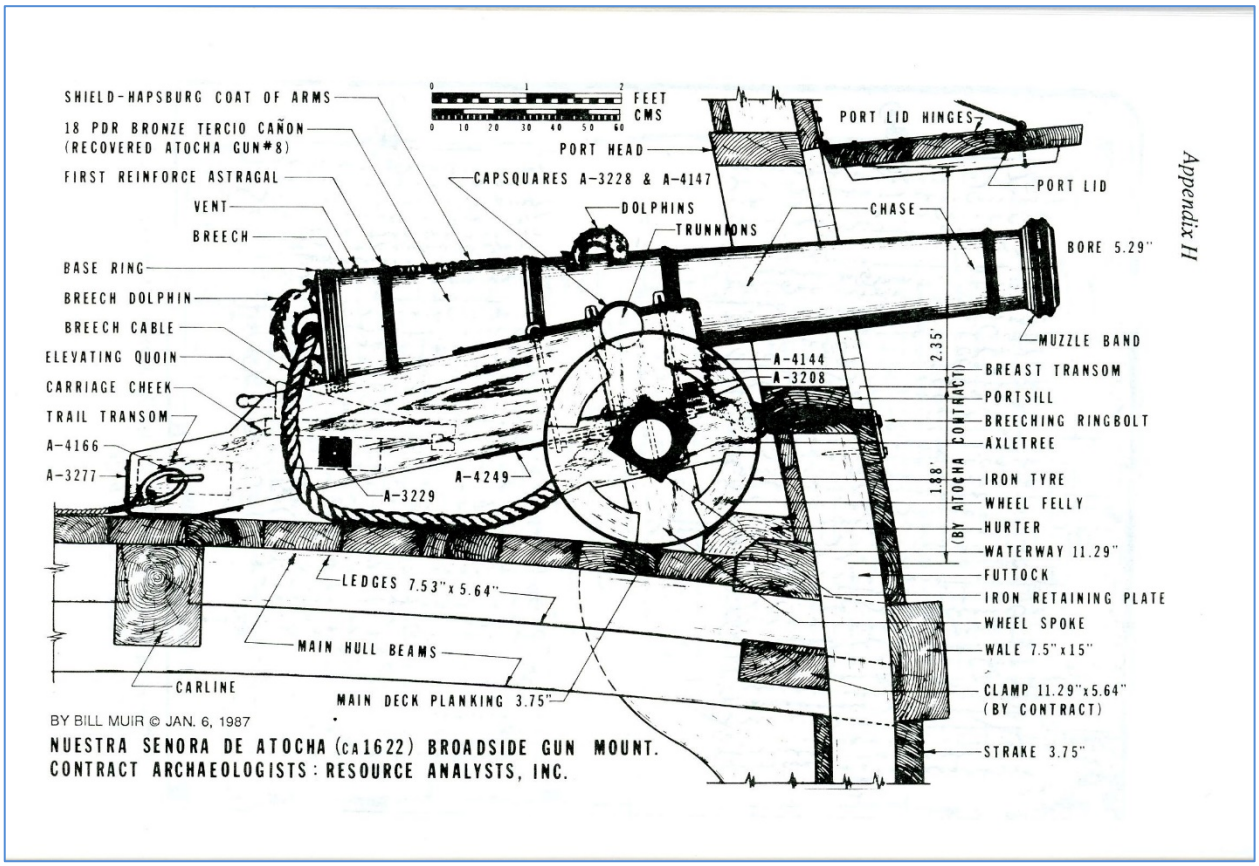
SANTA MARGARITA --- list of bronze cannon
(From A.G.I. Indiferente General 1,144)

Piece	2,409 lb.	(Castilian)
Piece	2,749 lb.	NOTE: Salvaged by Spain
Piece	2,706 lb.	
Medio Canon	3,244 lb.	NOTE: Salvaged by Spain
Piece	2,910 lb.	
Piece	2,625 lb.	Salvaged?
Piece	2,364 lb.	
Piece	4,313 lb.	
Medio Canon	3,149 lb.	NOTE: Salvaged by Spain
Medio Canon	3,854 lb.	
Piece	2,944 lb.	
Piece	2,601 lb.	
Piece	2,567 lb.	
Piece	2,007 lb.	(3,077)
Portuguese pedrero	2,000 lb.	with aldavas and 2 tangetas without number or weight NOTE: Salvaged by Spanish
Portuguese pedrero	1,228 lb.	NOTE: Salvaged by Spanish
Piece	2,397 lb.	
Piece	2,331 lb.	

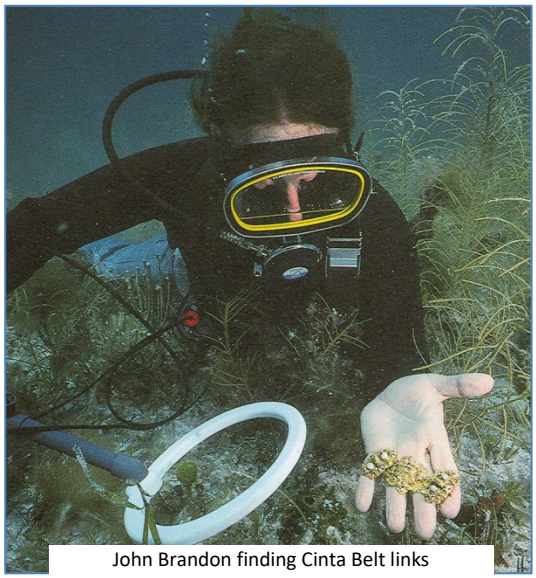
NOTE: Five more bronze pieces salvaged by Melian which do not match any of the weight numbers on this list.

Currently there are four of the *Atocha* bronze guns on public display at the "Treasures of the Sea" Exhibit on the Delaware Technical Community College campus located at 21179 College Drive in Georgetown, Delaware 19947

http://www.treasuresofthesea.org/



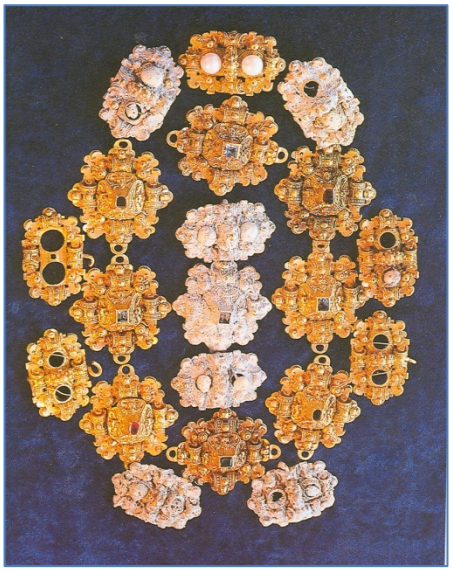
7.1.7 Coral Plateau


John Brandon finding Cinta Belt links

This area represents the first major barrier that the hulk of the *Atocha* encountered as the second hurricane propelled it across the seabed. It was on the southern edge of this barrier where the cannons were discovered, and after losing this mass of weight the wreckage of the *Atocha* was forced over the plateau and across towards shallower water.

Across this plateau a variety of artifacts were recovered, for the salvors the most important was a collection of four silver bars found in the mid 1970's one of which had markings that could be matched to the manifest of the *Atocha*. This was proof positive that part of the *Atocha* had been found and was important in the ongoing legal battles over the treasure.

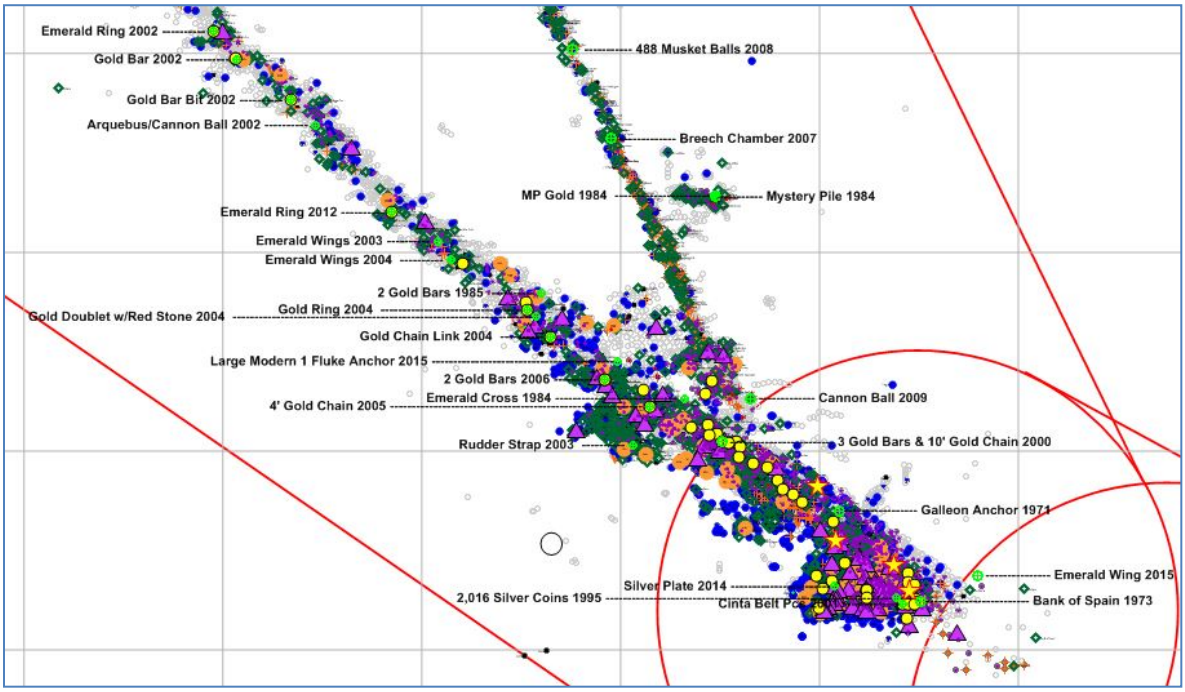
On this area nearly a decade later Captain John Brandon found what would become called the "Cinta". This fine collection of jewelry set with diamonds, rubies and pearls was part of a set of 22 that were meant to be worn around the waist of a lady of wealth. What we seem to be seeing is a dispersal of material that is both from the fractured lower hull (silver bars), and the cabins of the wealthy in the stern castle (cinta). While the cinta may represent part of a chest of a wealthy passenger from the lower hull there is no doubt that as the *Atocha* left this material across the plateau that the next barrier would begin a dispersal of objects much more dramatic than any except the PCD itself.



7.1.8 The Quicksands

As the wreckage of the *Atocha* spilled the silver bars and the jewelry across the coral plateau it was headed toward an area of deep shifting sands that are known collectively as the "Quicksands." This area consists of what are literally desert like sand dunes extending over a large area of sea bottom that shift over time, dependent upon current and seasonal storm intensities.

It was in this area that the hulk of the *Atocha* impacted on the south leading edge of the sand bars and began a more substantial breakup. Between the storm surge and hurricane currents the *Atocha*'s already badly compromised hull structure cracked like an egg and separated into at least two sections. The initial spill from this event scattered a host of varied artifacts. One of the first to be found was a galleon anchor. Close by thousands of coins would begin to be located, so many in fact that the divers at the time dubbed the area the "Bank of Spain".



"Bank of Spain" Area in the Quicksand's

7.1.9 *Atocha* Artifact scatter - division of direction

It is also in this area where using our GIS program we begin to see the divergence of the two sections and what they were carrying as it was distributed along the bottom. There are two distinct trails. One heads from the conglomerated materials at the leading edge of the Quicksands and the Bank of Spain toward a roughly Northerly direction. The other track of material leads away to the North-Northwesterly direction.

Careful recordation of location and analysis of the categories of materials, keeping in mind the "Galleon Matrix" of activity areas, and associated behaviors, allow us to make assumptions on what sections of the ship were driven in these two directions.

7.1.10 Northern Track

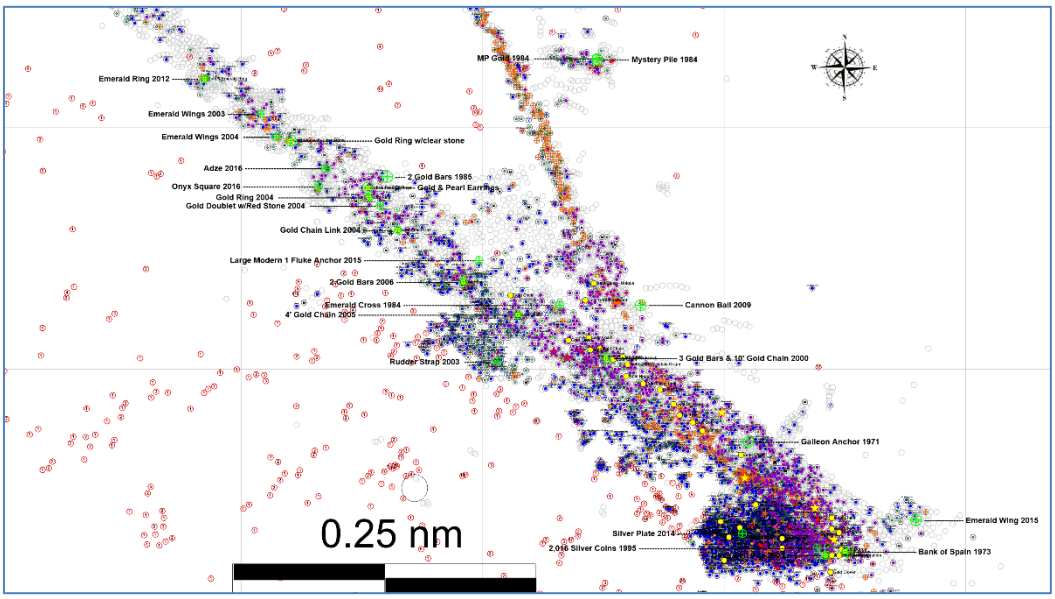
It is without any doubt that some scattered sections of the *Atocha* existed with some significant integrity. On the Northerly track in 1984 while conducting diver towed visual surveys the tenth bronze cannon from the *Atocha* was located. Further north from that two galleon size anchors were discovered. Obviously, a large section of hull was being driven forward along this line. Discoveries along this line over the past three years have produced a set of carpenter's tools and a chest of iron nails. This represents an extremely important collection of material. The ships carpenter would have held a valued place in the crew, after all, this was a vessel made of wood and any problems with its structure or function would have been in the realm of the carpenter. We also know that traditionally these sorts of stores and supplies would have been located in the bow section. This corresponds to the "Galleon Matrix" activity area 4 or the forecastle.

The presence of the two galleon size anchors to the north re-enforce this. So, we can say with some assurance that on this northern track we are dealing with at least a significant section of the bow or forecastle of the *Atocha*. Of course, these two anchors were never deployed before the wrecking and most likely held on the wreckage as they were stowed for sailing. Along this track we have also recovered a "breech block" for a breech loaded cannon. Although as yet no cannon that would take such a block has been found. Approximately 488 lead musket balls have been recovered attesting to the storage of at least some of the ammunition in this area of the ship. We can say, with some assurance, that the bronze cannon was one of the forward cannons on the ship.

7.1.11 Northwesterly Track

It is on this track of material that we begin to see some of the trappings and items of importance to the wealthy passengers and officers aboard the *Atocha*. If one looks at the map that highlights this division of material at the base where the two tracks diverge one can find the location of a "rudder strap". The rudder attached to the very stern of the vessel passed this way and from its position it is possible to say that it was close by here that the *Atocha* was torn asunder. The collection of materials from along this Northwesterly track is vastly different from that of the North track.

Along this track has been found high value items that represent some of the prized possessions of the wealthy and powerful elite who were traveling aboard the *Atocha*. It was from this area that we recovered the "bishops cross and ring", gold bars, chains, rings set with high value jewels, the solid gold



Rudder Strap Area Chart

bernagal, the emerald "wings", the first mariners astrolabe and, of course, silver coins. There can be no doubt that we are seeing spill from the stern of the *Atocha* along this line.

The wealthy passengers would have brought their most valued possessions into these cramped cabins. This would include their families, special foods (such as sweets like candied fruits) clothing, luxury items and objects too valuable to stow in the bulk cargo areas of the ship. A quick glance along this line of material gives one a good indication of what sorts of items these might be.

In conclusion, as the work on the *Atocha* continues and with the utilization of the GIS technology and the "Galleon Matrix" model, we can begin to pick out the patterns of artifact dispersal across the seabed and relate them to various activity areas aboard the vessel. This in turn allows us to make hypotheses as to where other like material may be found and for the first time extrapolate some of the human behaviors that surround each area of finds on the seabed. Truly we are with technological advances entering an age where middle range theoretical constructs can be postulated and tested with an eye toward answering larger anthropological questions.

Sadly, much of the artifacts that once comprised this great ship are gone, much of the structure is washed away. Those items that could still float were dispersed in the first and second storm and the fragile organic components that once were integral to the *Atocha* are no more. Yearly there is less even

of the more durable materials as the iron and other metals slowly return back to inert ores and sulfides. We have been honored through the last 40 years to be involved in the recovery of this great treasure, both of artifacts and knowledge.

Dogged work and recoveries will help to expand on our knowledge base and we hope to make more strides towards the location of some of the as yet unfound major sections of the Atocha in the coming years. We eagerly look forward to this and the next years of recovery under the renewed permit that will allow us to keep moving forward in this important archaeological investigation.

7.1.12 Question #2

The second question that we posed in our last renewal request was:

"Can artifacts from the Atocha give us insight into the religion that was so important in the formation of the Latin American Colonies and conversely can we see evidence of New World adaptations to "fit" the cultural groups encountered"?

While it was axiomatic that the Spanish would bring their religion with them to the new world one must attempt a bit of cognitive archaeology at this juncture. ***Cognitive Archaeology*** is a sub-discipline of archaeology which focuses on the ways that ancient societies thought and the symbolic structures that can be perceived in past material culture. Humans do not behave under the influence of their senses alone but also through their past experiences, such as their upbringing or group history. These experiences contribute to each individual's unique view of the world, a kind of cognitive map that guides them. Groups of people living together tend to develop a shared view of the world and similar cognitive maps which in turn influence their group material culture.

The Spanish when they entered the New World for the first time came with a set of beliefs and a world view that was shaped in large part by their religion and history.

The picture that most Anglo students have of the Spanish in the New World is most likely that of a helmeted conquistador. While those who study Spanish New World history know that this is a facile image, just where did the Spanish mind set come from?

One need only look at the history of the Spanish homeland to understand the warrior (conquistador) mentality. In 700 AD the Moors conquered the Iberian Peninsula and from that time until 1492 under Ferdinand and Isabella wars and battles would be fought between the Christian Kingdoms and those of the Muslim Moors. Many of the Christian Kings who sought to wrest control of Spain away from the Moorish Caliphs had already expended time, effort and resources attempting to conquer the Holy Land during a series of "Crusades" that took place over hundreds of years. All the while the Catholic Church held near absolute power as a theocracy that stood behind the thrones of many of the European Kingdoms. This long period of Spanish history became known as the "Reconquista" or the re-conquest. It is no wonder that the largest groups of early Spanish to the New World were the warrior caste.

By the year 1622 there had been much work done by various religious orders of the Catholic Church in converting the indigenous populations of the New World and dismantling the previously existing "heathen" temples and religions. As a Spanish subject you were a Catholic or you were not a Spaniard. This was made abundantly clear during the forced conversion or expulsion of the Jewish population in the Catholic homeland. Religions other than Catholicism in Spain and her colonies were banned or forced deep underground.

But all the conversion was not a harsh undertaking. Indeed, one of the hallmarks of Christianity's wide appeal was its fluid adaptability. This had been the case since the time of the Roman persecutions

of Christians and it remained the case with the populations encountered in the New World. The Catholic Church was adroit at melding indigenous observances, ceremonies, feasts and holy days into an understandable and comfortable world view for the newly converted. One of the most popular figures in New World Catholic Iconography is that of Our Lady of Guadalupe, who is pictured as an indigenous figure and embracing of that population in particular.

While we now have a better understanding of how Catholicism operated in the New World, how will that translate to the *Atocha*? What are the religious artifacts recovered from the *Atocha* and can we see evidence of the efforts of the Catholic Church's adaptability to the New World, and what were the important religious artifacts for those aboard the *Atocha*?

The following is a selection of two religious items both of the wealthy and from the lower class aboard the *Atocha*.

Perhaps the most stunning religious artifact recovered from the Nuestra Senora de *Atocha* is the Emerald Cross. This was recovered from the Northwest trail of material near where it diverges into two distinct tracts. The Cross is a baroque style and there are traces of enameling that can still be seen on the cartouches at the end of the uprights. It is set with 70 carats of extremely fine Muzo emeralds. The reverse of the cross is a masterwork of engraved imagery. The upright is engraved with a representation of St. Anthony of Padua,

Saint Anthony is a Franciscan Order Saint so it may be reasonably assumed that the cleric to whom this object belonged was derived from that order. Another interesting and somewhat ironic aspect to Saint Anthony is the fact that he is the "patron Saint of lost things".

The Iconography flows downward toward the foot of the cross where we find a pineapple, this is a purely new world image and its inclusion on this object reflects the enculturation processes at work during this time. Below this at the base is an image of the Madonna and Child that is known as the "Nuestra Senora de la Leche" or "Our Lady of the Milk". One of the oldest shrines to Catholicism in North America is in St. Augustine, Florida founded in 1565. The Mission that was founded was Nombre de Dios, and the earliest Chaple there was dedicated to the Nuestra Senora de la Leche;

The history of the devotion to the Mother of Jesus as Our Lady of La Leche may have roots in a 4th Century grotto in Bethlehem. To this day the Franciscan community maintains a shrine there called the Milk Grotto. Its centerpiece is the Blessed Virgin nursing the infant Jesus. Many believe that the crusaders brought the devotion to Mary as a nursing mother to Spain in the Middle Ages.

During the reign of Phillip III in Spain, word spread of a nobleman's wife and baby, expected to die during the birth of the child, who were both spared as a result of the intercession of Nuestra Senora de la Leche y buen parto (Our Lady of the Milk and Happy Delivery). The statue, in possession of the nobleman, soon found a place in the hearts of many throughout Spain.

By the early 1600's the devotion, under the title of Nuestra Senora de la Leche y buen parto, had a special place in the lives of the Spanish settlers and the converted Native People in St. Augustine. http://www.missionandshrine.org/la_leche.htm

It and the obvious connection to the Franciscan Order seem to have spread well throughout the American Colonies of Spain by this time period.

At the other end of the social spectrum represented by those aboard the *Nuestra Senora de Atocha* was a simple Jadeite pendent the type that might have been comfortably worn by the aboriginal population of the new world at that time. We know for example that there was at least one high ranking person of mixed race aboard the *Atocha*. However, the materials that we have found that we believe are associated with this individual reflect a more Latinized conception of wealth (i.e. they were made of silver). This object may have been in the possession of its owner(s) from before the person or his/her family was Christianized. Jade and Jadeite were a highly coveted stone used by aboriginal groups long before the arrival of the Spanish and the concomitant western influences.

IHS is the Chi-Rho or the Greek abbreviation for the name Jesus Christ it was adopted and used heavily by the Jesuits or the "Society of Jesus". On the opposite side in the monogram MAR, this is believed to be representative of Mary. However, these sacred images seem to have been added to what was at one time an Amerindian ornament, so the combination is of great interest.

7.1.13 Question #4

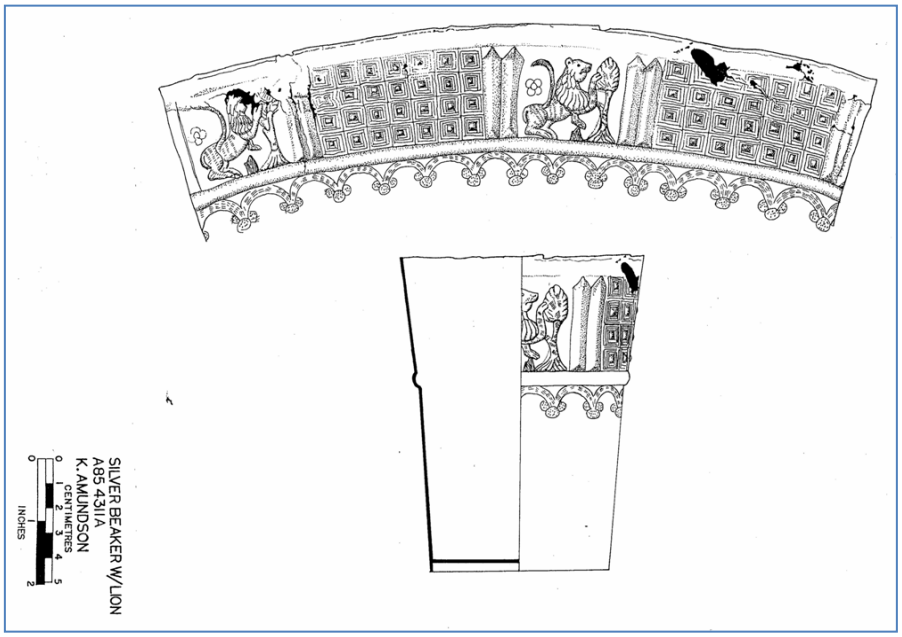
Our fourth question that was posed was specific to a particular group of artifacts that have been recovered and these reflect a dynamic time period in the history of South America.

What does the presence of Amerindian artifacts aboard the Atocha indicate? What does their presence there suggest as human behavior patterns and can we find correlates from other time periods?

These artifacts represented one type of silverware from the collection. These were containers, flatware and plates that showed a difference in decorative iconography and formed from the majority of other silverware. "Mestizo" silverwares (Mestizo was the word used by the Spanish to denote a person of mixed Spanish and indigenous blood) revealed iconographic motifs that showed quite starkly the two disparate cultures coming together and mixing (enculturation). It is here perhaps that we have the possibility of drawing inferences concerning the enculturation process, a reflection of the events that produced this melding into the hybridized cultural structure that today's Latin America would become.

7.1.14 Objects

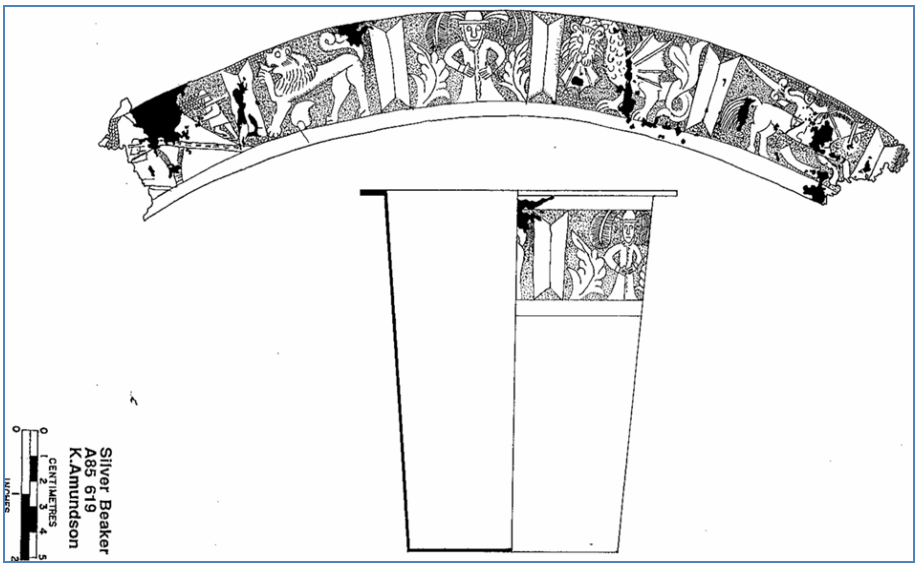
These objects were varied in form; beakers, bowls, plates and one special spoon made up the majority of items, in addition to nested silver boxes and fragments of objects. Perhaps some of the most dramatic were the beakers, most likely drinking vessels used in Andean aboriginal ceremonies.



Beaker showing a lion with field of concentric squares

Items like these have been found in Incan grave sites dating to the 11th century AD. However, unlike the more ancient pre-Columbian pieces which were decorated with floral and animalistic designs we have instead an object whose form is identical to the more ancient forms but whose artistic motifs have been impacted by the advent of the Spanish. The lion on this object was clearly executed by an artist that had no knowledge of what a lion (one of the symbols of Spanish royalty) looked like.

Another example of the iconography associated with these beakers shows in a number of panels the view of the Spanish overlords by the indigenous craftsman that created the object:



Beaker showing Spanish Grandee

In this instance we see a number of panels that represent a uniquely indigenous viewpoint. In the center is a Spanish grandee; we can deduce this from his style of dress, especially by the presence of (ostrich?) feathers in his hat, that he is someone of importance. There is yet another lion symbolized on this vessel, to the extreme right panel we can see a horseman and under the horse is a dismembered arm.

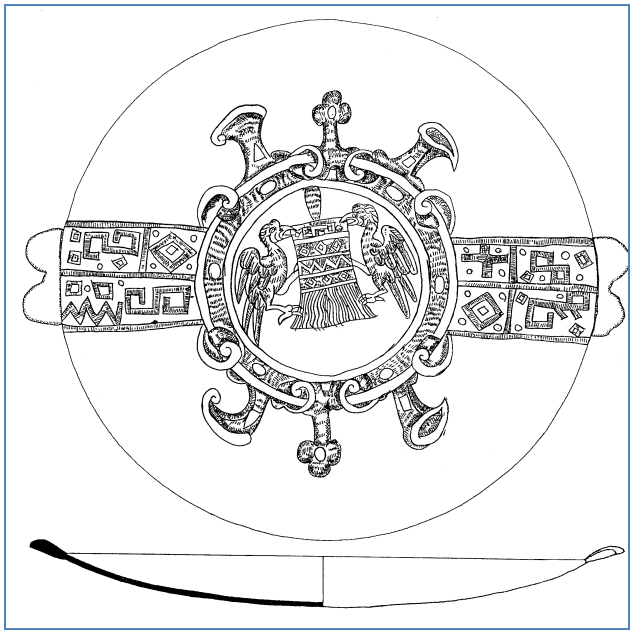
On a second cup bearing remarkably similar pattern we can see persons traversing mountain trails this may be representational of the mountain of Potosi, where the bulk of silver production in South America took place.

Beaker design showing mountain trails

On this design the mountain and the trails leading up (or in) the mountain is clear as are the people wearing hats (Andean style) and the dismembered arm under the horse.

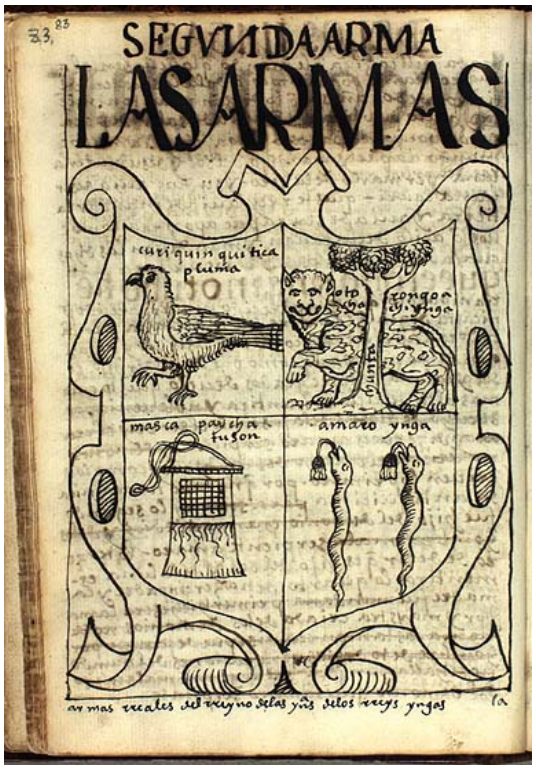
These images on just these two cups show a great amount of interaction between the two cultures. The mountain of Potosi, where the majority of silver was being produced, was a focal point activity for both the Spanish colonizers and the subjugated Andean population. There were however gradations in the social system in the Andean region that did not occur in other Spanish colonies.

When the conquest took place, the Spanish were encountering people who owed their allegiance to the Inca Empire. There was a class system already in place which the Spanish took advantage of. Incan royal families were incorporated into the Spanish culture by the bestowal of titles and the accompanying family crests. In this way, the Spanish conquistadores, far from alienating the ruling class subsumed them and intermarried creating the Mestizo class. These classifications were an important means of governance in a culture that had achieved such a high level of civilization. One such heraldic crest was recovered from the *Atocha*:



Silver plate with Heraldic crest

In the above illustration we see a plate that combines both elements of European art (the scrollwork on the center circle) with that of indigenous art (the center design and the two bands running out to the handles). Perhaps the most telling is the center design here we see two condors the giant bird of the Andes holding aloft a woven cloth (known in Incan culture as a quepu). Both of these symbols were indicative of the Incan Royalty. A similar cloth can be found in Guaman Pomas ,1615, El primer *Nueva corónica y buen gobierno,(http://www.kb.dk/elib/mss/poma/, 2003):*



Guaman Poma, Second Crest of the Inca, 1615

Note the inclusion of the quepu as well as the iconography of the bird (condor). Interestingly the scroll work around the design, as a decoration from the printed work of Poma, is essentially the same as that of the plate in question.

These unique artifacts, along with the wealth of historical documents concerning the *Atocha*, the colonial administration of Peru and accounts such as those of Guaman Poma, offer a unique opportunity to view enculturation processes at work in the Andean region in the early decades of the 17th century.

This one small subset of artifacts allow us to view through the eyes of the conquered people images from their daily lives; from the haughty attitude of the grandee, the cruelty of the Spanish conquerors, the forced labor at the mines of Potosi, and the seduction of power invested by the Conquerors on those deemed worthy. In reviewing the iconography of these artifacts, we can pose questions regarding human behavior, particularly the enculturation process, which is partly of the aim of middle range theorizing. For example, in what ways does the iconography present on the Mestizo silver recovered from the *Atocha* reflect the world view of the indigenous peoples? Clearly, even from the disproportionate sizes of the characters; i.e. the grandee and the sword-wielding figure in relation to the figures of the workers, suggests a power differential borne out by the historical documentation.

What aspects of the iconography show the melding of the cultures? Overall, the use of motifs demonstrates a blending of artistic traditions evident in the beakers field of concentric squares and the scroll-like decoration used as enhancement on some objects. Perhaps the most poignant of the pieces is the plate with the condor crest, reflective of not only Spanish machinations regarding the rule of the conquered peoples, but also indicative of the yearning of the conquered for standing in the new social structure. The family crest as represented by the condor plate is an example of the Spanish imposition of their own social and class systems by favoring certain individuals and raising them in status.

We must however be careful when making statements from such a small subset of artifacts. Remembering that they are derived from a site which represents skewed social categories at best and which has undergone the winnowing process of a hostile environment, losing large percentages of materials that might have told a more complete story. Nevertheless, we can from the evidence in the archaeological record, and from the documentary sources, begin to piece together a picture of life for the indigenous peoples in the Viceroyalty of Peru nearly four centuries ago. But we must by force use the historical particularism of earlier archaeological thought to begin to approach middle range theory on shipwrecks such as the *Atocha*.

It might be asked if all of these objects were the property of one person. We know that Diego de Illescas, was a high-ranking mestizo gentleman aboard the *Atocha.* However, there seems to be quite a few of these objects. Perhaps we need to view this on a more common human behavior. Could items such as these have been mementos of a wealthy passenger's life in the New World a sort of 17th century

souvenir? I believe that these represent a mix of at least both of these functions. Today when we travel, as in the past, travelers often carried home mementos of their journeys from their former lives. We can safety assume that those aboard the *Atocha* participated to some degree in this same human activity, and that some of these unique items represent this sort of object.

Research into these fascinating cultural transformations is ongoing, the presence of the indigenous or New World's influence is present in many objects, the pineapple on the emerald cross, the condor coat of arms, llamas on the Taza, and conversely Spanish iconography on native objects, such as beakers and the like. A simple pendant made of jadeite, with the inscriptions of Christianity carved in. These are the clearest examples but ongoing work may reveal more it is to be hoped that in this next renewal of permitting many more such objects will be revealed that will help shed light on this dynamic time in the Americas.

7.1.15 Conclusion

In conclusion it is obvious that the *Atocha* and *Margarita* are yielding - albeit over a long period, substantial archaeological and anthropological information. The ability to properly interpret this information is enhanced by our evolving technology and developing theoretical frameworks. We are very excited by the prospects of what the future holds. We once again respectfully request that the Florida Keys National Marine Sanctuary continue their long support of this project by renewing our permit for a further 5-years.

The overriding recommendation that we have at this point is a continuation of the exacting work being undertaken. In the investigation of this challenging shipwreck, there is much to find and there is no good way to estimate how long finding the remains of this wreckage will take. Simply looking at the number of magnetometer anomalies that have yet to be investigated gives some idea of the scope of the work. Sadly, the cannon feature of 10 major pieces of ordinance are of a non-ferrous nature and will not be seen with the traditional remote sensing devices employed in the past. It is hoped that with the developing EM technology currently deployed on the H-AUV *Dolores,* that many of the non-ferrous components of the NS *Atocha* will begin to be revealed.

8 HISTORICAL RESULTS AND CONCLUSIONS

1. *The description of the results and conclusions of the historical, architectural, engineering or cultural resource investigations shall address findings in relation to the stated objectives;*

The *Nuestra Senora de Atocha* and the *Santa Margarita* have revealed much of the lifeways, and society that was present at this period in the Spanish Colonies of what is today Latin America. The nearly unbelievable opulence and wealth of the upper classes, officers, dignitaries, lesser members of noble houses and powerful clergy is well represented in the magnificent jewelry, the heavy gold chain and the silver bar consignments that we know to have belonged to a single family.

The items found that were unregistered, give us a chance to speculate on the pervasive nature of contraband at nearly every level of society. Historical documentation of the building of the *Atocha* has given insight into the contractual arrangements between the crown and the builder in Havana, as well as revealing places in the remnant structure found at the Primary Cultural deposit that showed where the contractor had "cut corners" in the build, thereby making the overall structure weaker. We can only conjecture as to whether or not if the vessel had been built according to what the contract called for perhaps it would not have sunk so quickly after striking the outer reef.

2. *An assessment of the integrity of evaluated sites;*

While this has been covered at some length in the various documents, it is worth noting again. That while the *Atocha* and the *Santa Margarita* represent homogenous collections of 17th Century Spanish Colonial material, and hold undeniable historical and cultural value, these sites are highly scattered and dispersed. They exhibit often discontinuous multiple tracks of wreckage due to both the initial sinking, the hundreds of years of subsequent storms and in the case of the *Santa Margarita*, anthropogenic effects of salvage soon after the sinking. As with many sites of this period in warm, shallow water high energy zones there has been much lost due to the action of the environment on the remnant components depending on each object's material makeup.

Also, it is generally acknowledged that ships of this time period were slanted towards traditional male gender roles, so there is often little represented in the archaeological record from these two vessels that can be pinpointed to the female gender. In this regard while shipwrecks have been often called a time capsule, it may be more correct to say that shipwrecks that occur in warm shallow water high energy zones represent a naturally slanted or skewed picture of shipboard maritime culture and activities that have been winnowed by both natural and often anthropogenic events.

3. *Methods used to apply National Register criteria for a determination of eligibility and historic context;*

Since both of these sites were awarded to Motivation, Inc. and its predecessor companies in the US District Court for the Southern District of Florida, in Admiralty, these sites are not eligible for the National Register. Further, by the definitions for eligibility on the Federal Register neither of these sites would be eligible as they do not fit many of the criteria themselves.

4. *A description of the constituent elements that constitute the complete property (e.g., outbuildings, landscape features, etc.) which is determined eligible for listing in the National Register;*

This is not applicable to the *Atocha* and *Margarita shipwrecks*. See Section #3 above.

5. *The National Register property boundaries depicted on a scaled site plan sketch;*

This is not applicable to the *Atocha* and *Margarita* shipwrecks. See Section #3 above.

