

# CULTURAL RESOURCES REPORT COVER SHEET

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Title of Report: **Cultural Resources Survey Report for the Kennewick Irrigation District for the Nine Canyon Pipeline Project, Benton County, Washington.**

Date of Report: May 2020

County (ies): Benton Section: 27, 28, 33 and 34 Township: 8 North Range: 30 East

Quad: Pasco, WA. Acres: 37

PDF of report submitted (REQUIRED)  Yes

Historic Property Export Files submitted?  Yes  No

Archaeological Site(s)/Isolate(s) Found or Amended?  Yes  No

TCP(s) found?  Yes  No

Replace a draft?  Yes  No

Satisfy a DAHP Archaeological Excavation Permit requirement?  Yes  No

DAHP Archaeological Site #:

- Submission of paper copy is required.
- Please submit paper copies of reports unbound.
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# **Cultural Resources Survey Report for the Kennewick Irrigation District for the Nine Canyon Pipeline Project, Benton County, Washington.**



Submitted to:  
**Kennewick Irrigation District**

Prepared by:  
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May 2020



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## 1 Introduction

The Kennewick Irrigation District (KID) is proposing construction of a pipeline within the Nine Canyon Road Right-of-Way and in a County Right-of-Way east of Nine Canyon Road, located in the semi-rural community of Finley in Benton County, Washington. Prior to the commencement of pipeline construction, KID must consider possible adverse effects to historic properties in the Project Area of Potential Effect (APE) (Figures 1 and 2), in accordance with the State Environmental Protection Act (SEPA) (RCW 43.21, "State Environmental Policy"). To satisfy the requirements, KID contracted the services of Northwest Cultural Resources Services (NCRS) to conduct a cultural resources (CR) investigation of the Project APE.

This CR survey report describes the investigation and provides the KID with the CR information needed for response to SEPA checklist comments provided by the Washington Department of Archaeology and Historic Preservation (DAHP) and the Confederated Tribes of the Umatilla Indian Reservation (CTUIR). The report includes recommended options to mitigate any potential adverse effects to historic properties due to proposed construction related activities in the Project APE.

The CR investigation included a literature review and records search, an archaeological survey, and subsurface testing to identify historic properties in the Project APE that may be affected by project-related activities and to evaluate their eligibility for listing in the National Register of Historic Places (National Register). The CR investigation was conducted by Secretary of the Interior qualified archaeologists, Jim Sharpe and Stacie Sexton (Gram Northwest), with project management assistance and report editing and contributions from Secretary of the Interior qualified historian/architectural historian David Harvey of Northwest Cultural Resources Services (NCRS). Maps for this report were prepared by Raena DeMaris of Integrated GeoSpatial Solutions, LLC. Devary Communications provided final report editing, formatting and production services.

## 2 Project Description

The project is in the Nine Canyon Road Right-of-Way between the National Register eligible Kennewick Main Canal Division IV and Erickson Road, and in an area east of Nine Canyon Road within a Benton County Right-of-Way. The Nine Canyon Pipeline Project involves installation of approximately 10,720 ft of pipe with a maximum diameter of 18 in. Depth of excavation will be approximately 4 ft. Excavated material will be used to backfill the trench. No additional fill material is anticipated.

The Nine Canyon Pipeline Project encompasses installation of a new pipeline; no existing public or private irrigation pipeline is being replaced. The project will tie into the Kennewick Main Canal Division IV and parallel both the west and east sides of Nine Canyon Road (Nine Canyon Road Segment) for approximately 6,520 ft and terminate near Erickson Road. The diversion of water from the Kennewick Main Canal through a turnout (headgate) into the Nine Canyon Pipeline will not adversely affect the characteristics that make the Kennewick Main Canal eligible for listing in the National Register.

A second component of the project (East Segment) will extend east from Nine Canyon Road approximately 4,200 ft. Project construction drawings indicate subsurface utilities are present within the Project APE that reach depths of up to 36 in. below grade.

## 3 Project Area of Potential Effect

The Project APE contains approximately 14.9 ha (37 acres) located in Benton County, in Township 8 North, Range 30 East in Sections 27, 28, 33 and 34 of the Pasco, WA 7.5' USGS Quadrangle. Elevation ranges from about 440 to 650 ft above mean sea level.

