

## **2.0 Research Project Design**

This chapter is presented in two parts. Firstly, Section **2.1** summarises the research methodology concerning the collecting and immediate processing of data for this research project. The full detailed outline of this methodology is included within Appendix **10.0**. Secondly, the chapter focuses upon the approach and methods used to further define and interpret the data in Section **2.2**.

### **2.1 Research Methodology: An Overview**

There are five main parts to the Research Design (Table 10.0.1) and these are presented in detail within Appendix **10.0**. This section will provide an overview of this core methodology, as well as outlining the thesis format.

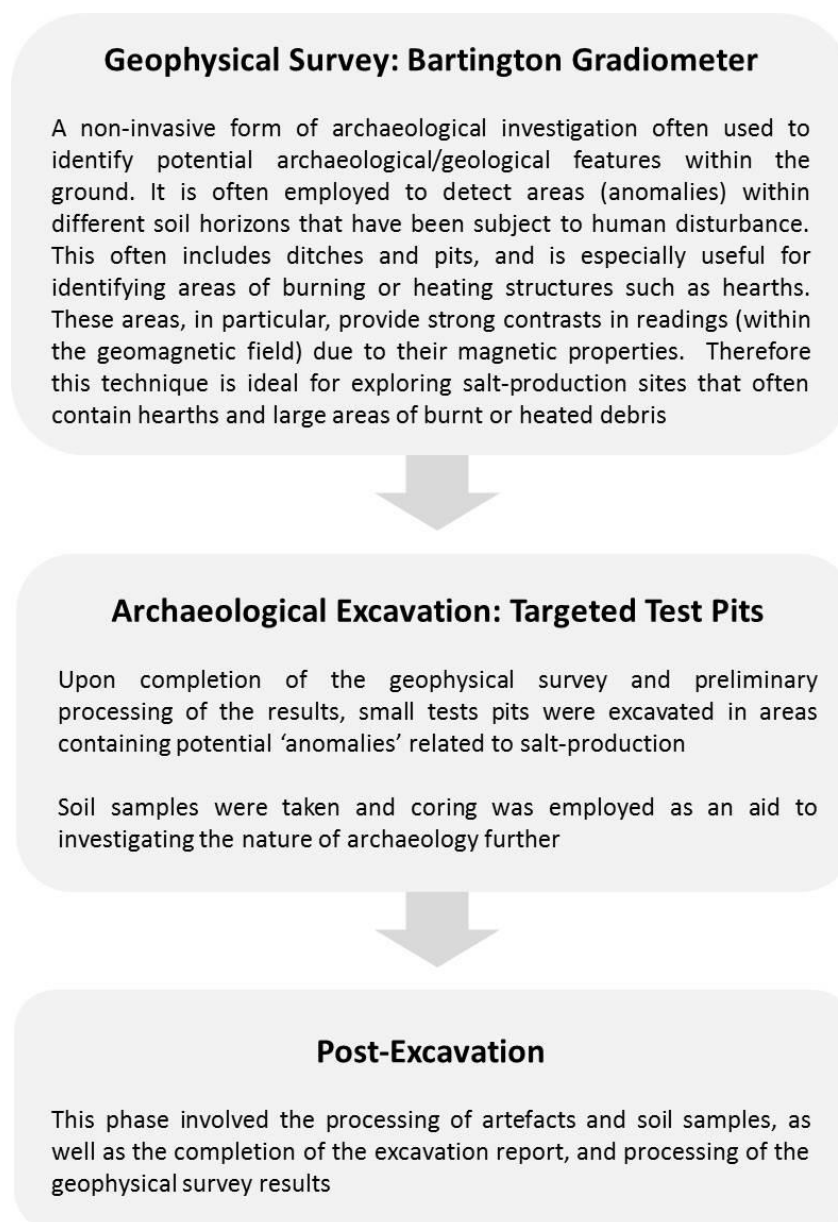
#### **2.1.1 Collecting the Data**

Data collected from a wide range of archaeological databases, as well as published and unpublished literature provided the bulk of the data collection methodology. This includes the collection of data on the archaeological features associated with salt-production sites.

As presented in **1.0**, the presence of briquetage is the primary way in which prehistoric and Roman salt-production sites are identified in Europe, and therefore data specifically related to briquetage assemblages were also recorded. This primarily involved the collection of data that had already been formulated from assessment reports. However, in some cases, accessible briquetage collections were visited and recorded in the assemblages that had not been recorded in any detail.