6. *Conclusions and analysis of the findings;*

While many archaeological, cultural and sociological conclusions can be drawn from the collections from the *Atocha* and the *Margarita*, perhaps one of the most compelling is the fact that good historical and archaeological data can be garnered from sites worked by private sector interests such as Motivation, Inc. That in the five decades that these sites have been worked much has changed regarding our understanding of both shipwrecks, conservation, preservation and the various methods that historic resources can be utilized and preserved. The *Atocha* and the *Santa Margarita* are arguably the best-known Spanish Galleons of the modern period. This was due to the efforts of Mel Fisher and his companies. Museums around the world are caretakers of parts of the collection, as well as the permanent collection in Sebastian, Florida at the Mel Fisher Center Treasure Museum and in Key West, Florida at the Mel Fisher Maritime Heritage Society Museum. For more detailed reports on finds from the *Atocha* and *Margarita*, please refer to previous reports, the attached bibliography and our growing online publications located on our web site at www.melfisher.com under the "Research" tab.

7. *A discussion of the manner in which the resources contribute to an understanding of local, regional, state, or national history and/or architectural history and recommendations regarding the treatment of the resource(s) including but not limited to preservation or avoidance, minimization or mitigation of potential impacts, or no action;*

The investigations of these shipwrecks, the recovery of the remains and further ongoing studies are supported by Motivation Inc. under both Federal Court orders and long-standing permitting from the FKNMS.

The various understandings that have been generated as to history whether local, State, regional or national are well documented in both the individual report as well as books, magazine articles, video and TV documentaries, and now on-line at www.melfisher.com. However, the impact of the recoveries from the *Nuestra Senora de Atocha* and *Santa Margarita* are ongoing.

On a local level, the tourist industry in Key West certainly benefits from both past and ongoing recoveries in various ways. In the first year following the discovery of the Primary Cultural Deposit of the *Atocha*, the exhibit received over 800,000 visitors. The permanent Collection of the *Atocha* and *Santa Margarita* held by the non-profit 501C3 Mel Fisher Maritime Heritage Society as well as the privately-owned museum exhibits at the Mel Fisher Center Treasure Museum in Sebastian, Florida not only supports educational outreach regarding these two shipwrecks but with respect to the Mel Fisher Maritime Heritage Society, undertakes archaeological projects both at the local and international levels. The investigations will continue, studies will continue and our understanding of these great shipwrecks and the societies and cultures that produced and influenced them will grow.

8. *A discussion of the scope and completeness of the project efforts and the need for any additional identification, evaluation or documentation efforts;*

The scope of this project is amazing in both size and duration. Few other underwater archaeology projects can come close. Admittedly at one level, it is about the value of materials recovered - but it has evolved into so much more. From the individual passions of the talented people who have spent their lives and careers on these projects to our investors who believe in us and to the unending interest of the public to come and be awed by the treasures and in the process learn about the Spanish interactions in the New World. Is the project complete, no. Under the orders of the District Court for the Southern District of Florida, in Admiralty, we continue to recover, both the artifacts and the stories of these incredible ships.

Documentation of the project has evolved over the course of the fifty years of work undertaken, and will, no doubt, continue to evolve.

Three generations of the Fisher Family have worked on these projects. Early leaders have passed, but the efforts to find, recover and preserve these lost artifacts will continue to be the goal of the work undertaken.

It is our hope that as the years pass that the relationship that we have established with the FKNMS and NOAA will always remain congenial and collegial. There are many examples today of private sector working with the public sector to achieve the goals of both entities. If Bezos, Branson and Musk can work with NASA in bringing science and yes passengers to outer space, we may certainly hope that the long standing, and we feel unfounded, adversarial stances taken by some individuals and professional organizations can be overcome. And like these other entrepreneurs we may find a path to both greater discoveries and a more conjoined and cooperative relationship on many such projects in the future.

9. *The location of all curated project records and location of all project records (e.g. photographs, oral interviews, etc.); and a bibliography of those sources used.*

All project records are held by Motivation Inc., the Mel Fisher Maritime Heritage Society and in reports submitted to the Florida Keys National Marine Sanctuary.

9 FLORIDA MASTER SITE FILE (FMSF) REQUIREMENTS PER FKNMS

At the request of the Florida Keys National Marine Sanctuary, and in an effort by Motivation, Inc. to help streamline the report review process and to be consistant with the State of Floridas Chapter 1A-31*"PROCEDURES FOR CONDUCTING EXPLORATION AND SALVAGE OF HISTORIC SHIPWRECK SITES"* and consistant with the standards and guidelines for archaeological reports in Rule 1A-46.001, Motivation, Inc is providing the following State of Florida Forms for the *Atocha* and *Margarita* wreck sites.

1. FMSF Survey Log Sheets (Form HR6E066R0107, effective 05/2016).

2. FMSF shipwreck forms (Form HR6E051R0705, effective 05/2016).

9.1 FMSF SURVEY LOG SHEET FORM *(ATOCHA #MO00141 & MARGARITA #MO03397)*

Page 1

Ent D (FMSF only)___/___/___

Survey Log Sheet

Florida Master Site File
Version 4.1 1/07

Survey # (FMSF only) _____

Consult *Guide to the Survey Log Sheet* for detailed instructions.

Identification and Bibliographic Information

Survey Project (name and project phase) Atocha & *Margarita Expedition, Salvage Phase*

Report Title (exactly as on title page) Nuestra Señora de Atocha & Santa Margarita Expedition 2017-2018 Report, Request for Permit Renewals and Amendment to combine Atocha & Margarita Permits

Report Author(s) (as on title page– individual or corporate; last names first) Randolph, Gary: Director of Operations, Motivation Inc. Sinclair, James, MA, Senior Archaeologist Motivation Inc.

Publication Date (year) 2018 Total Number of Pages in Report 270 pp.

Publication Information (Give series and no. in series, publisher and city. For article or chapter, cite page numbers. Use the style of *American Antiquity*.)
2018 Report on activities aimed at the recovery of the scattered remains of the Atocha & Santa Margarita, 1622 and a request for issuance of permit to continue same. Prepared by Motivation Inc. Key West Florida, 2018

Supervisor(s) of Fieldwork (whether or not the same as author[s]; last name first) Fisher, Kim Randolph, Gary, Sinclair, James

Affiliation of Fieldworkers (organization, city) Motivation Inc.

Key Words/Phrases (Don't use the county, or common words like *archaeology*, *structure*, *survey*, *architecture*. Limit each word or phrase to 25 characters.) Nuestra Senora de Atocha, Recovery, Salvage, Mel Fisher,

Survey Sponsors (corporation, government unit, or person who is directly paying for fieldwork)
Name Motivation Inc.
Address/Phone 200 Greene Street Key West, FL 33040 (305) 296-6534

Recorder of *Log Sheet* Randolph, Gary, Sinclair, James Date *Log Sheet* Completed 12/ 01 /2018

Is this survey or project a continuation of a previous project? Yes Previous survey #(s) (FMSF only) _____

Mapping

Counties (List each one in which field survey was done - do not abbreviate; use supplement sheet if necessary) Monroe

USGS 1:24,000 Map(s) : Map Name/Date of Latest Revision (use supplement sheet if necessary): NOAA Marine Chart #11439

Description of Survey Area

Dates for Fieldwork: Start / /___ End / /___ Total Area Surveyed (fill in one)_____hectares _____acres

HR6E066R0107 Florida Master Site File, Division of Historical Resources, Gray Building, 500 South Bronough Street, Tallahassee, Florida 32399-0250
Phone 850-245-6440, FAX 850-245-6439, Email: SiteFile@dos.state.fl.us

Survey Log Sheet

Survey #_____

Research and Field Methods

Types of Survey (check all that apply): D archaeological D architectural D historical/archival D underwater D other:_____

Preliminary Methods (,/Check as many as apply to the project as a whole.)

D Florida Archives (Gray Building) D library research- *local public* D local property or tax records X other historic maps
D Florida Photo Archives (Gray Building) X library-special collection - *nonlocal* D newspaper files D soils maps or data
D Site File property search D Public Lands Survey (maps at DEP) X literature search D windshield survey
D Site File survey search D local informant(s) D Sanborn Insurance maps X aerial photography

X other (describe) Extensive research in Archives in Spain,

Archaeological Methods (,/Check as many as apply to the project as a whole.)

D Check here if **NO** archaeological methods were used.

D surface collection, controlled D other screen shovel test (size:) D block excavation (at least 2x2 M)
D surface collection, **un**controlled D water screen (finest size:) D soil resistivity
D shovel test-1/4"screen D posthole tests X magnetometer
D shovel test-1/8" screen D auger (size:) X side scan sonar
D shovel test 1/16"screen D coring D unknown
D shovel test-unscreened D test excavation (at least 1x2 M)

D other (describe): Methodologies used on the site include hand fanning, water induction dredge, airlift, and prop wash deflection

Historical/Architectural Methods (,/Check as many as apply to the project as a whole.)

D Check here if **NO** historical/architectural methods were used.

D building permits D demolition permits D neighbor interview D subdivision maps
D commercial permits D exposed ground inspected D occupant interview D tax records
D interior documentation D local property records D occupation permits D unknown

D other (describe): Extensive research in Archives in Spain

Scope/Intensity/Procedures Project has been ongoing for 50 years, this is an archaeological salvage recovery operation overseen by Federal Court and Permitted through the FKNMS

Survey Results (cultural resources recorded)

Site Significance Evaluated? D Yes D No If *Yes*, circle NR-eligible/significant site numbers below.

Site Counts: Previously Recorded Sites (1)_____ **Newly Recorded Sites** N/A

Previously Recorded Site #'s with Site File Update Forms (List site #'s without "8." Attach supplementary pages if necessary) _____

Newly Recorded Site #'s (Are you sure all are originals and not updates? Identify methods used to check for updates, i.e., researched Site File records. List site #'s without "8." Attach supplementary pages if necessary.) N/A

Site Form Used: D Site File Paper Form D SmartForm II Electronic Recording Form

REQUIRED: ATTACH PLOT OF SURVEY AREA ON PHOTOCOPIES OF USGS 1:24,000 MAP(S)

DO NOT USE SITE FILE USE ONLY DO NOT USE

BAR Related		BHP Related
D 872	D 1A32 #_____	D State Historic Preservation Grant
D CARL	D UW	D Compliance Review: CRAT#_____

9.2 FMSF SHIPWRECK FORM (*ATOCHA*)

Page 1

SHIPWRECK FORM
FLORIDA MASTER SITE FILE
Version 1.1 7/05

Site #8 _____
Recorder # _ _____
Field Date _____
Form Date _____

___**Original**
___ **Update**

IDENTIFICATION & LOCATION

SITE NAME(S) *Atocha Wreck Site*
VESSEL NAME *Nuestra Senora de Atocha* | ***[MULT. LIST. #8 _____]***
PROJECT NAME *Nuestra Senora de Atocha Expedition* | ***[DHR SURVEY _____]***
COUNTY (nearest if offshore) Monroe County
MARINE CHART (Required if marine) NOAA Marine Chart #11439
USGS 7.5' TOPOGRAPHIC MAP (Required if inshore marine or inland waterway) N/A
LORAN LOCATION (LOPS) |__|__|__|__|__|__|.|__| + |__|__|__|__|__|__|.|__|
LATITUDE CONFIDENTIAL DATA LONGITUDE CONFIDENTIAL DATA (Point #1 in FKNMS Permit)
[UTM COORDINATES: Zone 16/17 Easting |__|__|__|__|__|__| ***Northing*** |__|__|__|__|__|__|__| ***]***
WATER BODY Major Atlantic Ocean **Minor** Quicksands /Hawks Channel area west of the Marquesas Keys
STATE OR FEDERAL GRANT/PERMIT IF ANY: USDC-SDF Admiralty Case No. 75-1416-Civ-King, FKNMS Permit #2016-052

SITE DESCRIPTION

SITE SIZE FKNMS Permit Area Approximately 5.234 nm^2
ELEVATION Depth of site ranges from ~20ft to ~55ft of water
SITE SITUATION _✓_**offshore** ___**inland bay** ___**river** ___**estuary** ___**lake** **Other** _____
BOTTOM ENVIRONMENT Bottom type primarily mud & sand, smaller areas of hard bottom, patch reefs, seagrass, etc. scattered within the area, see FWC bottom type map contained in this report

SITE DESCRIPTION Wreck site of the 1622 Fleet Spanish Galleon *Nuestra Senora de Atocha* located by Mel Fisher on July 12, 1971

DEGREE AND NATURE OF DISTURBANCES AND THREATS Prop-wash, airlift, suction dredge excavation to be done within the FKNMS permitted areas. Excavation units fill in naturally within a matter of months. Any sensitive natural marine resources will be avoided as stipulated in the FKNMS permit

WRECK DESCRIPTION

MAGNETIC AXIS (Bow) No part of the ships keel has ever been located, wreck scattered over 9 nautical miles
VESSEL TYPE: ___**canoe** ___**boat** _✓_**sailing ship** ___**steamship** ___**barge** ___**freighter**
Other:
VESSEL SIZE Length ~110ft **Width** ~33ft **Draft** ~15ft **Tonnage** 550 Tons
HULL MATERIAL: ___**iron** _✓_**wood** ___**composite** ___**steel** **Other** _____
MACHINERY: _✓_**none** ___**engine** ___**boiler** ___**pump** ___**propeller**
Other:

HISTORICAL INFORMATION

DATE SUNK: September 6, 1622 **CAUSE OF SINKING** Tropical storm / hurricane
NATIONALITY Spanish
DATE OF CONSTRUCTION: 1620 **PLACE OF CONSTRUCTION** Built in Havana, Cuba by Master Shipwright Alonso Ferreira
MAJOR OVERHAULS/REFITS (give dates) none
PAST SALVAGE (Dates, type of work, identity of salvors, success, effect on wreck as seen today)
Salvaged for the past 50 years by the Mel Fisher Family, primary cultural deposit located July 20, 1985 worth approximately $400 million, still missing based on manifest are approximately 264 silver bars, 45,000 silver coins, 10 bronze cannons, 140 copper ingots

MOST SHIPWRECKS ARE PROTECTED BY LAW

Shipwrecks and archaeological sites are protected by law if they are located on federal or state owned lands, or state-sovereignty submerged lands. Written permission is required to disturb such sites or to remove artifacts from them. If you are interested in exploring shipwreck sites or collecting from them, contact the Bureau of Archaeological Research, Division of Historical Resources at the address below.

Florida Master Site File / Div. of Historical Resources / R.A. Gray Bldg / 500 S. Bronough St. / Tallahassee, FL 32399
Phone **850.245.6440** / Fax **850.245.6439** / E-mail SiteFile@dos.myflorida.com

HR6E051R0705, effective 05/2016
Rule 1A-46.001, F.A.C.

SHIPWRECK FORM
Florida Master Site File

Site #8 _____

FIELD METHODS (Check as many as apply)

SITE DETECTION			SITE EXCAVATION		
_ no field check	✓ magnetometer	_ aerial photo	_ unknown	✓ air lift	✓ dredging
✓ literature search	✓ side-scan sonar	_____	_ none by recorder	✓ water jet	_
_ informant report	_ bottom profiler	_____	✓ hand excavation	✓ deflectors	_

Other information on methods _____

COLLECTION STRATEGY: __ **unknown** __ **uncollected by recorder** **Explain** ALL artifacts tagged, logged, recorded _____
SELECTIVITY ✓ **unselective (all artifacts)** _ **selective (some artifacts)** **Explain** _____
CONTROL OF COLLECTION ✓ **general (not by subarea)** _ **controlled (by subarea) Explain** _____

ARTIFACTS

CARGO ARTIFACTS As of this date over 200,000 artifacts are included in our on-line database for public viewing & research_____
SHIP ARTIFACTS Please see **https://www.melfisherartifacts.com/** for artifact details, photos, illustrations _____
ARTIFACTS REMOVED (attach list if needed) Please see public database listed above_____
ARTIFACTS SEEN OR COLLECTED __ **unknown** **Explain** _____

✓ **encrusted objects** ✓ **nonprecious metal** ✓ **ballast-type**
✓ **ceramic-aboriginal** ✓ **glass** ✓ **ceramic-nonaborig** ✓ **precious metal/coin**

RECORDER'S OPINION OF EVALUATION OF SITE (Check one choice on each line)

PE means Potentially Eligible **NR means National Register of Historic Places**

PE individually for NR? ☐**yes** ☑**no** ☐**insufficient info.** _____
PE as contributor to NR district? ☐**yes** ☑**no** ☐**insufficient info.** _____

HISTORICAL THEMES: ___**military** ___**economic** ___**technological**
Other _____
THREATS TO SITE none at this time _____
PROTECTIONS FOR SITE Federal Court Orders regarding *Atocha*, i.e., USDC-SDF Case No. 75-1416-Civ-King_____
RECOMMENDATIONS FOR SITE Continued responsible private sector salvage by Motivation, Inc. as per Federal Court Orders regarding *Atocha*, i.e., USDC-SDF Case No. 75-1416-Civ-King _____

OTHER REFERENCES

SITE REPORTER (name/affiliation/address/phone) Gary Randolph, VP/ Dir of Operations Motivation, Inc. 200 Greene St Key West, FL 33040 305-296-6533 _____

SITE INFORMANT (name/affiliation/address/phone)_____

MANUSCRIPTS OR PUBLICATIONS ON THE SITE See attached bibliography _____

PRESENT LOCATIONS OF ARTIFACTS/ID NOS. (attach list if needed) Please see https://www.melfisherartifacts.com/ for artifact details, photos, illustrations _____

SITE PHOTOS & LOCATION _____
SITE FILMS/VIDEOS & LOCATION _____

FURTHER INFORMATION **Attach extra sheets as needed**

DHR USE ONLY======== OFFICIAL EVALUATIONS ========DHR USE ONLY

NR DATE	***KEEPER-NR ELIGIBILITY*:*** *y n pe ii* ***Date*** ___/___/_____
___/___/____	***SHPO-NR ELIGIBILITY*:*** *y n pe ii* ***Date*** ___/___/_____
DELIST DATE	***LOCAL DESIGNATION*:*** _____ ***Date*** ___/___/_____
___/___/____	***Local office*** _____

**** y=Yes; n=No; pe=Potentially Eligible; ii=Insufficient Information***

REQUIRED: MARINE CHART (OFFSHORE) OR USGS MAP (INSHORE OR INLAND WATERWAY) WITH SITE LOCATION PINPOINTED

FMSF SHIPWRECK FORM *(MARGARITA)*

Page 1

SHIPWRECK FORM
FLORIDA MASTER SITE FILE
Version 1.1 7/05

Site #8 _____
Recorder # _ _____
Field Date _____
Form Date _____

___**Original**
___ **Update**

IDENTIFICATION & LOCATION

SITE NAME(S) *Margarita Wreck Site*
VESSEL NAME *Santa Margarita* | ***[MULT. LIST. #8 _____]***
PROJECT NAME *Santa Margarita Expedition* | ***[DHR SURVEY _____]***
COUNTY (nearest if offshore) Monroe County
MARINE CHART (Required if marine) NOAA Marine Chart #11439
USGS 7.5' TOPOGRAPHIC MAP (Required if inshore marine or inland waterway) N/A
LORAN LOCATION (LOPS) |__|__|__|__|__|__|__| . |__| + |__|__|__|__|__|__|__| . |__|
LATITUDE CONFIDENTIAL DATA LONGITUDE CONFIDENTIAL DATA (Area #1, Point #1 in FKNMS Permit)
[UTM COORDINATES: Zone 16/17 Easting |__|__|__|__|__|__| ***Northing*** |__|__|__|__|__|__|__| ***]***
WATER BODY Major Atlantic Ocean **Minor** Quicksands /Hawks Channel area west of the Marquesas Keys
STATE OR FEDERAL GRANT/PERMIT IF ANY: USDC-SDF Admiralty Case No. 79-1381-Civ-King, FKNMS Permit #1998-110-A14

SITE DESCRIPTION

SITE SIZE FKNMS Permit Area Approximately 3.776 nm^2
ELEVATION Depth of site ranges from ~17ft to ~55ft of water
SITE SITUATION __✓__**offshore** ___**inland bay** ___**river** ___**estuary** ___**lake** **Other** _____
BOTTOM ENVIRONMENT Bottom type primarily mud & sand, smaller areas of hard bottom, patch reefs, seagrass, etc. scattered within the area, see FWC bottom type map contained in this report

SITE DESCRIPTION Wreck site of the 1622 Fleet Spanish Galleon *Santa Margarita* located by Mel Fisher on May 10, 1980

DEGREE AND NATURE OF DISTURBANCES AND THREATS Prop-wash, airlift, suction dredge excavation to be done within the FKNMS permitted areas. Excavation units fill in naturally within a matter of months. Any sensitive natural marine resources will be avoided as stipulated in the FKNMS permit

WRECK DESCRIPTION

MAGNETIC AXIS (Bow) No part of the ships keel has ever been located, wreck scattered over 9 nautical miles
VESSEL TYPE: ___**canoe** ___**boat** __✓__**sailing ship** ___**steamship** ___**barge** ___**freighter**
Other:
VESSEL SIZE Length ~110ft **Width** ~33ft **Draft** ~15ft **Tonnage** 630 Tons
HULL MATERIAL: ___**iron** __✓__**wood** ___**composite** ___**steel** **Other** _____
MACHINERY: __✓__**none** ___**engine** ___**boiler** ___**pump** ___**propeller**
Other:

HISTORICAL INFORMATION

DATE SUNK: September 6, 1622 **CAUSE OF SINKING** Tropical storm / hurricane
NATIONALITY Spanish
DATE OF CONSTRUCTION: 1620 **PLACE OF CONSTRUCTION** Built in Viscaya, Spain
MAJOR OVERHAULS/REFITS (give dates) none
PAST SALVAGE (Dates, type of work, identity of salvors, success, effect on wreck as seen today)
Salvaged for the past 40 years by the Mel Fisher Family, primary cultural deposit located May 10, 1980 worth approximately $40 million, still missing based on manifest are approximately 169 silver bars, 80,000 silver coins, 4 bronze cannons, 22 copper ingots

MOST SHIPWRECKS ARE PROTECTED BY LAW

Shipwrecks and archaeological sites are protected by law if they are located on federal or state owned lands, or state-sovereignty submerged lands. Written permission is required to disturb such sites or to remove artifacts from them. If you are interested in exploring shipwreck sites or collecting from them, contact the Bureau of Archaeological Research, Division of Historical Resources at the address below.

Florida Master Site File / Div. of Historical Resources / R.A. Gray Bldg / 500 S. Bronough St. / Tallahassee, FL 32399
Phone **850.245.6440** / Fax **850.245.6439** / E-mail SiteFile@dos.myflorida.com

HR6E051R0705, effective 05/2016
Rule 1A-46.001, F.A.C.

SHIPWRECK FORM
Florida Master Site File

Site #8 _____

FIELD METHODS (Check as many as apply)

SITE DETECTION			SITE EXCAVATION		
_ no field check	✓ magnetometer	_ aerial photo	_ unknown	✓ air lift	✓ dredging
✓ literature search	✓ side-scan sonar	_____	_ none by recorder	✓ water jet	_
_ informant report	_ bottom profiler	_____	✓ hand excavation	✓ deflectors	_

Other information on methods _____

COLLECTION STRATEGY: __ **unknown** __ **uncollected by recorder** **Explain** ALL artifacts tagged, logged, recorded _____
SELECTIVITY ✓ **unselective (all artifacts)** _ **selective (some artifacts)** **Explain** _____
CONTROL OF COLLECTION ✓ **general (not by subarea)** _ **controlled (by subarea) Explain** _____

ARTIFACTS

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ARTIFACTS REMOVED (attach list if needed) Please see public database listed above_____
ARTIFACTS SEEN OR COLLECTED __ **unknown** **Explain** _____

✓ **encrusted objects** ✓ **nonprecious metal** ✓ **ballast-type**
✓ **ceramic-aboriginal** ✓ **glass** ✓ **ceramic-nonaborig** ✓ **precious metal/coin**

RECORDER'S OPINION OF EVALUATION OF SITE (Check one choice on each line)

PE means Potentially Eligible **NR means National Register of Historic Places**

PE individually for NR? ☐**yes** ☑**no** ☐**insufficient info.** _____
PE as contributor to NR district? ☐**yes** ☑**no** ☐**insufficient info.** _____

HISTORICAL THEMES: ___**military** ___**economic** ___**technological**
Other _____
THREATS TO SITE none at this time _____
PROTECTIONS FOR SITE Federal Court Orders regarding *Margarita*, i.e., USDC-SDF Case No. 79-1381-Civ-King _____
RECOMMENDATIONS FOR SITE Continued responsible private sector salvage by Motivation, Inc. as per Federal Court Orders regarding *Margarita*, i.e., USDC-SDF Case No. 79-1381-Civ-King _____

OTHER REFERENCES

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SITE PHOTOS & LOCATION _____
SITE FILMS/VIDEOS & LOCATION _____

FURTHER INFORMATION **Attach extra sheets as needed**

DHR USE ONLY======== OFFICIAL EVALUATIONS ========DHR USE ONLY

NR DATE	***KEEPER-NR ELIGIBILITY*:***	***y***	***n***	***pe***	***ii***	***Date*** ___/___/_____
___/___/____	***SHPO-NR ELIGIBILITY*:***	***y***	***n***	***pe***	***ii***	***Date*** ___/___/_____
DELIST DATE	***LOCAL DESIGNATION*:*** _____					***Date*** ___/___/_____
___/___/____	***Local office*** _____					

** y=Yes; n=No; pe=Potentially Eligible; ii=Insufficient Information*

REQUIRED: MARINE CHART (OFFSHORE) OR USGS MAP (INSHORE OR INLAND WATERWAY) WITH SITE LOCATION PINPOINTED

10 UNIQUE RECOVERIES: 2017-2018

10.1 "GUNNERS DICE" FROM THE ATOCHA:

By James Sinclair
2018

Dice Shot or "Gunners Dice" Atocha #85506, #85526, #93248

For many years from the wrecks of both the Nuestra Senora de Atocha and the Santa Margarita there have been odd roughly square shaped pieces of iron found most are no larger than the current example and the term "Gunners dice" has been used for them for many years by the Mel Fishers Company, more properly these are "Langrage" or "dice shot". But gunners dice an apt name none the less.

These are small angular pieces of iron of which there have been many found over the years on both the Atocha and the Margarita, likely these were broken off an iron bar and were intended to be used as a type of cannon shot.

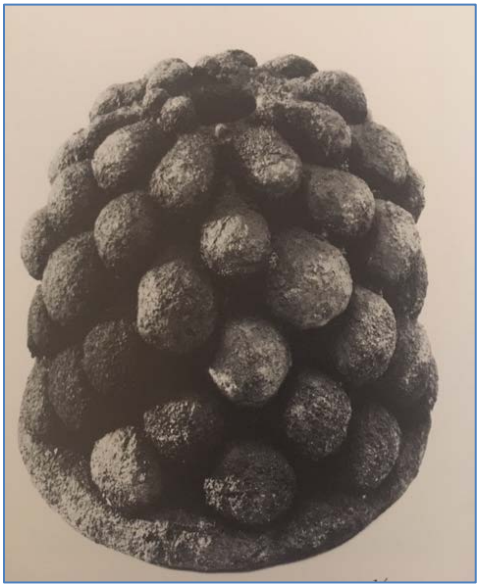
When cannon was used as both offensive and defensive weapons from a distance, the typical iron round shot, or ball was utilized. These and some of the more ingenious types of shot, such as chain shot, bar shot, and spike shot were all intended to inflict damage on the opposing ship itself. Holing the hull, taking down masts and rigging, thereby effectively crippling the opponent ship's ability to maneuver, were the main purpose of the standard types of shot utilized. While casualties were inevitable and horrific, the main purpose was crippling the vessel itself.

However, when the ships were in close action and boarding from one vessel to another had become an option, anti-personnel ammunition became much more effective. The harquebusiers (or arquebus) of the time fired their single shot small arms and were to a degree effective. But to clear a deck of opposing ship's personnel, the cannon, especially the small cannon known as "railguns" (because they were most often mounted on the railing of the vessel), became very important and useful. These guns were often "breach loading" weapons that had preloaded charges in a separate iron cannister known as a "breech-block". These were simply the powder charges for the cannon, the ammunition itself was loaded from the muzzle of the gun.

With this type of cannon, and even some of the larger long guns on the upper decks, it became possible to use the guns to decimate any congregated enemy personnel by utilizing a type shot where ballistics and trajectory were not of great importance, instead maximum close-proximity destruction was. Back then, as today, some form of scatter shot (as in a modern shot gun) was most effective and during the period of the Nuestra Senora de Atocha and the Santa Margarita there were many choices of ammunition of this nature that the cannoneers could employ.

Canister Shot – small ball or grape shot

Of somewhat smaller diameter than the cannonball, such shot was usually round balls placed inside a canister, which was often metal depending on manufacture and availability could have been something else like leather. The projectiles could be pre-made specifically for this purpose and were usually larger than musket balls. If the ball were packed inside a cloth bag instead of a can, the collection was called "grape shot," for its resemblance to a bunch of grapes.



Grape Shot from Santa Margarita, 1622

Example of Cannister shot in metal container

Another form of shot utilized was “hail shot” this was often scraps of metal, nails and assortments of other metallic objects that were packed into either a canister or canvas and used as a projectile which spread the shot over a wide area.

<u>Canister Shot - Assorted Metal Objects</u>

An alternate to small-diameter metal balls for canister shot was whatever was convenient, such as scrap metal, nails, links of chain, etc. The canister acted as a sleeve to carry this aggregate along inside the barrel during firing. Due to the lack of any aerodynamics whatsoever to these sorts of projectiles, their range was limited. It is likely that this was the sort of shot that our current objects were meant for. The number of these and their relative size has given them the name “gunners dice” although that name is likely evolved specifically from the Atocha and Margarita Projects however, it is a descriptive term for

this object which has been found in some quantities from these wrecks and would otherwise have been termed scrap.

Hail Shot

Hail shot was most often musket balls in a small cloth bag, the opening tied off. Although the current examples of "gunner's dice" are also a candidate in this sort of packaging. The bags were fist-sized or smaller and fired from small-caliber cannon like a falconet. Into any group of attackers, the shot would rip through enemy combatants like hailstones, obliterating a garden.

The point of interest here is that although listed in ships supplies of the time period and earlier these have not been described in any detail in extant reports. Is this a function of these objects not being recognize as such? Or are they not diagnostic enough to be studied in depth? What does this tell us as to the outfitting of these vessels? We know that in the New World colonies iron was scarce and expensive. Does the outbound manifest of the Atocha mention some analogous term for these dice shot? More research is needed to better understand this type of ammunition.

10.2 A Golden Loss:

The Santa Margarita as well as the Nuestra Senora de Atocha, 1622 have been veritable windows into the past as it has related to certain aspects of the lives lived by those who either sailed these vessels as officers and crew or those who traveled aboard in what was to have been a homecoming back to Spain. This ill-fated journey proved to be disastrous for the hundreds of souls lost on these ships. The storm took no regard of social status or wealth. With them they took various objects of value and importance.

Tools of their respective trades, carpenters and shipwrights, Surgeon/barbers, cooks' wares, weaponry to arm individuals as well as the contingent of soldiers aboard, there to protect the wealth of both the empire and private mercantile concerns. There were also the meager items that belonged to sailors, servants and slaves. Ships fittings appropriate to major vessels of that day.

Aboard these two vessels wealthy individuals and families traveled, and many lost everything they brought including their lives. In the environmentally harsh conditions that prevail on these sites most of the objects and goods of a more perishable nature are, sadly, long lost. However, those items that are more robust, made of materials that are less likely to succumb to the ravages of time and elements, remain.

One such type of material is of course gold. Valued for millennia for its qualities. It became one of the most prized types of metals throughout human history. Valued for is ductile attributes, and nearly impervious durability, gold, unsurprisingly, became a standard of value in cultures across much of Eurasia. Early on the value in gold was the base by which many cultures and societies would estimate worth. It was certainly a driving force in the early efforts of exploration, conquest and colonization in the New World.

Items of gold from the wrecks of the Nuestra Senora de Atocha and the Santa Margarita, 1622, allow us to glimpse the wealth that flowed out of the New World, the economics of which had changed

the balance of power in the world. By funding wide ranging wars, the socio-political structure of Europe and by extension its new world colonies were changing. Taking advantage of this new influx of wealth in the form of precious metals from the New World, nations, even those without direct access to the source of the metals that prompted much of the early efforts began to see the effects of the vast wealth generated in the New World. The Old-World nations, France, England, Dutch, German all would effect great changes to the geopolitical landscape because of the influx of wealth, ambitions both national and individual would also play roles in these changes.

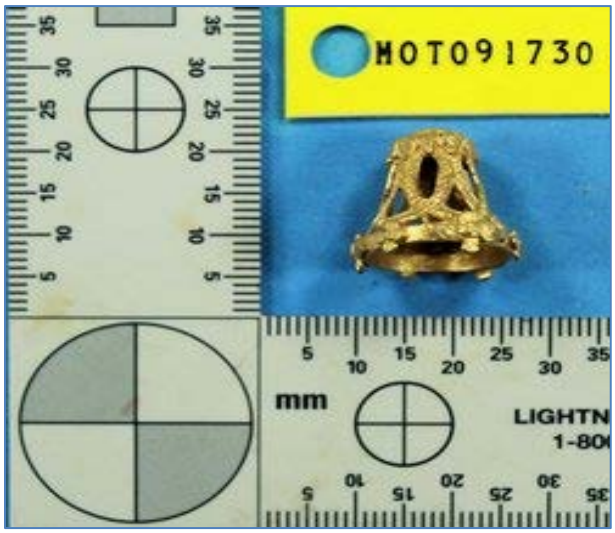
Wealth was measured in ounces, pounds and tons and had to be transported from the sources of the metal and valuable goods to the centers of power and trade where decisions would be made. Cropping up soon after the flow of gold and silver began increasing were endeavors to take advantage of the ever-expanding demands of the changing social structures. Movement of wealth was most often completed on the maritime routes that were developed in the early days of Exploration. The various efforts would evolve into the creation of the famous Spanish Treasure Fleets, of which in 1622 the Atocha and Santa Margarita were a part. England would become a world naval power with the help of income derived from the agricultural efforts of its colonists in the New World and the British East and West Indies Company. The Dutch had an analog to this with the Dutch East Indies Company better known by the initials VOC. The French had made fortunes from the North American continent from its colonies in Canada and through to the huge Louisiana area down to the mouth of the Mississippi and the Gulf of Mexico.

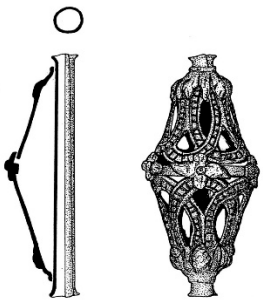
And while the production of agricultural products, timber, tobacco, cotton, animal pelts and the like were valuable; their value was based on how much in gold and silver these commodities were worth. Spain held the largest monopoly on the production of both gold and silver and would continue to do so throughout the colonial period.

It is unsurprising therefore that many items that remain on the wrecks of both the Nuestra Senora de Atocha and the Santa Margarita, 1622 are those that Spain produced so much of, gold and silver.

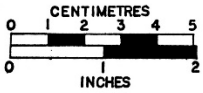
10.3 Partial Gold Pomander, *Santa Margarita, 1622*

The items of gold recovered from the 1622 Fleet take many shapes and sizes, gold bullion and coin, gold chain, gold dust and nuggets and gold jewelry of many descriptions. Three items recovered from the wreck of the Santa Margarita, 1622 are certainly worth describing as they give insight into the lives of the wealthy aboard the vessel. These are a partial gold pomander (MOT91730) and two intact gold filigree beads (MOT 93425, 93426).





Gold Pomander
M81 0200 86.08.043
K. Amundson



Courtesy of the Mel Fisher Maritime Heritage Society

Only one half of the pomander has been recovered. The pomander is done in an open strap-work design it would, if complete would have appeared as two open bell shapes with the two bells joined where they flair. Another of these objects was recovered in 1981 from the Santa Margarita and was intact this object was illustrated by one of our resident artists at the time, Kathrine Amundson.

A rose by any other name:

These are some possible explanations about the function of a pomander during the period of loss of the *Santa Margarita*, 1622. One must remember, that hygiene during this time period is not what it is today. It is likely kind to say that the odor of life, was much magnified at this time period, or that the historical period before the age of public sanitation or even modern personal hygiene, smelled, shall we say – ripe.

By Malcolm Moore in Rome
Mar 2007
https://www.telegraph.co.uk/news/worldnews/1546277/Eau-de-BC-the-oldest-perfume-in-the-world.html

> *This would give rise to an industry unto itself – perfume. While perfumes and scents have a long history.*

The world's oldest perfumes have been found on Cyprus by a team of archaeologists.

The perfumes were scented with extracts of lavender, bay, rosemary, pine or coriander and kept in tiny translucent alabaster bottles. The remaining traces found in Pyrgos, on the south of the island, are more than 4,000 years old.

The scents were discovered inside what archaeologists believe was an enormous 43,000 sq ft perfume-making factory. "We were astonished at how big the place was," said Maria Rosa Belgiorno, the leader of the Italian archaeological team. "Perfumes must have been produced on an industrial scale."

At least 60 distilling stills, mixing bowls, funnels and perfume bottles were found perfectly preserved at the site, which had been blanketed in earth after a violent earthquake around 1850 BC.

In Europe during the period known as the Dark ages the use of perfumes had fallen into a sharp decline. And various methods of fending off noxious odors were used. The pomander is one such method.

A pomander is described as:

Charlotte Mankey Calasibetta and Phyllis Tortora in the *Dictionary of Fashion* (2003) define the pomander as:

"a ball of fragrant herbs and/or flowers or the case in which these were carried. Examples of pomanders include pommes de senteur, small balls of gold or silver filigree set with precious stones used to hold scent, carried or hung from belt from 1500-1690s (also called musk apples, pound-box, musk balls, and pouncet box, consisting of a dry-scent box that contained fragrant herbs and flower petals and was carried during the late 16th c. Der. French, 'perfumed apples.'" (374)

Phyllis G. Tortora, Charlotte Mankey Calasibetta, and Publications Fairchild. *The Fairchild Dictionary of Fashion*. 3rd ed. New York: Fairchild Publications, 2003. http://www.worldcat.org/oclc/959132362

Two Ladies of European Aristocracy with Pomanders circa 1580's

Gold Filigree Pomander with ball of Ambergris, Collection of the Victoria and Albert Museum

The gold filigree Pomander gives us insight into not only the fashions of the wealthy but also of some of the fundamental misconceptions of the time period, the medieval idea that water, hence bathing, could spread disease was still widespread, and the rediscovered use of "perfumes" to any large degree was still in the future. To alleviate the prevailing odors of the day these small jewelry cages holding flowers, herbs, resins or ambergris were manufactured. These insights into both personal choices of the wealthy and how this would evolve into the perfume industry that we know today is unique.

11 APPENDIX-1, 2017 *ATOCHA* & *MARGARITA* RECOVERIES REPORTS

Details, digital photographs and illustrations of our recoveries are available on our public Artifact Database at https://www.melfisher.com/MOBILE/site/Research.html

See the "Main Menu" to the left for options. Use the "Search for Artifacts" option and the artifact tag numbers to search for a specific item.