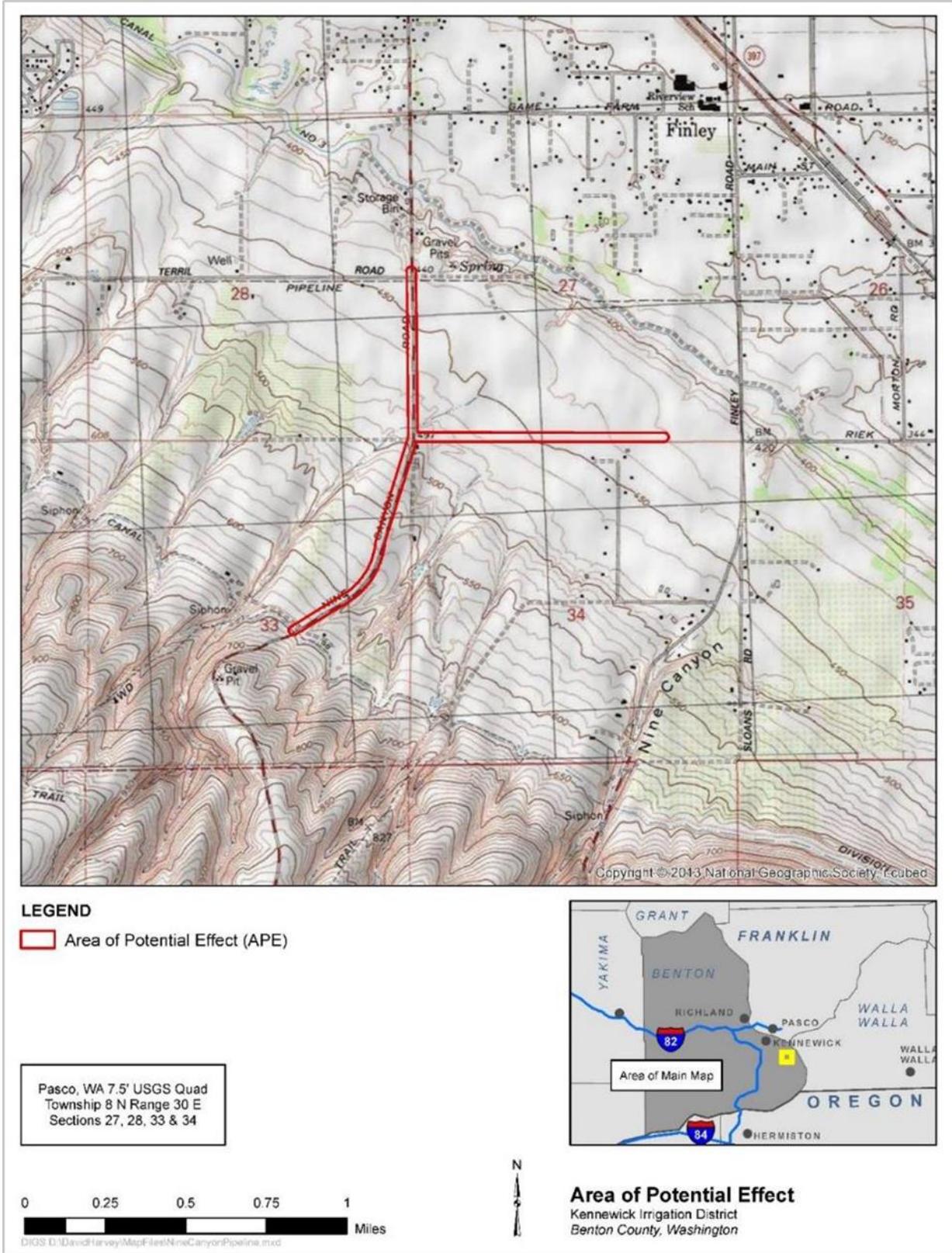


Figure 1. Topographic Map Location of the Project APE

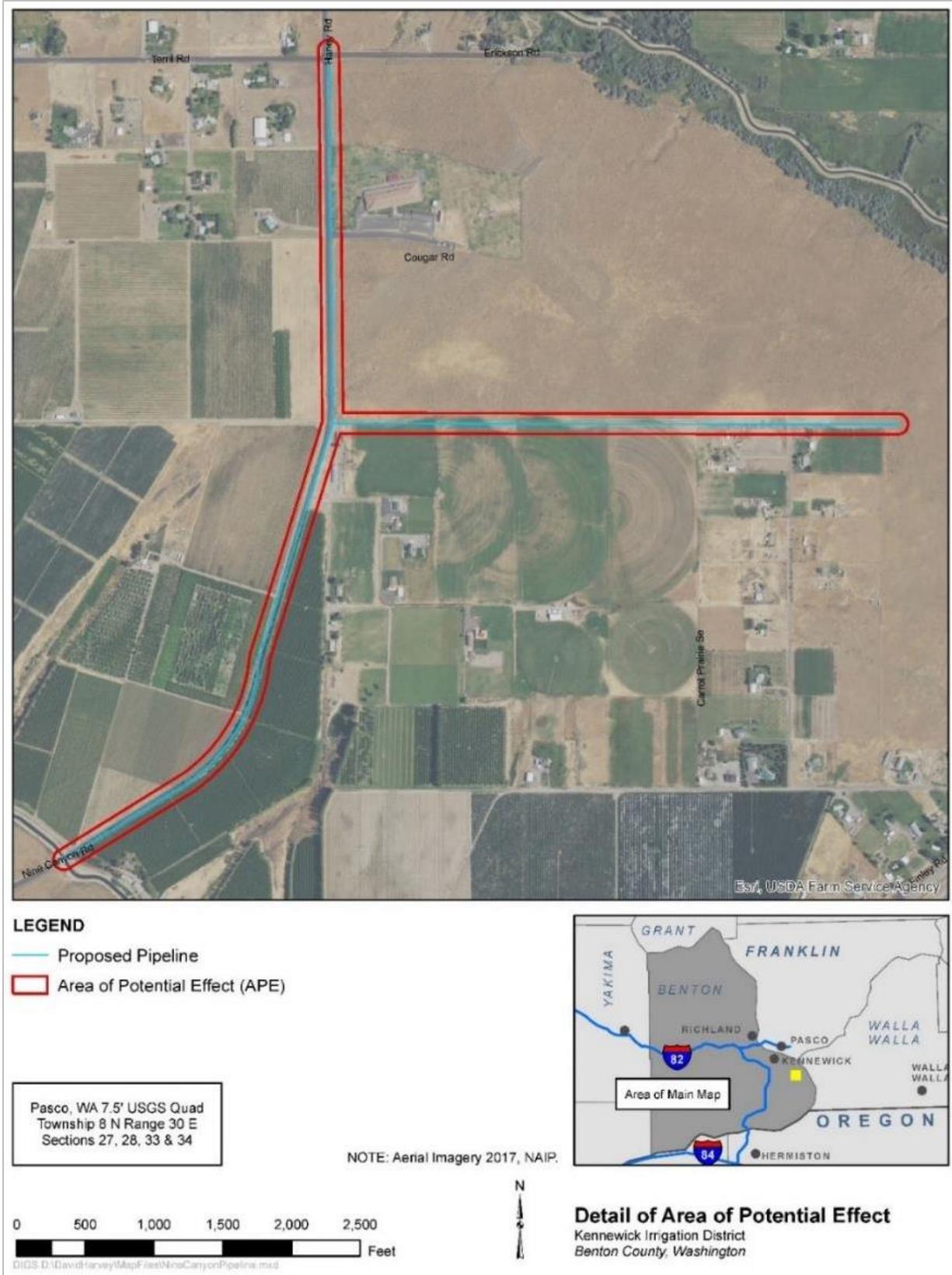


Figure 2. Aerial View of the Project APE

## 4 Environmental Setting

The Project APE is located within the physiographic boundaries of the Columbia Plateau and is described in the *Handbook of North American Indians*, Vol. 12, as follows: “bounded on the west by the Cascade Range, on the south by the Blue Mountains and the Salmon River, on the east by the Rocky Mountains, and to the north by the lower extensions of the Rocky Mountains and the northern portion of the Columbia River” (Walker 1998).