Site visits were also made in some cases in order to gain a better perspective of the surrounding landscape and preservation issues facing sites.

An element of archaeological fieldwork was also incorporated into this research project, to address specific regarding one region of the study area (Somerset). The data collected during this fieldwork, which included the excavation of test pits and geophysical survey, was incorporated into Chapter 6.0, which provides a regional evaluation of this area. The main methods employed are summarised in Figure 2.1.



**Figure 2.1 Diagram showing the process of archaeological investigation carried out within the Central Somerset Levels**

Further detailed information on the methodology used to conduct the fieldwork can be found within Appendices 10.0 and 10.4.

## 2.1.2 Creating the Research Dataset

Before data collection commenced, a database was designed in order to contain the data and record it consistently. A series of tables were designed to record and hold data specific to the research objectives. However, due to the nature of these particular archaeological remains, this research project was data-led, data-responsive and designed to be as flexible as possible. This therefore inevitably involved altering the database and definitions during and after data collection. This was deemed as important, as although the database was designed with certain definitions in mind (according to studies of salt-production in other UK areas), the exact nature of the archaeology within the study area was unknown, and it transpired that new definitions would be required for the sites.

The main outcomes of using the database are shown in Table 2.1.

**Table 2.1 Database Outcomes**

<b>Database Outcomes</b>	Store all sites individually with a uniquely generated Site ID
	Creation of queries in order to interrogate the data
	Generate a site gazetteer

## 2.1.3 Site Gazetteer and ‘Quick Guide’

The site gazetteer is a comprehensive record of each site, provided in summary form within sequential tables. This unique record is taken directly from the detailed site database.

The site gazetteer forms an important part of this research and involves generating a table for each site with key information that can be used as a guide to those reading this thesis as well as those carrying out future research of salt-production sites. Similarly, a ‘quick look-up guide’ has been provided, which includes key elements of a salt-production site, information about techniques, archaeological features, and artefacts, as well as suggested terminologies and definitions. The Site Gazetteer (Table 10.4.1) is provided digitally on a DVD accompanying the Appendices in Volume Two and the Guide is provided Appendix **10.6**.

#### **2.1.4 Thesis Format**

Key themes explored in Chapters **3.0-8.0** will be provided at the beginning of each chapter. A summary of the main points presented within each chapter is provided at the end.

The main text of this thesis is provided in two volumes. The main text, up to and including Chapter **8.0** (plus References in **9.0**), is provided in **Volume One**. All printed Appendices, are provided in **Volume Two**.

Appendices are used to contain the bulk of data tables, figures, maps and technical information. Each chapter has a separate Appendix. The Appendix table numbers are all sequential according to when they are referred to within the main text. As stated above, the Site Gazetteer is provided digitally, within a DVD disc at the back of Volume Two. This disc also contains a full digital copy of the main thesis text and appendices (pdf documents).

A digital copy of this thesis will also be provided to each of the Historic Environment Record databases within the study area for their archives providing them with the option of feeding the re-interpreted data into their databases.

## **2.2 Interpretation Methodology**

This section considers the methodology used to interpret the dataset, as well as factors potentially affecting the quality and quantity of the dataset. The five main factors considered in this section are listed below in Table 2.2.

Much emphasis in this research project is placed upon the importance of clearly defined and consistent recording strategies and terminologies. As is outlined in the Research Methodology (Appendix **10.0**), this will include a basic overview of the way in which archaeologists have interacted with salt-production sites, including investigation strategies and recording, as well as interpretation methods.

**Table 2.2 Interpretation Methodology sections**

<b>Interpretation Methodology</b>	Main factors impacting the quantity and quality of the dataset
	Interpretation and definition of the dataset
	Key definitions and identified site characteristics
	Key stages of salt-production
	Presentation of the results

One way in which we attempt to make sense of archaeological remains consistently is to define remains based upon physical attributes and probable function. For example, a hearth thought to have been used in salt-production could be recorded as ‘enclosed, clay-lined brine evaporation hearth’, or ‘clay-lined salt-production fire-pit’ which incorporates description and function.

For this research project, only descriptive terms have been used as it is possible that some features/objects had multi-functional attributes. However, for salt-production, certain forms of feature and objects are generally considered to be representative of different stages of salt-production, therefore, their presence has been used to attribute certain events that took place in the process of producing salt. These key stages are outlined shortly.