Motivation, Inc

Conservation Lab Artifact Report

Compiled by Gary Randolph

12/19/2018 **Atocha 2017 Recoveries** Page 1 of 3

Description	Quantity	Tag#	Latitude	Longitude	Vessel	Recovery Date	Location	
			CONFIDENTIAL DATA					
Ballast Stone	8	In Situ	[redacted]		Dare	1/4/2017	In Situ	
	10	In Situ			Dare	1/4/2017	In Situ	
	3	In Situ			Dare	1/5/2017	In Situ	
	4	In Situ			Dare	1/5/2017	In Situ	
	8	In Situ			Dare	1/5/2017	In Situ	
	12	In Situ			Dare	1/5/2017	In Situ	
	15	In Situ			Dare	1/5/2017	In Situ	
	1	In Situ			Dare	1/6/2017	In Situ	
	4	In Situ			Dare	2/17/2017	In Situ	
	6	In Situ			Dare	2/17/2017	In Situ	
	4	In Situ			Dare	2/18/2017	In Situ	
	6	In Situ			Dare	2/18/2017	In Situ	
	8	In Situ			Dare	2/18/2017	In Situ	
							Total:	**89**
Bedrock	1	91659			J.B. Magruder	5/29/2017	Modern Intrusion - Disposed	
							Total:	**1**
Colonoware	1	91653			J.B. Magruder	5/27/2017	Owner's Possession	
							Total:	**1**
Ebony Razor Sheath	1	85463			Dare	5/16/2017	Curator's Safe	
							Total:	**1**
Emerald	1	91650			J.B. Magruder	5/2/2017	Owner's Possession	
							Total:	**1**
Encrusted Object	1	85457			Dare	5/3/2017	Totally oxidized & disposed of conc	
	1	91651			J.B. Magruder	5/15/2017	Totally oxidized & disposed of conc	
	1	91654			J.B. Magruder	5/28/2017	Totally oxidized & disposed of conc	
	1	91655			J.B. Magruder	5/28/2017	Totally oxidized & disposed of conc	
	1	91656			J.B. Magruder	5/28/2017	Totally oxidized & disposed of conc	
	1	91657			J.B. Magruder	5/29/2017	Totally oxidized & disposed of conc	
	1	91661			J.B. Magruder	6/1/2017	Totally oxidized & disposed of conc	
	1	91665			J.B. Magruder	6/13/2017	Totally oxidized & disposed of conc	
	1	91667			J.B. Magruder	6/15/2017	Totally oxidized & disposed of conc	
	1	85475			Dare	6/27/2017	Totally oxidized & disposed of conc	
	1	91670			J.B. Magruder	6/27/2017	Totally oxidized & disposed of conc	
	1	91676			J.B. Magruder	6/30/2017	Totally oxidized & disposed of conc	
	1	91680			J.B. Magruder	11/7/2017	Totally oxidized & disposed of conc	
							Total:	**13**
Gold & Pearl Earrings	1	91662			J.B. Magruder	6/11/2017	Curator's Safe	
							Total:	**1**
Iron Barrel Hoop Fragment	1	85451			Dare	1/5/2017	Totally oxidized & disposed of conc	
	4	85454			Dare	1/19/2017	Lab Inventory	
							Total:	**5**

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Description	Quantity	Tag#	Latitude	Longitude	Vessel	Recovery Date	Location	
Iron Blade Fragment	1	91666	CONFIDENTIAL DATA		J.B. Magruder	6/14/2017	Totally oxidized & disposed of conc	
							Total:	1
Iron Pan Handle	1	85476			Dare	6/27/2017	Owner's Possession	
							Total:	1
Iron Pin Fragment	1	91677			J.B. Magruder	7/9/2017	Owner's Possession	
							Total:	1
Iron Tack	1	85455			Dare	4/2/2017	Totally oxidized & disposed of conc	
							Total:	1
Modern Material	1	In Situ			Dare	1/19/2017	In Situ	
	1	In Situ			Dare	1/19/2017	In Situ	
	1	85467			Dare	5/27/2017	Modern Intrusion - Disposed	
	1	85477			Dare	6/27/2017	Modern Intrusion - Disposed	
	1	91681			J.B. Magruder	11/8/2017	Modern Intrusion - Disposed	
							Total:	5
Olive Jar Sherd	1	91652			J.B. Magruder	5/16/2017	Gift Shop Warehouse	
	1	85471			Dare	6/16/2017	Gift Shop Warehouse	
	1	91669			J.B. Magruder	6/27/2017	Gift Shop Warehouse	
	1	91678			J.B. Magruder	8/24/2017	Gift Shop Warehouse	
	1	91679			J.B. Magruder	11/7/2017	Gift Shop Warehouse	
							Total:	5
Silver Coin	1	85456			Dare	5/3/2017	Curator's Safe	
	1	85458			Dare	5/14/2017	Owner's Possession	
	1	85459			Dare	5/14/2017	Owner's Possession	
	1	85460			Dare	5/14/2017	Owner's Possession	
	1	85461			Dare	5/15/2017	Owner's Possession	
	1	85462			Dare	5/16/2017	Owner's Possession	
	1	85464			Dare	5/26/2017	Owner's Possession	
	1	85465			Dare	5/26/2017	Owner's Possession	
	1	85466			Dare	5/26/2017	Owner's Possession	
	1	91658			J.B. Magruder	5/29/2017	Curator's Safe	
	1	91660			J.B. Magruder	5/29/2017	Owner's Possession	
	1	91663			J.B. Magruder	6/13/2017	Owner's Possession	
	1	91664			J.B. Magruder	6/13/2017	Owner's Possession	
	1	85468			Dare	6/14/2017	Owner's Possession	
	1	85469			Dare	6/14/2017	Curator's Safe	
	1	85470			Dare	6/14/2017	Owner's Possession	
	1	91668			J.B. Magruder	6/15/2017	Owner's Possession	
	1	85472			Dare	6/16/2017	Owner's Possession	
	1	85473			Dare	6/16/2017	Owner's Possession	
	1	85474			Dare	6/27/2017	Owner's Possession	
	1	91671			J.B. Magruder	6/28/2017	Curator's Safe	
	1	91671-1			J.B. Magruder	6/28/2017	Owner's Possession	
	1	91671-2			J.B. Magruder	6/28/2017	Totally oxidized & disposed of conc	
	1	91672			J.B. Magruder	6/28/2017	Public Relations	

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Description	Quantity	Tag#	Latitude	Longitude	Vessel	Recovery Date	Location	
			CONFIDENTIAL DATA					
Silver Coin	1	85478	[redacted]		Dare	6/29/2017	Curator's Safe	
	1	91673			J.B. Magruder	6/29/2017	Owner's Possession	
	1	91674			J.B. Magruder	6/29/2017	Owner's Possession	
	1	91675			J.B. Magruder	6/29/2017	Owner's Possession	
	1	85479			Dare	6/30/2017	Owner's Possession	
	1	91682			J.B. Magruder	11/8/2017	Curator's Safe	
							Total:	**30**
Silver Vessel Fragment	1	85453			Dare	1/6/2017	Owner's Possession	
							Total:	**1**
Wood Timber	1	85452			Dare	1/6/2017	Return to Site	
							Total:	**1**
							Total Artifacts Recovered:	**158**

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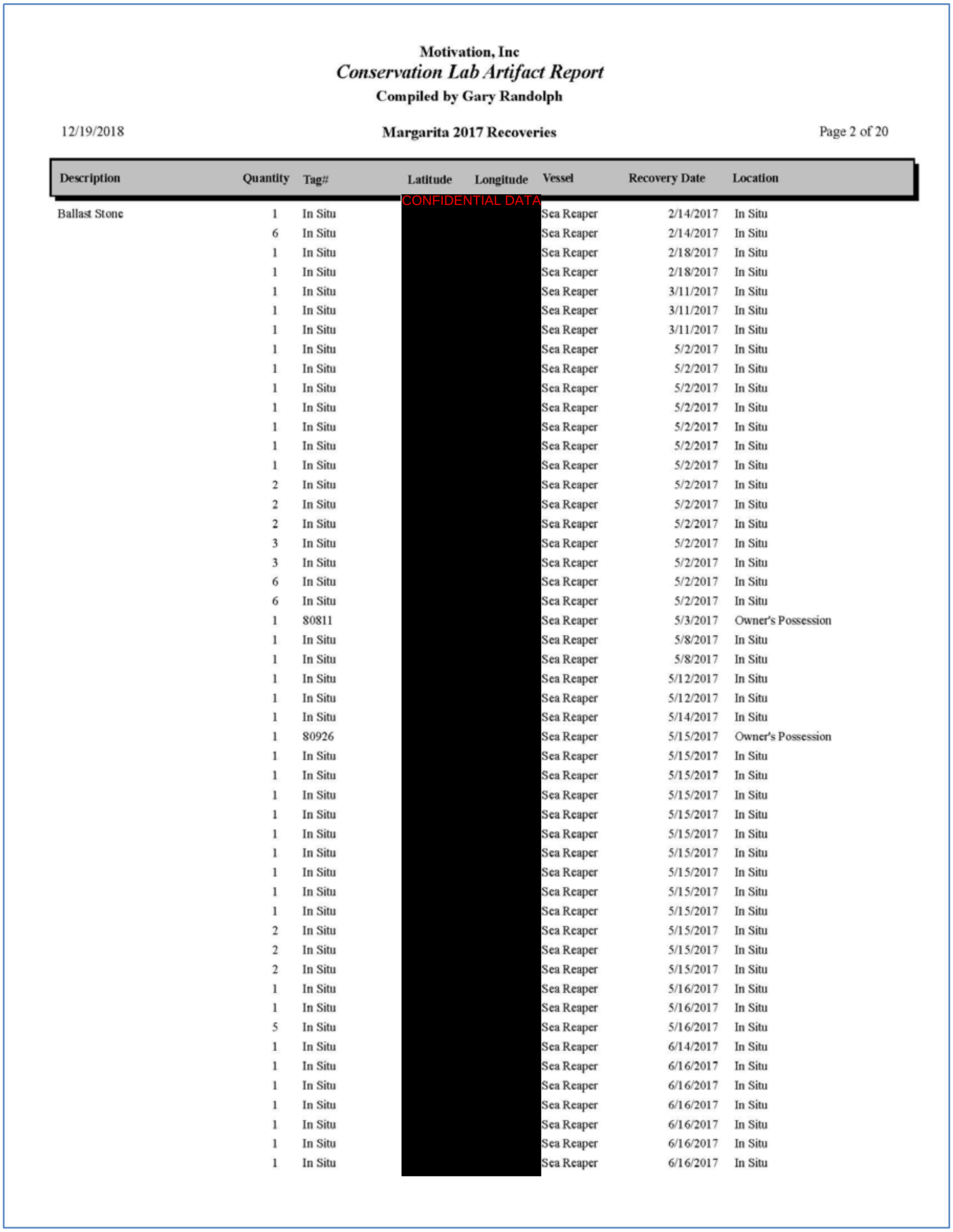
Description	Quantity	Tag#	Latitude	Longitude	Vessel	Recovery Date	Location	
			CONFIDENTIAL DATA					
Animal Bone	1	80577	[redacted]		Sea Reaper	1/3/2017	MFHS Museum	
	1	80583			Sea Reaper	1/5/2017	MFHS Museum	
	1	80605			Sea Reaper	1/5/2017	MFHS Museum	
	1	80666			Sea Reaper	1/19/2017	MFHS Museum	
	1	80717			Sea Reaper	2/12/2017	MFHS Museum	
	1	80725			Sea Reaper	2/14/2017	MFHS Museum	
	1	80757			Sea Reaper	2/19/2017	MFHS Museum	
	1	80774			Sea Reaper	3/12/2017	MFHS Museum	
	1	80785			Sea Reaper	3/12/2017	MFHS Museum	
	1	80923			Sea Reaper	5/14/2017	MFHS Museum	
	1	80935			Sea Reaper	5/16/2017	MFHS Museum	
	1	81013			Sea Reaper	6/27/2017	MFHS Museum	
	1	93215			Sea Reaper	6/28/2017	MFHS Museum	
	1	93245			Sea Reaper	6/30/2017	MFHS Museum	
	1	93250			Sea Reaper	7/15/2017	MFHS Museum	
	1	93254			Sea Reaper	7/15/2017	MFHS Museum	
	1	93258			Sea Reaper	7/15/2017	MFHS Museum	
	1	93308			Sea Reaper	9/24/2017	MFHS Museum	
	1	93325			Sea Reaper	9/26/2017	MFHS Museum	
	1	93327			Sea Reaper	9/26/2017	MFHS Museum	
	1	93373			Sea Reaper	9/28/2017	MFHS Museum	
	1	93402			Sea Reaper	9/30/2017	MFHS Museum	
	1	93403			Sea Reaper	9/30/2017	MFHS Museum	
							Total:	**23**
Animal Part	1	93301			Sea Reaper	7/16/2017	Modern Intrusion - Disposed	
							Total:	**1**
Animal Tooth	1	80715			Sea Reaper	2/12/2017	MFHS Museum	
	1	80856			Sea Reaper	5/9/2017	MFHS Museum	
	1	80884			Sea Reaper	5/10/2017	MFHS Museum	
	1	81011			Sea Reaper	6/27/2017	MFHS Museum	
	1	93213			Sea Reaper	6/28/2017	MFHS Museum	
	1	93251			Sea Reaper	7/15/2017	MFHS Museum	
	2	93252			Sea Reaper	7/15/2017	MFHS Museum	
	1	93309			Sea Reaper	9/24/2017	MFHS Museum	
	1	93311			Sea Reaper	9/24/2017	MFHS Museum	
							Total:	**10**
Ballast Stone	6	In Situ			Sea Reaper	1/19/2017	In Situ	
	2	In Situ			Sea Reaper	1/20/2017	In Situ	
	1	In Situ			Sea Reaper	2/12/2017	In Situ	
	1	In Situ			Sea Reaper	2/13/2017	In Situ	
	1	In Situ			Sea Reaper	2/13/2017	In Situ	
	1	In Situ			Sea Reaper	2/13/2017	In Situ	
	2	In Situ			Sea Reaper	2/13/2017	In Situ	
	3	In Situ			Sea Reaper	2/13/2017	In Situ	
	6	In Situ			Sea Reaper	2/13/2017	In Situ	
	1	In Situ			Sea Reaper	2/14/2017	In Situ	



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CONFIDENTIAL DATA

Description	Quantity	Tag#	Latitude	Longitude	Vessel	Recovery Date	Location
Ballast Stone	1	In Situ	[redacted]	[redacted]	Sea Reaper	2/14/2017	In Situ
	6	In Situ	[redacted]	[redacted]	Sea Reaper	2/14/2017	In Situ
	1	In Situ	[redacted]	[redacted]	Sea Reaper	2/18/2017	In Situ
	1	In Situ	[redacted]	[redacted]	Sea Reaper	2/18/2017	In Situ
	1	In Situ	[redacted]	[redacted]	Sea Reaper	3/11/2017	In Situ
	1	In Situ	[redacted]	[redacted]	Sea Reaper	3/11/2017	In Situ
	1	In Situ	[redacted]	[redacted]	Sea Reaper	3/11/2017	In Situ
	1	In Situ	[redacted]	[redacted]	Sea Reaper	5/2/2017	In Situ
	1	In Situ	[redacted]	[redacted]	Sea Reaper	5/2/2017	In Situ
	1	In Situ	[redacted]	[redacted]	Sea Reaper	5/2/2017	In Situ
	1	In Situ	[redacted]	[redacted]	Sea Reaper	5/2/2017	In Situ
	1	In Situ	[redacted]	[redacted]	Sea Reaper	5/2/2017	In Situ
	1	In Situ	[redacted]	[redacted]	Sea Reaper	5/2/2017	In Situ
	1	In Situ	[redacted]	[redacted]	Sea Reaper	5/2/2017	In Situ
	2	In Situ	[redacted]	[redacted]	Sea Reaper	5/2/2017	In Situ
	2	In Situ	[redacted]	[redacted]	Sea Reaper	5/2/2017	In Situ
	2	In Situ	[redacted]	[redacted]	Sea Reaper	5/2/2017	In Situ
	3	In Situ	[redacted]	[redacted]	Sea Reaper	5/2/2017	In Situ
	3	In Situ	[redacted]	[redacted]	Sea Reaper	5/2/2017	In Situ
	6	In Situ	[redacted]	[redacted]	Sea Reaper	5/2/2017	In Situ
	6	In Situ	[redacted]	[redacted]	Sea Reaper	5/2/2017	In Situ
	1	80811	[redacted]	[redacted]	Sea Reaper	5/3/2017	Owner's Possession
	1	In Situ	[redacted]	[redacted]	Sea Reaper	5/8/2017	In Situ
	1	In Situ	[redacted]	[redacted]	Sea Reaper	5/8/2017	In Situ
	1	In Situ	[redacted]	[redacted]	Sea Reaper	5/12/2017	In Situ
	1	In Situ	[redacted]	[redacted]	Sea Reaper	5/12/2017	In Situ
	1	In Situ	[redacted]	[redacted]	Sea Reaper	5/14/2017	In Situ
	1	80926	[redacted]	[redacted]	Sea Reaper	5/15/2017	Owner's Possession
	1	In Situ	[redacted]	[redacted]	Sea Reaper	5/15/2017	In Situ
	1	In Situ	[redacted]	[redacted]	Sea Reaper	5/15/2017	In Situ
	1	In Situ	[redacted]	[redacted]	Sea Reaper	5/15/2017	In Situ
	1	In Situ	[redacted]	[redacted]	Sea Reaper	5/15/2017	In Situ
	1	In Situ	[redacted]	[redacted]	Sea Reaper	5/15/2017	In Situ
	1	In Situ	[redacted]	[redacted]	Sea Reaper	5/15/2017	In Situ
	1	In Situ	[redacted]	[redacted]	Sea Reaper	5/15/2017	In Situ
	1	In Situ	[redacted]	[redacted]	Sea Reaper	5/15/2017	In Situ
	1	In Situ	[redacted]	[redacted]	Sea Reaper	5/15/2017	In Situ
	2	In Situ	[redacted]	[redacted]	Sea Reaper	5/15/2017	In Situ
	2	In Situ	[redacted]	[redacted]	Sea Reaper	5/15/2017	In Situ
	2	In Situ	[redacted]	[redacted]	Sea Reaper	5/15/2017	In Situ
	1	In Situ	[redacted]	[redacted]	Sea Reaper	5/16/2017	In Situ
	1	In Situ	[redacted]	[redacted]	Sea Reaper	5/16/2017	In Situ
	5	In Situ	[redacted]	[redacted]	Sea Reaper	5/16/2017	In Situ
	1	In Situ	[redacted]	[redacted]	Sea Reaper	6/14/2017	In Situ
	1	In Situ	[redacted]	[redacted]	Sea Reaper	6/16/2017	In Situ
	1	In Situ	[redacted]	[redacted]	Sea Reaper	6/16/2017	In Situ
	1	In Situ	[redacted]	[redacted]	Sea Reaper	6/16/2017	In Situ
	1	In Situ	[redacted]	[redacted]	Sea Reaper	6/16/2017	In Situ
	1	In Situ	[redacted]	[redacted]	Sea Reaper	6/16/2017	In Situ
	1	In Situ	[redacted]	[redacted]	Sea Reaper	6/16/2017	In Situ

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Description	Quantity	Tag#	Latitude	Longitude	Vessel	Recovery Date	Location	
			CONFIDENTIAL DATA					
Ballast Stone	1	In Situ	[redacted]		Sea Reaper	6/16/2017	In Situ	
	1	In Situ			Sea Reaper	6/17/2017	In Situ	
	1	In Situ			Sea Reaper	6/27/2017	In Situ	
	3	In Situ			Sea Reaper	6/29/2017	In Situ	
	3	In Situ			Sea Reaper	6/29/2017	In Situ	
	1	In Situ			Sea Reaper	7/16/2017	In Situ	
	1	In Situ			Sea Reaper	7/17/2017	In Situ	
	1	In Situ			Sea Reaper	7/17/2017	In Situ	
	1	In Situ			Sea Reaper	7/17/2017	In Situ	
	1	In Situ			Sea Reaper	9/24/2017	In Situ	
	1	In Situ			Sea Reaper	9/24/2017	In Situ	
	1	In Situ			Sea Reaper	9/26/2017	In Situ	
	1	In Situ			Sea Reaper	9/28/2017	In Situ	
	2	In Situ			Sea Reaper	9/28/2017	In Situ	
	3	In Situ			Sea Reaper	9/28/2017	In Situ	
	3	In Situ			Sea Reaper	9/28/2017	In Situ	
	1	In Situ			Sea Reaper	9/29/2017	In Situ	
	1	In Situ			Sea Reaper	9/29/2017	In Situ	
							Total:	**130**
Bomb Fragment	1	80934			Sea Reaper	5/15/2017	Modern Intrusion - Disposed	
							Total:	**1**
Ceramic Bowl Fragment	1	80837			Sea Reaper	5/8/2017	Maritime Research & Recovery	
	1	93290			Sea Reaper	7/16/2017	Maritime Research & Recovery	
	1	93398			Sea Reaper	9/29/2017	Lab Inventory	
							Total:	**3**
Ceramic Plate Sherd	1	80640			Sea Reaper	1/18/2017	Lab Inventory	
	1	80998			Sea Reaper	6/17/2017	Lab Inventory	
							Total:	**2**
Ceramic Vessel Sherd	1	80590			Sea Reaper	1/5/2017	Maritime Research & Recovery	
	1	80598			Sea Reaper	1/5/2017	Maritime Research & Recovery	
	1	80604			Sea Reaper	1/5/2017	Maritime Research & Recovery	
	1	80614			Sea Reaper	1/7/2017	Maritime Research & Recovery	
	1	80828			Sea Reaper	5/8/2017	Owner's Possession	
	1	80939			Sea Reaper	6/14/2017	Owner's Possession	
	1	93365			Sea Reaper	9/27/2017	Owner's Possession	
							Total:	**7**
Coal	1	80803			Sea Reaper	5/2/2017	In Situ	
	1	80819			Sea Reaper	5/3/2017	In Situ	
	1	81031			Sea Reaper	6/28/2017	In Situ	
							Total:	**3**
Columbia Plain Sherd	1	93358			Sea Reaper	9/27/2017	Maritime Research & Recovery	
							Total:	**1**
Conglomerate	1	80579			Sea Reaper	1/5/2017	Totally oxidized & disposed of conc	

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Description	Quantity	Tag#	Latitude	Longitude	Vessel	Recovery Date	Location
							Total: 1
Copper Fragment	1	80894	CONFIDENTIAL DATA [redacted]		Sea Reaper	5/11/2017	Maritime Research & Recovery
							Total: 1
Copper Rivet	1	93390			Sea Reaper	9/28/2017	Owner's Possession
							Total: 1
Encrusted Object	1	80578			Sea Reaper	1/3/2017	Totally oxidized & disposed of conc
	1	80612			Sea Reaper	1/7/2017	Totally oxidized & disposed of conc
	1	80616			Sea Reaper	1/7/2017	Totally oxidized & disposed of conc
	1	80617			Sea Reaper	1/7/2017	Totally oxidized & disposed of conc
	1	80619			Sea Reaper	1/18/2017	Totally oxidized & disposed of conc
	1	80622			Sea Reaper	1/18/2017	Totally oxidized & disposed of conc
	1	80624			Sea Reaper	1/18/2017	Totally oxidized & disposed of conc
	1	80633			Sea Reaper	1/18/2017	Totally oxidized & disposed of conc
	1	80646			Sea Reaper	1/18/2017	Totally oxidized & disposed of conc
	1	80654			Sea Reaper	1/18/2017	Totally oxidized & disposed of conc
	1	80659			Sea Reaper	1/18/2017	Totally oxidized & disposed of conc
	1	80787			Sea Reaper	3/13/2017	Totally oxidized & disposed of conc
	1	80810			Sea Reaper	5/3/2017	Totally oxidized & disposed of conc
	1	80833			Sea Reaper	5/8/2017	Totally oxidized & disposed of conc
	1	80835			Sea Reaper	5/8/2017	Totally oxidized & disposed of conc
	1	80836			Sea Reaper	5/8/2017	Totally oxidized & disposed of conc
	1	80908			Sea Reaper	5/11/2017	Totally oxidized & disposed of conc
	1	80909			Sea Reaper	5/11/2017	Totally oxidized & disposed of conc
	1	80916			Sea Reaper	5/11/2017	Totally oxidized & disposed of conc
	1	80920			Sea Reaper	5/14/2017	Totally oxidized & disposed of conc
	1	80921			Sea Reaper	5/14/2017	Totally oxidized & disposed of conc
	1	80931			Sea Reaper	5/15/2017	Totally oxidized & disposed of conc
	1	80949			Sea Reaper	6/15/2017	Totally oxidized & disposed of conc
	1	80976			Sea Reaper	6/17/2017	Totally oxidized & disposed of conc
	1	80982			Sea Reaper	6/17/2017	Totally oxidized & disposed of conc
	1	80986			Sea Reaper	6/17/2017	Totally oxidized & disposed of conc
	1	80988			Sea Reaper	6/17/2017	Totally oxidized & disposed of conc
	1	93165			Sea Reaper	6/28/2017	Totally oxidized & disposed of conc
	1	93174			Sea Reaper	6/28/2017	Totally oxidized & disposed of conc
	1	93196			Sea Reaper	6/28/2017	Totally oxidized & disposed of conc
	1	93201			Sea Reaper	6/28/2017	Totally oxidized & disposed of conc
	1	93206			Sea Reaper	6/28/2017	Totally oxidized & disposed of conc
	1	93222			Sea Reaper	6/28/2017	Totally oxidized & disposed of conc
	1	93237			Sea Reaper	6/29/2017	Totally oxidized & disposed of conc
	1	93257			Sea Reaper	7/15/2017	Totally oxidized & disposed of conc
	1	93259			Sea Reaper	7/16/2017	Totally oxidized & disposed of conc
	1	93264			Sea Reaper	7/16/2017	Totally oxidized & disposed of conc
	1	93285			Sea Reaper	7/16/2017	Totally oxidized & disposed of conc
	1	93310			Sea Reaper	9/24/2017	Totally oxidized & disposed of conc
	1	93338			Sea Reaper	9/27/2017	Totally oxidized & disposed of conc
	1	93380			Sea Reaper	9/28/2017	Totally oxidized & disposed of conc
	1	93391			Sea Reaper	9/28/2017	Totally oxidized & disposed of conc

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Description	Quantity	Tag#	Latitude	Longitude	Vessel	Recovery Date	Location
			CONFIDENTIAL DATA				
Encrusted Object	1	93395	[redacted]		Sea Reaper	9/29/2017	Totally oxidized & disposed of conc
	1	93396			Sea Reaper	9/29/2017	Totally oxidized & disposed of conc
							Total: 44
Glass Fragment	1	93350			Sea Reaper	9/27/2017	Maritime Research & Recovery
							Total: 1
Glazed Redware Sherd	1	93212			Sea Reaper	6/28/2017	Maritime Research & Recovery
	1	93361			Sea Reaper	9/27/2017	Owner's Possession
							Total: 2
Glazed Sherd	1	80600			Sea Reaper	1/5/2017	Lab Inventory
							Total: 1
Iron Arquebus Barrel Fragment	1	80760			Sea Reaper	2/20/2017	Totally oxidized & disposed of conc
							Total: 1
Iron Barrel Hoop Fragment	1	80664			Sea Reaper	1/19/2017	Totally oxidized & disposed of conc
	1	80677			Sea Reaper	1/19/2017	Totally oxidized & disposed of conc
	1	80746			Sea Reaper	2/18/2017	Totally oxidized & disposed of conc
	1	80769			Sea Reaper	3/11/2017	Totally oxidized & disposed of conc
	1	In Situ			Sea Reaper	3/11/2017	In Situ
	1	80786			Sea Reaper	3/12/2017	Totally oxidized & disposed of conc
	1	80868			Sea Reaper	5/10/2017	Totally oxidized & disposed of conc
	1	80877			Sea Reaper	5/10/2017	Totally oxidized & disposed of conc
	1	80903			Sea Reaper	5/11/2017	Totally oxidized & disposed of conc
	1	80914			Sea Reaper	5/11/2017	Totally oxidized & disposed of conc
	1	80965			Sea Reaper	6/17/2017	Totally oxidized & disposed of conc
	1	80971			Sea Reaper	6/17/2017	Totally oxidized & disposed of conc
	2	80975			Sea Reaper	6/17/2017	Totally oxidized & disposed of conc
	1	80980			Sea Reaper	6/17/2017	Totally oxidized & disposed of conc
	1	80983			Sea Reaper	6/17/2017	Totally oxidized & disposed of conc
	2	80990			Sea Reaper	6/17/2017	Totally oxidized & disposed of conc
	1	81017			Sea Reaper	6/28/2017	Totally oxidized & disposed of conc
	3	81020			Sea Reaper	6/28/2017	Totally oxidized & disposed of conc
	1	81027			Sea Reaper	6/28/2017	Totally oxidized & disposed of conc
	1	93168			Sea Reaper	6/28/2017	Totally oxidized & disposed of conc
	1	93173			Sea Reaper	6/28/2017	Totally oxidized & disposed of conc
	1	93180			Sea Reaper	6/28/2017	Totally oxidized & disposed of conc
	1	93202			Sea Reaper	6/28/2017	Totally oxidized & disposed of conc
	2	93223			Sea Reaper	6/28/2017	Totally oxidized & disposed of conc
	1	93226			Sea Reaper	6/29/2017	Totally oxidized & disposed of conc
	1	93227			Sea Reaper	6/29/2017	Totally oxidized & disposed of conc
	1	93233			Sea Reaper	6/29/2017	Totally oxidized & disposed of conc
	2	93239			Sea Reaper	6/29/2017	Totally oxidized & disposed of conc
	0	93240			Sea Reaper	6/29/2017	Totally oxidized & disposed of conc
	1	93273			Sea Reaper	7/16/2017	Totally oxidized & disposed of conc
	1	93284			Sea Reaper	7/16/2017	Totally oxidized & disposed of conc
	1	93286			Sea Reaper	7/16/2017	Totally oxidized & disposed of conc
	1	93288			Sea Reaper	7/16/2017	Totally oxidized & disposed of conc

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Description	Quantity	Tag#	Latitude	Longitude	Vessel	Recovery Date	Location
			CONFIDENTIAL DATA				
Iron Barrel Hoop Fragment	1	93292	[redacted]		Sea Reaper	7/16/2017	Totally oxidized & disposed of conc
	1	93306			Sea Reaper	7/17/2017	Totally oxidized & disposed of conc
	1	In Situ			Sea Reaper	9/26/2017	In Situ
	1	93384			Sea Reaper	9/28/2017	Totally oxidized & disposed of conc
							Total: 42
Iron Blade Fragment	1	80627			Sea Reaper	1/18/2017	Totally oxidized & disposed of conc
	1	80632			Sea Reaper	1/18/2017	Totally oxidized & disposed of conc
	1	80676			Sea Reaper	1/19/2017	Totally oxidized & disposed of conc
	3	80682			Sea Reaper	1/19/2017	Totally oxidized & disposed of conc
	1	80685			Sea Reaper	1/19/2017	Totally oxidized & disposed of conc
	1	80689			Sea Reaper	1/19/2017	Totally oxidized & disposed of conc
	1	80692			Sea Reaper	1/19/2017	Totally oxidized & disposed of conc
	1	80728			Sea Reaper	2/14/2017	Totally oxidized & disposed of conc
	1	80818			Sea Reaper	5/3/2017	Totally oxidized & disposed of conc
	1	80823			Sea Reaper	5/3/2017	Totally oxidized & disposed of conc
	1	80824			Sea Reaper	5/3/2017	Totally oxidized & disposed of conc
	1	80864			Sea Reaper	5/10/2017	Totally oxidized & disposed of conc
	1	80881			Sea Reaper	5/10/2017	Totally oxidized & disposed of conc
	1	80885			Sea Reaper	5/10/2017	Totally oxidized & disposed of conc
	1	80905			Sea Reaper	5/11/2017	Totally oxidized & disposed of conc
	1	80938			Sea Reaper	5/16/2017	Totally oxidized & disposed of conc
	1	80948			Sea Reaper	6/15/2017	Totally oxidized & disposed of conc
	1	80964			Sea Reaper	6/17/2017	Totally oxidized & disposed of conc
	4	80991			Sea Reaper	6/17/2017	Totally oxidized & disposed of conc
	1	80996			Sea Reaper	6/17/2017	Totally oxidized & disposed of conc
	1	81000			Sea Reaper	6/17/2017	Totally oxidized & disposed of conc
	1	81003			Sea Reaper	6/17/2017	Totally oxidized & disposed of conc
	1	81005			Sea Reaper	6/17/2017	Totally oxidized & disposed of conc
	1	80954			Sea Reaper	6/19/2017	Totally oxidized & disposed of conc
	1	81023			Sea Reaper	6/28/2017	Totally oxidized & disposed of conc
	1	81026			Sea Reaper	6/28/2017	Totally oxidized & disposed of conc
	1	93167			Sea Reaper	6/28/2017	Totally oxidized & disposed of conc
	1	93177			Sea Reaper	6/28/2017	Totally oxidized & disposed of conc
	1	93181			Sea Reaper	6/28/2017	Totally oxidized & disposed of conc
	1	93184			Sea Reaper	6/28/2017	Totally oxidized & disposed of conc
	1	93189			Sea Reaper	6/28/2017	Totally oxidized & disposed of conc
	1	93192			Sea Reaper	6/28/2017	Totally oxidized & disposed of conc
	1	93204			Sea Reaper	6/28/2017	Totally oxidized & disposed of conc
	1	93214			Sea Reaper	6/28/2017	Totally oxidized & disposed of conc
	2	93221			Sea Reaper	6/28/2017	Totally oxidized & disposed of conc
	1	93229			Sea Reaper	6/29/2017	Totally oxidized & disposed of conc
	1	93230			Sea Reaper	6/29/2017	Totally oxidized & disposed of conc
	1	93232			Sea Reaper	6/29/2017	Totally oxidized & disposed of conc
	1	93263			Sea Reaper	7/16/2017	Totally oxidized & disposed of conc
	1	93270			Sea Reaper	7/16/2017	Totally oxidized & disposed of conc
	1	93343			Sea Reaper	9/27/2017	Totally oxidized & disposed of conc
	1	93378			Sea Reaper	9/28/2017	Totally oxidized & disposed of conc
							Total: 48

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Description	Quantity	Tag#	Latitude	Longitude	Vessel	Recovery Date	Location
			CONFIDENTIAL DATA				
Iron Cannon Ball	1	80802	[redacted]		Sea Reaper	5/2/2017	Maritime Research & Recovery
							Total: 1
Iron Cargo Hook	1	80647	[redacted]		Sea Reaper	1/18/2017	Totally oxidized & disposed of conc
							Total: 1
Iron Chisel	1	80765	[redacted]		Sea Reaper	3/11/2017	Owner's Possession
	1	80777	[redacted]		Sea Reaper	3/12/2017	Maritime Research & Recovery
							Total: 2
Iron Cooking Pot	1	80775	[redacted]		Sea Reaper	3/12/2017	Totally oxidized & disposed of conc
	1	80798	[redacted]		Sea Reaper	3/13/2017	Totally oxidized & disposed of conc
	2	80925	[redacted]		Sea Reaper	5/14/2017	Maritime Research & Recovery
							Total: 4
Iron Grommet	1	80736	[redacted]		Sea Reaper	2/18/2017	Owner's Possession
	1	80736-1	[redacted]		Sea Reaper	2/18/2017	Owner's Possession
	1	80739	[redacted]		Sea Reaper	2/18/2017	Owner's Possession
	1	80782	[redacted]		Sea Reaper	3/12/2017	Maritime Research & Recovery
	1	93297	[redacted]		Sea Reaper	7/16/2017	Maritime Research & Recovery
							Total: 5
Iron Gunners Dice	1	93248	[redacted]		Sea Reaper	7/15/2017	Maritime Research & Recovery
							Total: 1
Iron Key Fragment	1	80788	[redacted]		Sea Reaper	3/13/2017	Maritime Research & Recovery
							Total: 1
Iron Nail	1	In Situ	[redacted]		Sea Reaper	5/2/2017	In Situ
							Total: 1
Iron Object	1	80783	[redacted]		Sea Reaper	3/12/2017	Lab Inventory
	1	93249	[redacted]		Sea Reaper	7/15/2017	Totally oxidized & disposed of conc
	1	In Situ	[redacted]		Sea Reaper	9/29/2017	In Situ
							Total: 3
Iron Pin	1	In Situ	[redacted]		Sea Reaper	1/5/2017	In Situ
							Total: 1
Iron Pin Fragment	1	In Situ	[redacted]		Sea Reaper	1/18/2017	In Situ
	1	80732	[redacted]		Sea Reaper	2/18/2017	Maritime Research & Recovery
	1	80745	[redacted]		Sea Reaper	2/18/2017	Owner's Possession
	1	93408	[redacted]		Sea Reaper	9/30/2017	Owner's Possession
							Total: 4
Iron Scissor	1	80963	[redacted]		Sea Reaper	6/17/2017	Totally oxidized & disposed of conc
							Total: 1
Iron Spike	1	80644	[redacted]		Sea Reaper	1/18/2017	Totally oxidized & disposed of conc

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Description	Quantity	Tag#	Latitude	Longitude	Vessel	Recovery Date	Location
			CONFIDENTIAL DATA				
Iron Spike	1	80662	[redacted]		Sea Reaper	1/18/2017	Totally oxidized & disposed of conc
	1	In Situ			Sea Reaper	1/18/2017	In Situ
	1	In Situ			Sea Reaper	1/18/2017	In Situ
	1	In Situ			Sea Reaper	1/20/2017	In Situ
	1	80732-1			Sea Reaper	2/18/2017	Owner's Possession
	1	80735			Sea Reaper	2/18/2017	Totally oxidized & disposed of conc
	1	80735-1			Sea Reaper	2/18/2017	Totally oxidized & disposed of conc
	1	80740			Sea Reaper	2/18/2017	Totally oxidized & disposed of conc
	1	80745-1			Sea Reaper	2/18/2017	Owner's Possession
	1	80749			Sea Reaper	2/18/2017	Totally oxidized & disposed of conc
	1	80749-1			Sea Reaper	2/18/2017	Totally oxidized & disposed of conc
	1	80756			Sea Reaper	2/18/2017	Totally oxidized & disposed of conc
	1	80764			Sea Reaper	3/11/2017	Totally oxidized & disposed of conc
	1	80766			Sea Reaper	3/11/2017	Totally oxidized & disposed of conc
	1	80796			Sea Reaper	3/13/2017	Totally oxidized & disposed of conc
	1	80812			Sea Reaper	5/3/2017	Totally oxidized & disposed of conc
	1	80831			Sea Reaper	5/8/2017	Totally oxidized & disposed of conc
	1	80832			Sea Reaper	5/8/2017	Totally oxidized & disposed of conc
	1	80863			Sea Reaper	5/10/2017	Totally oxidized & disposed of conc
	1	80897			Sea Reaper	5/11/2017	Maritime Research & Recovery
	1	80919			Sea Reaper	5/11/2017	Totally oxidized & disposed of conc
	1	80945			Sea Reaper	6/15/2017	Totally oxidized & disposed of conc
	1	80966			Sea Reaper	6/17/2017	Totally oxidized & disposed of conc
	1	80972			Sea Reaper	6/17/2017	Totally oxidized & disposed of conc
	1	80952			Sea Reaper	6/19/2017	Maritime Research & Recovery
	1	93176			Sea Reaper	6/28/2017	Totally oxidized & disposed of conc
	1	93267			Sea Reaper	7/16/2017	Totally oxidized & disposed of conc
	1	93272			Sea Reaper	7/16/2017	Totally oxidized & disposed of conc
	1	93340			Sea Reaper	9/27/2017	Totally oxidized & disposed of conc
	1	93394			Sea Reaper	9/29/2017	Totally oxidized & disposed of conc
							Total: 31
Iron Spike Fragment	1	80650			Sea Reaper	1/18/2017	Maritime Research & Recovery
	1	80770			Sea Reaper	3/11/2017	Maritime Research & Recovery
	1	80847			Sea Reaper	5/9/2017	Totally oxidized & disposed of conc
	1	80869			Sea Reaper	5/10/2017	Maritime Research & Recovery
	1	80889			Sea Reaper	5/10/2017	Totally oxidized & disposed of conc
	1	80901			Sea Reaper	5/11/2017	Maritime Research & Recovery
	1	80902			Sea Reaper	5/11/2017	Lab Inventory
	1	80993			Sea Reaper	6/17/2017	Totally oxidized & disposed of conc
	1	In Situ			Sea Reaper	6/17/2017	In Situ
	1	93164			Sea Reaper	6/28/2017	Totally oxidized & disposed of conc
	1	93169			Sea Reaper	6/28/2017	Totally oxidized & disposed of conc
	1	93247			Sea Reaper	7/13/2017	Owner's Possession
	1	93298			Sea Reaper	7/16/2017	Totally oxidized & disposed of conc
	1	93315			Sea Reaper	9/25/2017	Owner's Possession
	1	93332			Sea Reaper	9/26/2017	Owner's Possession
							Total: 15
Iron Sword Fragment	1	93183			Sea Reaper	6/28/2017	Totally oxidized & disposed of conc