### 4.1 Geology

The combined effects of lava flows and glacial floods have primarily shaped the Columbia Plateau region. During the Miocene epoch, numerous intermittent lava flows blanketed the region (Orr and Orr 1996). During the Pleistocene epoch, continental glaciers advanced and retreated from British Columbia into northern Washington State. The advances and retreats of the glaciers created ice dams and glacial lakes that caused extensive flooding. Locally, the most noted was the flooding caused by the release of glacial melt water from Lake Missoula. It is believed the last major Pleistocene floods occurred about 12,000 years ago (Orr and Orr 1996).

The Washington State Department of Natural Resources Interactive Geologic map indicates that the geologic unit label of the project area is Qf, which is Pleistocene outburst flood deposits. The geologic unit contains “Pleistocene gravel and sandy gravel deposits with interbedded silt lenses . . .” (<https://geologyportal.dnr.wa.gov/>) (Washington Department of Natural Resources 2012). The Soil Survey of Benton County classified the soils as Warden Silt Loam and Finley fine sandy loam (Rasmussen n.d.).

### 4.2 Climate

The post-glacial climate ca. 13,000 to 9,000 years before present (BP) was cooler and moister than today. After 9,000 BP, the climate changed to warmer and drier conditions until about 4,400 BP. From ca. 4,400 BP to ca. 2,500 BP, the climate was again cool and wet. Conditions from 2,500 BP to the present appear somewhat warmer and drier than the earlier warm phase and reflect current conditions. The climate of the general project area is influenced by moist air from the Pacific Ocean and by cold air moving southward from Canada. Summers are hot and dry, and winters are mostly clear, cold and dry (Rasmussen n.d.). Annual precipitation ranges from 9 to 12 in.

### 4.3 Vegetation

Vegetation of the APE is consistent with the low-rainfall, semi-arid landscape, and it includes primarily shrubs such as cheat grass (*Bromus tectorum*), rabbitbrush (*Chrysothamnus* sp.), Russian thistle (*Salsola iberica* Sennen) and sagebrush (*Artemisia* sp.) (Franklin and Dyrness 1973).

## 5 Cultural Setting

The cultural setting for the Project APE encompasses the Columbia Plateau/Mid-Columbia Basin Pre-Contact Cultural Sequence. Using archaeological investigations conducted on the Columbia Plateau, a cultural chronology has been established which dates back to the end of the Pleistocene. Table 1 summarizes the Precontact Cultural Sequence for the area.

**Table 1. Pre-Contact Cultural Sequence**

Cultural Period	Years Before Present	Site Types	Architecture	Subsistence
<b>General Columbia Plateau</b>				
Windust Phase	11,000 – 8,000	Rock shelters, caves, game processing sites, lithic reduction sites; isolated lithic tools. Examples include Marmes Rockshelter, Bernard Creek, Lind Coulee, Kirkwood Bar, Deep Gully, Granite Point, Five Mile Rapids, and Bobs Point.	Rock shelters and caves; open habitation sites. No evidence of constructed dwellings or storage features.	Large mammals supplemented with small mammals and fish. Toolset: Windust, Clovis, Folsom, and Scottsbluff points; contracting stemmed points and/or lanceolate points; cobble tools.
<b>Mid-Columbia Region—Vantage Area</b>				
Cascade/Vantage Phase	8,000 – 4,500	Lithic scatters, quarry sites, resource processing sites, temporary camps.	Rock shelters and caves; open habitation sites.	Mobile, opportunistic foragers subsisting on fish, mussels, seeds, and mammals. Basalt leaf-shaped Cascade and stemmed projectile points, ovate knives, edge-ground cobble tools, microblades, hammerstones, core tools, and scrapers.
Frenchman Springs Period	4,500 – 2,500	Habitation sites along major rivers, confluences, tributaries, canyons, and rapids. Lithic scatters, quarry sites, resource processing sites. Seasonal round of upland to lowland travel for resource procurement; seasonal camps.	House dwellings, including semi-subterranean.	As earlier, but with increased use of upland resources, seeds, and roots. Groundstone and cobble tools, mortars, pestles, contracting stemmed, corner notched, and stemmed projectile points, hopper mortar bases and pestles, knives, scrapers, and graters. Wider tool material variety.
Cayuse Phase	I 2,500 – 1,200	Habitation sites at major rivers, confluences, tributaries, canyons, and rapids. Lithic scatters, quarry sites, resource processing sites, seasonal round camps. Ideological and spiritual sites.	Pithouses with wall benches.	Reliance on riverine resources, fish, and botanicals; basal-notched and corner-notched projectile points (most corner-notched); variety of tools including groundstone, scrapers, lanceolate and pentagonal knives, net weights, cobble tools, drills, etc.
	II 1,200 – 900	Same as Cayuse Phase I	Pithouses without wall benches.	Same as Cayuse Phase I.