When collecting the archaeological data for this research project, it was inevitable that similar features or objects, or general site attributes, had been ‘labelled’ differently, according to the preference of the excavators and authors of site reports and more general reviews. Although it is becoming more common to record sites in the archaeological record using shared, pre-defined terms in shared collective databases such as those in Historic Environment Records, or projects such as the ‘Archaeological Investigations Project’ (recently replaced by ‘OASIS’: Archaeology Data Service 2003) there is still a lot of inconsistency in earlier records. Also, inevitably, there will be new archaeological remains which do not fit these standard definitions, and may challenge the validity of these terms, and require new or amended definitions. This is the nature of archaeological investigation. Therefore, incorporating an option for ‘Other’ for certain definitions is useful, to incorporate evidence does not fit the standard definitions or terminology.

Varying descriptions of features and artefacts is one of the many factors that can affect the way a site enters into the archaeological record, in databases, grey literature and publications. A further factor is the way in which a site is investigated (if at all) and 'perceived' and interpreted. As stated above, this is dependent upon on the personal preferences of this individual, skillset, and expectations of a site, as well as time and resources. Other factors include the treatment of site archives, and the way in which the site is originally entered into databases and literature and subsequent decisions by other researchers/authors/archaeologists, to *re-define the data*.

Therefore it is essential to acknowledge that these potential variables could have affected the quality of the original recorded data. In summary, the main issues which would determine the quality and quantity of data collected were identified from the start (Table 2.3), perhaps the most significant being 'perception of site significance'.

**Table 2.3 Main issues affecting the research outcome**

<b>Perceptions as to significance of sites</b>	1	Preservation	<b>Thesis Outcome</b>
	2	Quality and quantity of original archives of site and artefacts	
	3	Excavation and Recording Standards	
	4	Terminology/Definitions	
	5	Wider Modern Research Context	



It has also been common place in pre-2000s literature especially, that even if salt-production is discussed, discourse will be biased towards final product distribution as opposed to production. As was shown in Figure 1.18, the word 'salt' popped up commonly on maps of resources and trade networks. However, little attention has been given to the technology and agency of production, especially for areas outside of Essex and Lincolnshire.

De Roche (1997) highlighted this point and explains that it is impossible to discuss organisation and distribution of the end-product before understanding each stage of production and the technology involved:

Because the range of options open to any group for the organisation of production processes may be constrained by technological requirements, our first goal should be to learn as much as possible about each sequence of the production processes from the archaeological remains, comprising the equipment, tools and waste, as well as the end-products. (De Roche, 1997: 20)

The situation has improved over the last 15 years, with more research published on the technology of salt-production in the Fenlands and Essex, including new typologies of briquetage. In order to further enhance knowledge about salt-production sites, this research will consider all aspects of the salt-production process, including the choice of location, raw material procurement, production and use of space.

### **2.2.1 Research Approach: Making the Most of the Dataset**

As outlined earlier (and in Appendix **10.0**), an MSAccess database was created in order to store and process data, and create the research dataset.

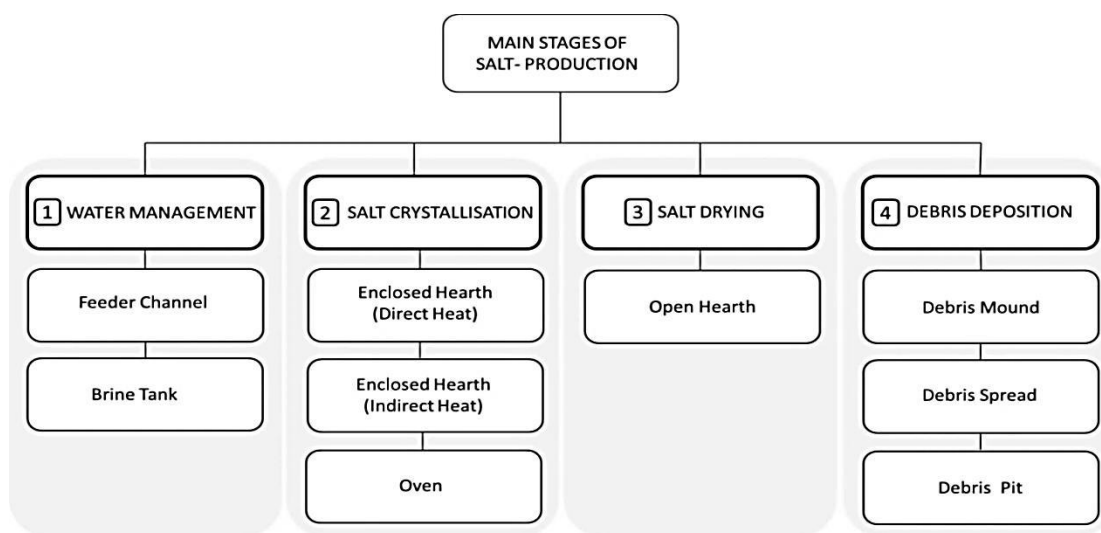
In order to best evaluate and process the data, the dataset was created in two stages. The first stage was to record the raw data from sources as it had been originally recorded and defined. Therefore 'open tables' were used with no detailed pre-defined feature or artefact types. At this stage, dimensions of features and artefacts were also recorded. As shown in Table 10.0.4, Database Table 8 contains all the feature data, whilst Database Table 9 holds all briquetage data. Linked to these tables, are further tables containing pre-defined 'drop down lists' that were used to re-define the data according to terminology devised for this research. This provides a 'transparent' dataset, and also provides the opportunity to critically evaluate the previous interpretations of salt-production sites.