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Description	Quantity	Tag#	Latitude	Longitude	Vessel	Recovery Date	Location
							Total: 1
Iron Sword Handle	1	80793	CONFIDENTIAL DATA	[redacted]	Sea Reaper	3/13/2017	Totally oxidized & disposed of conc
							Total: 1
Iron Tack	1	80759	[redacted]	[redacted]	Sea Reaper	2/19/2017	Totally oxidized & disposed of conc
	1	In Situ	[redacted]	[redacted]	Sea Reaper	2/19/2017	In Situ
	1	80789	[redacted]	[redacted]	Sea Reaper	3/13/2017	Totally oxidized & disposed of conc
	1	In Situ	[redacted]	[redacted]	Sea Reaper	5/8/2017	In Situ
	1	In Situ	[redacted]	[redacted]	Sea Reaper	5/15/2017	In Situ
	1	93179	[redacted]	[redacted]	Sea Reaper	6/28/2017	Totally oxidized & disposed of conc
	1	In Situ	[redacted]	[redacted]	Sea Reaper	7/16/2017	In Situ
	1	In Situ	[redacted]	[redacted]	Sea Reaper	9/26/2017	In Situ
							Total: 8
Iron Washer	1	93322	[redacted]	[redacted]	Sea Reaper	9/25/2017	Maritime Research & Recovery
							Total: 1
Lead Musket Ball	1	80709	[redacted]	[redacted]	Sea Reaper	1/20/2017	Maritime Research & Recovery
	1	80709-1	[redacted]	[redacted]	Sea Reaper	1/20/2017	Maritime Research & Recovery
	1	80755	[redacted]	[redacted]	Sea Reaper	2/18/2017	Maritime Research & Recovery
	1	93319-21	[redacted]	[redacted]	Sea Reaper	2/25/2017	Lab Inventory
	1	80761	[redacted]	[redacted]	Sea Reaper	3/11/2017	Maritime Research & Recovery
	1	80762	[redacted]	[redacted]	Sea Reaper	3/11/2017	Maritime Research & Recovery
	1	80763	[redacted]	[redacted]	Sea Reaper	3/11/2017	Maritime Research & Recovery
	1	80771	[redacted]	[redacted]	Sea Reaper	3/11/2017	Maritime Research & Recovery
	1	80778	[redacted]	[redacted]	Sea Reaper	3/12/2017	Maritime Research & Recovery
	1	80779	[redacted]	[redacted]	Sea Reaper	3/12/2017	Maritime Research & Recovery
	1	80780	[redacted]	[redacted]	Sea Reaper	3/12/2017	Maritime Research & Recovery
	1	80781	[redacted]	[redacted]	Sea Reaper	3/12/2017	Maritime Research & Recovery
	1	80784	[redacted]	[redacted]	Sea Reaper	3/12/2017	Maritime Research & Recovery
	1	80898	[redacted]	[redacted]	Sea Reaper	5/11/2017	Maritime Research & Recovery
	1	80899	[redacted]	[redacted]	Sea Reaper	5/11/2017	Maritime Research & Recovery
	1	80900	[redacted]	[redacted]	Sea Reaper	5/11/2017	Maritime Research & Recovery
	1	93178	[redacted]	[redacted]	Sea Reaper	6/28/2017	Maritime Research & Recovery
	1	93228	[redacted]	[redacted]	Sea Reaper	6/29/2017	Maritime Research & Recovery
	1	93314	[redacted]	[redacted]	Sea Reaper	9/25/2017	Maritime Research & Recovery
	1	93316	[redacted]	[redacted]	Sea Reaper	9/25/2017	Maritime Research & Recovery
	1	93317	[redacted]	[redacted]	Sea Reaper	9/25/2017	Maritime Research & Recovery
	1	93317-1	[redacted]	[redacted]	Sea Reaper	9/25/2017	Maritime Research & Recovery
	1	93317-10	[redacted]	[redacted]	Sea Reaper	9/25/2017	Maritime Research & Recovery
	1	93317-11	[redacted]	[redacted]	Sea Reaper	9/25/2017	Maritime Research & Recovery
	1	93317-12	[redacted]	[redacted]	Sea Reaper	9/25/2017	Maritime Research & Recovery
	1	93317-13	[redacted]	[redacted]	Sea Reaper	9/25/2017	Maritime Research & Recovery
	1	93317-2	[redacted]	[redacted]	Sea Reaper	9/25/2017	Maritime Research & Recovery
	1	93317-3	[redacted]	[redacted]	Sea Reaper	9/25/2017	Maritime Research & Recovery
	1	93317-4	[redacted]	[redacted]	Sea Reaper	9/25/2017	Maritime Research & Recovery
	1	93317-5	[redacted]	[redacted]	Sea Reaper	9/25/2017	Maritime Research & Recovery
	1	93317-6	[redacted]	[redacted]	Sea Reaper	9/25/2017	Maritime Research & Recovery
	1	93317-7	[redacted]	[redacted]	Sea Reaper	9/25/2017	Maritime Research & Recovery

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Description	Quantity	Tag#	Latitude	Longitude	Vessel	Recovery Date	Location
			CONFIDENTIAL DATA				
Lead Musket Ball	1	93317-8	[redacted]		Sea Reaper	9/25/2017	Maritime Research & Recovery
	1	93317-9			Sea Reaper	9/25/2017	Maritime Research & Recovery
	1	93318			Sea Reaper	9/25/2017	Maritime Research & Recovery
	1	93318-1			Sea Reaper	9/25/2017	Maritime Research & Recovery
	1	93318-2			Sea Reaper	9/25/2017	Maritime Research & Recovery
	1	93319			Sea Reaper	9/25/2017	Maritime Research & Recovery
	1	93319-1			Sea Reaper	9/25/2017	Maritime Research & Recovery
	1	93319-10			Sea Reaper	9/25/2017	Maritime Research & Recovery
	1	93319-11			Sea Reaper	9/25/2017	Maritime Research & Recovery
	1	93319-12			Sea Reaper	9/25/2017	Maritime Research & Recovery
	1	93319-13			Sea Reaper	9/25/2017	Owner's Possession
	1	93319-14			Sea Reaper	9/25/2017	Owner's Possession
	1	93319-15			Sea Reaper	9/25/2017	Owner's Possession
	1	93319-16			Sea Reaper	9/25/2017	Lab Inventory
	1	93319-17			Sea Reaper	9/25/2017	Owner's Possession
	1	93319-18			Sea Reaper	9/25/2017	Lab Inventory
	1	93319-19			Sea Reaper	9/25/2017	Lab Inventory
	1	93319-2			Sea Reaper	9/25/2017	Lab Inventory
	1	93319-20			Sea Reaper	9/25/2017	Lab Inventory
	1	93319-22			Sea Reaper	9/25/2017	Divers Division
	1	93319-3			Sea Reaper	9/25/2017	Lab Inventory
	1	93319-4			Sea Reaper	9/25/2017	Lab Inventory
	1	93319-5			Sea Reaper	9/25/2017	Lab Inventory
	1	93319-6			Sea Reaper	9/25/2017	Lab Inventory
	1	93319-7			Sea Reaper	9/25/2017	Lab Inventory
	1	93319-8			Sea Reaper	9/25/2017	Lab Inventory
	1	93319-9			Sea Reaper	9/25/2017	Lab Inventory
	1	93320			Sea Reaper	9/25/2017	Owner's Possession
	1	93320-1			Sea Reaper	9/25/2017	Owner's Possession
	1	93320-2			Sea Reaper	9/25/2017	Lab Inventory
	1	93320-3			Sea Reaper	9/25/2017	Lab Inventory
	1	93320-4			Sea Reaper	9/25/2017	Lab Inventory
	1	93320-5			Sea Reaper	9/25/2017	Lab Inventory
	1	93321			Sea Reaper	9/25/2017	Owner's Possession
	1	93323			Sea Reaper	9/26/2017	Lab Inventory
	1	93324			Sea Reaper	9/26/2017	Lab Inventory
	1	93324-1			Sea Reaper	9/26/2017	Lab Inventory
	1	93324-2			Sea Reaper	9/26/2017	Lab Inventory
	1	93324-3			Sea Reaper	9/26/2017	Lab Inventory
	1	93324-4			Sea Reaper	9/26/2017	Lab Inventory
	1	93324-5			Sea Reaper	9/26/2017	Lab Inventory
	1	93324-6			Sea Reaper	9/26/2017	Divers Division
	1	93324-7			Sea Reaper	9/26/2017	Lab Inventory
	1	93324-8			Sea Reaper	9/26/2017	Lab Inventory
	1	93326			Sea Reaper	9/26/2017	Divers Division
	1	93328			Sea Reaper	9/26/2017	Lab Inventory
	1	93328-1			Sea Reaper	9/26/2017	Owner's Possession
	1	93330			Sea Reaper	9/26/2017	Lab Inventory
	1	93331			Sea Reaper	9/26/2017	Owner's Possession
	1	93331-1			Sea Reaper	9/26/2017	Lab Inventory

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Description	Quantity	Tag#	Latitude	Longitude	Vessel	Recovery Date	Location
Lead Musket Ball	1	93333	CONFIDENTIAL DATA		Sea Reaper	9/26/2017	Lab Inventory
	1	93333-1			Sea Reaper	9/26/2017	Lab Inventory
	1	93333-2			Sea Reaper	9/26/2017	Lab Inventory
	1	93333-3			Sea Reaper	9/26/2017	Owner's Possession
	1	93333-4			Sea Reaper	9/26/2017	Lab Inventory
	1	93333-5			Sea Reaper	9/26/2017	Lab Inventory
	1	93335			Sea Reaper	9/26/2017	Lab Inventory
	1	93335-1			Sea Reaper	9/26/2017	Lab Inventory
	1	93335-2			Sea Reaper	9/26/2017	Lab Inventory
	1	93336			Sea Reaper	9/26/2017	Divers Division
	1	93336-1			Sea Reaper	9/26/2017	Owner's Possession
							Total: 93
Lead Object	1	80758			Sea Reaper	2/19/2017	Maritime Research & Recovery
							Total: 1
Lead Sheathing	1	80601			Sea Reaper	1/5/2017	Maritime Research & Recovery
	1	80606			Sea Reaper	1/5/2017	Maritime Research & Recovery
	1	80608			Sea Reaper	1/5/2017	Maritime Research & Recovery
	1	80610			Sea Reaper	1/7/2017	Maritime Research & Recovery
	2	80615			Sea Reaper	1/7/2017	Maritime Research & Recovery
	1	80630			Sea Reaper	1/18/2017	Maritime Research & Recovery
	1	80638			Sea Reaper	1/18/2017	Maritime Research & Recovery
	1	80648			Sea Reaper	1/18/2017	Maritime Research & Recovery
	1	80651			Sea Reaper	1/18/2017	Maritime Research & Recovery
	1	80655			Sea Reaper	1/18/2017	Maritime Research & Recovery
	1	80663			Sea Reaper	1/18/2017	Maritime Research & Recovery
	1	80665			Sea Reaper	1/19/2017	Maritime Research & Recovery
	4	80667			Sea Reaper	1/19/2017	Maritime Research & Recovery
	1	80669			Sea Reaper	1/19/2017	Maritime Research & Recovery
	1	80671			Sea Reaper	1/19/2017	Maritime Research & Recovery
	1	80673			Sea Reaper	1/19/2017	Maritime Research & Recovery
	2	80675			Sea Reaper	1/19/2017	Maritime Research & Recovery
	5	80679			Sea Reaper	1/19/2017	Maritime Research & Recovery
	5	80680			Sea Reaper	1/19/2017	Maritime Research & Recovery
	4	80683			Sea Reaper	1/19/2017	Maritime Research & Recovery
	1	80687			Sea Reaper	1/19/2017	Maritime Research & Recovery
	3	80691			Sea Reaper	1/19/2017	Maritime Research & Recovery
	1	80693			Sea Reaper	1/19/2017	Maritime Research & Recovery
	1	80694			Sea Reaper	1/20/2017	Maritime Research & Recovery
	1	80696			Sea Reaper	1/20/2017	Maritime Research & Recovery
	2	80697			Sea Reaper	1/20/2017	Maritime Research & Recovery
	1	80698			Sea Reaper	1/20/2017	Maritime Research & Recovery
	3	80699			Sea Reaper	1/20/2017	Maritime Research & Recovery
	1	80701			Sea Reaper	1/20/2017	Maritime Research & Recovery
	1	80703			Sea Reaper	1/20/2017	Maritime Research & Recovery
	4	80704			Sea Reaper	1/20/2017	Maritime Research & Recovery
	1	80706			Sea Reaper	1/20/2017	Maritime Research & Recovery
	5	80707			Sea Reaper	1/20/2017	Maritime Research & Recovery
	5	80708			Sea Reaper	1/20/2017	Maritime Research & Recovery

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Description	Quantity	Tag#	Latitude	Longitude	Vessel	Recovery Date	Location
Lead Sheathing	2	80711	CONFIDENTIAL DATA		Sea Reaper	1/20/2017	Maritime Research & Recovery
	7	80712			Sea Reaper	1/20/2017	Maritime Research & Recovery
	1	80716			Sea Reaper	2/12/2017	Maritime Research & Recovery
	2	80720			Sea Reaper	2/13/2017	Maritime Research & Recovery
	1	80726			Sea Reaper	2/14/2017	Maritime Research & Recovery
	1	80731			Sea Reaper	2/18/2017	Maritime Research & Recovery
	7	80733			Sea Reaper	2/18/2017	Maritime Research & Recovery
	40	80734			Sea Reaper	2/18/2017	Maritime Research & Recovery
	6	80738			Sea Reaper	2/18/2017	Maritime Research & Recovery
	3	80741			Sea Reaper	2/18/2017	Maritime Research & Recovery
	10	80743			Sea Reaper	2/18/2017	Maritime Research & Recovery
	21	80747			Sea Reaper	2/18/2017	Maritime Research & Recovery
	6	80750			Sea Reaper	2/18/2017	Lab Inventory
	1	80753			Sea Reaper	2/18/2017	Maritime Research & Recovery
	1	80772			Sea Reaper	3/11/2017	Maritime Research & Recovery
	1	80801			Sea Reaper	5/2/2017	Maritime Research & Recovery
	1	80804			Sea Reaper	5/2/2017	Lab Inventory
	1	80806			Sea Reaper	5/2/2017	Lab Inventory
	1	80808			Sea Reaper	5/2/2017	Lab Inventory
	1	80815			Sea Reaper	5/3/2017	Lab Inventory
	1	80820			Sea Reaper	5/3/2017	Lab Inventory
	1	80853			Sea Reaper	5/9/2017	Lab Inventory
	1	80861			Sea Reaper	5/9/2017	Lab Inventory
	2	80862			Sea Reaper	5/9/2017	Lab Inventory
	1	80872			Sea Reaper	5/10/2017	Lab Inventory
	1	80873			Sea Reaper	5/10/2017	Lab Inventory
	4	80876			Sea Reaper	5/10/2017	Lab Inventory
	1	80892			Sea Reaper	5/10/2017	Lab Inventory
	2	80912			Sea Reaper	5/11/2017	Lab Inventory
	1	80928			Sea Reaper	5/15/2017	Lab Inventory
	4	80933			Sea Reaper	5/15/2017	Lab Inventory
	1	80936			Sea Reaper	5/16/2017	Lab Inventory
	1	80937			Sea Reaper	5/16/2017	Lab Inventory
	2	80941			Sea Reaper	6/14/2017	Lab Inventory
	1	80946			Sea Reaper	6/15/2017	Lab Inventory
	1	80950			Sea Reaper	6/16/2017	Lab Inventory
	1	80960			Sea Reaper	6/16/2017	Lab Inventory
	2	80968			Sea Reaper	6/17/2017	Lab Inventory
	1	80970			Sea Reaper	6/17/2017	Lab Inventory
	2	80973			Sea Reaper	6/17/2017	Lab Inventory
	1	80978			Sea Reaper	6/17/2017	Lab Inventory
	1	80981			Sea Reaper	6/17/2017	Lab Inventory
	5	81002			Sea Reaper	6/17/2017	Lab Inventory
	1	81007			Sea Reaper	6/27/2017	Lab Inventory
	1	81009			Sea Reaper	6/27/2017	Lab Inventory
	1	81010			Sea Reaper	6/27/2017	Lab Inventory
	1	81015			Sea Reaper	6/28/2017	Lab Inventory
	1	81022			Sea Reaper	6/28/2017	Owner's Possession
	1	81030			Sea Reaper	6/28/2017	Lab Inventory
	1	93171			Sea Reaper	6/28/2017	Lab Inventory

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Description	Quantity	Tag#	Latitude	Longitude	Vessel	Recovery Date	Location
Lead Sheathing	3	93175	CONFIDENTIAL DATA		Sea Reaper	6/28/2017	Lab Inventory
	1	93186	[redacted]		Sea Reaper	6/28/2017	Lab Inventory
	1	93190	[redacted]		Sea Reaper	6/28/2017	Lab Inventory
	1	93193	[redacted]		Sea Reaper	6/28/2017	Lab Inventory
	2	93195	[redacted]		Sea Reaper	6/28/2017	Lab Inventory
	3	93197	[redacted]		Sea Reaper	6/28/2017	Lab Inventory
	1	93200	[redacted]		Sea Reaper	6/28/2017	Lab Inventory
	1	93203	[redacted]		Sea Reaper	6/28/2017	Lab Inventory
	1	93208	[redacted]		Sea Reaper	6/28/2017	Lab Inventory
	3	93211	[redacted]		Sea Reaper	6/28/2017	Lab Inventory
	1	93218	[redacted]		Sea Reaper	6/28/2017	Lab Inventory
	1	93224	[redacted]		Sea Reaper	6/29/2017	Lab Inventory
	1	93225	[redacted]		Sea Reaper	6/29/2017	Owner's Possession
	1	93235	[redacted]		Sea Reaper	6/29/2017	Lab Inventory
	2	93236	[redacted]		Sea Reaper	6/29/2017	Lab Inventory
	1	93244	[redacted]		Sea Reaper	6/30/2017	Lab Inventory
	1	93246	[redacted]		Sea Reaper	6/30/2017	Lab Inventory
	3	93260	[redacted]		Sea Reaper	7/16/2017	Lab Inventory
	1	93265	[redacted]		Sea Reaper	7/16/2017	Lab Inventory
	3	93269	[redacted]		Sea Reaper	7/16/2017	Lab Inventory
	2	93271	[redacted]		Sea Reaper	7/16/2017	Lab Inventory
	4	93275	[redacted]		Sea Reaper	7/16/2017	Lab Inventory
	3	93277	[redacted]		Sea Reaper	7/16/2017	Lab Inventory
	6	93278	[redacted]		Sea Reaper	7/16/2017	Lab Inventory
	3	93280	[redacted]		Sea Reaper	7/16/2017	Lab Inventory
	5	93282	[redacted]		Sea Reaper	7/16/2017	Lab Inventory
	2	93287	[redacted]		Sea Reaper	7/16/2017	Lab Inventory
	1	93289	[redacted]		Sea Reaper	7/16/2017	Lab Inventory
	2	93293	[redacted]		Sea Reaper	7/16/2017	Lab Inventory
	1	93294	[redacted]		Sea Reaper	7/16/2017	Lab Inventory
	4	93295	[redacted]		Sea Reaper	7/16/2017	Lab Inventory
	1	93296	[redacted]		Sea Reaper	7/16/2017	Lab Inventory
	1	93300	[redacted]		Sea Reaper	7/16/2017	Lab Inventory
	1	93302	[redacted]		Sea Reaper	7/17/2017	Lab Inventory
	1	93303	[redacted]		Sea Reaper	7/17/2017	Lab Inventory
	1	93305	[redacted]		Sea Reaper	7/17/2017	Lab Inventory
	3	93307	[redacted]		Sea Reaper	7/17/2017	Lab Inventory
	1	93312	[redacted]		Sea Reaper	9/24/2017	Lab Inventory
	1	93329	[redacted]		Sea Reaper	9/26/2017	Lab Inventory
	1	93334	[redacted]		Sea Reaper	9/26/2017	Lab Inventory
	1	93337	[redacted]		Sea Reaper	9/27/2017	Lab Inventory
	9	93341	[redacted]		Sea Reaper	9/27/2017	Lab Inventory
	4	93342	[redacted]		Sea Reaper	9/27/2017	Lab Inventory
	1	93345	[redacted]		Sea Reaper	9/27/2017	Lab Inventory
	1	93353	[redacted]		Sea Reaper	9/27/2017	Lab Inventory
	2	93364	[redacted]		Sea Reaper	9/27/2017	Lab Inventory
	2	93366	[redacted]		Sea Reaper	9/27/2017	Lab Inventory
	2	93368	[redacted]		Sea Reaper	9/27/2017	Lab Inventory
	1	93374	[redacted]		Sea Reaper	9/28/2017	Lab Inventory
	3	93375	[redacted]		Sea Reaper	9/28/2017	Lab Inventory

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Description	Quantity	Tag#	Latitude	Longitude	Vessel	Recovery Date	Location
Lead Sheathing	1	93377	CONFIDENTIAL DATA		Sea Reaper	9/28/2017	Lab Inventory
	2	93379			Sea Reaper	9/28/2017	Lab Inventory
	1	93381			Sea Reaper	9/28/2017	Lab Inventory
	1	93383			Sea Reaper	9/28/2017	Lab Inventory
	1	93386			Sea Reaper	9/28/2017	Lab Inventory
	2	93387			Sea Reaper	9/28/2017	Lab Inventory
	1	93388			Sea Reaper	9/28/2017	Lab Inventory
	2	93389			Sea Reaper	9/28/2017	Lab Inventory
	1	93400			Sea Reaper	9/29/2017	Lab Inventory
	1	93404			Sea Reaper	9/30/2017	Lab Inventory
	1	93407			Sea Reaper	9/30/2017	Lab Inventory
							Total: 341
Majolica Sherd	1	80878			Sea Reaper	5/10/2017	Maritime Research & Recovery
							Total: 1
Modern Material	1	80592			Sea Reaper	1/5/2017	Modern Intrusion - Disposed
	1	80609			Sea Reaper	1/6/2017	Modern Intrusion - Disposed
	1	80723			Sea Reaper	2/13/2017	Modern Intrusion - Disposed
	1	80767			Sea Reaper	3/11/2017	Modern Intrusion - Disposed
	1	80792			Sea Reaper	3/13/2017	Modern Intrusion - Disposed
	1	80809			Sea Reaper	5/3/2017	Modern Intrusion - Disposed
	1	80922			Sea Reaper	5/14/2017	Modern Intrusion - Disposed
	1	80927			Sea Reaper	5/15/2017	Modern Intrusion - Disposed
	1	80947			Sea Reaper	6/15/2017	Modern Intrusion - Disposed
	1	93253			Sea Reaper	7/15/2017	Modern Intrusion - Disposed
	1	93255			Sea Reaper	7/15/2017	Modern Intrusion - Disposed
	1	93256			Sea Reaper	7/15/2017	In Situ
							Total: 12
Olive Jar Neck	1	80628			Sea Reaper	1/18/2017	Divers Division
	1	80657			Sea Reaper	1/18/2017	Divers Division
	1	80657-1			Sea Reaper	1/18/2017	Maritime Research & Recovery
	1	80724			Sea Reaper	2/14/2017	Maritime Research & Recovery
	1	80995			Sea Reaper	6/17/2017	Maritime Research & Recovery
							Total: 5
Olive Jar Neck Fragment	1	80879			Sea Reaper	5/10/2017	Maritime Research & Recovery
	1	93219			Sea Reaper	6/28/2017	Owner's Possession
							Total: 2
Olive Jar Sherd	1	80576			Sea Reaper	1/3/2017	Maritime Research & Recovery
	1	80580			Sea Reaper	1/5/2017	Maritime Research & Recovery
	2	80581			Sea Reaper	1/5/2017	Maritime Research & Recovery
	1	80582			Sea Reaper	1/5/2017	Maritime Research & Recovery
	1	80584			Sea Reaper	1/5/2017	Maritime Research & Recovery
	1	80585			Sea Reaper	1/5/2017	Maritime Research & Recovery
	1	80586			Sea Reaper	1/5/2017	Maritime Research & Recovery
	1	80587			Sea Reaper	1/5/2017	Maritime Research & Recovery
	1	80588			Sea Reaper	1/5/2017	Maritime Research & Recovery

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Description	Quantity	Tag#	Latitude	Longitude	Vessel	Recovery Date	Location
Olive Jar Sherd	2	80589	CONFIDENTIAL DATA		Sea Reaper	1/5/2017	Maritime Research & Recovery
	1	80591			Sea Reaper	1/5/2017	Maritime Research & Recovery
	1	80593			Sea Reaper	1/5/2017	Maritime Research & Recovery
	1	80594			Sea Reaper	1/5/2017	Maritime Research & Recovery
	1	80595			Sea Reaper	1/5/2017	Maritime Research & Recovery
	1	80596			Sea Reaper	1/5/2017	Maritime Research & Recovery
	1	80597			Sea Reaper	1/5/2017	Maritime Research & Recovery
	2	80599			Sea Reaper	1/5/2017	Maritime Research & Recovery
	2	80602			Sea Reaper	1/5/2017	Maritime Research & Recovery
	1	80603			Sea Reaper	1/5/2017	Maritime Research & Recovery
	1	80607			Sea Reaper	1/5/2017	Maritime Research & Recovery
	1	80611			Sea Reaper	1/7/2017	Maritime Research & Recovery
	1	80613			Sea Reaper	1/7/2017	Maritime Research & Recovery
	3	80618			Sea Reaper	1/18/2017	Maritime Research & Recovery
	3	80620			Sea Reaper	1/18/2017	Maritime Research & Recovery
	1	80621			Sea Reaper	1/18/2017	Maritime Research & Recovery
	3	80623			Sea Reaper	1/18/2017	Maritime Research & Recovery
	3	80625			Sea Reaper	1/18/2017	Maritime Research & Recovery
	4	80626			Sea Reaper	1/18/2017	Maritime Research & Recovery
	1	80629			Sea Reaper	1/18/2017	Maritime Research & Recovery
	1	80631			Sea Reaper	1/18/2017	Maritime Research & Recovery
	1	80634			Sea Reaper	1/18/2017	Maritime Research & Recovery
	1	80635			Sea Reaper	1/18/2017	Maritime Research & Recovery
	1	80636			Sea Reaper	1/18/2017	Maritime Research & Recovery
	3	80637			Sea Reaper	1/18/2017	Maritime Research & Recovery
	1	80639			Sea Reaper	1/18/2017	Maritime Research & Recovery
	2	80641			Sea Reaper	1/18/2017	Maritime Research & Recovery
	3	80642			Sea Reaper	1/18/2017	Maritime Research & Recovery
	4	80643			Sea Reaper	1/18/2017	Maritime Research & Recovery
	3	80645			Sea Reaper	1/18/2017	Maritime Research & Recovery
	2	80649			Sea Reaper	1/18/2017	Maritime Research & Recovery
	1	80652			Sea Reaper	1/18/2017	Maritime Research & Recovery
	1	80653			Sea Reaper	1/18/2017	Maritime Research & Recovery
	1	80656			Sea Reaper	1/18/2017	Maritime Research & Recovery
	3	80658			Sea Reaper	1/18/2017	Maritime Research & Recovery
	1	80660			Sea Reaper	1/18/2017	Maritime Research & Recovery
	4	80661			Sea Reaper	1/18/2017	Maritime Research & Recovery
	1	80668			Sea Reaper	1/19/2017	Maritime Research & Recovery
	1	80670			Sea Reaper	1/19/2017	Maritime Research & Recovery
	3	80672			Sea Reaper	1/19/2017	Maritime Research & Recovery
	2	80674			Sea Reaper	1/19/2017	Maritime Research & Recovery
	1	80678			Sea Reaper	1/19/2017	Maritime Research & Recovery
	2	80681			Sea Reaper	1/19/2017	Maritime Research & Recovery
	1	80684			Sea Reaper	1/19/2017	Maritime Research & Recovery
	3	80686			Sea Reaper	1/19/2017	Maritime Research & Recovery
	1	80688			Sea Reaper	1/19/2017	Maritime Research & Recovery
	3	80690			Sea Reaper	1/19/2017	Maritime Research & Recovery
	1	80695			Sea Reaper	1/20/2017	Maritime Research & Recovery
	1	80700			Sea Reaper	1/20/2017	Maritime Research & Recovery
	1	80702			Sea Reaper	1/20/2017	Maritime Research & Recovery

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Description	Quantity	Tag#	Latitude	Longitude	Vessel	Recovery Date	Location
			CONFIDENTIAL DATA				
Olive Jar Sherd	1	80705	[redacted]		Sea Reaper	1/20/2017	Maritime Research & Recovery
	1	80710			Sea Reaper	1/20/2017	Maritime Research & Recovery
	1	80713			Sea Reaper	1/20/2017	Maritime Research & Recovery
	1	80714			Sea Reaper	2/12/2017	Maritime Research & Recovery
	1	80718			Sea Reaper	2/12/2017	Maritime Research & Recovery
	1	80719			Sea Reaper	2/12/2017	Maritime Research & Recovery
	1	80721			Sea Reaper	2/13/2017	Maritime Research & Recovery
	1	80727			Sea Reaper	2/14/2017	Maritime Research & Recovery
	2	80729			Sea Reaper	2/18/2017	Maritime Research & Recovery
	1	80730			Sea Reaper	2/18/2017	Maritime Research & Recovery
	1	80737			Sea Reaper	2/18/2017	Maritime Research & Recovery
	2	80742			Sea Reaper	2/18/2017	Maritime Research & Recovery
	1	80744			Sea Reaper	2/18/2017	Maritime Research & Recovery
	3	80748			Sea Reaper	2/18/2017	Maritime Research & Recovery
	2	80751			Sea Reaper	2/18/2017	Maritime Research & Recovery
	1	80752			Sea Reaper	2/18/2017	Maritime Research & Recovery
	1	80754			Sea Reaper	2/18/2017	Maritime Research & Recovery
	1	80768			Sea Reaper	3/11/2017	Maritime Research & Recovery
	1	80773			Sea Reaper	3/11/2017	Maritime Research & Recovery
	1	80776			Sea Reaper	3/12/2017	Maritime Research & Recovery
	1	80790			Sea Reaper	3/13/2017	Maritime Research & Recovery
	1	80791			Sea Reaper	3/13/2017	Maritime Research & Recovery
	1	80794			Sea Reaper	3/13/2017	Maritime Research & Recovery
	2	80795			Sea Reaper	3/13/2017	Maritime Research & Recovery
	1	80797			Sea Reaper	3/13/2017	Maritime Research & Recovery
	1	80799			Sea Reaper	3/13/2017	Maritime Research & Recovery
	1	80800			Sea Reaper	3/13/2017	Maritime Research & Recovery
	1	80807			Sea Reaper	5/2/2017	Maritime Research & Recovery
	1	80813			Sea Reaper	5/3/2017	Maritime Research & Recovery
	1	80814			Sea Reaper	5/3/2017	Maritime Research & Recovery
	1	80816			Sea Reaper	5/3/2017	Maritime Research & Recovery
	1	80817			Sea Reaper	5/3/2017	Maritime Research & Recovery
	1	80821			Sea Reaper	5/3/2017	Maritime Research & Recovery
	1	80822			Sea Reaper	5/3/2017	Maritime Research & Recovery
	1	80825			Sea Reaper	5/3/2017	Maritime Research & Recovery
	1	80826			Sea Reaper	5/8/2017	Maritime Research & Recovery
	1	80827			Sea Reaper	5/8/2017	Maritime Research & Recovery
	2	80829			Sea Reaper	5/8/2017	Maritime Research & Recovery
	7	80830			Sea Reaper	5/8/2017	Maritime Research & Recovery
	2	80834			Sea Reaper	5/8/2017	Maritime Research & Recovery
	2	80838			Sea Reaper	5/8/2017	Maritime Research & Recovery
	3	80839			Sea Reaper	5/8/2017	Maritime Research & Recovery
	4	80840			Sea Reaper	5/8/2017	Maritime Research & Recovery
	1	80841			Sea Reaper	5/8/2017	Maritime Research & Recovery
	2	80842			Sea Reaper	5/8/2017	Maritime Research & Recovery
	1	80843			Sea Reaper	5/8/2017	Maritime Research & Recovery
	3	80844			Sea Reaper	5/9/2017	Maritime Research & Recovery
	2	80845			Sea Reaper	5/9/2017	Maritime Research & Recovery
	1	80846			Sea Reaper	5/9/2017	Maritime Research & Recovery
	1	80848			Sea Reaper	5/9/2017	Maritime Research & Recovery

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Description	Quantity	Tag#	Latitude	Longitude	Vessel	Recovery Date	Location
			CONFIDENTIAL DATA				
Olive Jar Sherd	1	80849	[redacted]		Sea Reaper	5/9/2017	Maritime Research & Recovery
	2	80850			Sea Reaper	5/9/2017	Maritime Research & Recovery
	1	80851			Sea Reaper	5/9/2017	Maritime Research & Recovery
	1	80852			Sea Reaper	5/9/2017	Maritime Research & Recovery
	1	80854			Sea Reaper	5/9/2017	Maritime Research & Recovery
	1	80855			Sea Reaper	5/9/2017	Maritime Research & Recovery
	1	80857			Sea Reaper	5/9/2017	Maritime Research & Recovery
	1	80858			Sea Reaper	5/9/2017	Maritime Research & Recovery
	1	80859			Sea Reaper	5/9/2017	Maritime Research & Recovery
	1	80860			Sea Reaper	5/9/2017	Maritime Research & Recovery
	1	80865			Sea Reaper	5/10/2017	Maritime Research & Recovery
	2	80866			Sea Reaper	5/10/2017	Maritime Research & Recovery
	1	80867			Sea Reaper	5/10/2017	Lab Inventory
	2	80870			Sea Reaper	5/10/2017	Lab Inventory
	1	80871			Sea Reaper	5/10/2017	Lab Inventory
	1	80874			Sea Reaper	5/10/2017	Lab Inventory
	1	80875			Sea Reaper	5/10/2017	Lab Inventory
	2	80880			Sea Reaper	5/10/2017	Lab Inventory
	3	80882			Sea Reaper	5/10/2017	Lab Inventory
	1	80883			Sea Reaper	5/10/2017	Lab Inventory
	1	80886			Sea Reaper	5/10/2017	Lab Inventory
	1	80887			Sea Reaper	5/10/2017	Lab Inventory
	2	80888			Sea Reaper	5/10/2017	Lab Inventory
	1	80890			Sea Reaper	5/10/2017	Lab Inventory
	2	80891			Sea Reaper	5/10/2017	Lab Inventory
	1	80893			Sea Reaper	5/11/2017	Lab Inventory
	1	80895			Sea Reaper	5/11/2017	Lab Inventory
	1	80896			Sea Reaper	5/11/2017	Lab Inventory
	2	80904			Sea Reaper	5/11/2017	Lab Inventory
	2	80906			Sea Reaper	5/11/2017	Lab Inventory
	1	80907			Sea Reaper	5/11/2017	Lab Inventory
	1	80910			Sea Reaper	5/11/2017	Lab Inventory
	3	80911			Sea Reaper	5/11/2017	Lab Inventory
	5	80913			Sea Reaper	5/11/2017	Lab Inventory
	3	80915			Sea Reaper	5/11/2017	Lab Inventory
	3	80917			Sea Reaper	5/11/2017	Lab Inventory
	4	80918			Sea Reaper	5/11/2017	Lab Inventory
	1	80924			Sea Reaper	5/14/2017	Lab Inventory
	1	80930			Sea Reaper	5/15/2017	Lab Inventory
	1	80932			Sea Reaper	5/15/2017	Lab Inventory
	1	80951			Sea Reaper	6/16/2017	Lab Inventory
	4	80962			Sea Reaper	6/17/2017	Lab Inventory
	1	80967			Sea Reaper	6/17/2017	Lab Inventory
	1	80969			Sea Reaper	6/17/2017	Lab Inventory
	1	80974			Sea Reaper	6/17/2017	Lab Inventory
	3	80977			Sea Reaper	6/17/2017	Lab Inventory
	6	80979			Sea Reaper	6/17/2017	Lab Inventory
	1	80984			Sea Reaper	6/17/2017	Lab Inventory
	2	80985			Sea Reaper	6/17/2017	Lab Inventory
	1	80987			Sea Reaper	6/17/2017	Lab Inventory

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Description	Quantity	Tag#	Latitude	Longitude	Vessel	Recovery Date	Location
Olive Jar Sherd	7	80989	CONFIDENTIAL DATA		Sea Reaper	6/17/2017	Lab Inventory
	1	80992	[redacted]		Sea Reaper	6/17/2017	Lab Inventory
	2	80994	[redacted]		Sea Reaper	6/17/2017	Lab Inventory
	1	80997	[redacted]		Sea Reaper	6/17/2017	Lab Inventory
	1	80998-1	[redacted]		Sea Reaper	6/17/2017	Lab Inventory
	1	80999	[redacted]		Sea Reaper	6/17/2017	Lab Inventory
	1	81001	[redacted]		Sea Reaper	6/17/2017	Lab Inventory
	1	81004	[redacted]		Sea Reaper	6/17/2017	Lab Inventory
	2	81006	[redacted]		Sea Reaper	6/17/2017	Lab Inventory
	1	80953	[redacted]		Sea Reaper	6/19/2017	Lab Inventory
	1	81012	[redacted]		Sea Reaper	6/27/2017	Lab Inventory
	1	81014	[redacted]		Sea Reaper	6/27/2017	Lab Inventory
	1	81016	[redacted]		Sea Reaper	6/28/2017	Lab Inventory
	4	81018	[redacted]		Sea Reaper	6/28/2017	Lab Inventory
	3	81019	[redacted]		Sea Reaper	6/28/2017	Lab Inventory
	1	81021	[redacted]		Sea Reaper	6/28/2017	Lab Inventory
	2	81024	[redacted]		Sea Reaper	6/28/2017	Owner's Possession
	3	81025	[redacted]		Sea Reaper	6/28/2017	Lab Inventory
	1	81028	[redacted]		Sea Reaper	6/28/2017	Lab Inventory
	2	81029	[redacted]		Sea Reaper	6/28/2017	Lab Inventory
	2	93162	[redacted]		Sea Reaper	6/28/2017	Lab Inventory
	3	93163	[redacted]		Sea Reaper	6/28/2017	Lab Inventory
	1	93170	[redacted]		Sea Reaper	6/28/2017	Lab Inventory
	6	93172	[redacted]		Sea Reaper	6/28/2017	Lab Inventory
	1	93182	[redacted]		Sea Reaper	6/28/2017	Lab Inventory
	1	93185	[redacted]		Sea Reaper	6/28/2017	Lab Inventory
	1	93187	[redacted]		Sea Reaper	6/28/2017	Lab Inventory
	3	93188	[redacted]		Sea Reaper	6/28/2017	Lab Inventory
	1	93191	[redacted]		Sea Reaper	6/28/2017	Lab Inventory
	1	93194	[redacted]		Sea Reaper	6/28/2017	Lab Inventory
	1	93198	[redacted]		Sea Reaper	6/28/2017	Lab Inventory
	3	93199	[redacted]		Sea Reaper	6/28/2017	Lab Inventory
	1	93205	[redacted]		Sea Reaper	6/28/2017	Lab Inventory
	5	93207	[redacted]		Sea Reaper	6/28/2017	Lab Inventory
	7	93209	[redacted]		Sea Reaper	6/28/2017	Lab Inventory
	2	93210	[redacted]		Sea Reaper	6/28/2017	Lab Inventory
	2	93216	[redacted]		Sea Reaper	6/28/2017	Lab Inventory
	2	93217	[redacted]		Sea Reaper	6/28/2017	Lab Inventory
	3	93220	[redacted]		Sea Reaper	6/28/2017	Lab Inventory
	1	93231	[redacted]		Sea Reaper	6/29/2017	Lab Inventory
	1	93234	[redacted]		Sea Reaper	6/29/2017	Gift Shop Warehouse
	1	93241	[redacted]		Sea Reaper	6/30/2017	Gift Shop Warehouse
	1	93242	[redacted]		Sea Reaper	6/30/2017	Gift Shop Warehouse
	1	93243	[redacted]		Sea Reaper	6/30/2017	Lab Inventory
	3	93261	[redacted]		Sea Reaper	7/16/2017	Lab Inventory
	1	93262	[redacted]		Sea Reaper	7/16/2017	Lab Inventory
	1	93268	[redacted]		Sea Reaper	7/16/2017	Gift Shop Warehouse
	1	93274	[redacted]		Sea Reaper	7/16/2017	Lab Inventory
	1	93276	[redacted]		Sea Reaper	7/16/2017	Lab Inventory
	1	93279	[redacted]		Sea Reaper	7/16/2017	Lab Inventory

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Conservation Lab Artifact Report

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12/19/2018 **Margarita 2017 Recoveries** Page 19 of 20

Description	Quantity	Tag#	Latitude	Longitude	Vessel	Recovery Date	Location
Olive Jar Sherd	2	93281	CONFIDENTIAL DATA		Sea Reaper	7/16/2017	Lab Inventory
	1	93283			Sea Reaper	7/16/2017	Lab Inventory
	4	93291			Sea Reaper	7/16/2017	Lab Inventory
	1	93299			Sea Reaper	7/16/2017	Lab Inventory
	1	93313			Sea Reaper	9/24/2017	Lab Inventory
	1	93339			Sea Reaper	9/27/2017	Lab Inventory
	1	93344			Sea Reaper	9/27/2017	Lab Inventory
	2	93346			Sea Reaper	9/27/2017	Lab Inventory
	1	93347			Sea Reaper	9/27/2017	Lab Inventory
	1	93348			Sea Reaper	9/27/2017	Lab Inventory
	1	93349			Sea Reaper	9/27/2017	Lab Inventory
	1	93351			Sea Reaper	9/27/2017	Lab Inventory
	1	93352			Sea Reaper	9/27/2017	Lab Inventory
	1	93354			Sea Reaper	9/27/2017	Gift Shop Warehouse
	2	93355			Sea Reaper	9/27/2017	Lab Inventory
	4	93356			Sea Reaper	9/27/2017	Lab Inventory
	7	93357			Sea Reaper	9/27/2017	Lab Inventory
	2	93359			Sea Reaper	9/27/2017	Lab Inventory
	1	93360			Sea Reaper	9/27/2017	Lab Inventory
	1	93362			Sea Reaper	9/27/2017	Lab Inventory
	1	93363			Sea Reaper	9/27/2017	Lab Inventory
	1	93367			Sea Reaper	9/27/2017	Lab Inventory
	1	93369			Sea Reaper	9/27/2017	Lab Inventory
	3	93370			Sea Reaper	9/27/2017	Lab Inventory
	1	93371			Sea Reaper	9/27/2017	Lab Inventory
	3	93372			Sea Reaper	9/27/2017	Lab Inventory
	1	93376			Sea Reaper	9/28/2017	Lab Inventory
	1	93382			Sea Reaper	9/28/2017	Lab Inventory
	1	93385			Sea Reaper	9/28/2017	Lab Inventory
	1	93392			Sea Reaper	9/29/2017	Lab Inventory
	1	93393			Sea Reaper	9/29/2017	Lab Inventory
	1	93397			Sea Reaper	9/29/2017	Lab Inventory
	1	93399			Sea Reaper	9/29/2017	Lab Inventory
	1	93401			Sea Reaper	9/29/2017	Lab Inventory
	1	93405			Sea Reaper	9/30/2017	Gift Shop Warehouse
	1	93406			Sea Reaper	9/30/2017	Gift Shop Warehouse
							Total: 408
Sharpening Stone	1	93266			Sea Reaper	7/16/2017	Maritime Research & Recovery
							Total: 1
Silver Coin	1	80722			Sea Reaper	2/13/2017	Maritime Research & Recovery
	1	80805			Sea Reaper	5/2/2017	Owner's Possession
	1	80929			Sea Reaper	5/15/2017	Owner's Possession
	1	80940			Sea Reaper	6/14/2017	Maritime Research & Recovery
	1	80942			Sea Reaper	6/14/2017	Owner's Possession
	1	80943			Sea Reaper	6/15/2017	Owner's Possession
	1	80944			Sea Reaper	6/15/2017	Owner's Possession
	1	80956			Sea Reaper	6/16/2017	Owner's Possession
	1	80957			Sea Reaper	6/16/2017	Maritime Research & Recovery

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12/19/2018 **Margarita 2017 Recoveries** Page 20 of 20

Description	Quantity	Tag#	Latitude	Longitude	Vessel	Recovery Date	Location	
			CONFIDENTIAL DATA					
Silver Coin	1	80958	[redacted]		Sea Reaper	6/16/2017	Totally oxidized & disposed of conc	
	1	80959			Sea Reaper	6/16/2017	Owner's Possession	
	1	80961			Sea Reaper	6/16/2017	Maritime Research & Recovery	
	1	80987-1			Sea Reaper	6/17/2017	Totally oxidized & disposed of conc	
	1	80955			Sea Reaper	6/19/2017	Maritime Research & Recovery	
	1	93304			Sea Reaper	7/17/2017	Owner's Possession	
							Total:	**15**
Silver Encrusted Object	1	93166			Sea Reaper	6/28/2017	Totally oxidized & disposed of conc	
							Total:	**1**
Silver Fragment	1	93238			Sea Reaper	6/29/2017	Totally oxidized & disposed of conc	
							Total:	**1**
Tinajas Sherd	1	81008			Sea Reaper	6/27/2017	Divers Division	
							Total:	**1**
Wood Fragment	1	In Situ			Sea Reaper	5/11/2017	In Situ	
							Total:	**1**
							Total Artifacts Recovered:	**1,288**

12 APPENDIX-2, 2018 *ATOCHA* & *MARGARITA* RECOVERIES REPORTS

Details, digital photographs and illustrations of our recoveries are available on our public Artifact Database at https://www.melfisher.com/MOBILE/site/Research.html

See the "Main Menu" to the left for options. Use the "Search for Artifacts" option and the artifact tag numbers to search for a specific item.