**Table 1. Pre-Contact Cultural Sequence**

Cultural Period	Years Before Present		Site Types	Architecture	Subsistence
	II I	900 – 250	Increased mobility and hunting ability due to horse introduction. Large village habitation sites along rivers, seasonal round camps. Same site types as Cayuse Phases I & II.	Pit longhouse village sites.	Decrease in corner-notched points, increase in stemmed and side-notched projectile points, fine pressure-flaked tools. Increase in trade goods.

Sources: Morgan et al. (2001), Walker (1998), Sharpe and Marceau (2001), Swanson (1962), Nelson (1969), Galm et al. (1981), Benson et al. (1989), Thoms et al. (1983), Green (1975), Rice (1980).

### 5.1 Ethnographic Period

Ethnographically, the project area may have been used by the Cayuse, Umatilla, Walla Walla, Paluse, Yakama and neighboring groups of Sahaptin speakers (Trost 2012; Steinmetz and Dickson 2003). Many of these tribes relied on the Columbia Plateau and its major tributaries as residential and year around subsistence areas and as primary movement corridors. Other Native Tribes made seasonal use of the region for resource procurement, trade, and inter-tribal relations. Territorial boundaries were generally delineated by geography, but were crossed regularly for hunting, fishing, gathering, and trading activities (Churchill and Griffin 2003).

During this period, residents relied on a pattern of seasonal rounds that included semi-permanent residences in villages along major waterways during the winter months. With the arrival of spring, small groups would travel into the canyons and river valleys to gather roots living in temporary camps. Seasonal camps were used in the interior of the Columbia Plateau during the spring and early summer months. By late summer or early fall, seasonal rounds focused on ripening berries in the mountains. It was this time of the year when the acquisition of food came to an end and families returned to the winter villages (Chatters 1980).

A review of *Čáw Pawá Láakni* They Are Not Forgotten, indicates that the Cayuse, Umatilla, and Walla Walla Tribes traditionally used the general project area for trails, trade, hunting, grazing, myth age sites, materials and medicines, plant foods and seasonal camps. Winter villages were located near the Columbia, Snake and Yakima Rivers (Hunn 2015). As stated in the December 3, 2019 letter from the CTUIR, the Project APE is in close proximity to a historical property of religious and cultural significance known as Piyuušmaamí Puštáy (‘hills of snakes’). Piyuušmaamí Puštáy is described as follows:

A chain of hills beginning southwest of Richland, Washington, and extending southeast to the Columbia River in the vicinity of Crescent and Badger Islands. This feature on the landscape refers to a mythical snake transformed into a mountain chain whose head has now been inundated by the Columbia River. Hills in this chain include Red Mountain, Candy Mountain, and Badger Mountain (Hunn 2015).

The *Handbook of North American Indians* summarizes the ethnohistoric cultural pattern of the Columbia Plateau as characterized by:

- Riverine settlement patterns
- Reliance on a diverse subsistence base of anadromous fish and extensive game and root resources
- Mutual cross-utilization of subsistence resources among the various groups comprising the populations of the area
- Extension of kinship ties through extensive intermarriage
- Limited political integration, primarily at the village and band levels, until adoption of the horse
- Relatively uniform mythology, art styles, and religious beliefs and practices focused on the vision quest, shamanism, life-cycle observances, and seasonal celebrations of the annual subsistence cycle (Walker 1998).