Deconstructing and re-categorising the data has produced a dataset that is more consistent and therefore better suited for inter-site comparisons.

## 2.2.2 Key Site Characteristics: Defining the Data

There are a variety of feature and briquetage types that could potentially be present on a site. These all have different functions that are linked to various stages of the salt-production process (or ‘events’, as listed in Tables 1.8-1.12).

A simple list of key site characteristics (feature and briquetage types) has been designed, which incorporates all of the main components that are considered necessary to have on a salt-production site. This is constructed carefully with regard to the nature of the archaeology in the dataset, and takes into consideration previous terminology used to record sites in the Fenlands, as well as in the English Heritage report outlined in 1.5.5.2 (Tables 1.8-1.12). There are a variety of recorded feature definitions; the main types of feature and their links to the four main stages of salt-production are shown in Figure 2.2.



**Figure 2.2 Main stages of salt-production with the linked general archaeological features**

All of the ‘General Feature Types’ and ‘Detailed Feature Types’ associated with salt-production are listed in Table 2.4. Not all feature types will link directly to specific stages of the salt-production process, and many will be more ‘general’ to the site ‘infrastructure’ and are recorded as such.

Table 2.5 lists the main briquetage types as defined in the database. Briquetage could be potentially associated with all the four stages, but will mostly be linked to Stages 2 and 4.



**Table 2.4 Key Characteristics: General and Detailed Feature Types**

General Feature Type	Detailed Feature Type		
<b>Water Management</b>	Evaporation Tank Feeder Feeder connected tank Natural Channel Inlet Settling Tank Settling/Evaporation Tank Sluice structure Square shaped feeder U-shaped feeder V-shaped feeder Water Storage Pit Unknown		
<b>Enclosed Hearth</b>	<b>Indirect</b>	<b>Direct</b>	<b>Form</b>
	Clay lined Stone Lined Single Stokehole Double Stokehole Twin Hearth Ditch Unknown	Linear Rectangular Circular Clay lined Stone Lined Twin Hearth Ditch Unknown	Rectangular Circular Irregular Unknown
<b>Oven (Indirect)</b>	Chambered Single Stokehole Double Stokehole Unknown		<b>Form</b> Rectangular Circular Irregular Unknown
<b>Open Hearth (Direct)</b>	Surface Burnt Clay Burnt Clay Pit Clay Storage Pit Burnt Surface Clay Floor Clay Platform Unknown		<b>Form</b>
			Rectangular Circular Irregular Unknown
<b>Debris Deposition</b>	Burnt Mound Debris Layer Debris Mound Debris Mound with features Midden Unknown		
<b>Structural</b>	Building Clay Wall Ditch/Gully Enclosure Post-Hole/s Stake-Hole/s Stone Wall Unknown		
<b>General Site</b>	Clay Floor Clay Platform Ditch/Gully Unknown		
<b>Other</b>	Other		