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Conservation Lab Artifact Report

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12/19/2018 **Atocha 2018 Recoveries** Page 1 of 4

Description	Quantity	Tag#	Latitude	Longitude	Vessel	Recovery Date	Location	
Ballast Stone	20	In Situ	CONFIDENTIAL DATA	[redacted]	Dare	3/17/2018	In Situ	
	2	In Situ	[redacted]	[redacted]	Dare	4/25/2018	In Situ	
	1	In Situ	[redacted]	[redacted]	Dare	8/11/2018	In Situ	
	2	In Situ	[redacted]	[redacted]	Dare	11/9/2018	In Situ	
							Total:	**25**
Bomb Fragment	1	85484	[redacted]	[redacted]	Dare	4/5/2018	Modern Intrusion - Disposed	
							Total:	**1**
Ceramic Vessel Sherd	1	85514	[redacted]	[redacted]	Dare	7/1/2018	Lab Inventory	
	1	85519	[redacted]	[redacted]	Dare	7/17/2018	Lab Inventory	
							Total:	**2**
Columbia Plain Sherd	1	85516	[redacted]	[redacted]	Dare	7/13/2018	Lab Inventory	
							Total:	**1**
Emerald	1	91708	[redacted]	[redacted]	J.B. Magruder	7/10/2018	Curator's Safe	
							Total:	**1**
Encrusted Object	1	85480	[redacted]	[redacted]	Dare	4/25/2018	Totally oxidized & disposed of conc	
	2	85495	[redacted]	[redacted]	Dare	6/3/2018	Totally oxidized & disposed of conc	
	1	85497	[redacted]	[redacted]	Dare	6/4/2018	Totally oxidized & disposed of conc	
	1	85522	[redacted]	[redacted]	Dare	8/12/2018	Totally oxidized & disposed of conc	
	1	85523	[redacted]	[redacted]	Dare	8/12/2018	Totally oxidized & disposed of conc	
	1	85525	[redacted]	[redacted]	Dare	8/12/2018	Totally oxidized & disposed of conc	
	1	85527	[redacted]	[redacted]	Dare	8/13/2018	Totally oxidized & disposed of conc	
	1	85533	[redacted]	[redacted]	Dare	8/13/2018	Totally oxidized & disposed of conc	
	1	85534	[redacted]	[redacted]	Dare	8/13/2018	Totally oxidized & disposed of conc	
	1	85538	[redacted]	[redacted]	Dare	8/14/2018	Totally oxidized & disposed of conc	
	1	85539	[redacted]	[redacted]	Dare	8/14/2018	Totally oxidized & disposed of conc	
	1	85542	[redacted]	[redacted]	Dare	8/23/2018	Totally oxidized & disposed of conc	
	1	85543	[redacted]	[redacted]	Dare	8/23/2018	Totally oxidized & disposed of conc	
	1	85544	[redacted]	[redacted]	Dare	8/23/2018	Totally oxidized & disposed of conc	
	1	85545	[redacted]	[redacted]	Dare	8/23/2018	Totally oxidized & disposed of conc	
	1	85546	[redacted]	[redacted]	Dare	8/24/2018	Totally oxidized & disposed of conc	
	1	85549	[redacted]	[redacted]	Dare	8/24/2018	Totally oxidized & disposed of conc	
							Total:	**18**
Glazed Redware Sherd	1	85491	[redacted]	[redacted]	Dare	6/2/2018	Lab Inventory	
							Total:	**1**
Iron Gunners Dice	4	85506	[redacted]	[redacted]	Dare	6/28/2018	Conservation Lab	
	1	85526	[redacted]	[redacted]	Dare	8/13/2018	Conservation Lab	
	1	85550	[redacted]	[redacted]	Dare	11/9/2018	Conservation Lab	
	1	85551	[redacted]	[redacted]	Dare	11/9/2018	Conservation Lab	
							Total:	**7**
Iron Nail	1	85531	[redacted]	[redacted]	Dare	8/13/2018	Totally oxidized & disposed of conc	
							Total:	**1**

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Conservation Lab Artifact Report

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12/19/2018 **Atocha 2018 Recoveries** Page 2 of 4

Description	Quantity	Tag#	Latitude	Longitude	Vessel	Recovery Date	Location	
			CONFIDENTIAL DATA					
Iron Nail Fragment	1	85530	[redacted]		Dare	8/13/2018	Lab Inventory	
							Total:	**1**
Iron Spike	1	85509	[redacted]		Dare	6/29/2018	Conservation Lab	
	1	85512	[redacted]		Dare	6/30/2018	Conservation Lab	
							Total:	**2**
Iron Spike Fragment	1	85486	[redacted]		Dare	4/27/2018	Conservation Lab	
	1	85541	[redacted]		Dare	8/23/2018	Conservation Lab	
							Total:	**2**
Lead Sheathing	1	85547	[redacted]		Dare	8/24/2018	Lab Inventory	
							Total:	**1**
Ming Porcelain Sherd	1	85517	[redacted]		Dare	7/15/2018	Conservation Lab	
							Total:	**1**
Modern Material	1	In Situ	[redacted]		Dare	3/17/2018	In Situ	
	1	In Situ	[redacted]		Dare	3/17/2018	In Situ	
	1	In Situ	[redacted]		Dare	3/18/2018	In Situ	
	1	In Situ	[redacted]		Dare	3/19/2018	In Situ	
	1	85488	[redacted]		Dare	6/1/2018	Return to Site	
	1	In Situ	[redacted]		Dare	6/1/2018	In Situ	
	1	In Situ	[redacted]		Dare	6/1/2018	In Situ	
	1	85489	[redacted]		Dare	6/2/2018	Modern Intrusion - Disposed	
	1	85494	[redacted]		Dare	6/3/2018	Return to Site	
	1	In Situ	[redacted]		Dare	6/3/2018	In Situ	
	1	In Situ	[redacted]		Dare	6/15/2018	In Situ	
	1	In Situ	[redacted]		Dare	6/15/2018	In Situ	
	1	In Situ	[redacted]		Dare	6/15/2018	In Situ	
	1	In Situ	[redacted]		Dare	6/16/2018	In Situ	
	1	In Situ	[redacted]		Dare	6/16/2018	In Situ	
	1	In Situ	[redacted]		Dare	6/17/2018	In Situ	
	1	In Situ	[redacted]		Dare	6/17/2018	In Situ	
	1	In Situ	[redacted]		Dare	6/17/2018	In Situ	
	1	In Situ	[redacted]		Dare	6/18/2018	In Situ	
	1	In Situ	[redacted]		Dare	6/18/2018	In Situ	
	1	In Situ	[redacted]		Dare	6/19/2018	In Situ	
	1	In Situ	[redacted]		Dare	6/20/2018	In Situ	
	1	In Situ	[redacted]		Dare	6/21/2018	In Situ	
	1	In Situ	[redacted]		Dare	6/28/2018	In Situ	
	1	In Situ	[redacted]		Dare	6/28/2018	In Situ	
	1	In Situ	[redacted]		Dare	6/29/2018	In Situ	
	1	In Situ	[redacted]		Dare	7/1/2018	In Situ	
	1	In Situ	[redacted]		Dare	7/15/2018	In Situ	
	1	In Situ	[redacted]		Dare	7/16/2018	In Situ	
	1	In Situ	[redacted]		Dare	7/16/2018	In Situ	
	1	In Situ	[redacted]		Dare	7/16/2018	In Situ	
	1	In Situ	[redacted]		Dare	7/18/2018	In Situ	

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12/19/2018 **Atocha 2018 Recoveries** Page 3 of 4

Description	Quantity	Tag#	Latitude	Longitude	Vessel	Recovery Date	Location	
Modern Material	1	In Situ	CONFIDENTIAL DATA		Dare	8/1/2018	In Situ	
	1	85532			Dare	8/13/2018	Modern Intrusion - Disposed	
							Total:	**34**
Olive Jar Neck	1	85483			Dare	4/5/2018	Lab Inventory	
	1	85510			Dare	6/29/2018	Lab Inventory	
							Total:	**2**
Olive Jar Neck Fragment	1	85511			Dare	6/30/2018	Lab Inventory	
							Total:	**1**
Olive Jar Sherd	1	85481			Dare	2/7/2018	Lab Inventory	
	1	85485			Dare	4/9/2018	Lab Inventory	
	16	85487			Dare	4/26/2018	Lab Inventory	
	1	85490			Dare	6/2/2018	Lab Inventory	
	1	85492			Dare	6/2/2018	Lab Inventory	
	4	85493			Dare	6/3/2018	Lab Inventory	
	2	85496			Dare	6/3/2018	Lab Inventory	
	1	85498			Dare	6/16/2018	Lab Inventory	
	2	85499			Dare	6/18/2018	Lab Inventory	
	1	85500			Dare	6/19/2018	Lab Inventory	
	1	85501			Dare	6/19/2018	Lab Inventory	
	1	85502			Dare	6/20/2018	Lab Inventory	
	1	85503			Dare	6/20/2018	Lab Inventory	
	1	85504			Dare	6/21/2018	Lab Inventory	
	1	85505			Dare	6/28/2018	Lab Inventory	
	1	85507			Dare	6/28/2018	Lab Inventory	
	1	85508			Dare	6/29/2018	Lab Inventory	
	1	85513			Dare	6/30/2018	Lab Inventory	
	1	85515			Dare	7/12/2018	Lab Inventory	
	2	85518			Dare	7/16/2018	Lab Inventory	
	1	85519-1			Dare	7/17/2018	Lab Inventory	
	2	85520			Dare	7/17/2018	Lab Inventory	
	1	85521			Dare	7/17/2018	Lab Inventory	
	1	85524			Dare	8/12/2018	Conservation Lab	
	1	85535			Dare	8/13/2018	Conservation Lab	
							Total:	**47**
Redware Sherd	1	85548			Dare	8/24/2018	Lab Inventory	
							Total:	**1**
Silver Coin	1	85482			Dare	3/17/2018	Curator's Safe	
	1	85528			Dare	8/13/2018	Curator's Safe	
	1	85529			Dare	8/13/2018	Curator's Safe	
	1	85537			Dare	8/14/2018	Curator's Safe	
	1	85552			Dare	11/9/2018	Curator's Safe	
							Total:	**5**
Silver Plate Fragment	1	85536			Dare	8/14/2018	Lab Inventory	
	1	85540			Dare	8/23/2018	Lab Inventory	

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12/19/2018 **Atocha 2018 Recoveries** Page 4 of 4

Description	Quantity	Tag#	Latitude	Longitude	Vessel	Recovery Date	Location	
							Total:	2
							Total Artifacts Recovered:	156

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Conservation Lab Artifact Report

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12/19/2018 **Margarita 2018 Recoveries** Page 1 of 9

Description	Quantity	Tag#	Latitude	Longitude	Vessel	Recovery Date	Location	
			CONFIDENTIAL DATA					
Animal Bone	1	91735	[redacted]		J.B. Magruder	8/11/2018	Conservation Lab	
	1	93560			Sea Reaper	9/13/2018	Lab Inventory	
	1	93564			Sea Reaper	9/13/2018	Lab Inventory	
							Total:	**3**
Animal Tooth	1	91757			J.B. Magruder	9/14/2018	Lab Inventory	
							Total:	**1**
Ballast Stone	1	93541			Sea Reaper	6/7/2018	Conservation Lab	
	1	In Situ			Sea Reaper	9/15/2018	In Situ	
	8	In Situ			Sea Reaper	9/15/2018	In Situ	
	1	In Situ			Sea Reaper	11/11/2018	In Situ	
	1	In Situ			Polly-L	11/27/2018	In Situ	
							Total:	**12**
Bead - Cut Crystal	1	91733			J.B. Magruder	8/10/2018	Conservation Lab	
							Total:	**1**
Bomb Fragment	1	93583			Sea Reaper	9/17/2018	Modern Intrusion - Disposed	
	1	93584			Sea Reaper	9/17/2018	Modern Intrusion - Disposed	
	1	93585			Sea Reaper	9/17/2018	Modern Intrusion - Disposed	
	1	93587			Sea Reaper	9/17/2018	Modern Intrusion - Disposed	
	1	93588			Sea Reaper	9/17/2018	Modern Intrusion - Disposed	
							Total:	**5**
Ceramic Bowl Fragment	1	91689-2			J.B. Magruder	6/18/2018	Lab Inventory	
	1	93557			Sea Reaper	9/12/2018	Conservation Lab	
							Total:	**2**
Ceramic Vessel Sherd	1	93420			Sea Reaper	2/28/2018	Lab Inventory	
	1	91685			J.B. Magruder	6/16/2018	Lab Inventory	
	1	91691			J.B. Magruder	6/18/2018	Lab Inventory	
	1	91692			J.B. Magruder	6/19/2018	Lab Inventory	
	1	93621			Sea Reaper	12/3/2018	Conservation Lab	
							Total:	**5**
Circle Search	1				J.B. Magruder	7/20/2018	Owner's Possession	
	1				J.B. Magruder	7/20/2018	Owner's Possession	
	1				J.B. Magruder	7/21/2018	Owner's Possession	
	1				J.B. Magruder	7/21/2018	Owner's Possession	
							Total:	**4**
Encrusted Object	1	93422			Sea Reaper	2/28/2018	Modern Intrusion - Disposed	
	1	93423			Sea Reaper	2/28/2018	Modern Intrusion - Disposed	
	1	93442			Sea Reaper	4/8/2018	Totally oxidized & disposed of conc	
	1	93443			Sea Reaper	4/8/2018	Totally oxidized & disposed of conc	
	1	93444			Sea Reaper	4/9/2018	Totally oxidized & disposed of conc	
	1	93445			Sea Reaper	4/9/2018	Totally oxidized & disposed of conc	
	1	93453			Sea Reaper	4/10/2018	Totally oxidized & disposed of conc	

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12/19/2018 **Margarita 2018 Recoveries** Page 2 of 9

Description	Quantity	Tag#	Latitude	Longitude	Vessel	Recovery Date	Location	
Encrusted Object	1	93466	CONFIDENTIAL DATA		Sea Reaper	4/25/2018	Totally oxidized & disposed of conc	
	1	93476			Sea Reaper	4/26/2018	Totally oxidized & disposed of conc	
	1	93480			Sea Reaper	4/27/2018	Totally oxidized & disposed of conc	
	1	93481			Sea Reaper	4/27/2018	Totally oxidized & disposed of conc	
	1	93493			Sea Reaper	6/2/2018	Totally oxidized & disposed of conc	
	1	93494			Sea Reaper	6/2/2018	Totally oxidized & disposed of conc	
	1	93516			Sea Reaper	6/4/2018	Totally oxidized & disposed of conc	
	1	93522			Sea Reaper	6/5/2018	Totally oxidized & disposed of conc	
	1	93526			Sea Reaper	6/6/2018	Totally oxidized & disposed of conc	
	1	91700			J.B. Magruder	6/30/2018	Totally oxidized & disposed of conc	
	1	91701			J.B. Magruder	6/30/2018	Totally oxidized & disposed of conc	
	1	91702			J.B. Magruder	6/30/2018	Totally oxidized & disposed of conc	
	1	91725			J.B. Magruder	7/24/2018	Totally oxidized & disposed of conc	
	1	91737			J.B. Magruder	8/11/2018	Totally oxidized & disposed of conc	
	1	91738			J.B. Magruder	8/11/2018	Totally oxidized & disposed of conc	
	1	91748-1			J.B. Magruder	8/12/2018	Totally oxidized & disposed of conc	
	1	91749			J.B. Magruder	8/12/2018	Totally oxidized & disposed of conc	
	1	91750			J.B. Magruder	8/13/2018	Totally oxidized & disposed of conc	
	1	91751			J.B. Magruder	8/13/2018	Totally oxidized & disposed of conc	
	1	91752			J.B. Magruder	8/13/2018	Totally oxidized & disposed of conc	
	1	93544			Sea Reaper	9/9/2018	Totally oxidized & disposed of conc	
	1	93556			Sea Reaper	9/12/2018	Totally oxidized & disposed of conc	
	1	93565			Sea Reaper	9/13/2018	Totally oxidized & disposed of conc	
	1	93567			J.B. Magruder	9/14/2018	Totally oxidized & disposed of conc	
	1	93570			J.B. Magruder	9/14/2018	Totally oxidized & disposed of conc	
	1	93575			Sea Reaper	9/15/2018	Totally oxidized & disposed of conc	
	1	93579			Sea Reaper	9/16/2018	Totally oxidized & disposed of conc	
	1	93581			Sea Reaper	9/17/2018	Totally oxidized & disposed of conc	
	1	93582			Sea Reaper	9/17/2018	Totally oxidized & disposed of conc	
	1	93586			Sea Reaper	9/17/2018	Totally oxidized & disposed of conc	
	1	93589			Sea Reaper	9/17/2018	Totally oxidized & disposed of conc	
	1	93590			Sea Reaper	9/17/2018	Totally oxidized & disposed of conc	
	1	93591			Sea Reaper	9/17/2018	Totally oxidized & disposed of conc	
	1	93592			Sea Reaper	9/17/2018	Totally oxidized & disposed of conc	
	1	93593			Sea Reaper	9/17/2018	Totally oxidized & disposed of conc	
	1	91759			J.B. Magruder	10/25/2018	Totally oxidized & disposed of conc	
	1	91763			J.B. Magruder	10/26/2018	Totally oxidized & disposed of conc	
	1	91766			J.B. Magruder	10/26/2018	Totally oxidized & disposed of conc	
	1	91770			J.B. Magruder	10/27/2018	Totally oxidized & disposed of conc	
	1	93594			Sea Reaper	11/9/2018	Conservation Lab	
							Total:	47
Glass Button	1	91760			J.B. Magruder	10/25/2018	Conservation Lab	
							Total:	1
Glazed Sherd	1	91768			J.B. Magruder	10/26/2018	Conservation Lab	
							Total:	1
Gold Bead	1	93425			Sea Reaper	3/16/2018	Curator's Safe	
	1	93426			Sea Reaper	3/16/2018	Curator's Safe	

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Conservation Lab Artifact Report

Compiled by Gary Randolph

12/19/2018 **Margarita 2018 Recoveries**

Description	Quantity	Tag#	Latitude	Longitude	Vessel	Recovery Date	Location
			CONFIDENTIAL DATA				**Total:** 2
Gold Garment Mount	1	91731	[redacted]		J.B. Magruder	8/8/2018	Curator's Safe
							Total: 1
Gold Pomander	1	91730	[redacted]		J.B. Magruder	8/8/2018	Curator's Safe
							Total: 1
Iron Arquebus Barrel Fragment	1	93580	[redacted]		Sea Reaper	9/16/2018	Conservation Lab
							Total: 1
Iron Barrel Hoop Fragment	1	93417	[redacted]		Sea Reaper	2/27/2018	Totally oxidized & disposed of conc
	1	93462	[redacted]		Sea Reaper	4/25/2018	Totally oxidized & disposed of conc
	1	93467	[redacted]		Sea Reaper	4/25/2018	Totally oxidized & disposed of conc
	1	93479	[redacted]		Sea Reaper	4/27/2018	Totally oxidized & disposed of conc
	1	93492	[redacted]		Sea Reaper	6/2/2018	Totally oxidized & disposed of conc
	1	93506	[redacted]		Sea Reaper	6/3/2018	Totally oxidized & disposed of conc
	1	93515	[redacted]		Sea Reaper	6/4/2018	Totally oxidized & disposed of conc
	1	93525	[redacted]		Sea Reaper	6/5/2018	Totally oxidized & disposed of conc
	1	93545	[redacted]		Sea Reaper	9/12/2018	Totally oxidized & disposed of conc
	1	93559	[redacted]		Sea Reaper	9/13/2018	Totally oxidized & disposed of conc
	1	93577	[redacted]		Sea Reaper	9/15/2018	Totally oxidized & disposed of conc
	1	93578	[redacted]		Sea Reaper	9/16/2018	Totally oxidized & disposed of conc
	1	93620	[redacted]		Sea Reaper	12/3/2018	Totally oxidized & disposed of conc
	1	93626	[redacted]		Sea Reaper	12/4/2018	Conservation Lab
							Total: 14
Iron Blade Fragment	1	93433	[redacted]		Sea Reaper	3/17/2018	Totally oxidized & disposed of conc
	1	93435	[redacted]		Sea Reaper	3/17/2018	Totally oxidized & disposed of conc
	2	93440	[redacted]		Sea Reaper	3/19/2018	Totally oxidized & disposed of conc
							Total: 4
Iron Gunners Dice	1	93491	[redacted]		Sea Reaper	6/2/2018	Conservation Lab
	1	93511	[redacted]		Sea Reaper	6/4/2018	Conservation Lab
							Total: 2
Iron Nail	1	91744	[redacted]		J.B. Magruder	8/12/2018	Totally oxidized & disposed of conc
							Total: 1
Iron Pin	1	93412	[redacted]		Sea Reaper	2/26/2018	Totally oxidized & disposed of conc
							Total: 1
Iron Pin w/Washer	1	93410	[redacted]		Sea Reaper	2/26/2018	Conservation Lab
	1	93551	[redacted]		Sea Reaper	9/12/2018	Conservation Lab
							Total: 2
Iron Spike	1	93465	[redacted]		Sea Reaper	4/25/2018	Totally oxidized & disposed of conc
	1	93519	[redacted]		Sea Reaper	6/5/2018	Totally oxidized & disposed of conc
	1	91705	[redacted]		J.B. Magruder	7/1/2018	Conservation Lab
	1	91724	[redacted]		J.B. Magruder	7/24/2018	Totally oxidized & disposed of conc

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Conservation Lab Artifact Report

Compiled by Gary Randolph

12/19/2018 **Margarita 2018 Recoveries** Page 4 of 9

Description	Quantity	Tag#	Latitude	Longitude	Vessel	Recovery Date	Location	
			CONFIDENTIAL DATA					
Iron Spike	1	91728	[redacted]		J.B. Magruder	7/25/2018	Totally oxidized & disposed of conc	
	1	91755			J.B. Magruder	9/12/2018	Totally oxidized & disposed of conc	
	1	93546			Sea Reaper	9/12/2018	Totally oxidized & disposed of conc	
	1	91758			J.B. Magruder	9/14/2018	Totally oxidized & disposed of conc	
	1	93568			J.B. Magruder	9/14/2018	Totally oxidized & disposed of conc	
	1	93572			J.B. Magruder	9/14/2018	Totally oxidized & disposed of conc	
	1	91772			J.B. Magruder	10/29/2018	Totally oxidized & disposed of conc	
	1	93600			Sea Reaper	11/10/2018	Totally oxidized & disposed of conc	
							Total:	**12**
Iron Spike Fragment	1	93478			Sea Reaper	4/27/2018	Conservation Lab	
	1	93548			Sea Reaper	9/12/2018	Totally oxidized & disposed of conc	
	1	93550			Sea Reaper	9/12/2018	Totally oxidized & disposed of conc	
	1	91756			J.B. Magruder	9/13/2018	Totally oxidized & disposed of conc	
	1	91769			J.B. Magruder	10/27/2018	Conservation Lab	
	1	93624			Sea Reaper	12/4/2018	Conservation Lab	
	1	93625			Sea Reaper	12/4/2018	Conservation Lab	
							Total:	**7**
Iron Washer	1	91684			J.B. Magruder	6/16/2018	Conservation Lab	
							Total:	**1**
Lead Bar Shot	2	93490			Sea Reaper	6/1/2018	Lab Inventory	
	1	93502			Sea Reaper	6/3/2018	Lab Inventory	
							Total:	**3**
Lead Musket Ball	1	93441			Sea Reaper	3/19/2018	Lab Inventory	
	1	93495			Sea Reaper	6/2/2018	Lab Inventory	
	1	93501			Sea Reaper	6/3/2018	Lab Inventory	
	1	91716			J.B. Magruder	7/20/2018	Lab Inventory	
	1	91718			J.B. Magruder	7/21/2018	Lab Inventory	
	1	91719			J.B. Magruder	7/21/2018	Lab Inventory	
	1	91765			J.B. Magruder	10/26/2018	Lab Inventory	
	1	93597			Sea Reaper	11/10/2018	Lab Inventory	
	1	93597-1			Sea Reaper	11/10/2018	Lab Inventory	
	1	93597-2			Sea Reaper	11/10/2018	Lab Inventory	
	1	93597-3			Sea Reaper	11/10/2018	Lab Inventory	
							Total:	**11**
Lead Object	1	93485			Sea Reaper	6/1/2018	Lab Inventory	
							Total:	**1**
Lead Sheathing	1	93419			Sea Reaper	2/27/2018	Lab Inventory	
	3	93424			Sea Reaper	3/16/2018	Lab Inventory	
	6	93427			Sea Reaper	3/16/2018	Lab Inventory	
	1	93430			Sea Reaper	3/16/2018	Lab Inventory	
	1	93508			Sea Reaper	6/3/2018	Lab Inventory	
	2	93520			Sea Reaper	6/5/2018	Lab Inventory	
	1	93521			Sea Reaper	6/5/2018	Lab Inventory	
	4	93523			Sea Reaper	6/5/2018	Lab Inventory	

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Conservation Lab Artifact Report

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12/19/2018 **Margarita 2018 Recoveries** Page 5 of 9

Description	Quantity	Tag#	Latitude	Longitude	Vessel	Recovery Date	Location	
Lead Sheathing	1	93528	CONFIDENTIAL DATA	[redacted]	Sea Reaper	6/7/2018	Lab Inventory	
	1	91712			J.B. Magruder	6/16/2018	Lab Inventory	
	1	91710			J.B. Magruder	6/17/2018	Lab Inventory	
	1	91711			J.B. Magruder	6/18/2018	Lab Inventory	
	1	91686			J.B. Magruder	6/20/2018	Lab Inventory	
	1	91709-1			J.B. Magruder	6/20/2018	Lab Inventory	
	1	91694			J.B. Magruder	6/27/2018	Lab Inventory	
	1	91714			J.B. Magruder	7/20/2018	Lab Inventory	
	1	91717			J.B. Magruder	7/21/2018	Lab Inventory	
	1	91721			J.B. Magruder	7/22/2018	Lab Inventory	
	1	91734			J.B. Magruder	8/11/2018	Conservation Lab	
	2	91736			J.B. Magruder	8/11/2018	Conservation Lab	
	9	91743			J.B. Magruder	8/11/2018	Conservation Lab	
	4	91754			J.B. Magruder	9/12/2018	Lab Inventory	
	1	91761			J.B. Magruder	10/25/2018	Lab Inventory	
	1	91767			J.B. Magruder	10/26/2018	Lab Inventory	
	1	91771			J.B. Magruder	10/27/2018	Lab Inventory	
	1	93601			Sea Reaper	11/10/2018	Conservation Lab	
	1	93603			Sea Reaper	11/10/2018	Conservation Lab	
	2	93604			Sea Reaper	11/11/2018	Conservation Lab	
	1	93607			Sea Reaper	11/11/2018	Conservation Lab	
							Total:	**53**
Lead Split Shot	1	93489			Sea Reaper	6/1/2018	Lab Inventory	
	1	93496			Sea Reaper	6/2/2018	Lab Inventory	
	1	93497			Sea Reaper	6/3/2018	Lab Inventory	
	1	93498			Sea Reaper	6/3/2018	Lab Inventory	
	1	93499			Sea Reaper	6/3/2018	Lab Inventory	
	1	93500			Sea Reaper	6/3/2018	Lab Inventory	
	1	93503			Sea Reaper	6/3/2018	Lab Inventory	
	1	93504			Sea Reaper	6/3/2018	Lab Inventory	
	1	91764			J.B. Magruder	10/26/2018	Lab Inventory	
							Total:	**9**
Majolica Sherd	1	93459			Sea Reaper	4/24/2018	Lab Inventory	
	1	91753			J.B. Magruder	9/12/2018	Conservation Lab	
							Total:	**2**
Modern Material	1	93573			Sea Reaper	9/15/2018	Modern Intrusion - Disposed	
	1	91762			J.B. Magruder	10/25/2018	Modern Intrusion - Disposed	
	1	In Situ			Polly-L	11/23/2018	In Situ	
							Total:	**3**
Non-Artifact	1	93558			Sea Reaper	9/13/2018	Conservation Lab	
							Total:	**1**
Olive Jar Neck Fragment	1	93413			Sea Reaper	2/26/2018	Lab Inventory	
	1	91683			J.B. Magruder	6/16/2018	Lab Inventory	
	1	91699			J.B. Magruder	6/30/2018	Lab Inventory	
							Total:	**3**

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12/19/2018 **Margarita 2018 Recoveries** Page 6 of 9

Description	Quantity	Tag#	Latitude	Longitude	Vessel	Recovery Date	Location
Olive Jar Sherd	1	93409	CONFIDENTIAL DATA		Sea Reaper	2/26/2018	Lab Inventory
	1	93411			Sea Reaper	2/26/2018	Lab Inventory
	1	93414			Sea Reaper	2/26/2018	Lab Inventory
	1	93415			Sea Reaper	2/26/2018	Lab Inventory
	2	93416			Sea Reaper	2/27/2018	Lab Inventory
	1	93418			Sea Reaper	2/27/2018	Lab Inventory
	1	93421			Sea Reaper	2/28/2018	Lab Inventory
	1	93428			Sea Reaper	3/16/2018	Lab Inventory
	1	93432			Sea Reaper	3/17/2018	Lab Inventory
	1	93434			Sea Reaper	3/17/2018	Lab Inventory
	2	93438			Sea Reaper	3/19/2018	Lab Inventory
	2	93439			Sea Reaper	3/19/2018	Lab Inventory
	1	93457			Sea Reaper	4/24/2018	Lab Inventory
	1	93461			Sea Reaper	4/25/2018	Lab Inventory
	4	93464			Sea Reaper	4/25/2018	Lab Inventory
	3	93468			Sea Reaper	4/25/2018	Lab Inventory
	1	93471			Sea Reaper	4/26/2018	Lab Inventory
	1	93477			Sea Reaper	4/27/2018	Lab Inventory
	1	93482			Sea Reaper	4/27/2018	Lab Inventory
	1	93483			Sea Reaper	4/27/2018	Lab Inventory
	2	91687			J.B. Magruder	6/16/2018	Lab Inventory
	3	91688			J.B. Magruder	6/17/2018	Lab Inventory
	2	91689-1			J.B. Magruder	6/18/2018	Lab Inventory
	3	91690-1			J.B. Magruder	6/18/2018	Lab Inventory
	1	91693			J.B. Magruder	6/20/2018	Lab Inventory
	2	91695			J.B. Magruder	6/27/2018	Lab Inventory
	1	91696			J.B. Magruder	6/28/2018	Lab Inventory
	2	91697			J.B. Magruder	6/28/2018	Lab Inventory
	1	91698			J.B. Magruder	6/30/2018	Lab Inventory
	4	91703			J.B. Magruder	6/30/2018	Lab Inventory
	1	91704			J.B. Magruder	6/30/2018	Lab Inventory
	2	91706			J.B. Magruder	7/1/2018	Lab Inventory
	4	91707			J.B. Magruder	7/1/2018	Lab Inventory
	1	91713			J.B. Magruder	7/19/2018	Conservation Lab
	2	91715			J.B. Magruder	7/20/2018	Conservation Lab
	1	91720			J.B. Magruder	7/21/2018	Conservation Lab
	2	91722			J.B. Magruder	7/22/2018	Conservation Lab
	3	91723			J.B. Magruder	7/24/2018	Conservation Lab
	1	91726			J.B. Magruder	7/24/2018	Conservation Lab
	1	91727			J.B. Magruder	7/24/2018	Conservation Lab
	1	91729			J.B. Magruder	7/25/2018	Conservation Lab
	1	91745			J.B. Magruder	8/12/2018	Conservation Lab
	1	91746			J.B. Magruder	8/12/2018	Conservation Lab
	2	91747			J.B. Magruder	8/12/2018	Conservation Lab
	1	93542			Sea Reaper	9/8/2018	Conservation Lab
	1	93543			Sea Reaper	9/8/2018	Conservation Lab
	1	93547			Sea Reaper	9/12/2018	Conservation Lab
	2	93549			Sea Reaper	9/12/2018	Conservation Lab
	2	93552			Sea Reaper	9/12/2018	Conservation Lab

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Compiled by Gary Randolph

12/19/2018 **Margarita 2018 Recoveries** Page 7 of 9

Description	Quantity	Tag#	Latitude	Longitude	Vessel	Recovery Date	Location	
Olive Jar Sherd	1	93553	CONFIDENTIAL DATA		Sea Reaper	9/12/2018	Conservation Lab	
	1	93554			Sea Reaper	9/12/2018	Conservation Lab	
	1	93555			Sea Reaper	9/12/2018	Conservation Lab	
	1	93561			Sea Reaper	9/13/2018	Conservation Lab	
	1	93562			Sea Reaper	9/13/2018	Conservation Lab	
	1	93563			Sea Reaper	9/13/2018	Conservation Lab	
	1	93566			Sea Reaper	9/13/2018	Conservation Lab	
	1	93569			J.B. Magruder	9/14/2018	Conservation Lab	
	1	93571			J.B. Magruder	9/14/2018	Conservation Lab	
	1	93574			Sea Reaper	9/15/2018	Conservation Lab	
	1	93576			Sea Reaper	9/15/2018	Conservation Lab	
	1	93595			Sea Reaper	11/10/2018	Conservation Lab	
	1	93598			Sea Reaper	11/10/2018	Conservation Lab	
	1	93599			Sea Reaper	11/10/2018	Conservation Lab	
	1	93602			Sea Reaper	11/10/2018	Conservation Lab	
	1	93605			Sea Reaper	11/11/2018	Conservation Lab	
	1	93606			Sea Reaper	11/11/2018	Conservation Lab	
	1	93608			Sea Reaper	12/3/2018	Conservation Lab	
	1	93609			Sea Reaper	12/3/2018	Conservation Lab	
	1	93610			Sea Reaper	12/3/2018	Conservation Lab	
	1	93611			Sea Reaper	12/3/2018	Conservation Lab	
	1	93612			Sea Reaper	12/3/2018	Conservation Lab	
	1	93613			Sea Reaper	12/3/2018	Conservation Lab	
	1	93614			Sea Reaper	12/3/2018	Conservation Lab	
	1	93615			Sea Reaper	12/3/2018	Conservation Lab	
	1	93616			Sea Reaper	12/3/2018	Conservation Lab	
	1	93617			Sea Reaper	12/3/2018	Conservation Lab	
	1	93618			Sea Reaper	12/3/2018	Conservation Lab	
	1	93619			Sea Reaper	12/3/2018	Conservation Lab	
	1	93622			Sea Reaper	12/3/2018	Conservation Lab	
	1	93623			Sea Reaper	12/3/2018	Conservation Lab	
							Total:	**110**
Pewter Stud	1	93529			Sea Reaper	6/7/2018	Lab Inventory	
	6	93531			Sea Reaper	6/7/2018	Lab Inventory	
	7	93532			Sea Reaper	6/7/2018	Lab Inventory	
	6	93533			Sea Reaper	6/7/2018	Lab Inventory	
	7	93534			Sea Reaper	6/7/2018	Lab Inventory	
	6	93535			Sea Reaper	6/7/2018	Lab Inventory	
	7	93536			Sea Reaper	6/7/2018	Lab Inventory	
	7	93537			Sea Reaper	6/7/2018	Lab Inventory	
	2	93539			Sea Reaper	6/7/2018	Lab Inventory	
	1	93540			Sea Reaper	6/7/2018	Lab Inventory	
							Total:	**50**
Silver Button	1	93486			Sea Reaper	6/1/2018	Curator's Safe	
	1	93487			Sea Reaper	6/1/2018	Curator's Safe	
	1	93488	CONFIDENTIAL DATA		Sea Reaper	6/1/2018	Curator's Safe	
							Total:	**3**

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12/19/2018 **Margarita 2018 Recoveries** Page 8 of 9

Description	Quantity	Tag#	Latitude	Longitude	Vessel	Recovery Date	Location
Silver Chain Fragment	1	93429	CONFIDENTIAL DATA		Sea Reaper	3/16/2018	Curator's Safe
							Total: 1
Silver Coin	1	93431	CONFIDENTIAL DATA		Sea Reaper	3/17/2018	Totally oxidized & disposed of conc
	1	93436			Sea Reaper	3/18/2018	Totally oxidized & disposed of conc
	1	93437			Sea Reaper	3/18/2018	Curator's Safe
	1	93446			Sea Reaper	4/9/2018	Curator's Safe
	1	93447			Sea Reaper	4/9/2018	Totally oxidized & disposed of conc
	1	93448			Sea Reaper	4/9/2018	Totally oxidized & disposed of conc
	1	93449			Sea Reaper	4/9/2018	Curator's Safe
	1	93450			Sea Reaper	4/9/2018	Curator's Safe
	1	93451			Sea Reaper	4/10/2018	Totally oxidized & disposed of conc
	1	93452			Sea Reaper	4/10/2018	Totally oxidized & disposed of conc
	1	93454			Sea Reaper	4/24/2018	Totally oxidized & disposed of conc
	1	93455			Sea Reaper	4/24/2018	Totally oxidized & disposed of conc
	1	93456			Sea Reaper	4/24/2018	Totally oxidized & disposed of conc
	1	93458			Sea Reaper	4/24/2018	Curator's Safe
	1	93460			Sea Reaper	4/24/2018	Curator's Safe
	1	93463			Sea Reaper	4/25/2018	Totally oxidized & disposed of conc
	1	93469			Sea Reaper	4/26/2018	Totally oxidized & disposed of conc
	1	93470			Sea Reaper	4/26/2018	Totally oxidized & disposed of conc
	1	93472			Sea Reaper	4/26/2018	Totally oxidized & disposed of conc
	1	93473			Sea Reaper	4/26/2018	Totally oxidized & disposed of conc
	1	93475			Sea Reaper	4/26/2018	Totally oxidized & disposed of conc
	1	93484			Sea Reaper	6/1/2018	Curator's Safe
	1	93505			Sea Reaper	6/3/2018	Curator's Safe
	1	93507			Sea Reaper	6/3/2018	Totally oxidized & disposed of conc
	1	93509			Sea Reaper	6/3/2018	Curator's Safe
	1	93510			Sea Reaper	6/4/2018	Curator's Safe
	1	93512			Sea Reaper	6/4/2018	Totally oxidized & disposed of conc
	1	93513			Sea Reaper	6/4/2018	Totally oxidized & disposed of conc
	1	93514			Sea Reaper	6/4/2018	Curator's Safe
	1	93517			Sea Reaper	6/5/2018	Totally oxidized & disposed of conc
	1	93518			Sea Reaper	6/5/2018	Totally oxidized & disposed of conc
	1	93524			Sea Reaper	6/5/2018	Curator's Safe
	1	93527			Sea Reaper	6/6/2018	Curator's Safe
	1	93527-1			Sea Reaper	6/6/2018	Curator's Safe
	1	93530			Sea Reaper	6/7/2018	Curator's Safe
	1	93538			Sea Reaper	6/7/2018	Totally oxidized & disposed of conc
	1	91732			J.B. Magruder	8/9/2018	Curator's Safe
	1	91739			J.B. Magruder	8/11/2018	Totally oxidized & disposed of conc
	1	91740-1			J.B. Magruder	8/11/2018	Totally oxidized & disposed of conc
	1	91741			J.B. Magruder	8/11/2018	Totally oxidized & disposed of conc
	1	91742			J.B. Magruder	8/11/2018	Curator's Safe
	1	93596			Sea Reaper	11/10/2018	Curator's Safe
							Total: 42
Silver Scabbard Frog	1	93474			Sea Reaper	4/26/2018	Curator's Safe
							Total: 1

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12/19/2018 **Margarita 2018 Recoveries** Page 9 of 9

Description	Quantity	Tag#	Latitude	Longitude	Vessel	Recovery Date	Location

Total Artifacts Recovered: 424

13 APPENDIX-3, SALVAGE OPERATION VESSELS, EQUIPMENT, PERSONNEL

This section has been added at the request of the FKNMS to update them on current salvage operation vessels, excavation equipment, personnel and will be amended from time to time as there are any major changes. These amendments will be sent to the current FKNMS Notification email at FKNMSPermits@noaa.gov .