The first historic contact between Native American and non-Indian people occurred between 1600 and 1750 AD. Non-Indian contact resulted in the introduction of horses, epidemic diseases, Christian missionaries, and trade goods that resulted in profound effects on the traditional Native American lifestyle (Walker 1998). During the early 1800s, Lewis and Clark entered the area, soon to be followed by fur traders entering the Columbia Plateau in search of furs, horses, and trade routes. The non-Indian expansion resulted in mounting tensions with aboriginal groups. Tensions remained high until the early 1850s, when an Indian agency was established in Echo, Oregon. The agency monitored the Indians and set the groundwork for the treaties of 1855. The Walla Walla Treaty of 1855 was signed with 14 bands and tribes of central and eastern Washington and Oregon. The Yakama, Nez Perce, and Umatilla groups ceded their lands in exchange for three reservations. Treaty terms reserved the right for tribal members to hunt, fish, and gather plants at their traditional locations.

## 5.2 Euro-American Period

The Lewis and Clark expedition of 1805 began the Euro-American exploration and settlement of the region. The explorers sought trade items from Native Americans and trade routes were established. Gold miners, livestock producers, and homesteaders soon followed. By the 1860s, the discovery of gold north and east of the mid-Columbia region resulted in an influx of miners traveling through the area. The mining industry created a demand for beef, and the Columbia Basin turned out to be ideal for livestock production (Gundy et. al. 1998).

An increase in Euro-American settlement began in eastern Washington during the late 1800s. The initial permanent settlement of non-Indians began slowly with livestock producers who discovered that the area was very suitable for raising of cattle. Ranchers relied on the abundant bunch grass and open rangeland to graze thousands of cattle and later sheep and horses. The open range lasted from the 1880s to ca. 1910, as homesteaders increasingly settled and plowed the rangeland to plant crops. However, livestock remained an important economic commodity to the area's agricultural producers (Fridlund 1985). Gradually agricultural producers replaced the open-range livestock operations that had dominated the area. The Northern Pacific Railroad was constructed during the 1880s creating transportation routes for agricultural commodities and new settlers into eastern Washington (Lewty 1987).

By 1905, wheat had surpassed livestock production as the most important agricultural product in the Columbia Plateau (McGregor 1989). However, agricultural production remained difficult in some areas of the Columbia Plateau due to the sparse rainfall. Numerous attempts to develop privately funded canals for irrigation were mostly unsuccessful due to the shortages of financial support. The Newlands

Reclamation Act of 1902 created opportunities for federal funding of irrigation projects in the arid lands, particularly in the Far West. Three years later funding was approved for irrigation projects in the Yakima Valley which included the construction of the Yakima Project. The future Kennewick Division was the final district completed for the Yakima Project when it was authorized in 1948 (Pfaff 2002).

In the lower Yakima River valley, irrigation water was first provided on a large scale to the Kennewick Highlands in 1909 from the Columbia Irrigation District (CID) canal and was under the management of the Highland Water Users Association until 1930, when the KID took control (Doncaster 2008). In 1930, KID entered into a contract with the U.S. Bureau of Reclamation (Reclamation) for rehabilitation of the Kennewick Highlands irrigation system and for construction of a new hydroelectric power plant at Prosser to supply cheap power for pumping water to their irrigation district (U. S. Department of the Interior, Bureau of Reclamation, February 1955).

The first Congressionally authorized projects built by Reclamation in Washington State were the Yakima and Okanogan Projects in 1905 (Rowley 2006). The Yakima Project was the largest and most extensive of its kind in Washington State until the Columbia Basin project became operational in the 1950s. The Yakima Project was so large that it was composed of several discrete irrigation divisions that would irrigate almost 500,000 acres.

The Kennewick Division, located in southcentral Washington in the lower Yakima River drainage in the vicinity of Kennewick, Washington, was the last unfinished component of the Yakima Project. Construction commenced in 1953 and was completed in 1958, bringing the lands under irrigation in the Yakima Project to 474,000 acres (Doncaster 2011; U. S. Department of the Interior, Bureau of Reclamation, February 1955). On January 2, 1958, Reclamation turned over to the KID the transferred works for the operation and maintenance (O&M) of most of the newly completed Kennewick Division (U. S. Department of the Interior, Bureau of Reclamation, 1958). However, Prosser Dam, the Chandler Canal, the Chandler Power and Pumping Plant, and the siphon under the Yakima River remained under Reclamation O&M.