**Table 2.5 Key Characteristics: General Briquetage Forms**

<b>CONTAINER</b>						
<b>Container Unknown (No details)</b>						
<b>Container (Details)</b>						
<b>Type</b>		<b>Form</b>	<b>Surface</b>	<b>Temper</b>	<b>Complete?</b>	
<b>Type 1</b>		Rectangular/Sub-rectangular Flat-Based			Yes/No	
<b>Type 2</b>		Oval/Round Flat-Based				
<b>Type 3</b>		Cylindrical/Trough				
<b>SUPPORT</b>						
<b>Support Unknown (No details)</b>						
<b>Support (Details)</b>						
<b>Type</b>			<b>Form</b>	<b>Surface</b>	<b>Temper</b>	<b>Complete?</b>
<b>Pedestals</b>	<b>Type 1 (Plain)</b>	<b>1a</b>	Round	Forked or Notched Top		Yes/No
		<b>1b</b>		Pinched Top/Base		

	1 c		Skittle-Shaped
		1 d	T-Shaped
	Type 2	Round	Twisted Squat
	Type 3	Brick/Block	Brick/Block
	Type 4	Brick/Block	Large Squat Brick/Block
	Type 5	Round	Tall/Slim with flanged base
Type 6	Multi- Faceted/Squar ed	Largest form- Tall Squared/Multi- faceted	
<b>Bar and Wedge</b>	Type 1	Square/Rectangular Profile	
	Type 2	Circular Profile	
	Type 3	Boomerang Shaped	
	Type 4	Triangular	
	Type 5	Tongue Shaped	
	Type 6	Wedge	
	Type 7	Gridded	
<b>Slab</b>	Type 1	Rectangular/Square	
	Type 2	Oval/Circular	
	Type 3	Slotted Lump	

**STRUCTURAL/STABILISERS**

**Structural/Stabilisers (No details)**

**Structural/Stabilisers (Details)**

Type		Form	Complete?
<b>Stabiliser</b>	Type 1	Pinch-Prop	Yes/No
	Type 2	Spacer	
	Type 3	Platform	
	Type 4	Rod	

Although general briquetage typologies have been formulated for the Fenlands and Essex, there is currently no typological series within other areas. However the main basic 'class' of supports and containers are generally similar (i.e. pedestals and bars) across most of the UK and areas of continent. Therefore the basic types listed in Table 2.5 are based upon existing types: Container, Pedestal, Bar, Wedge, Slab and Stabilisers. However, the more detailed 'Form' categories (second column in Table 2.5) are based purely upon forms identified within the study area, and are therefore specifically designed for the study area only. The support typologies are in order of size, and are illustrated in Chapter 3.0.

The presence or absence of basic briquetage forms provides a picture of the technology employed. For example, some producers used horizontal bars only to support containers, while others employed both horizontal bars and upright supports, and yet others only used upright supports. At its simplest level, a presence and absence categorisation has been employed to establish which forms were being used on a site.

### **2.2.3 Presentation of Results**

The main issues related to the quality of original data related to salt-production have been considered previously. Despite re-defining this original data, there are inevitably many incomplete/fragmentary sites and site records. This means that it remains difficult to compare all of the sites across all data categories. Therefore the way in which the data is presented and compared has been designed to obtain the best possible outcome for understanding as much about the data as possible. This includes the presentation of regional evaluations.

#### **2.2.3.1 Primary Core Data and Reconstructing Techniques of Salt-Production**

Chapter 3.0 will present the core data based upon simple individual and grouped categories. Firstly, a list of all sites containing a summary of each record will be provided in sequential Site ID order. This will be followed by other tables summarising site chronology, location and general site type data. Detailed data

tables will again be provided in the Appendices whilst summary tables and graphs will be included within the main text.

Data will then be compared across **Type** (Site, Features and Briquetage) **Period** (Iron Age and Romano-British) and **Space** (Site distribution and spatial formation of individual sites).

Chapter **4.0** will consider more detailed data associated with the techniques and technology involved in the four main stages of salt-production. Sites providing particularly well-preserved examples of different production stages will be highlighted. Key features and briquetage types will be compared across the study area.

### **2.2.3.2 Regional Evaluations**

In order to address the issue of the limited and inconsistent that restricts comparison between all sites, case studies in the form of regional evaluations will be used. The choice of the regions involved was based on the assessment of the initial data record collection, which showed which geographical areas had the best potential for detailed evaluation.

It was also important that the regions chosen, provided a fair sample of the whole study area. The two key areas of activity suitable for more detailed evaluation were identified as Kent and Somerset. These are evaluated in Chapters **5.0** and **6.0** respectively.

The first regional evaluation in Kent (**5.0**) is based upon desk-based research whereas the regional evaluation of Somerset in Chapter **6.0** will be primarily based upon the results of fieldwork. Evidence from other regions will be explored and presented in Chapter **4.0**, and further evaluated in Chapter **7.0**.