MOTIVATION, INC.

Gary Randolph, VP & Director of Operations

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Gary started working for Mel Fisher in 1995 and became the Captain of the 90' salvage vessel "J.B. Magruder" on December 1, 1995, a mere eleven months after signing on to its crew as a diver. On his first trip as captain, they recovered a gold coin and a gold chain - which was the best gift this talented young captain could hope for on his December 11th birthday! People who work with Gary have said on many occasions, he is definitely not afraid to make the sacrifices it takes to pursue his dreams.

In 1997, Gary's hard work and dedication earned him the position of Operations Manager. His previous experience with computers has made him invaluable on land, as well as on sea, as the network administrator and computer guru for the office. He is also responsible for the conservation lab and is diligent in assuring the careful preservation of all artifacts being recovered from the *Atocha* and *Margarita* wreck sites.

One of Gary's first assignments from Mel Fisher was to begin working with the FKNMS to secure permits for the Atocha and Margaritas sites. On December 22, 1997 the first FKNMS permit was secured for the Atocha Emerald City area. In the years to follow, Gary secured permits for the rest of the Atocha and Margarita sites. He also served on the FKNMS Advisory Council from 2006-2009.

In the late 1990's his computer background has also assisted him in using the MS Access program to develop and format one of the most comprehensive Marine Archaeological Artifact Databases in existence. As technology developed, this database was used as the foundation to create the current Mel Fisher SQL based database which houses over 200,000 artifact records and is available to the world via the on-line version at www.melfisherartifacts.com

In 2002, Gary shifted his focus to running the survey vessel "Pin Pointer" and a few years later the "Huntress" to develop the computer-controlled survey equipment and mapping programs in an effort to help locate the remaining structure and cargo of the "*Atocha*" and "*Margarita*." He has personally surveyed thousands of miles of sea bottom using magnetometers,

side scan sonar and sub-bottom profilers as well as processing the raw data to create detailed charts of the results.

In recent years Gary has been honing his skills as the Expedition Leader for a number of ultra-deep-water missions to locate historic shipwreck sites in water depths beyond 5000 meters. He has planned, budgeted and executed the largest deep ocean side scan survey for historic period shipwrecks ever done. Most recently he's led multiple expeditions to locate and identify a number of these targets using remotely operated vehicles to locate, document and successfully recover artifacts from these ultra-deep shipwrecks. Admiralty actions under the laws of salvage and finds have been successful on these recoveries in the US District Court for the Southern District of Florida.

Gary is currently leading the design and engineering team that constructed "Dolores", a 1000m rated HAUV (hybrid autonomous underwater vehicle) that has been custom built for the search and identification of historic shipwrecks. He has had hands-on experience in assembling, testing and piloting this amazing vehicle and will continue to develop its capabilities going forward. He is also working to develop EM (electromagnetic) detection technologies that will be used on HAUV's and ROV's which will help to identify deeply buried objects previously out of the range of current detector technology and will also discriminate between all metals in an effort to use remote sensing technology to identify areas for potential excavation activities.

J.B. Magruder Specifications

- Manufacturer: Custom Hull
- Year: 1956
- Reg Length: 81'-1"
- Reg Breath: 22'-7"
- Reg Draft: 10'-6"
- Gross Tons: 125
- Power: Twin 12-71 (naturally aspirated) Detroit Diesels (approx. 400HP @1800rpm ea.) with twin disk transmissions
- Props: (2) 4-blade, 48” dia. x 43 pitch
- Twin 54” diameter Prop Wash Deflectors
- Generators: Twin Kubota 30kw Diesels
- Top Speed: 10 Knots
- Electronics: Simrad NSS12 Multifunction Display, SDGPS, Fathometer, Radar
- ICOM VHF Radio
- Includes: 3-Point Anchor Mooring System with 10HP Electric Winches and Motor Brakes
- Various 4"-12" dia. x 8’-10’ long Portable PVC Airlifts (discharge underwater) powered by CP120 cfm Air Compressor
- 8” Emerald Airlift & Sifting Screen System powered by CP120 cfm Air Compressor
- Bauer 20cfm SCUBA Air Compressor
- AquaPulse Metal Detectors (with 8”, 10”, 15” diameter search loops)
- Sleeps up to 6 people
- Tender & Anchor Vessel: 21' Workskiff with Yamaha 150 Engine

The Magruder, Captain Andy Matroci

amatroci@gmail.com

When you first meet Andy Matroci, Captain of the J.B. Magruder, you would never guess that this soft-spoken, unassuming man has had such a fascinating life, an illustrious 30-year diving career and has logged over 21,000 hours underwater.

Andy grew up in the windy city of Chicago. Being drawn to diving at a very early age, he became certified during his first year at Triton College and was a dive instructor by age 19. He achieved his next level of dive training in 1975 at the Ocean Corporation in Houston, TX, attaining his commercial dive certification. For the next few years, Andy worked commercial dive jobs in Morgan City, LA, San Diego, Chicago, and finally Gary, IN, where he was diving in an industrial holding tank. Needing some time away from such difficult working conditions, Andy felt a little awkward asking his boss for a vacation after only 2 months on this job, and was quite surprised when he was told yes, since Andy had already endured longer than any of the company’s previous employees.

So, in early 1981, Andy’s vacation took him from the cold Chicago weather to the Fort Lauderdale area for a visit with his grandmother and then on to Key West for some recreational diving. The first diver he met in Key West was Captain Billy Deans, who was to later become a very good and influential friend. Andy also heard of a man named Mel Fisher, a treasure hunter and diver looking for a lost Spanish galleon. Having never heard of a diving job that involved searching for treasure, it was Andy’s curiosity that led him,

with his resume, into Mel's office the following day. After looking over the resume, Mel said to Andy, "I've never seen a diving resume before. Would you like to start today or tomorrow? I can pay you $103 per week." Before he could catch himself, Andy laughed and then explained to Mel that he made more than that in one day at his present job. Mel said that was all he could afford to pay his divers, but offered a percentage of the treasure they find, as well. They had already discovered huge amounts of treasure now and were likely to find the "Motherlode" of the Atocha any day now. Like so many others who had been influenced by Mel, Andy thought about it for a day or two, and in two weeks' time he had gone back to Chicago and moved all of his belongings to Key West, thinking that he would try treasure hunting for a year.

Andy's first assignment was on the Dauntless and his eyes still light up when he talks about finding his first GOLD after only a few months there! He enjoyed his work and decided to stay on longer than planned. He loved history and became fascinated with the history and archaeology of the Atocha. And more importantly, would he ever be able to live with himself if he left and then later read or heard about the discovery of the "Motherlode" without his being a part of it?

On July 20, 1985, as First Mate on the Dauntless, Andy had been plotting the charts and had spent time studying them. The crew knew they were getting close to something big because of all the treasure they were finding. On the 5th dive of the day, Andy said to his dive buddy, Greg Wareham, "Before we pick up anything, let's swim a compass course out of the hole to the southeast and see what's out there. So, they swam out of the hole to the southeast, swimming parallel lines but out of each other's sight. Andy was heading back to the hole when Greg came up and motioned for Andy to follow him. There it was! Ballast stones and silver bars rising 3 feet out of the mud. They hugged each other and then took ten to fifteen minutes to swim around the huge ballast pile, knowing they were the first to see and would never have an opportunity to see the Nuestra Senora de Atocha like this again. They then surfaced and screamed, "It's the Motherlode! It's right here!" Needless to say, Andy has countless fascinating stories of the recoveries, celebrities, and adventures that followed as the result of this great treasure find. He continued to work the Atocha and Margarita sites through 1991. At one time or another during his tenure, he has captained or co-captained the M/V Dauntless, M/V Magruder, M/V Virgilona, and the M/V Swordfish, as well as doing some work on the 1715 and 1733 fleets.

Deciding it was time for a career change, Andy left in 1991 to work on the Nuestra Senora de Pilar, a 1690 Spanish Manila galleon off the coast of Guam. The depth of this wreck required him to bring his crew to Key West to be trained in mixed-gas, deep water diving by his friend and accomplished diver Billy Deans. Andy's diving career has also taken him to many wrecks in the waters of the Philippines, Anguilla and Honduras and includes subcontract work on "Emerald City" in 1994 and on the Santa Margarita site in 2000. Also, in the 1990's, Andy helped form a marketing company which has given him the opportunity to speak to thousands of children and adults in schools, universities, civic clubs, etc., sharing with them his knowledge of the history and archaeology of the Atocha and other historical shipwrecks.

Despite such a busy career, Andy is a very dedicated and loving husband and father. He and his wife Monica are extremely proud of daughter Melissa, who will be attending Yale University this fall, and of their son Andy, who is 6 years old. Those who know and work with Andy are very happy to have his knowledge, experience, and strong leadership back on the trail and searching for the remaining treasures of the Atocha's manifest.

Dare Specifications

- Mfg: Swiftship
- Year: 1971
- Reg Length: 83'-5"
- Reg Breath: 21'- 7"
- Reg Draft: 7'-4"
- Gross Tons: 90
- Power: Triple 12-71 (naturally aspirated) Detroit Diesels (approx. 400HP @1800rpm ea.) with twin disk transmissions
- Generators: Twin Kabota 30kw Diesels
- Top Speed: 17 Knots
- Props: (3) 30" dia. - 4 blade, 2.5" shaft
- Three 36" dia. Prop-Wash Deflectors
- Electronics: Simrad NSS12 Color Multifunction Navigational Display System with additional Depth Display Monitor, SDGPS, hull mounted side scan sonar, radar
- Survey GPS: Trimble SPS461 Modular SDGPS Positioning System with Heading Receiver
- H-AUV (hybrid autonomous underwater vehicle, tethered) "Dolores", custom built (1000m depth rating)
- Sub-Atlantic Comanche ROV (300m depth rating, tethered)
- ICOM VHF Radio
- 3 Anchor Mooring System with Hydraulic Winches
- 2 Ton Marine Crane
- AquaPulse Metal Detectors (with 8", 10", 15" diameter search loops)
- Various 4"-12" dia. x 8'-10' long Portable PVC Airlifts (discharge underwater) powered by CP120 cfm Air Compressor
- 8" Emerald Airlift & Sifting Screen System powered by CP120 cfm Air Compressor
- Bauer 10cfm SCUBA Air Compressor
- Sleeps up to 7 people
- Tender & Anchor Vessel: 21' WorkSkiff with 150HP Yamaha 4-Stroke Engine

The Dare Captain, Nelson "Papo" Garcia

josengarcia@bellsouth.net

In Hollywood movies, the Captain of a treasure hunting vessel is almost always an "old salt," someone who lives for the sea and has led a life of daring and adventure. Jose Nelson "Papo" Garcia, the new captain of the Dare, is the kind of man that inspired those portrayals. A man whose love of the sea and diving for treasure.

Papo was born in Havana, Cuba in 1966 and began diving with his father when he was 9 years old. He became a professional diver during a stint in the Cuban Navy and in 1987 began diving for the government's national archaeological service. He developed a specialization in underwater photography and video and provided footage for a 1992 National Geographic presentation "Cuba's Lost Treasures." In 1992 he began serving as captain of various research vessels. His skill and knowledge led to invitations to

work on underwater sites around the world including work with French treasure diver Frank Goddio on the ancient city of Alexandria in Egypt and a 15th century Chinese wreck in the Philippines. He was also asked to participate in international archaeological conferences, one of which would begin the chain of events that changed his life.

Like anyone in "the business," Papo knew about the discovery of the Atocha and had seen pictures of the treasure. Having worked on galleons of the same era he was very interested in seeing the artifacts in person. In 1997 his chance came when he was invited to a conference at Texas A&M University. After the conference he stopped in Key West to examine the Atocha treasure as well as finally meet a fellow treasure hunter whose exploits he had followed for many years - Mel Fisher. The picture he had taken with Mel on that visit is now one of his fondest possessions.

He landed in Key West on October 24th, 1999, and was a little surprised to find himself in the middle of a giant party. "I didn't know it was just a couple of days before Fantasy Fest," he says, referring to Key West's version of Mardi Gras. "It was a little crazy, but a very good time to get here." The choice of where to live and how he could apply his skill and experience in treasure hunting was easy for Papo: "Since long before I met him, I had wanted to work for Mel Fisher so I stayed in Key West and lived with my brother-in-law." In 2000 he officially joined the Mel Fisher's Treasures team, jumping in to do whatever needed doing - boat maintenance, helping out in the conservation lab, diving whenever the opportunity arose.

On one of his first dives from the Magruder, Papo found three Atocha coins by visual search. For most of us, that would be the thrill of our lives. For Jose Nelson "Papo" Garcia, a man who chose to continue pursuing his passion for treasure hunting, it is his life, and he won't hesitate to tell you: "I am 100% happy with it."

Huntress Specification

- Mfg: Parker Model 2820 XL Sport Cabin
- Year: 2005
- Reg Length: 27'-7"
- Reg Breath: 9'- 6"
- Reg Draft: 18"
- Gross Weight: 6,400 lbs. dry
- Power: Twin 250 Yamaha 4-Stroke Engines
- Fuel Capacity: 250 Gal
- Top Speed: 40 Knots
- Electronics:
- Simrad NSS12evo3 Color Multifunction Navigational Display System, SDGPS, depth finder, radar, Autopilot System, Underwater Thru-Hull Video Camera, PC NMEA Interface
- ICOM VHF Radio
- Panasonic Toughbook Laptop with fixed docking station for use with Geometrics Cesium 882 Magnetometer
- Nobeltec Navigational Suite Software
- Marine Sonics Side Scan Sonar System
- Includes: Reel Easy Cable Winch System
- 3 Anchor Mooring Capability
- 5" Suction Dredge Powered by 9.5HP 2" Honda Pump
- Aquapulse Metal Detectors

SUB-CONTRACTED VESSELS & CAPTAINS (MARGARITA SITE ONLY)

Maritime Research & Recovery, LLC

Dan Porter, Managing Member

dportermrr@gmail.com

Dan Porter is a boat captain and shipwreck recovery operations director with three decades of experience in the industry. His unique qualifications, which combine old school hands-on work ethic with contemporary state-of-the-art acoustic and electronic sensing technical knowledge, have made him an in-demand consultant for numerous clients and one of the most proficient and sought-after on-site directors today.

As MRR Director of Operations, Dan directs search and recovery strategies as well as investigating and facilitating new undertakings. Dan literally grew up in the salvage industry— working with treasure hunting legend Mel Fisher and his protégée John Brandon, Mo Molinar, Fay Fields, and his own father, Don Porter. He has personally recovered or implemented the salvage plan to recover three of the most significant artifacts ever discovered, a jewel encrusted "Cinta" belt, a lead box containing more than 16,000 rare natural pearls, and a magnificent gold chalice. Practicing his own unique blend of straight science and uncanny intuition on some of the most famous shipwreck sites in the world, Dan has recovered multi-millions of dollars' worth of treasures and innumerable artifacts of significant archaeological and historical importance.

Salvage History:

1980 – Diver/Crewmember, Marine Archeological Research and Salvage, Inc. Our excavation of a 1628 shipwreck resulted in the recovery of hundreds of silver "pieces of eight" treasure coins and other historic artifacts.

1982 - First-Mate/Diver, Treasure Salvors Inc. Participated in proton magnetometer survey of the *Santa Margarita* with Fay Fields, one of the pioneers in the field. Also, in the same year, while excavating the 1622 Spanish galleon *Nuestra Señora de Atocha*, recovered hundreds of silver coins, a gold bar, eleven very rare gold coins, a six-foot-long gold chain, and a spectacular gold belt with rubies, diamonds and pearls known as the "Cinta." It is considered to be one of the most exquisite pieces of jewelry ever recovered from a Spanish galleon.

1983 - First-Mate/Diver, Cobb Coin Company Inc. Our team as a whole made a significant number of major discoveries, including five gold bars, a large hand-sized gold disc, hundreds of gold coins, thousands of silver coins, and countless historic artifacts.

1985/1989 - Captain/Diver/Owner, Tropical Treasure Salvors, Inc. Worked along Florida's treasure coast conducting metal detector surveys in unexplored areas of known wreck sites.

1990 - Owner/Operator, Tropical Treasure Salvors, Inc. Turned a low budget operation into an extremely profitable one with the discovery of thirty-eight gold escudos' treasure coins, four gold rings, hundreds of silver "pieces of eight," and a wide variety of historic artifacts.

1991/1992 – First-Mate/Diver/Survey Captain, Marine Archeological Research and Salvage, Inc., in Grand Bahama. While conducting fifteen hundred linear miles of visual surveys of the southern coast of Grand Bahama, discovered nineteen unknown shipwrecks, recovered an intact mariner's astrolabe dated 1602, as well as a significant number of coins.

2001/2002 - Owner/Operator, Tropical Treasure Salvage, Inc. Conducted a shallow water excavation operation off the coast of Vero Beach, Florida. Recoveries included silver "pieces of eight" treasure coins and a number of artifacts from a previously unknown section of a 1715 galleon.

2006 – 2012 Chief of Operations/Diver/Salvage Captain for Keith Webb's Blue Water Ventures of Key West: Design and implementation of salvage plans for Treasure Coast shipwrecks. Design and implementation of salvage plan to locate the missing sections of the *Santa Margarita*. The plan proved fruitful with the recovery of thousands of artifacts, including silver coins, a magnificent gold chalice, thousands of rare natural pearls, gold bars, chains and jewelry, and historical weaponry worth multimillions of dollars.

2009-2012 – Chief of Operations, American Shoal Archaeological Project. Instrumental in identifying and defining multiple scattered wreck sites while conducting search for a mid-sixteenth century vessel and overseeing compliance with the Florida Keys National Marine Sanctuary.

2012 - Onsite Operations Director/Diver/ Salvage Captain/Remote Sensing Director, IMDI- Eco Olas. Working in Central and South America, have identified and begun excavation plans on more than a half a dozen different treasure bearing Spanish galleons.

2013-2014 - Onsite Operations Director/Diver/ Salvage Captain/Remote Sensing Director/Conservation Director, IMDI-Eco Olas. Implemented excavation, recovery and conservation of the 1631 Spanish galleon San Jose in the Republic of Panama, worth multi-millions of dollars.

2014-2015 - Partnered with Mike McDowell and Jim Sinclair to form Maritime Research & Recovery, LLC. Designed and outfitted the excavation and recovery vessel Sea Reaper, a 65-foot fiberglass Light expedition vessel capable of stay on site in remote locations for up to 30 days. Captained Sea Reaper from Florida to the Caribbean side of Panama to locate and successfully map four Spanish galleons and one French vessel. Captained the return voyage to Florida gathering shipwreck information the entire way and located an undisclosed amount of shipwrecks, some known and some unknown. Captained the Sea Reaper to South Carolina and conducted survey and identification on two shipwrecks, including one with significant artifacts dating closely to the year of 1790.

2016 – Conducted operations with 1715 Queens Jewels, LLC., along the East coast of Florida, recovering gold and silver coins, artifacts and K'ang Hsi porcelain from May-August. Conducted operations with Motivation, Inc., on the famed *Santa Margarita*, recovering silver coins and artifacts from September-December. Completed a total of 2,470 excavations for the year while also negotiating terms for rights to pursue major shipwreck interests in two Caribbean countries and one Asian country.

2017 – continued as managing member of Maritime Research & Recovery, LLC. Acting as primary captain and overseeing daily operations of excavation vessel Sea Reaper while working with Motivation Inc on Santa Margarita and 1715 Queens Jewels, LLC. where under his direction recovered 17 assorted gold coins and numerous silver coins, began constructing a second excavation vessel Seatrepid for MRR LLC. Seatrepid is a 45' shallow water excavation vessel with full offshore operation capabilities.

“Sea Reaper III” Specifications

- Hull Type: Resmondo Boat Works, FRP (Fiber Reinforced Plastic) with Sea Flex planks
- Length: 65’
- Beam: 21.5’
- Draft: 7.5’
- Power: Twin 580 HP Caterpillar 3604E
- Main Generator: 35 KW
- Back-up Generator: 8 kw
- Tank Fill Compressor: K-14, high pressure
- Excavation Equipment: Airlift compressor Sulair 185CFM with two 5” aluminum airlift tubes that are 6’ long; Water jet and Venturi pump supply; 40” 90° propwash deflectors
- 8 underwater AquaPulse metal detectors with accessories
- 1 underwater handheld magnetometer
- Data recording stations: Artifact documentation station and equipment; Two onboard data recording computer stations with AutoCAD and other related software
- Six onboard artifact stabilization tanks
- Scuba Tanks: 15ea 80cu scuba cylinders
- Ground Tackle
- Onboard DVR Camera System
- 900 gallon-per-day fresh water maker

The Sea Reaper III Captain, Josh Fisher-Abt

Email: mayhem1715@yahoo.com

Josh Fisher Abt is a third-generation treasure hunter, grandson of world-famous treasure hunting pioneer and legend Mel Fisher. He has grown up alongside and been exposed to all aspects of the historic shipwreck salvage industry. Having grown up watching his mother manage the historic 1715 Fleet wreck sites, and his grandfather and uncles working the famed 1622 *Atocha* and *Margarita* sites and other shipwreck projects, Josh has a unique insight into the realm of historic shipwreck salvage.

While attending college for finance and investment, Josh carried on the family tradition during the summers, captaining a survey boat to conduct geometric magnetometer surveys along the Treasure Coast. During those summer, he worked alongside industry expert Capt. John Brandon—one of his grandfather's proteges—as well as worked in the office and conservation lab for the 1715 Fleet wrecks.

After completing his college years, Josh moved to Key West to work as a diver for Motivation, Inc. (Mel Fisher Company). After nearly five years of working on the historic 1622 *Atocha* site, Josh returned to land to manage one of the Mel Fisher retail outlets, and then back to the Treasure Coast to assist his sister in managing the Mel Fisher Treasure Museum in Sebastian, Florida.

In early 2016, Josh was recruited to work as first mate on the Sea Reaper under Capt. Dan Porter of Maritime Research & Recovery. He became an integral part of operations on the subcontracted 1715 Fleet and Margarita wreck sites, and by 2017 he advanced to Captain. As Captain of the Sea Reaper, Josh has been successful in conducting ongoing salvage operations year-round between the two historic fleets. He looks forward to the breadth of future projects and opportunities that the historic shipwreck industry has to offer.

Industry History

2003-2004 – Captain of the Pin Pointer, a survey boat that was used to conduct magnetometer surveys using a G-880 magnetometer with MagLog Survey Software. Surveyed the 1715 fleet wreck sites along the Treasure Coast for the Mel Fisher Center.

2005 – First mate aboard salvage vessel Endeavor under Capt. John Brandon.

2006-2010 – Crew/Diver on the Dare, salvage vessel for Motivation, Inc. under Capt. Jose Garcia. Recovered many unique and interesting artifacts over the years.

2011-2012 – Manager of Mel Fishers Treasures Duval Street retail store in Key West, Florida. Sold many historic coins, relics and jewelry.

2012-2015 – Assistant Manager of Mel Fisher Treasure Museum in Sebastian, Florida.

2016-2017 – First Mate on Sea Reaper for Maritime Research & Recovery under Capt. Dan Porter.

2017- Present – Captain on Sea Reaper for Maritime Research & Recovery, subcontracting on 1715 and 1622 wreck sites.

“Seatrepid” Specifications

- Hull Type: Key West #1, fiberglass
- Length: 45’
- Beam: 15’
- Draft: 38”
- Power: Twin 430HP Cummings 6CTA
- Transmissions: Twin Disk 2:1 with trolling valves
- Main Generator: 35KW Kohler Power System
- Back-up Generator: 8KW Northern Lights
- Electronics: Complete 2018 Simrad Package
- A/C: 4-ton carrier
- Hydraulics: Three 14,000 lb. capstans, quick connects to connect underwater hydraulic tools
- Tank Fill Compressor: Bauer K-14, electric below-deck
- Excavation Equipment: High-pressure water jet; Venturi capabilities; 36” propwash deflectors (90° and 45° capability)
- 4 AquaPulse underwater metal detectors with accessories
- Data recording station: Artifact documentation station and equipment; Onboard data recording computer station with AutoCAD and other related software
- Scuba Tanks: 15ea 80cu scuba cylinders
- Ground Tackle
- Onboard artifact stabilization tanks
- Fresh water maker

The Sea Reaper III Captain, Levin Shavers

Email:

Levin Shavers started working on boats as a dive guide in West Palm Beach in June of 2012, with occasional commercial dive trips out of Cape Canaveral for surveying and locating trans-Atlantic cables, as well as commercial fishing and lobstering. In October 2012, Levin started working for a historical salvage group, Seafarer Exploration. He worked on a total of 3 historic shipwreck sites along the east coast of Florida, including the Juno Beach wreck, Lantana and a site located off Melbourne. During his experience with Seafarer, Levin took part in the survey, as well as dig and identify of these sites, and had the opportunity to work with renowned archaeologists John Debry and Jim Sinclair.

In the summer of 2016, Levin began working with another historical salvage company, Plate Fleet Salvage, on the 1715 Fleet. During his work with Plate Fleet Salvage, he was introduced to Dan Porter and began work as a diver with Maritime Research & Recovery in September of 2016 on the Santa Margarita. The following summer, Levin completed his obligations with Plate Fleet Salvage and advanced to the position of Captain with Maritime Research & Recovery in 2017.

Levin has since worked as Captain on the Santa Margarita, 1715 Fleet sites, and a site located off South Carolina. With a total of just under 6 years in the field and a passion for history, archaeology, and paleontology, Levin Shavers is a highly respected captain by all that know him.

“Sea Hunter” Specifications

- Hull Type: Parker, fiberglass
- Length: 28’
- Width: 8’
- Draft: 2.6’
- Power: 250HP Yamahas
- Electronics: Complete 2016 Simrad Package
- Scuba Tanks: 8ea 80cf scuba cylinders
- Survey Equipment:
- Geometrics 882 Magnetometer
- 4125 Edge Tech Side Scan Sonar
- Survey Software:
- Nobletech TimeZero Professional
- Geometrics MagLog Lite
- Discovery Software
- SonarWiz Complete Package
- Hypack
- AutoCAD

Amelia Research & Recovery, LLC

C. Douglas Pope, Manager-Operations and Finance

4163 Dowling Rd.
Middleburg, FL 32068

doug@ameliaresearch.com

Doug Pope has an extensive background in marine operations. For the past 22 years Mr. Pope has managed Amelia's offshore Treasure Hunting operation that ranged from Northeast Florida south to an area 25 miles west of Key West, Florida. In 1998 Mr. Pope designed and began construction of Amelia's self-elevating LIFTBOAT that is the only one of its kind used in the Treasure Industry. Under Mr. Pope's direct supervision this vessel has operated for 17 years offshore. Mr. Pope is one of the most experienced and competent LIFTBOAT operators in the offshore marine industry today. Mr. Pope is a graduate of Nashville Auto Diesel College, a Certified Welder, a US Army Helicopter Pilot, Test Pilot and Maintenance Officer. Mr. Pope enjoyed an Aviation Career as an Officer and Pilot in the US Army, Florida National Guard and Army Reserves, which spanned 40 years. Mr. Pope has been a certified diver since 1988.

Mr. Pope has been operating small business where he was responsible for the management and finances since 1974.

“Polly-L” Lift Boat

Construction of the Polly L began in January 1999 [Keith Marine] following years of Amelia's research and development of lift boat technologies for coastal shipwreck salvage. The Polly L was launched for sea trials in the spring of 2000, to concurrently test both the Polly L's systems, and a huge new excavator designed by MacTaggart, Scott & Co. of Scotland. In the autumn of 2000 the Polly L was retrofitted with three feet of pontoons for additional lateral stability, and Amelia decided to design our own excavator system.

Since the Polly L's second launch in late 2000, the Polly L's performance has exceeded all expectations. She was on site more than 200 days in 2001, which is unheard of in this industry. Traditional salvage vessels have a seasonal operating window, subject to weather, of June through September. Our lift boat remains on site for extended periods of time. We have no daily commuting to and from the site, which saves valuable recovery time.

The working platform raised above the ocean swells, provides stable, comfortable accommodations for the ship's crew, archaeological and media consultants, and visitors. Dive teams can begin dive operations at sunrise and continue until sundown, working in rotating shifts after an excellent night of rest and relaxation within the fully equipped galley and staterooms.

The Polly L's on-board systems set a new standard for the industry. A ten-ton crane on the bow has more than adequate lifting capacity for deeply lodged and heavy objects. We can concurrently deploy the excavator, and dredge through a sluice box, 24 hours a day. Our on-board facilities for preservation of recoveries are a first in this industry. Extensive use of hydraulics results in huge savings in fuel consumption. The Polly L burns 50 to 100 gallons of fuel in a 24-hour day, compared to the voracious 50 to 80 gallons an hour appetite of conventional salvage vessels.

"Polly-L" Specifications

- Length: 71 feet
- Beam: 36.7 feet
- Depth: 8 feet
- Draft: 5.5 feet
- Propulsion: Two - 300 hp Caterpillars Main Engines
- Legs: Three, 65 feet tall each
- 12-inch moon pool for core sampling rig.
- Drill rod rack for storing drill rods while drilling
- The ship has a complete geometrics 881 magnetometer system capable of locating and documenting magnetic materials such as iron or steel. Lost dredge pipe or equipment, etc.
- One, 300 hp caterpillar hydraulic power unit with a pumping capacity of 210 gpm at 3000 psi. 100% biodegradable hydraulic fluid. This may be used to operate large hydraulic tools. Its primary use is to power our unique hydraulic excavator.
- Two 60 kw generators with three phase or single phase available with voltages of 120, 208 and 480
- One 24 kw generator, three phase
- One 30 kw generator, three phase
- One rectifier to produce 230 volt dc power
- 10 ton - 40 foot boom, pedestal crane with a 20,000lb load line and a 5000lb fast line.
- A crane deployable magnet that will lift up to 7,000 pounds of magnet material
- Reverse osmosis water maker with up to 1500 gallon per day capacity and a storage capacity of 1100 gallons.
- Can sleep up to 14 people in 6 state rooms in air conditioned or heated comfort
- 250 amp dc welder, 175 amp mig welder, 225 amp tig welder, plasma cutter and acetylene torch set. 20 ton hydraulic press, drill press, shop air compressor and large assortment of tools to support customer's equipment.
- 104 cfm electric compressor to operate large air tools and air lifts.
- Navigation system is a North Star 951 and Garmin gps, both with WAAS.
- A 36 inch wide permanently mounted dive ladder.
- A complete dive capability which includes a high pressure dive compressor which provides air to a dual fill station which has six 220 cubic foot storage tanks that also supply low pressure air for a surface supplied air system that can supply up to 4 hoses. 18 dive tanks are stored on board. Fuel capacity 2800 gallons, which allows the Polly-L to remain on site for about 90 days before refueling.
- The Polly-L has 1404 square feet of deck space for mounting equipment most of which can be welded to the deck. An additional 244 square feet of deck space is available on the o-2 deck. This deck space can be utilized for light equipment or for relaxation.
- The main deck house is 26 x 20 feet (520 sq ft) and houses the galley and a tool room/shop. The large galley has two freezers and a large refrigerator and can easily accommodate 12 to 16 people. The galley also has a large TV with direct TV service. We also have a large refrigerator and shower on the deck for the divers.
- The 0-1 deck house is 26 x 28 feet (728 sq ft) and houses the main crew/diver quarters, 2 toilets, 2 showers, clothes washer and drier. Each crew room has direct TV.
- The 0-2 deck is 20 x 21 (420 sq ft) and houses the captain's quarters, first mates' quarters and pilot house. This deck also has a full bath.

- The Polly-L has two support vessels on board. One is an 18 foot Avon, hard bottom inflatable with a 90-hp four stroke Yamaha and has a 10 person capacity. The other is an 18 foot cuddy with a 115-hp 4 stroke Yamaha and has a 6 person capacity.
- Our excavator consists of two 36-inch bow thrusters that blow down to gentle remove the overburden from the targets. We also have a 4-inch portable airlift.

Captain Scott Dallman

scott@dallman.us

Experience

- USGC Master 100-ton, near coastal #USA000386748
- Sailing and towing endorsements, STCW certified
- Jack up barge vessel Polly-L (2 years)
- Sailboats up to 60 feet (15+ years)
- Powerboats up to 120 feet (20+ years)
- Lived on own sailboat on San Francisco Bay (1 year)
- Lived on own sailboat on San Diego Bay (5 years)
- Captained luxury crewed catamarans in the British and US Virgin Islands including provisioning and cooking (2 years)
- Second skipper on 110-foot luxury power yacht in southern California including high-end charters for one summer
- Skipper on 85-foot fishing vessel in Californian and Mexican waters, single and multi-day trips including 10 weeks to Guadeloupe Island with shark cages

Extensive coverage between

- San Francisco and Ensenada including Channel Islands Florida, Bahamas, Windwards, Leewards, British and US Virgin Islands along Atlantic US shore including all of Chesapeake Bay, Delaware River and Long Island Sound
- Skipper for Harbor Island Sailboats' local racing regattas, Aventura Sailing Club, and Dana Island Yacht charters
- Experience in commissioning and offshore deliveries

Cruising History

Four years on own Beneteau 51 from Dana Point, CA to Port Canaveral, Fl. Including Mexico east and west coasts and Sea of Cortez, Costa Rica, Panama, Columbia, Cayman Islands, Yucatan Peninsula, Florida Keys and east coast, Inter Coastal Waterway, Bahamas including outer islands, Turks and Caicos, Dominican Republic, Puerto Rico, British and US Virgin Islands and Leeward Islands

Captain Michael Ian Bozeman

capnsnapmarine@gmail.com

Experience

- Captain Polly-L (1 June 2017 –present)
- Sailing Instructor (21 April 2005 – present)
- Powerboating inshore & offshore 40 years exp.
- Grand Prix Sailing offshore since 2008
- Competitive J24 Regatta sailing 22 years
- Graphic Arts industry 1978 to Present
- Presently in course for 100-ton Master

Skills

- Graphic Artist, State Cert Firefighter, First Responder & EMT Trained, US Sailing, sailing & small boat instructor, Sailboat rigging, Mechanics, Blacksmithing, Bonsai trees, Hand lettering.
-

Attention: **Gary Randolph** November / 12 /2018

The relationship between the Fisher families with Amelia Research & Recovery (ARR) has been a pleasure for many years. ARR's team will provide you additional opportunities to recovery artifacts in the near future. I have recommended several individuals for your consideration as Data Recorders in the listings below.

1. Doug Pope / Graduated Nashville Automotive & Diesel Collage (1964)
2. Mike Bozeman / FCCJ / Fire Fighter / EMT (1990)
3. Scott Dallman / Embry-Riddle Aeronautical University (1987)
4. Gary Czito / FSU (1974)

These gentlemen all have impeccable credentials; all have a diverse area of study in their fields and they are honest folks! If you need more information just give me a call at (904) 764-4287.

Scott R Jensen, M.A.

Archaeology in Motion, Inc

14 APPENDIX-4, OTHER WRECKS LOCATED

Non-Atocha/Margarita archaeological shipwreck site information located by Motivation, Inc and requested by FKNMS Marine Archaeologist Mathew Lawrence at our meeting on April 24, 2018.

Note: THE FOLLOWING INFORMATION IS NOT FOR PUBLIC RELEASE

1. 1800's Wreck 2002 CONFIDENTIAL DATA CONFIDENTIAL DATA
2. 1800's Timbers & Brass Spikes 1995 CONFIDENTIAL DATA CONFIDENTIAL DATA
3. BonVont Wreck CONFIDENTIAL DATA CONFIDENTIAL DATA
4. Copper Clad Wreck CONFIDENTIAL DATA CONFIDENTIAL DATA
5. Dominguez Wreck CONFIDENTIAL DATA CONFIDENTIAL DATA
6. 1800's Anchor 6' #1 CONFIDENTIAL DATA CONFIDENTIAL DATA
7. 1800's Anchor 6' #2 CONFIDENTIAL DATA CONFIDENTIAL DATA
8. 1800's Anchor 6' #3 CONFIDENTIAL DATA CONFIDENTIAL DATA
9. 1800's Anchor 6' #4 CONFIDENTIAL DATA CONFIDENTIAL DATA

15 APPENDIX-5, 1800'S WRECK REPORT

PRELIMINARY ARCHAEOLOGICAL ASSESMENT

OF A LATE 19TH CENTURY SAILING VESSEL IN THE FLORIDA KEYS NATIONAL MARINE SANCTUARY

Assessment conducted by

James J. Sinclair, MA, senior archaeologist
SeaRex Inc.
15 Marlin Dr.
St. Augustine, FL 32080

Performed for

Motivation Inc.
200 Green Street
Key West, FL 33040

Introduction

Motivation Inc. working under both Federal Admiralty arrests and permits with the Florida Keys National Marine Sanctuary is continuing the search for the scattered remains of the 1622 Tierra Firme galleon, **Nuestra Señora de Atocha**. Part of the search for these scattered remains includes the survey of large areas of sea bottom using remote sensing gear.

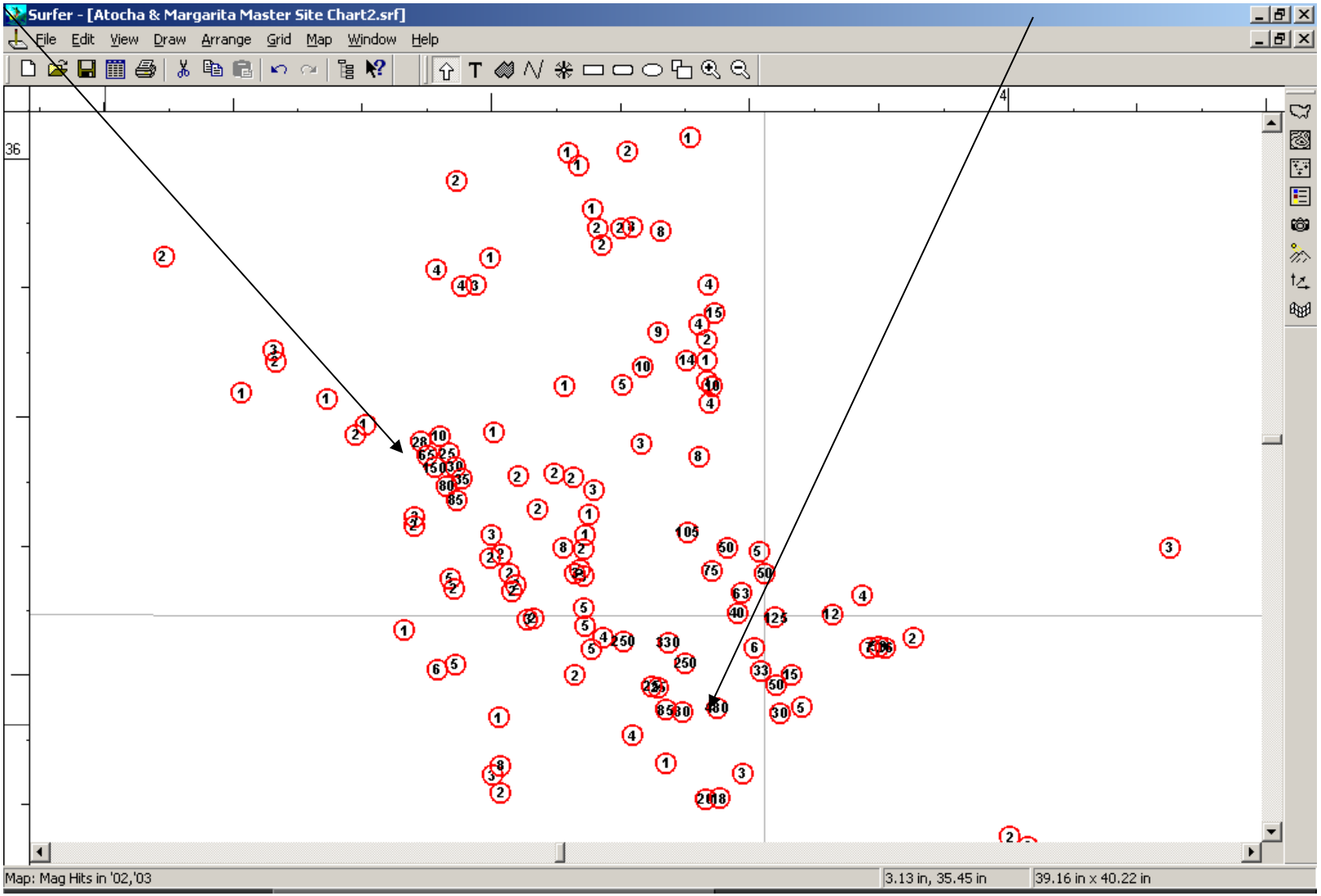
The main type of remote sensing apparatus employed by Motivation Inc. is a Geometrics 881 Cesium Magnetometer. This unit is, at the present time, acknowledged to be one of the best instruments available in the field with sensitivity reaching one tenth of a nano tesla (nt) or gamma. The sensitivity is joined with the most current positioning technology DGPS (Differential Global Positioning System) and software package that tracks the survey. This coupled with the fact that the unit has a low amount of "noise" (or interference). This makes for very accurate survey data.

Ongoing surveys are being conducted to try to track the attenuated "trail(s)" of artifact scatter that are the remains of the Atocha. It was during one such survey that the subject shipwreck was located.

The Quicksands

The first evidence of the Atocha was located in the early 1970's in an area that is known as the Quicksands. This area west of the Marquesas Keys is literally where the waters of the Gulf of Mexico pour over the shallows and into the Atlantic Ocean. This has created a large area of shifting sand-dune-like formations. Over the years of searching, thousands of artifacts such as silver coins, jewelry, gold ingots, cannon and anchors have been located in this area. The current hypothesis is that the Atocha's upper decking including the stern castle were forced into the shallows by hurricane force currents, waves and winds where it fractured into a number of parts and continued its dispersal. These are the trails of material that Motivation Inc. is currently tracking.

Timbers **1800's Wreck Site Mag Hits** Anchors and Winch

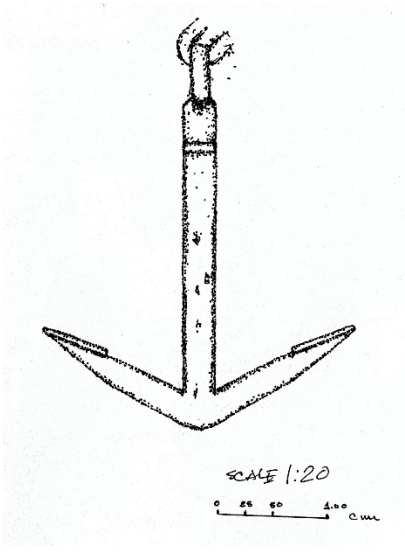


Discovery of 19th Century Wreckage

During a survey conducted on November 1st 2002 by Captain Gary Randolph aboard the MV Pin Pointer a cluster of anomalies was detected in the Northwest sector of the search area known as the Quicksands. Diver reconnaissance quickly revealed that these were the remains of a sailing vessel from a much later period. The wreckage rests in a depth of 17-18 feet and is scattered over a fairly large area with two distinct sections visible. One section consists of wooden hull structure (mostly hull planking) with iron fittings and braces.

The second section is 300 feet away in a Southeasterly direction and represents a significant portion of the bow area. Two anchors that are approximately 2-2 ½ tons each are present as well as piles of chain representing the anchor chain that was still stored in its lockers. The hawse pipes which the chain passes through are there as is the 15-foot-wide windless mechanism which was used to lift the anchors. The size of the anchors and the windless as well as the surrounding structural remains is indicative of a very large vessel.

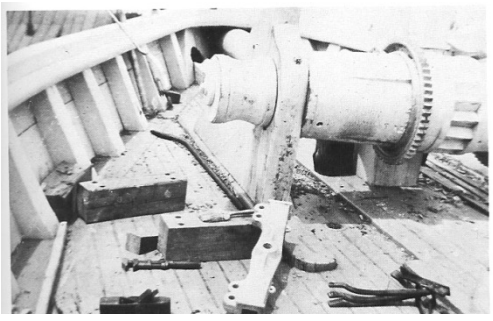
(Anchor in situ)



(Illustration of anchor)

Many structural elements are present. Iron standing rigging is in evidence as are iron hanging knees, bracings, brackets and the like. A number of snatch blocks were observed as was at least one deadeye. Wire cable stays are also in evidence. All visible fasteners appeared to be bronze. No objects were collected and video and photographic records and preliminary measurements were made to record the site in situ.

(**windless in situ**)



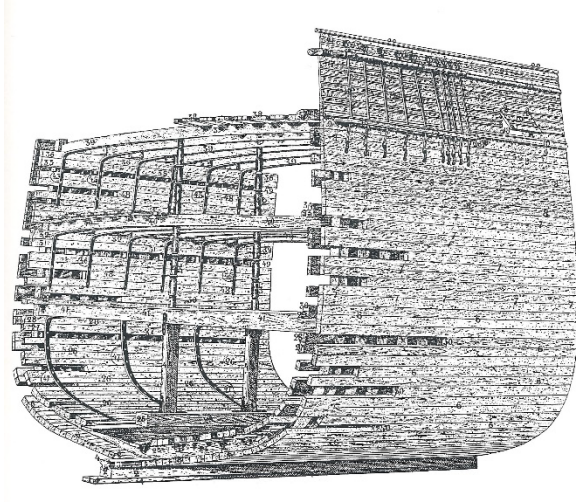
(windless circa 1925)

Working Hypothesis on the "New Wreck"

Both on the first and subsequent dives on this new wreck site the overall impression is of size. There are enormous amounts of iron fittings and construction elements that are associated with both sections of the wreck. On the northwestern section of the wreck there are still significant wooden elements extant. On the southeast or bow section of the wreck it is mostly the metallic components that have survived. The iron strapping and brackets are still very much in evidence there may also be significant amounts of wood structure buried along with the more obvious surface components.

Taken together the evidence points to a vessel of substantial size, the anchor size alone indicates this. The construction style of using both wood and iron to build vessels became popular in the later half of the 19th century and extended into the first quarter of the 20th century.

(Iron Construction elements in-situ)



(**Interior of a vessel showing iron construction elements**)

Cargo

No evidence of cargo has as yet been seen. With so much of the wreckage visible one would expect to see some evidence of a cargo, yet none is visible. Two possibilities suggest themselves as to the absence of cargo:

1. ***The vessel was completely salvaged at the time of sinking***. This seems unlikely. One would expect some evidence of the cargo to be left. One of the most heavily salvaged and well documented shipwrecks in the Florida Keys during the heyday of the wreckers was that of the Isaac Allerton. A square rigged cargo ship 137 feet long, the Isaac Allerton displaced 595 tons. She was on her way from New York to New Orleans when on August 28th, 1856 she was pounded by a brutal hurricane. The Allerton sank about a mile seaward of the Saddlebunch Keys in 30 feet of consistently murky water. The Isaac Allerton was rediscovered in 1985 by a group of Key West wreckers/salvors led by Steve and Ray Maloney, descendants of Walter C. Maloney, the lawyer for Asa Tift, original salvor of the Allerton in 1856. Much evidence of her cargo yet remained on this heavily salvaged site.

2. ***The cargo was a perishable commodity and no trace is extant or has yet to be found.*** This may well be the case as the type of cargo frequently carried through the Florida Keys and Gulf of Mexico were of this type. Examples of this type of cargo would be sugar, cotton and wood. Robin Moore has done an excellent study of a shipwreck known as Hamilton's wreck off Pensacola Bay in Florida that shows the importance of the lumber trade in Florida at approximately the same time period as our suspected wrecksite.

(Moore, 2002).

Historical Research

Preliminary (and cursory) historical research has revealed a number of possibilities for this vessel. Although there are numerous wrecks in the Quicksands area one stands out as a more likely candidate. Court records from Key West show that a British bark The London sank in 17-18 feet of water in 1892. Steven Singer in his Shipwrecks of Florida lists The London as a Scottish bark built in 1863 (Singer,pg 88). Both list the captain as a man named Ewan. According to the records the cargo consisted of lumber and deals (the division of a piece of fir or pine timber made by sawing: a plank). It should be pointed out that the only sure match is the depth of water, i.e. 17-18 feet. The lack of cargo evidence seems to indicate a possible cargo of perishable commodity, in this case a cargo that would have been transported away from the site as flotsam (as in lumber and deals). More research both on site and in the archival sources needs to be done.

Recommendations for future work

The site needs to be investigated more thoroughly. The magnetometer survey clearly shows the predominant scatter of material leading to the north, away from the two main concentrations of material. This scatter trail needs to be assessed for evidence of cargo and other significant structural components. While interesting and in close association with the scatter trail of the Nuestra Señora de Atocha it is clear that this vessel is from a much later time period. It should be investigated by Motivation Inc. or its assigns and the findings turned over to the Florida Keys National Marine Sanctuary as a part of the ongoing assessment of the inventory of submerged cultural resources in the sanctuary. This site strongly lends itself to use as an educational tool, a training ground for archaeologists and for avocationals.

Bibliography

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16 APPENDIX-6, *ATOCHA* - *MARGARITA* PROJECT TIME-LINE

The Atocha & Margarita 1622 Projects Time-Line

by Gary Randolph

This section will present the most significant finds to date on the *Atocha* and *Margarita* sites during its nearly 50 years of continuous work. It will be done in a time-line format, sorted by date and include the details of the vessels and personnel involved as well as bullet points summarizing the find or event.

1968

Mel Decides to move operations to the Keys to look for the Atocha and Margarita Wrecks

Mel first saw the *Atocha* and *Margarita* listed in John S. Potter Jr.'s book "The Treasure Divers Guide" published in 1960.

Mel obtained a state contract for all of Monroe County which includes the Keys

Treasure Salvors do a huge magnetometer survey using the survey boat "Buccaneer" starting in the middle Keys off Lower Matecumbe going north up to central Key Largo and finds close to 40 wrecks. Some of these are to be identified as ships from the lost 1733 Fleet. The "San Jose" wreck is located outside of the states 3 mile limit.

Mel Moves the search to the Marathon Area

The team started doing aerial mag surveys with Harold Williams and Fay Field. Nothing significant was found.

Mel moves to Key Largo area

Mel setup his operation out of the "Anglers Club"
Competitors Burt Webber and Jack Haskins team up to start looking for the *Atocha*.

The State of Florida extends its boundaries.

State agents start supervising all recovery efforts and now require state artifact tags and logs be used.

1969

July: Burt Webber starts working off Matecumbe with 136' vessel "Revenge"

September: Mel Meets Dr. Eugene Lyons

Mel met Eugene Lyons' wife Dot in a Ft. Pierce library while looking for shipwreck information. They would soon become friends attending the same church in Vero Beach. Mel asks Eugene to keep an eye out for information on the *Atocha* during his trip to Spain and the Archives of the Indies.
Eugene finds salvage papers for the *Margarita* in Spain's archives which has over 40,000 bundles of documents totaling 50 million pages.
"Cayos del Marques" the Marquesas Keys!!!! *(Eugene Lyons' book, page 37-38)*

1970

Mel moves the search to Key West and the Marquesas Keys area

March 1970 Mel files for a state salvage contract for the area west of the Marquesas Keys

Mel starts searching the area with magnetometer and side scan sonar.

1971

July 12, 1971 Galleon Anchor & First Gold Found

Bob Holloway on Holly's Folly find 15' galleon anchor while magging in the Quicksand's. This was the anchor just north of the current "Bank of Spain" area.
Don Kincaid finds 8.5' long gold chain next to anchor, first *Atocha* Gold.

Mid summer Holley Folly finds Margarita site

1972

"Sand Barge" moved to Atocha anchor site, National GEO sent first film crew to the site.

Henrietta Marie found at New Ground

Found by Bob Holloway on Holly's Folly, Don Kincaid, Spencer Wickens John Brandon, Mike Wiesenbaker State agent still with the State, Steve Wickens, Tim Marsh.

1973

May 20, 1973 The "Bank of Spain" is Found

Found by the crew of the Virgalona, crewmembers Don Kincaid, Spencer Wickens John Brandon, Mike Wiesenbaker (State agent still with the State of FL), Steve Wickens, Tim Marsh. Eugene Lyon is credited for naming this area the *Bank of Spain*, ballast calculated to be one third of the total on board the *Atocha*. They also found indigo die in this area. John Brandon finds 1,600 silver coins that is the beginning of approximately 6,000 silver coins being found during this period.

June 17, 1973 Father's Day Kim Fisher finds Gold Disk & Bar

Found by Captain Kim Fisher and the crew of the Southwind.
Two gold coins also found that day.

July 4, 1973 First 3 Silver Bars found to verify identity of "Atocha"

Found by Captain Kim Fisher on the Southwind, Mike Schneidelbach found the first silver bar, Kane Fisher finds 2nd bar
(Pat Clyne finds 4th or 5th silver bar in 1976 while on the *Arbutus*.)
According to Don Kinkade, Mike found the first one then all three bars where together. First astrolabe found here by Dirk Fisher along with other navigational equipment.
Bar #569, #794, #4584

1973 Summertime Kim Fisher Finds the "Poison Cup"

Personally found by Captain Kim Fisher of the Southwind.

1975

July 13, 1975 Dirk Fisher Finds the Nine Bronze Cannons

Dirk Fisher found 5 cannons, then Pat Clyne found 4 more cannons buried in the mud close by in 39 feet of water. Gun #3110 was first one to be positively identified as being from the *Atocha*.

July 20,1975 The salvage vessel Northwind Sinks

Dirk Fisher, his wife Angel and diver Rick Gage tragically drown.
Survivors: Kane Fisher, Don Kincaid, Donny Jonas, Jim Solnick, Reave (dirks friend) Angels' brother Keith Curry aka "Shark Bait" check Duncan's book, Pete Venwestern.

1976

1976 The Legal Battles Heat Up

1976 second National Geographic article in June, first film by NatGeo in December
1976-1982 over 100 court cases

1976 The *Arbutus* goes to work the site

The *Arbutus* is was an old US Coast Guard buoy tender, had no propulsion and was used as a work barge.

1976 fall, Mel donates an Atocha bronze cannon to Quean of Spain

He also gave her Dirk Fisher's first gold artifact that he had found on the *Atocha*.
The cannon remains on display in the Archives of the Indies in Seville Spain.

1980

1980 The Galleon museum exhibit sank in Key West

This was a replica Spanish galleon converted into a public museum and exhibit of *Atocha* and *Margarita* artifacts created by the Fisher family.

May 10, 1980 The Margarita site is Found

Virgalona, Captain Kane Fisher
Don: Kane found the first silver bars on the Marg.
Bored with diving under the Virgalona, Don Durant had swam away. About one hundred yards to the SE of the Virgalona's position he finds exposed timbers, ballast and artifacts that will be known as the *Margarita* main pile.

Gold plate, Dick Klaudt

Clump of 43 gold chains totaling 180' long approx 14lbs of chain, divers Don, Pat Clyne
$40 Million dollar wreck

July 7, 1980 Margarita Southern Bronze Cannon Found

Swordfish, Capt Syd Jones
Cannon found by Larry Beckman while swimming out to check an anchor line

July 8, 1980 Margarita Cannonball Clump area was found

May 1980, Mag hit on Castillion, checked by Swordfish, Capt Syd Jones

1981

1981 Margarita Northern Bronze Cannon & Anchor

Subcontractor boat “Tern” owned and captained by Denny Breese. Crew: Dick Klaudt
While they were towing a ferrous-non-ferrous detector sled it snagged on something. Dick Klaudt dove down to find that had snagged on a bronze cannon and full size galleon anchor lying next to each other, exposed just like the first cannon had been found.

Summer 1981 Three Margarita Anchors found in Hawks Channel

"Plus Ultra”, Captain Bob Moran conducting a magnetometer survey

1982

1982-83?? Cinta Belt and wedding chain found

Endeavor, Captain John Brandon, Danny Porter and Lainey

February, 1982 MFHRS is founded by Mel Fisher

Web link to their site
Treasure Donation by Fisher Family $$$?? List some items

July 2, 1982 Mel Wins US Supreme Court case!!!!

Treasure Salvors, Inc is awarded sole title and ownership of the *Atocha*, all of her tackle, armament, apparel and cargo wherever the same may be found, as per Federal Court Orders regarding *Atocha*, i.e., USDC-SDF Case No. 75-1416-Civ-King

1982 Museum gate money (Don said 500,000) went to help rebuild/repair the Martello towers, had treasure exhibit there

July 20, 1982 The Emerald Cross is found

Found on Golden Venture (subcontractor). Captain/owner Ian Koblick (not present at time).

T.S.Crew: Captain Dick Klaudt, Rick “Rico” Ingerson, Ed. Hinkle, KT Budde- Jones. Grady Sullivan and non-diving ship crew are employees of Ian Koblick.

Also during this time, eighteen gold bars, a gold coin, gold/ emerald earring, silver stirrup, silver coins and of course the Emerald Cross would all come up in a progression.

1984

1984 Atocha Bronze Cannon Found

Plus Ultra" magging, Fay Fields spots cannon while being towed with Jim Sinclair
Don has pictures

1984 (What day?) 2 Northern Galleon Anchors Found in the Quicksands

“Plus Ultra”, Captain Bob Morran, Morrishia Morran, Jim Sinclair, Bruce Eshman, Fay Field
Both anchors were broken, only the flukes are found, one is currently in the KW museum, the other one is still on the site. Also, a single piece of eight was found here.

1985

May 27, 1985 The "Memorial Day" Find

"Saba Rock" 167' vessel, Captain Jim Duran
13 gold bars
414 silver coins
5pcs gold & emerald jewelry found by Syd & KT (a year later more were found totaling 67 pcs)
10' gold chain (a girl found it, who was it?)
Dauntless found a large "Mast" timber or "Boomkin" 300-400 yards ESE, (Don said it was in museum)
(Don has Andy digging up coins on the bottom)

1985 Atocha Swivel Gun Found

Description of event, old salvors buoy? (Don: Shackle trough the breach lock and attached to the chain plate. (Don has lots of photos, took Jimmy Buffet diving on it)

July 19, 1985 start finding lots of silver coins

Magruder, Jimmy Buffet taking photo on Arbutus for album.

July 20, 1985 Atocha Mother Load Found

Dauntless, Capt. Kane Fisher, divers Andy Matroci and Greg Wherham
991 Silver bars, 120,000 total silver coins, and copper ingots
(Lots of pictures)

Next day Mel visits the site and dives Motherload, Don has picture of Mel on the bottom stroking silver

August 16, 1985 150lbs of GOLD!

76 gold bars, chains and disks found by 2 divers
50 yards west of AMP
Group of gold coins found NW of AMP

1986

1986 Conservation pictures of Jim Sinclair prepping for big division. Taffi pushing the button on computer for division to run.

Late 1985 or early 1986 Emerald City

Dauntless, Captain Kane Finds 77ct emerald

Winter of 1986 “Dreams of Gold” movie made.

Emerald shower near pilots chest. Light emeralds.

1990 The Florida Keys National Marine Sanctuary is designated by congress

1995 Emerald City Barge

Dauntless, Captain Kane finds boson’s whistle & jewelry

November 30, 1995 Coin Chest found near BOS

Magruder finds 2,100 silver coins, many rare Mexico mint, 1 & 2 Reale coins

Captain Dick Engles, First Mate Gary Randolph, Kevin Holiday

1996 ? Empress Emerald Ring Found

Magruder, Captain Gary Randolph, diver Clyde Kuntz found the ring while diving and detecting around the main ballast pile

1997 ? Three Northern Margarita Anchors Found

Gambler mag hit, Terry & Carla Fisher
Magruder Captain Gary Randolph finds anchors on Gamblers hits
Two 10' anchors on top of each other, one missing flukes one missing ring.
Just to the north was an intact 14' galleon anchor

1997 Papal Seal Found

Magruder, Captain Gary Randolph, diver John Corcoran

1998 Dauntless finds silver bar

Dauntless, Captain Robbie Hanna, diver?

2000 3 Gold Bars, 10' Gold Chain, 127 Silver coins found in Quicksands

Magruder, Capt Gary Randolph, crew Jeff Dickinson, Scott Synar, Ben Kinnaman

August 20, 2005 Atocha Galleon Anchor Found South of Main Pile

Huntress, Captain Gary Randolph, First Mate John Corcoran

To be continued.....

17 APPENDIX-7, BIBLIOGRAPHY - ATOCHA & MARGARITA

17.1 INDEX OF 1622 FLEET RESEARCH

by Duncan Mathewson

*This document is a working draft to be amended from time to time.

Update History:
ber 28, 2018, by Gary Randolph

17.1.1 Publications

Compiled publications, unpublished manuscripts and data stemming from the 1622 research on the *Atocha &Margarita* wreck sites from 1969 to 2018.

I. Historic Introduction

Cultural and Historical Meaning of the 1622 Shipwrecks	1975	Lyon & Mathewson
Mathewson's first article to SHA with Larry Murphy & Bill Spencer	1975	Mathewson
What the Documents Say	1987	Lyon
Spain and the New World	1988	Christie Catalog
Search and Discovery	1988	Christie Catalog
The Ill-Fated Flota of 1622	1988	Christie Catalog

II. Operations

Excerpts from Mathewson's M.A. Thesis		Mathewson
Excerpts from Lyon's Book, 1st Book, 2nd Edition		Lyon
Excerpts from Mathewson's Book		
Digging Procedures - Conference Paper		Mathewson
Atocha's A-Team		Shaughnessy
Atocha NG	Lyon	
Margarita NG		Lyon
Beyond the Glitter: PCD Notes & Interpretation		Mathewson
Queen's Museum Catalog – Archaeological Note		Mathewson
Mapping the Mother Load		Dorwin
Mapping the *Nuestra Senora de Atocha*		Malcolm

III. Survey & Discovery

Hurricane Model Tracking the *Atocha*	1973	John Cryer
Excerpts from Lyons Book	1981	Lyon
Excerpts from Mathewson's Books	1977/86	Mathewson
Pulse Induction Metal Detecting		Brandon
Mail Boxes NOAA Manual	1981	Mathewson
Excerpts from SCR Corps Study	1981	Mathewson

IV. Small Finds

Atocha Glass		Malcolm
Copper Ingots		Malcolm
Bezoar Stones		Malcolm
Pilot's Chest		MacIntosh
Pewter		Malcolm
Shackles		Malcolm
Chain's Box		Malcolm
Swords and Left-Handed Daggers M.A. Degree		Lusardi
Pottery Research Papers 1975-77 at F.A.U.		Mathewson
Archaeology of Tourism		MFMHS
Fasteners		Mathewson
Ceramics from the *Nuestra Senora de Atocha* - Wrecked 1622	1986	Marken
Atocha Porcelain		Malcolm
Lead Bale Seal		Tedesco

V. Coins

Coins of the *Atocha*	Sandy McKinney
The Lima Chest	Sandy McKinney
1622 Coins A.N.A. Booklet	Neil Harris
Early Lima Mint Coin	Malcom
Coins of the Lost 1622 Wrecks	KT Budd Jones
Gold & Silver Coins of the *Atocha* & *Margarita*	Christie Catalog

VI. Historical & Archaeological Interpretations

The Face of 17th Century Spain	Byrna West
Portrait & Identity	M. Burnside
Influence in 16th Century Spanish Decorative Arts	Andrews Kelly
Mestizo Silver	James Sinclair, MA
A Bridge of Ships	Eugene Lyon
Faith, Hope, & Tragedy	K. Amundson & Sandy McKinney
Mestizo Art	MFMHS Staff

VII. Conservation

Iron Conservation, Seabed to Showcase	James Sinclair, MA
Shortcuts to Artifact Drawing	Larissa Dillon
Making Something from Nothing	W. Zacharchuk
Cross Staff Restoration	Stimpson
Restoration of the poison Cup	Joseph Turnbach,
Coin Cleaning	Henry Taylor

VIII. Jewelry

Jewels of Spain 1491, 1972,1942	Priscilla Muller
Emeralds of the *Atocha*	Manual Marcial
Emeralds of the *Atocha*	Christie's Catalog
1622 Jewelry	Muller

IX. Historical Documentation

Excerpts from Gene's Book	Eugene Lyon
1622 Manifests	Eugene Lyon
Cannon List	Eugene Lyon
Ships Papers	Eugene Lyon

X. Exhibition & Education

Behind the Scenes at MFMHS	John McGarry
Producing an Astrolabe: An Ancient Craft	Bwitt & Zacharchuk
Curatorial Methods	John McGarry
Made by Loving Hands at Work	Sandi Dalton
If Shipwrecks Could Talk Middle School Module Ph.D. Dissertation	Mathewson
Sunken Treasure (Book)	Gail Gibbons
The Search for the Atocha Treasure (Book)	O'Byrne-Pelharn & Balcer

XI. Navigation

Navigation on the *Nuestra Senora de Atocha* I & II	John Cryer
Atocha Astrolabes - Book & Articles Early 16th Century Navigation	Stimpson
Early 16th Century Navigation	Christie's Catalog
Mariners Astrolabes	Malcom
Astrolabe Picture	National Geographic
Astrolabe & Navigational Dividers – Sundial	Queens Museum

XII. Gold & Silver Bullion

Bullion of the *Atocha & Santa Margarita*	Christie's Catalog
Marks on *Atocha* Silver	Christie's Catalog
Spanish Treasure Bars from New World Shipwrecks (Book)	Alan Craig & Ernie Richards
1622 Silver Wares	Green

XIII. Hull Structure

Atocha Timbers: A Preliminary Study		David Moore
Heritage in Wood		David Moore
Atocha Hull Structure		Schwicker
Atocha Reconstruction Notes & Drawings		Muir
Atocha Timbers at FKCC		Mathewson
Lead Hull – Sheathing	Malcom	
Atocha Timbers: Field Notes & interpretation		Mathewson
Excerpts from Book		Mathewson
Spanish Galleons 1530-1690	2004	Angus Konstam

XIV. Guns

Excerpts from Book and MA	Mathewson
Excerpts from Book with Documents	Lyon
Guns of the *Atocha*	Mathewson
Atocha Guns	Muir
Where are all the Cannons?	Angus Konstam

XV. Ground Tackle

Excerpts from Book	Mathewson
Atocha Anchors	Muir
1622 Anchors	Portia Takakjian

XVI. Ballast

Excerpts from Conference Papers & Field Notes	Mathewson

XVII. Organic Remains

Ostogical Remains on *Santa Margarita*	Olsen
Floating Technique for Plant Residue	Malcom

XVIII. Data Analysis

Early Computer Systems (1985-1995)	Taffi Fisher Abt & Mark Carlson
Later Computer Systems (1995-2005)	Gary Randolph & Cliff Siriman
Computerized Mag Systems & Side-Scan Anomaly Mapping & Bathymetric Contouring (2000-2005)	Gary Randolph & Cliff Siriman

XIX. Legal Cases

(To Be Listed)	Horan, Lewis, McHaley, VanderCreek

XX. Addendum (In MFMHS Library)

(Some titles are duplicated in earlier sections)

The Nuestra Senora de Atocha: A Report of Investigations of a Spanish Galleon Sunk off Key West in 1622	Dr. John Dorwin
Archaeology and The Nuestra Senora de Atocha	Dr. John Dorwin
Mapping the Nuestra Senora de Atocha 1985-86	Cory Malcom
Preliminary Assessment of the Structural Remains of the Nuestra Senora de Atocha	David Moore
Timbers of the Atocha	William Schwicker ill
The Anchors of the 1622 Spanish Galleons Atocha and Santa Margarita	Portia Takakjian
Preliminary Report on the Two Anchors Found in Hawk Channel	Duncan Mathewson
Guns of the 1622 Spanish Galleons - A Preliminary Study	William Muir
Wood Containers of the Atocha: Specie Boxes, Pilot's Chest, and Chain Box	David MacIntosh

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- AGI Contratacion 5019, 27 June 1623 - Consego to Casa

- AGI Santo Domingo 101, 1623 - Loss of ship w/ bronze cannon

- AGI Santo Domingo 101,13 July 1623 - Governor of Havana to King

- AGI Santo Domingo 132, 15 November 1623 - Vargas to King

- AGI Contratacion 3041, "Papeles de Armada, de las arcs 1622 a 1624.11

- AGI Ind. Gen. 1148, 29 April 1625 - Lost cannon

- AGI Ind. Gen. 1151, 19 January 1627 – Administrators of Averia to King

- AGI Santo Domingo 132, 22 April 1627 - Francisco Nunez Melian to King

- AGI Esc. de Camera 1022 B, 1627.- Petition presented before the Consejo de lndias

- AGI Santo Domingo 132, Havana, 24 September 1628 Francisco NuEez de Melian letter

- AGI Santo Domingo 132, 18 October 1628 – Contador of Havana to the King

- AGI Ind. Gen. 756, 16 February 1629 - Consejo de lndias to the King

- AGI Santo Domingo 870, 27 March 1629 Francisco NuEez de Melian to the King

- AGI Santo Domingo 132, 5 October 1629 Francisco NuRez Melian to the King from Havana

- AGI Contratacion 2899 - Rosario info

- Bib. Nae., Sec. de Mans. Legajo 2468 - "Desc, Geographicas....' por Capt. Nicholas de Cardona, 1632. (Book with the 1622 wreck location chart)

- Dura, "Armada Espanola," Tomo N - Notes concerning 1622 Fleet disaster

- Chaunu, Tome V, pp. 50-60 - Data concerning the ships of the 1622 Fleets

- AGI Contratacion 5020, 2 August 1632 - King to Casa de Contratacion Officials

- AGI Ind. Gen. 761, 7 August 1640 - Consejo de lndias to the King

- AGI Contratacion 2988, "Relation of the equipment of artillery, arms, and munitions necessary" to arm the eight galleons and three pataches of the Armada ...

- AGI Santo Domingo 132, Ferrara contract to build *Atocha*.

- AGI lndiferente General 1144, List of artillery aboard the *Atocha* and *Santa Margarita*.

- AGI lndiferente General 2535 (c.1609) and AGI Contratacion 3859 (c.1616), Data concerning bronze gun types and cannonball weights

- AGI Contratacion 3008, Nails & fastenings used on 450-ton vessel

- AGI Contratacion 2211, Registry or manifest for the *Atocha*

- AGI Contratacion 818, *Santa Margarita* silver bar recovery

- AGI Contaduria 1394, lndiferente General 1146, and Contratacion 3003, Concerns 1622 tobacco lading.

- AGI Contratacion 3003 & 4449, and lndiferente General 754 (averia relacion of 1623), Concerns 1622 indigo lading

- AGI Contratacion 5116, "Relation of those drowned in the two galleons lost on 5 September 1622 in the Caveza de los Martires, thirty leagues from Havana-"

- AGI EC 956, Concerns contraband on 1622 wrecks

- Biblioteca Nacional (Madrid)', MS 2468, fol.53, Map and description of Nicholas de Cardona worked with Vargas in 1623

- AGI IG 755, 1144, 1146, 1149, 1265, 1463, 1465, 1953, 2535, 2699

- AGI Mexico 469

- AGI CT 818, 2987, 2988, 4499, 5116, 5173, 5175, 5189

- AGI SD 101,132,134, 135.,233, 570

- AGI Escribania de Camara 76-A, 76-B, 1080-A, 1080-B

- AGI Contraduria 1112

- Miscellaneous documentary evidence concerning the 1622 Flota disaster, ships, and cargo (compiled, translated, and edited by Gene Lyon; AGI Contaduria 1112; Escribania de Camara 75-A; Santo Domingo 132,134,570; Contratacion 90-A, 2211, 2988, 3003, 4449; lndiferente General 754, 1144; Santa Fe 192)

Shipwright's contract for four galleons (c.1616) including the *Nuestra Senora de Atocha* (translated by Dr. Gene Lyon); AGI lndiferente General 1869 (Qualities needed in Armada ships, c.1620-21) and Contratacion 90-A (List of supplies taken to Havana for Ferrara).

AGI CT 4929, Miscellaneous documents concerning the construction of the Ascension (c.1590) and the rations, foodstuffs, containers and stowage of the Los Tres Reyes c.17th century (compiled and translated by Dr. Gene Lyon)

18 Appendix-8, Index of Previous FKNMS Permits

18.1 Atocha FKNMS Permit History Log

- 1997-12-22_FKNMS-200-97_Atocha Emerald City Permit.pdf
- 1998-08-31 Army Corp Letter - No ACE Permit Required on Atocha.pdf
- 1998-08-31 Atocha Permit FKNMS-075-98 08-31-1998 to 08-31-1999.pdf
- 1998-12-17 Atocha Permit FKNMS-075-98 Amendment-1 165-Line Extension.pdf
- 1999-08-25 Atocha Permit FKNMS-99-052 08-25-1999 to 12-31-2003.pdf
- 2000-03-31 Atocha Permit Amendment-1 Quicksands extension.pdf
- 2000-05-23 Atocha Permit Amendment-1 Admiralty rights letter.pdf
- 2001-10-03 Atocha Permit Amendment-2 added Par 2a.pdf
- 2002-10-07 Atocha Permit Kims request to excavate 4 hits.pdf
- 2002-10-07 Atocha Permit Kims request to excavate 4 hits_fax.pdf
- 2002-10-09 Atocha Permit Amendment-3 excavate 4 hits.pdf
- 2003-01-23 Atocha Permit Amendment-4 excavate 2 hits.pdf
- 2004-01-05 Atocha Permit Amendment-5 01-01-2005 to 01-01-2007.pdf
- 2006-12-29 Atocha Permit FKNMS-2006-052 01-01-2007 to 11-30-2009.pdf
- 2009-11-06_Atocha Permit Amendment-A1 11-06-2009 to 04-01-2010.pdf
- 2010-03-30 Atocha Permit Amendment-A2 04-01-2010 to 03-01-2013.pdf
- 2012-04-03 FKNMS John Halas Retirement notice & no night work.pdf
- 2012-06-21 Atocha Permit Amendment-A3 06-13-2012 to 03-01-2013.pdf
- 2013-03-08 Atocha Permit Amendment-A4 03-08-2013 to 04-01-2016 .pdf
- 2013-07-03 Atocha Permit Amendment-A5 07-03-2013 to 04-01-2016.pdf
- 2015-04-28 Atocha Permit Amendment-A6 04-28-2015 to 04-01-2016_HAUV test area.pdf
- 2016-04-04 Atocha Permit FKNMS-2016-052 04-04-2016 to 04-01-2017 .pdf
- 2017-03-31 Atocha Permit Amendment-A1 03-31-2017 to 10-01-2017.pdf
- 2017-09-28 Atocha Permit Amendment-A2 09-29-2017 to 12-31-2017_Irma Extension.pdf
- 2017-12-22 Atocha Permit Amendment-A3 12-22-2017 to 12-30-2018_Bio Survey Extension.pdf

18.2 MARGARITA FKNMS PERMIT HISTORY LOG

1998-12-22 Margarita Permit FKNMS-1998-110 12-23-1998 to 12-22-2001 .pdf
1998-12-23 Margarita Permit corrected page-4.pdf
2001-12-17 Margarita Permit Amendment-A1 12-23-2001 to 12-23-04.pdf
2002-03-18 Margarita Permit Amendment-A2 3-18-02 to 12-31-04.pdf
2002-03-26 Margarita Permit Amendment-A2 correction.pdf
2004-12-16 Margarita Permit Amendment-A3 12-23-2004 to 12-23-2007.pdf
2005-01-01 Margarita Permit Amendment-A4 FKNMS SKIPPED THIS AMENDMENT NUMBER.pdf
2007-08-15 Margarita Permit Amendment-A5 correction.pdf
2007-12-14 Margarita Permit Amendment-A5 2007-12-23 to 2010-11-30.pdf
2009-11-06 Margarita Permit Amendment-A6 11-05-2009 to 04-01-2011.pdf
2010-06-16 Margarita Permit Amendment-A7 06-16-2010 to 04-01-2011.pdf
2011-03-21 Margarita Permit Amendment-A8 04-01-20110 to 4-01-2014.pdf
2012-04-03 FKNMS John Halas Retirement notice & no night work.pdf
2012-06-21 Margarita Permit Amendment-A9 06-13-2012 to 04-01-2014.pdf
2013-07-03 Margarita Permit Amendment-A10 07-03-2013 to 04-01-2014.pdf
2014-04-09 Margarita Permit Amendment-A11 04-01-2014 to 04-01-2017.pdf
2017-03-31 Margarita Permit Amendment-A12 03-31-2017 to 10-01-2017.pdf
2017-09-28 Margarita Permit Amendment-A13 09-28-2017 to 12-31-2017.pdf
2017-12-22 Margarita Permit Amendment-A14 12-22-2017 to 12-30-2018.pdf

19 APPENDIX-9, ORIGINAL FKNMS ATOCHA PERMIT

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Florida Keys National Marine Sanctuary
Upper Keys Region
P.O. Box 1083
Key Largo, FL 33037

December 22 , 1997

Melvin A. Fisher
Motivation, Inc.
200 Greene St.
Key West, FL 33040

Dear Mr. Fisher:

The Sanctuary staff and the Florida Division of Historical Resources have received your request for a permit to conduct recovery activities in the Florida Keys National Marine Sanctuary (FKNMS). Enclosed you will find permit number FKNMS-200 97 to recover emeralds from the Atocha site. However, this permit will not be valid until you obtain a US Army Corps of Engineers permit and provide us with a copy. Please contact Oswaldo Collazo in the regulatory branch in Jacksonville at (904) 232-1675.

You should notify the FKNMS Lower Region Office at (305) 292 0311 prior to conducting the recovery activities under this permit. The regional Sanctuary manager should be aware of your activities and schedule of cruises. In addition, the enclosed NOAA research flag must be flown from your vessel while conducting permitted activities to alert others that research is in progress. The flag must be returned when your permit expires.

Should you have any questions regarding this permit or National Marine Sanctuary permits in general, please contact me at (305) 852-7717, ext. 35, or Mr. John Halas at ext. 34. Thank you for your cooperation with the Florida Keys National Marine Sanctuary.

Sincerely,

Paul D. Moen

Paul D. Moen
Upper Keys Regional Manager

encl.
cc: B. Causey, JHalas/FKNMS
H. Golde, G. Torres/GAD HQ
O. Varner, M. Weiss/GCOS
J. Miller/Florida Division of Historical Resources
D. Boardman/ USACE
J. Dougherty

PERMIT
FKNMS-200-97

TO CONDUCT RECOVERY (§ 922.166(c)) ACTIVITIES ON A PRIVATELY OWNED VESSEL (THE ATOCHA) IN THE FLORIDA KEYS NATIONAL MARINE SANCTUARY

This recovery permit is issued in accordance with the National Marine Sanctuaries Act (NMSA), 16 USC 1431 et seq., implementing regulations (15 CFR Part 922), and the Florida Keys National Marine Sanctuary and Protection Act (FKNMSPA), PL 101-605, 16 U.S.C. 1433 note. All activities shall be conducted in accordance with those regulations, laws, and the management plan for the Florida Keys National Marine Sanctuary (FKNMS), however, activities which would otherwise be prohibited under § 922.163(a)(3), (4) and (9), may be conducted in strict accordance with the terms and conditions of this permit.

No deaccession/transfer permit (§ 922.166(d)) is required for recovery of the emeralds from the Atocha as NOAA does not dispute that the permittee Motivation Inc. and President Mel Fisher have title to the Atocha and its cargo. Execution of this permit shall not be taken as a waiver of such title or of any related preexisting rights of access which may still be valid under Federal Admiralty Law.

Subject to the terms and conditions of this permit, Motivation Inc. and Melvin A. Fisher as President are hereby granted permission to conduct recovery activities within the FKNMS. All activities are to be conducted in accordance with the terms and conditions of this permit, provided however, if there are any conflicts between your permit request and the terms and conditions of this permit, the terms and conditions of this permit and the above laws shall be controlling.

In addition to the above terms and conditions, the following terms and conditions apply to this permit:

Special Conditions

1. This permit is effective as of the approval signature and date shown at the end of this permit, and will will remain in effect for one year.

2. This permit may be extended for subsequent years, provided that Motivation, Inc. continues to hold valid admiralty rights to Atocha and complies with all terms and conditions of this permit. An application for extending this permit must be submitted at least 60 days prior to the expiration date of this permit to the individuals listed in General Condition #4.

3. The following activity is allowed under this permit:

Airlifting, using a suction dredge, of sediments and associated emeralds within an area limited to a 1500 yard radius around the geographic position of the primary Atocha site, commonly known as "Emerald City", located at the following coordinates: Lat. CONFIDENTIAL DATA [redacted] seconds N; Lon. CO degrees, [redacted]

4. Alteration of the seabed and discharge of sediments shall be conducted in a manner that does not destroy, harm, or injure seagrass, hardbottom or coral reef communities. The Florida Department of Environmental Protection staff, may accompany FKNMS staff to observe the dredging and discharging activities authorized under this permit and any Army Corps of Engineers permit to determine whether additional conditions are required to address water quality impacts. If FKNMS and FDEP staff determine that the activities are resulting in injury to, loss, or destruction of Sanctuary resources or qualities, including water quality, FKNMS staff will require permittee to cease operations until such time that the permittee alleviates the problem to the satisfaction of FKNMS in consultation with FDEP and ACOE, and FKNMS modifies this permit accordingly. At a minimum, environmental restoration must be performed by the permittee for any injury caused by the conduct of activities carried out under this permit.

5. The use of prop-wash deflectors is expressly prohibited.

6. This permit is granted with the presumption that no intact archaelogical deposits exist at the point where emeralds are permitted to be recovered. However, other archaelogical deposits may exist elsewhere within the federal admiralty court order area. This permit does not extend to recovery of such remains. NOAA and the State of Florida will cooperate with the permittee on additional permits to cover such remains if requested.

General Conditions

1. All persons participating in the permitted activity shall be under the supervision of Motivation, Inc., the permittee, as represented by Mel Fisher, President, and the permittee shall be responsible for any violation of this permit, the NMSA, regulations thereunder, and the FKNMSPA. The permittee shall assure that all persons performing activities under this permit are fully aware of the conditions herein. Prior to conducting activities under this permit, the permittee must send written notice to NOAA as to the designee in charge of field operations, as well as a list of those employees, contractors, agents and others who may be conducting activities under this permit.

2. This permit is not valid until the permittee submits the following to NOAA: a copy of a list identifying the Motivation employee or contractor which is responsible for operations under this permit; a list of employees and contractors which will be conducting activities under this permit; and the vessel to be used.

3. NOAA reserves the right to have an observer(s) aboard the permittee's vessel during all activities authorized by this permit. The NOAA Observer(s) may document the permittee's activities for the purpose of determining whether the permitted activities are conducted in accordance with the terms and conditions of this permit and the applicable statutes and regulations. The NOAA Observer(s) may also provide limited advice and technical assistance, if requested by the permittee. The NOAA Observer(s) will not be present for the purpose of safety of permittees, nor for the purpose of approval of activities not specifically authorized by this permit.

4. The permittee shall maintain a cruise log. The log shall contain a daily description of cruise activities including geographic locations (GPS coordinates) and brief descriptions of who conducted which activities. Within 3 days of the end of each cruise, the permittee shall submit copies of the cruise log to the person listed below:

   Mr. John Halas
   Resource Manager, NOAA/FKNMS
   P.O. Box 1083
   Key Largo, FL 33037

5. The permittee shall also provide a final report, either 30 days after the expiration of the permit or 30 days prior if a renewal is desired, that describes all of the recovery activities conducted under this permit. The report should include the following information: a site map, description of artifacts found and their location in the site map, and copies of photos of tagged artifacts where appropriate or after recovery. In addition, copies of all written reports, publications and videotapes resulting from the activities described in this permit will be submitted to Mr. Halas. Except for reports produced by the permittee, all intellectual property rights will remain with the producer of the publication or videotape.

6. A Sanctuary research flag shall be flown from all vessels under this permit while conducting permitted activities in the Sanctuary. A flag is enclosed with this permit. If additional flags are needed, they can be obtained from the lower keys regional office in Key West (305-292-0311).

7. This permit is non-transferable and shall be carried by the permittee at all times while engaging in any activity authorized by this permit.

8. This permit may be amended under appropriate circumstances. Any request for modification should be submitted to the individuals listed in General Condition #4.

9. This permit may be suspended, revoked, or modified for violation of the terms and conditions of this permit, the regulations at 15 CFR Part 922, the NMSA, the FKNMSPA, or for other good cause shown. Such action shall be communicated in writing to the applicant or permittee, and shall set forth the reason(s) for the action taken.

10. This permit may be suspended, revoked or modified if requirements from previous permits or authorizations issued to the permittee are not fulfilled by their due date. Permit or authorization applications for any future activities in the Sanctuary by the permittee may not be considered if the permittee is out of compliance with the conditions of this permit.

11. If the permittee or any person acting under his supervision conducts, or causes to be conducted, any activity in the Sanctuary not in accordance with the terms and conditions set forth in this permit, or who otherwise violates such terms and conditions, the permittee shall be subject to civil penalties, forfeiture, costs, and all other remedies under the NMSA, the FKNMSPA, and the regulations at 15 CFR Part 922.

12. Any publications and/or reports resulting from these activities produced by the permittee shall include the notation that the activity was conducted under National Marine Sanctuary Permit FKNMS-200-97 and be sent to the individuals listed in General Condition #4.

13. This permit does not relieve the permittee of responsibility to comply with all other applicable Federal, State and local laws and regulations, and this permit is not valid until all other necessary permits and/or authorizations are obtained.

14. Any question or interpretation of any term or condition of this permit shall be resolved by the Director of the Office of Ocean and Coastal Resource Management, NOAA. However, this permit may not be interpreted as a waiver of any of Motivation, Inc.'s preexisting rights under Federal admiralty law, or as a waiver of Motivation Inc.'s rights to challenge the applicabiltiy or validity of the Sanctuary regulations and NOAA's actions related thereto. In the event there are questions or a dispute about the permit conditions and the underlying statutes, or regulatory prohibitions, the terms and conditions which permit the conduct of prohibited

activities should be construed narrowly; while the underlaying statutes, regulations and management plan should be interpreted broadly. In the event there is a question of interpretation as to whether a specific acitivity is within the scope of permitted activities, the permittee should contact NOAA and request clarification prior to conducting such activity.

15. This permit supercedes any previous permits issued by NOAA/SRD to permittees Melvin Fisher, Motivation Inc, or Salvors Inc. All such previous permits are null and void.

This permit is effective as of the approval signature and date shown below.

Approved: Paul D. Moen Date: 12/22/97

Paul D. Moen, Lieutenant Commander/NOAA
Manager, Upper Keys Region/FKNMS

National Marine Sanctuary Program

Florida Keys

Upper Region Office
P.O. Box 1083
Key Largo, Florida 33037

PH: (305) 852-7717
Fax: (305) 853-0877

TO: Gary Randolf / Pat Clyne

FROM: John Hales

SUBJECT: Attached Permit

DATE: 8/31/98

NOTE:
There were a few i's to dot & T's to cross
use this version. I will bring the original tomorrow
John

P.S. I spoke with Chuck Salvagio a few minutes ago. He is putting together a letter for me stating that the Corps not exercise jurisdiction for treasure salvage excavation (mail boxing & airlifting) in federal waters. I will send you or bring a copy when I receive it.
John

This transmission contains 7 pages.

08/31/98 15:14 TX/RX NO.6500 P.001

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE

PERMIT
FKNMS - 075-98

TO CONDUCT RECOVERY ACTIVITIES ON A PRIVATELY OWNED VESSEL IN THE FLORIDA KEYS NATIONAL MARINE SANCTUARY

This research and recovery permit is issued in accordance with the National Marine Sanctuaries Act (NMSA), 16 USC 1431 et seq., implementing regulations (15 CFR Part 922), and the Florida Keys National Marine Sanctuary and Protection Act (FKNMSPA), PL 101-605, 16 U.S.C. 1433 note. All activities shall be conducted in accordance with these regulations, laws, and the management plan for the Florida Keys National Marine Sanctuary (FKNMS), however, activities which would otherwise be prohibited under § 922.163(a)(3), (4) and (9), may be conducted in strict accordance with the terms and conditions of this permit.

No deaccession/transfer permit (§ 922.166(d)) is required for recovery of *Atocha* cargo as NOAA does not dispute that the permitee Motivation Inc. and President Melvin A. Fisher have title to the *Atocha* and its cargo. Execution of this permit shall not be taken as a waiver of such title or of any related preexisting rights of access which may still be valid under Federal Admiralty Law.

Subject to the terms and conditions of this permit, Motivation Inc. and Melvin A. Fisher as President are hereby granted permission to conduct recovery activities within the FKNMS. All activities are to be conducted according to the application and reports submitted to the Florida Keys National Marine Sanctuary on June 23, July 24, and August 13, 1998, incorporated by reference to this permit, and the terms and conditions of this permit. If there are any conflicts between such application and reports and the terms and conditions of this permit, the terms and conditions of this permit and the above laws shall be controlling.

In addition to the above terms and conditions, the following terms and conditions apply to this permit. No further disturbance of the cultural or living resources of the Sanctuary is permitted.

Special Conditions

1. This permit is effective as of the approval signature and date shown at the end of this permit, and will remain in effect for one year.

2. The permitee is authorized to conduct excavation and recovery of the *Atocha* track, all of which lies in Federal waters, utilizing airlift suction dredges and propwash deflectors as follows:

   a. All excavation and recovery activities shall be conducted within 600 yards of the axis connecting previously excavated *Atocha* archaeological deposits between the *Atocha* main site [redacted] and the nine bronze cannon site ([redacted] N [redacted]W) as depicted in the survey and inventory final report submitted to the FKNMS and located within the boundaries of the *Atocha* order of final judgment.

   b. Suction dredges and propwash deflectors shall not be used at the following locations known to contain sensitive coral community patch reef habitats:

08/31/98 15:14 TX/RX NO.6580 P.002

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A-1	CONFIDENTIAL DATA [redacted]	within a 50 meter radius
A-2		within a 35 meter radius
A-3		within a 30 meter radius
A-4		within a 35 meter radius
A-5		within a 65 meter radius
A-6		within a 55 meter radius
A-7		within a 70 meter radius
A-8		within a 35 meter radius
A-9		within a 30 meter radius
A-10		within a 45 meter radius
A-11		within 20 m of 17' patch reef at this location
A-12		within 20 m of 9 bronze cannon coral plateau

c. Airlifting and propwash deflectors shall not be used on or within 25 meters of any seagrass bed, hard bottom community, or coral community that may be encountered and is not listed above. If any seagrass bed, hard bottom community, or coral community not listed above is encountered, the permittee shall immediately notify the individual listed in general condition #4 and provide him exact coordinates of the natural resource in question.

d. The permittee shall use only the minimum amount of engine RPM necessary to remove overburden without harming the natural and underlying archaeological resources and shall follow the twin prop-wash deflector tables, attached to this permit and made a part hereof, and in no case shall the permittee exceed the maximum RPM and time combination for any depth listed in the tables.

3. If the *Anacha* trail leads beyond 600 yards of the designated axis within the court awarded area and the permittee wishes to excavate this additional area, the permittee shall contact the individual listed in general condition #4 of this permit so that a natural resources assessment can be conducted. Additional required survey and inventory documentation must accompany the request before the permit may be amended to cover the new area.

4. Alteration of the seabed and discharge of sediments shall be conducted in a manner that does not destroy, harm, or injure seagrass, hardbottom or coral reef communities. The Florida Department of Environmental Protection (FDEP) and U.S. Army Corps of Engineers (ACOE) staffs may accompany FKNMS staff to observe excavation and recovery activities authorized under this permit to determine whether additional conditions are required to address water quality impacts. If FKNMS, ACOE and FDEP staff determine that the activities are resulting in injury to, loss, or destruction of Sanctuary resources or qualities, including water quality, FKNMS staff will require the permittee to cease operations until such time that the permittee alleviates the problem to the satisfaction of FKNMS, in consultation with FDEP and ACOE, and the FKNMS modifies this permit accordingly. At a minimum, environmental restoration must be performed by the permittee for any injury caused by the conduct of activities carried out under this permit.

5. Propwash deflectors or suction dredges shall not be used during times that current or sea conditions cause excavation sediment plumes to carry over any known patch reefs. NOAA believes the use of propwash deflectors or blowers as a method of excavation is potentially harmful to the resources, but may not be damaging in controlled situations.

6. This permit does not extend to recovery of non-*Atocha* archaeological deposits. If the permittee wishes to recover non-*Atocha* archaeological deposits, he must notify the individual listed in #4 immediately and must submit a separate permit application to NOAA.

7. This permit may be extended for subsequent years, provided that permittee continues to hold valid admiralty rights to *Atocha* and complies with all terms and conditions of this permit. An application for extending this permit must be submitted at least 60 days prior to the expiration date of this permit to the individual listed in General Condition #4.

General Conditions

1. All persons participating in the permitted activity shall be under the supervision of Motivation Inc., the permittee, as represented by Melvin A. Fisher, President, and the permittee shall be responsible for any violation of this permit, the NMSA, regulations thereunder, and the FKNMSPA. The permittee shall assure that all persons performing activities under this permit are fully aware of the conditions herein. Prior to conducting activities under this permit, the permittee must send written notice to NOAA as to the designee in charge of field operations, as well as a list of those employees, contractors, agents and others who may be conducting activities under this permit.

2. This permit is not valid until the permittee submits the following to NOAA: a copy of a list identifying the Motivation employee or contractor which is responsible for operations under this permit; a list of employees and contractors which will be conducting activities under this permit; and the vessel to be used.

3. NOAA reserves the right to have an observer(s) aboard the permittee's vessel during all activities authorized by this permit. The NOAA Observer(s) may document the permittee's activities for the purpose of determining whether the permitted activities are conducted in accordance with the terms and conditions of this permit and the applicable statutes and regulations. The NOAA Observer(s) may also provide limited advice and technical assistance, if requested by the permittee. The NOAA Observer(s) will not be present for the purpose of the safety of the permittee, nor for the purpose of approval of activities not specifically authorized by this permit.

4. The permittee shall maintain a cruise log. The log shall contain a daily description of cruise activities including geographic locations (GPS coordinates) and brief descriptions of who conducted which activities. Within 3 days after the end of each cruise, the permittee shall submit copies of the cruise log to the person listed below:

   Mr. John Halas
   Resource Manager, NOAA/FKNMS
   P.O. Box 1083
   Key Largo, FL 33037
   (305) 852-7717 x34

5. The permittee shall also provide a final report, either 30 days after the expiration of the permit or 30 days prior if a renewal is desired, that describes all of the recovery activities conducted under this permit. The report should include the following information: a site map, description of artifacts found and their location in the site map, and copies of photos of logged artifacts where appropriate or after recovery. In addition, copies of all written reports, publications and videotapes resulting from the activities described in this permit will be submitted to the individual listed in general condition #4. Except for reports produced by the permittee, all intellectual property rights will remain with the producer of the publication or videotape or other valid holder of such rights.

6. A NOAA flag shall be flown from all vessels under this permit while conducting permitted activities in the Sanctuary. A flag is enclosed with this permit. If additional flags are needed, they can be obtained from the lower keys regional office in Key West (305-292-0311).

7. This permit is non-transferable and shall be carried by the permittee at all times while engaging in any activity authorized by this permit.

8. This permit may be amended under appropriate circumstances. Any request for modification should be submitted to the individual listed in General Condition #4.

9. This permit may be suspended, revoked, or modified for violation of the terms and conditions of this permit, the regulations in 15 CFR Part 922, the NMSA, the FKNMSPA, or for other good cause shown. Such action shall be communicated in writing to the applicant or permittee, and shall set forth the reason(s) for the action taken.

10. This permit may be suspended, revoked or modified if requirements from previous permits or authorizations issued to the permittee are not fulfilled by their due date. Permit or authorization applications for any future activities in the Sanctuary by the permittee may not be considered if the permittee fails to comply with conditions of this permit.

11. If the permittee or any person acting under his supervision conducts, or causes to be conducted, any activity in the Sanctuary not in accordance with the terms and conditions set forth in this permit, or who otherwise violates such terms and conditions, the permittee or other such other person shall be subject to civil penalties, forfeiture, costs, and all other remedies under the NMSA, the FKNMSPA, and the regulations at 15 CFR Part 922.

12. Any publications and/or reports resulting from these activities produced by the permittee shall include the notation that the activity was conducted under National Marine Sanctuary Permit FKNMS-075-98 and be sent to the individual listed in General Condition #4.

13. This permit does not relieve the permittee of responsibility to comply with all other applicable Federal, State and local laws and regulations, and this permit is not valid until any other necessary permits and/or authorizations are obtained. Copies of such permits and authorizations shall be submitted to the individual listed in general condition # 4.

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14. Any question or interpretation of any term or condition of this permit shall be resolved by the Director of the Office of Ocean and Coastal Resource Management, NOAA.. In the event there are questions or a dispute about the permit conditions and the underlying statutes, or regulatory prohibitions, the terms and conditions which permit the conduct of prohibited activities should be construed narrowly; while the underlying statutes, regulations and management plan should be interpreted broadly. In the event there is a question of interpretation as to whether a specific activity is within the scope of permitted activities, the permittee should contact NOAA and request clarification prior to conducting such activity.

15. This permit supersedes any previous permits issued by NOAA/SRD to permittee Melvin A. Fisher, Motivation Inc., or Salvors Inc. All such previous permits are null and void.

This permit is effective as of the approval signature and date shown below.

Approved: _____ Date: 8/21/98

Dave Savage, Lieutenant Commander/NOAA
Manager, Upper Keys Region/FKNMS

20 APPENDIX-10, ORIGINAL FKNMS MARGARITA PERMIT

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE

Florida Keys National Marine Sanctuary
Upper Keys Region
P.O. Box 1083
Key Largo, FL 33037

December 22, 1998

Mr. Kim Fisher
Motivation, Inc.
200 Greene St.
Key West, FL 33040

Dear Mr. Fisher:

The Sanctuary staff and the Florida Division of Historical Resources have received your request for a permit to conduct recovery activities in the Florida Keys National Marine Sanctuary (FKNMS). Enclosed you will find permit number FKNMS-110-98 to conduct recovery operations. This permit may not be interpreted as a waiver of any of Motivation Inc.'s preexisting rights under Federal Admiralty Law, or as a waiver of Motivation Inc.'s rights to challenge the applicability or validity of the Sanctuary regulations and NOAA's actions related thereto.

You should notify the FKNMS Lower Region Office at (305) 292-0311 prior to conducting the recovery activities under this permit. Mr. G. P. Schmahl, the regional Sanctuary manager, should be aware of your activities and schedule of cruises. In addition, the enclosed NOAA flag must be flown from your vessel while conducting permitted activities to alert others that permitted activities are in progress. The flag must be returned when your permit expires.

Should you have any questions regarding this permit or National Marine Sanctuary permits in general, please contact me at (305) 852-7717, extension 35, or Mr. John Halas at extension 34. Thank you for your cooperation with the Florida Keys National Marine Sanctuary.

Sincerely,

Dave Savage
Upper Keys Regional Manager

Encl.
cc: B. Causey, J. Halas, G. P. Schmahl/FKNMS
B. Terrel/SRD HQ
M. Freeman/GCOS
J. Miller/Florida Division of Historical Resources

Printed on Recycled Paper

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE

PERMIT
FKNMS - 110-98

TO CONDUCT RECOVERY ACTIVITIES ON A PRIVATELY OWNED VESSEL IN THE FLORIDA KEYS NATIONAL MARINE SANCTUARY

This research and recovery permit is issued in accordance with the National Marine Sanctuaries Act (NMSA), 16 USC 1431 et seq., implementing regulations (15 CFR Part 922), and the Florida Keys National Marine Sanctuary and Protection Act (FKNMSPA), PL 101-605, 16 U.S.C. 1433 note. All activities shall be conducted in accordance with those regulations, laws, and the management plan for the Florida Keys National Marine Sanctuary (FKNMS), however, activities which would otherwise be prohibited under § 922.163(a)(3), (4) and (9), may be conducted in strict accordance with the terms and conditions of this permit.

No deaccession/transfer permit (§ 922.166(d)) is required for recovery of *Margarita* cargo as NOAA does not dispute that the permittee Motivation Inc. and President Kim Fisher have title to the *Margarita* and its cargo. Execution of this permit shall not be taken as a waiver of such title or of any related preexisting rights of access which may still be valid under Federal Admiralty Law.

Subject to the terms and conditions of this permit, Motivation Inc. and Kim Fisher as President are hereby granted permission to conduct recovery activities within the FKNMS. All activities are to be conducted according to the application and reports submitted to the Florida Keys National Marine Sanctuary on October 29, 1998, incorporated by reference to this permit, and the terms and conditions of this permit. If there are any conflicts between such application and reports and the terms and conditions of this permit, the terms and conditions of this permit and the above laws shall be controlling.

In addition to the above terms and conditions, the following terms and conditions apply to this permit. No further disturbance of the cultural or living resources of the Sanctuary is permitted.

Special Conditions

1. This permit is effective as of the approval signature and date shown at the end of this permit, and will remain in effect for three years.

2. The permittee is authorized to conduct excavation and recovery of the *Margarita* plot, all of which lies in Federal waters, utilizing airlift suction dredges and propwash deflectors as follows within the rectangle delineated by the following coordinates:

   1) CONFIDENTIAL DATA [redacted]

   a. All excavation and recovery activities shall be conducted as depicted in the survey and inventory final report submitted to the FKNMS and located within the boundaries of the *Margarita* order of final judgment.

b. Airlifting and propwash deflectors shall not be used on or within 25 meters of any seagrass bed, hard bottom community, or coral community that may be encountered. If any seagrass bed, hard bottom community, or coral community is encountered the permittee shall notify the individual listed in general condition #4 and provided the exact coordinates of the natural resource in question.

c. The permittee shall use only the minimum amount of engine RPM necessary to remove overburden without harming the natural and underlying archaeological resources and shall follow the twin prop-wash deflector tables, attached to this permit and made a part hereof, and in no case shall the permittee exceed the maximum RPM and time combination for any depth listed in the tables.

3. If the *Margarita* trail leads beyond the designated 1.5 square mile primary area within the court awarded area and permittee wishes to excavate this additional area, the permittee shall contact the individual listed in general condition #4 of this permit so that a natural resources assessment can be conducted. Additional required survey and inventory documentation must accompany the request before the permit may be amended to cover the new area.

4. Alteration of the seabed and discharge of sediments shall be conducted in a manner that does not destroy, harm, or injure seagrass, hardbottom or coral reef communities. The Florida Department of Environmental Protection (FDEP) and U.S. Army Corps of Engineers (ACOE) staffs may accompany FKNMS staff to observe excavation and recovery activities authorized under this permit to determine whether additional conditions are required to address water quality impacts. If FKNMS, ACOE and FDEP staff determine that the activities are resulting in injury to, loss, or destruction of Sanctuary resources or qualities, including water quality, FKNMS staff will require permittee to cease operations until such time that the permittee alleviates the problem to the satisfaction of FKNMS in consultation with FDEP and ACOE, and FKNMS modifies this permit accordingly. At a minimum, environmental restoration must be performed by the permittee for any injury caused by the conduct of activities carried out under this permit.

5. Propwash deflectors or suction dredges shall not be used during times that current or sea conditions cause excavation sediment plumes to carry over any known patch reefs. NOAA believes the use of propwash deflectors or blowers as a method of excavation is potentially harmful to the resources, but may not be damaging in controlled situations.

6. This permit does not extend to recovery of non-*Margarita* archaeological deposits. If the permittee wishes to recover non-*Margarita* archaeological deposits, he must notify the individual listed in #4 immediately and must submit a separate permit application to NOAA.

7. This permit may be extended for subsequent years, provided that permittee continues to hold valid admiralty rights to *Margarita* and complies with all terms and conditions of this permit. An application for extending this permit must be submitted at least 60 days prior to the expiration date of this permit to the individual listed in General Condition #4.

General Conditions

1. All persons participating in the permitted activity shall be under the supervision of Motivation, Inc., the permittee, as represented by Kim Fisher, President, or designee, and the permittee shall be responsible for any violation of this permit, the NMSA, regulations thereunder, and the FKNMSPA. The permittee shall assure that all persons performing activities under this permit are fully aware of the conditions herein. Prior to conducting activities under this permit, the permittee must send written notice to NOAA as to the designee in charge of field operations, as well as a list of those employees, contractors, agents and others who may be conducting activities under this permit.

2. This permit is not valid until the permittee submits the following to NOAA: a copy of a list identifying the Motivation employee or contractor which is responsible for operations under this permit; a list of employees and contractors which will be conducting activities under this permit; and the vessel to be used.

3. NOAA reserves the right to have an observer(s) aboard the permittee's vessel during all activities authorized by this permit. The NOAA Observer(s) may document the permittee's activities for the purpose of determining whether the permitted activities are conducted in accordance with the terms and conditions of this permit and the applicable statutes and regulations. The NOAA Observer(s) may also provide limited advice and technical assistance, if requested by the permittee. The NOAA Observer(s) will not be present for the purpose of safety of permittee, nor for the purpose of approval of activities not specifically authorized by this permit.

4. The permittee shall maintain a cruise log. The log shall contain a daily description of cruise activities including geographic locations (GPS coordinates) and brief descriptions of who conducted which activities. Within 3 days after the end of each month, the permittee shall submit copies of the cruise logs for each vessel for the month to the person listed below:

   Mr. John Halas
   Resource Manager, NOAA/FKNMS
   P.O. Box 1083
   Key Largo, FL 33037
   (305) 852-7717 x34

5. The permittee shall also provide a final report, either 30 days after the expiration of the permit or 30 days prior if a renewal is desired, that describes all of the recovery activities conducted under this permit. The report should include the following information: a site map, description of artifacts found and their location in the site map, and copies of photos of tagged artifacts where appropriate or after recovery. In addition, copies of all written reports, publications and videotapes resulting from the activities described in this permit will be submitted to the individual listed in general condition #4. Except for reports produced by the permittee, all intellectual property rights will remain with the producer of the publication or videotape or other valid holder of such rights.

6. A NOAA flag shall be flown from all vessels under this permit while conducting permitted activities in the Sanctuary. A flag is enclosed with this permit. If additional flags are needed, they can be obtained from the lower keys regional office in Key West (305-292-0311).

7. This permit is non-transferable and shall be carried by the permittee at all times while engaging in any activity authorized by this permit.

8. This permit may be amended under appropriate circumstances. Any request for modification should be submitted to the individual listed in General Condition #4.

9. This permit may be suspended, revoked, or modified for violation of the terms and conditions of this permit, the regulations in 15 CFR Part 922, the NMSA, the FKNMSPA, or for other good cause shown. Such action shall be communicated in writing to the applicant or permittee, and shall set forth the reason(s) for the action taken.

10. This permit may be suspended, revoked or modified if requirements from previous permits or authorizations issued to the permittee are not fulfilled by their due date. Permit or authorization applications for any future activities in the Sanctuary by the permittee may not be considered if the permittee fails to comply with conditions of this permit.

11. If the permittee or any person acting under his supervision conducts, or causes to be conducted, any activity in the Sanctuary not in accordance with the terms and conditions set forth in this permit, or who otherwise violates such terms and conditions, the permittee or other such other person shall be subject to civil penalties, forfeiture, costs, and all other remedies under the NMSA, the FKNMSPA, and the regulations at 15 CFR Part 922.

12. Any publications and/or reports resulting from these activities produced by the permittee shall include the notation that the activity was conducted under National Marine Sanctuary Permit FKNMS-110-98 and be sent to the individuals listed in General Condition #4.

13. This permit does not relieve the permittee of responsibility to comply with all other applicable Federal, State and local laws and regulations, and this permit is not valid until any other necessary permits and/or authorizations are obtained.

14. Any question or interpretation of any term or condition of this permit shall be resolved by the Director of the Office of Ocean and Coastal Resource Management, NOAA. However, this permit may not be interpreted as a waiver of any of Motivation, Inc.'s preexisting rights under Federal Admiralty law, or as a waiver of Motivation Inc.'s rights to challenge the applicability or validity of the Sanctuary regulations and NOAA's actions related thereto. In the event there are questions or a dispute about the permit conditions and the underlying statutes, or regulatory prohibitions, the terms and conditions which permit the conduct of prohibited activities should be construed narrowly; while the underlying statutes, regulations and management plan should be interpreted broadly. In the event there is a question of interpretation as to whether a specific activity is within the scope of permitted activities, the permittee should contact NOAA and request clarification prior to conducting such activity.

15. This permit supersedes any previous permits issued by NOAA/SRD to permittee Kim Fisher, Motivation Inc., or Salvors Inc. All such previous permits are null and void.

This permit is effective as of the approval signature and date shown below.

Approved: _____ Date: 12/23/98

Dave Savage, Lieutenant Commander/NOAA
Manager, Upper Keys Region/FKNMS

21 APPENDIX-11, 2017 ADJUDICATION OF TITLE ORDERS

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF FLORIDA
KEY WEST DIVISION
"IN ADMIRALTY"

CASE NO. 75-1416-CIV-ARONOVITZ (KING)
IN RE: NUESTRA SEÑORA DE ATOCHA

MOTIVATION, INC.,

Plaintiff

vs.

THE UNIDENTIFIED, WRECKED, AND
ABANDONED SAILING VESSEL,
ATOCHA, ETC,

Defendant *in Rem*.
_____/

ORDER ADJUDICATING TITLE TO ARTICLES OF SALVAGE

THIS CAUSE came on before the Court upon Plaintiff's Motion for Order Adjudicating Title to Articles of Salvage and Report of On-Going Salvage Operations and the Court, having retained jurisdiction to protect the valid ownership and operations of Plaintiff and having received an inventory of all artifacts which have been salvaged by the substitute custodian, Motivation, Inc., under assignment from said inventory list having been designated as Exhibit "A" to the above motion, and being otherwise fully advised in the premises, finds that the list of the items on the inventory has been authenticated by the substitute custodian as true and complete and that the items and data relative to the finds has been duly logged and preserved in accordance with the Court's instructions and that the items have been placed in the possession of the Court for the adjudication of title and distribution upon the Court's Order. Accordingly, it is

ORDERED AND ADJUDGED that:

1. Plaintiff, Motivation, Inc., be and the same is hereby awarded title to all artifacts and treasure recovered from the wrecked Spanish Galleon NUESTRA SEÑORA DE

ATOCHA, from the period January 1, 2017, through December 31, 2017, as contained on Exhibit A (Motivation, Inc., Adjudication Report, Atocha 2017), and delivered into the custody of the Court; and

2. Plaintiff, Motivation, Inc., be and the same is hereby directed to continue in its appointment as substitute custodian of artifacts yet to be discovered and recovered; and

3. The Court hereby retains jurisdiction to protect the valid *in rem* ownership by Plaintiff, Motivation., of the wrecked Spanish Galleon NUESTRA SEÑORA DE ATOCHA and all her tackle, armament, apparel and cargo wherever the same may be found and salvage operations of the Plaintiff, Motivation, Inc., and to adjudicate its claim to a salvage award on a periodic basis for those artifacts hereafter recovered; and

4. Plaintiff, Motivation., be, and hereby is directed to continue to file with the Court its annual Report of Salvage Operations for the salvage of the NUESTRA SEÑORA DE ATOCHA.

DONE AND ORDERED at the United States District Courthouse, Key West, Florida, on this 19th day of April, 2018.

JAMES LAWRENCE KING
U. S. DISTRICT JUDGE
SOUTHERN DISTRICT OF FLORIDA

Copies to Counsel of Record

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF FLORIDA
KEY WEST DIVISION
"IN ADMIRALTY"

IN RE: SANTA MARGARITA

MOTIVATION, INC.,

Plaintiff,

vs.

CASE NO. 79-CIV-1381

THE UNIDENTIFIED, WRECKED AND ABANDONED SAILING VESSEL, SANTA MARGARITA, ETC.

Defendant in Rem.

_____/

ORDER ADJUDICATING TITLE TO ARTICLES OF SALVAGE

THIS CAUSE came on before the Court upon Plaintiff's Motion for Order Adjudicating Title to Articles of Salvage and Report of On-Going Salvage Operations and the Court, having retained jurisdiction to protect the valid ownership and operations of Plaintiff and having received an inventory of all artifacts which have been salvaged by the substitute custodian, Motivation, Inc., under assignment from said inventory list having been designated as Exhibit "A" to the above motion, and being otherwise fully advised in the premises, finds that the list of the items on the inventory has been authenticated by the substitute custodian as true and complete and that the items and data relative to the finds has been duly logged and preserved in accordance with the Court's instructions and that the items have been placed in the possession of the Court for the adjudication of title and distribution upon the Court's Order. Accordingly, it is

ORDERED AND ADJUDGED that:

1. Plaintiff, Motivation, Inc., be and the same is hereby awarded title to all artifacts and treasure recovered from the wrecked Spanish Galleon SANTA MARGARITA from the period January 1, 2017, through December 31, 2017, as contained on Exhibit A

(Motivation, Inc., Adjudication Report, Margarita 2017), and delivered into the custody of the Court; and

2. Plaintiff, Motivation, Inc., be and the same is hereby directed to continue in its appointment as substitute custodian of artifacts yet to be discovered and recovered; and

3. The Court hereby retains jurisdiction to protect the valid *in rem* ownership by Plaintiff, Motivation., of the wrecked Spanish Galleon SANTA MARGARITA and all her tackle, armament, apparel and cargo wherever the same may be found and salvage operations of the Plaintiff, Motivation, Inc., and to adjudicate its claim to a salvage award on a periodic basis for those artifacts hereafter recovered; and

4. Plaintiff, Motivation., be, and hereby is directed to continue to file with the Court its annual Report of Salvage Operations for the salvage of the SANTA MARGARITA.

DONE AND ORDERED at the United States District Courthouse, Key West, Florida, on this 19th day of April, 2018.

JAMES LAWRENCE KING
U. S. DISTRICT JUDGE
SOUTHERN DISTRICT OF FLORIDA

Copies to Counsel of Record

“The finding of a great treasure from the days of the Spanish Main is not the cherished dream of only the United States and Florida citizens; countless people from other lands have shared such thoughts. It would amaze and surprise most citizens of this country, when their dream, at the greatest of cost, was realized, that agents of respective governments would, on the most flimsy grounds, lay claim to the treasure”

- Judge William O. Mehrtens

U.S District Court for the Southern District of Florida

August 21, 1978, ruling against the State of Florida