The Yakima Project has had a significant impact on the livelihood, agriculture, and environment of the 175-mile-long Yakima Basin and has turned it into one of the most productive agricultural areas in the United States (Doncaster 2011). Of the Yakima Project divisions, the Kennewick Division is the most unique for its purpose and designation. The Kennewick Division is a combined division for irrigation and hydroelectric power generation. While the Kennewick Division was the second multipurpose development in the Yakima Project to provide both irrigation and hydroelectric power, it was also authorized as a replacement for lands taken by the federal government in the Kennewick area during and after World War II. No other division in the Yakima Project was authorized due to federal removal of irrigated lands from production. During World War II, the federal government condemned over 6,000 acres of irrigatable land north of Kennewick as part of the lands acquired in 1943 for the top-secret Manhattan Project which established the Hanford Site. In 1947, the Atomic Energy Commission acquired an additional 7,000 acres for expanded plutonium production at Hanford due to the onset of the Cold War. The Kennewick Division replaced the 13,000 plus acres of farmland that had been taken by the Hanford Site, and an additional 1,000 irrigated acres that were flooded by McNary Dam.

The Kennewick Division was sorely needed as the displacement of the 7,000 acres in 1947 reduced the available supply of certain vegetables and soft fruits to processors and shippers in Kennewick by an estimated 50 percent. The Mid-Columbia region of Washington has the earliest crop season in the Pacific Northwest so the reduction in irrigated farmland was an impact locally and nationally in food production.

The Kennewick Division was not only a replacement of lands removed for the Hanford Site and the construction of McNary Dam, but it also was established to create new job opportunities in the Kennewick area. It provided employment for returning servicemen, farmers who lost their land, and workers formerly employed in wartime installations in eastern Washington.

The National Register-eligible Kennewick Main Canal is divided into four divisions. Division I begins at the outlet of the Chandler Power and Pumping Plant discharge pipe west of Benton City, and it proceeds downstream through Divisions II and III. At the terminus of Division III, a siphon delivers the water to the Amon Relift Pumping Plant and Division IV of the Main Canal (U. S. Department of the Interior, Bureau of Reclamation, January 1958). Further downstream, the Kennewick Main Canal Division IV intersects with Nine Canyon Road, where water from the canal will be diverted through a turnout (headgate) into the proposed Nine Canyon Pipeline.

The Nine Canyon Pipeline APE is situated in a semi-rural community of Finley that includes small farms and orchards interspersed with single family homes, KID property, and an elementary school. Finley was founded in 1902 when George Finley and his family arrived and established a 40-acre farm south of Kennewick (The Lane Real Estate Team n.d.). As the valley became irrigated, more farms were established. Within 10 years the arrival of the Spokane, Portland, and Seattle Railroad ushered in a period of economic growth (The Lane Real Estate Team n.d.). Finley grew and added a hotel, railroad depot, post office, school, stores, and lumber yards. Unfortunately, the area declined during the Depression, but it expanded again during the post-war years when the residents of nearby Hover on the Columbia River were displaced due to rising waters of the newly constructed McNary Dam and moved to Finley. During the 1960s, manufacturing plants and light industry were established in Finley along with a growing number of farms (The Lane Real Estate Team n.d.).

## **6 Literature Review and Records Search**

For the CR investigation, NCRS conducted a literature review and records search for the one-mile radius search area around the Project APE. The review and search included an examination of the 1866 General Land Office (GLO) map, the 1917 topographic map, Tribal Correspondence, and the Washington Information System for Architectural and Archaeological Records Data (WISAARD) website. The findings from the literature review are provided as follows.

### **6.1 General Land Office**

A review of the 1866 GLO map indicates that two small sections of trails were present within the Project APE at that time (Figure 3). Both trail sections appear to be partially within the footprint of Nine Canyon Road.

### **6.2 1917 Topographic Map**

A review of the 1917 topographic map indicates that a road was present within the north section of Nine Canyon Road in the Project APE. No other historic period structures or features were documented within the Project APE at that time (Figure 4).

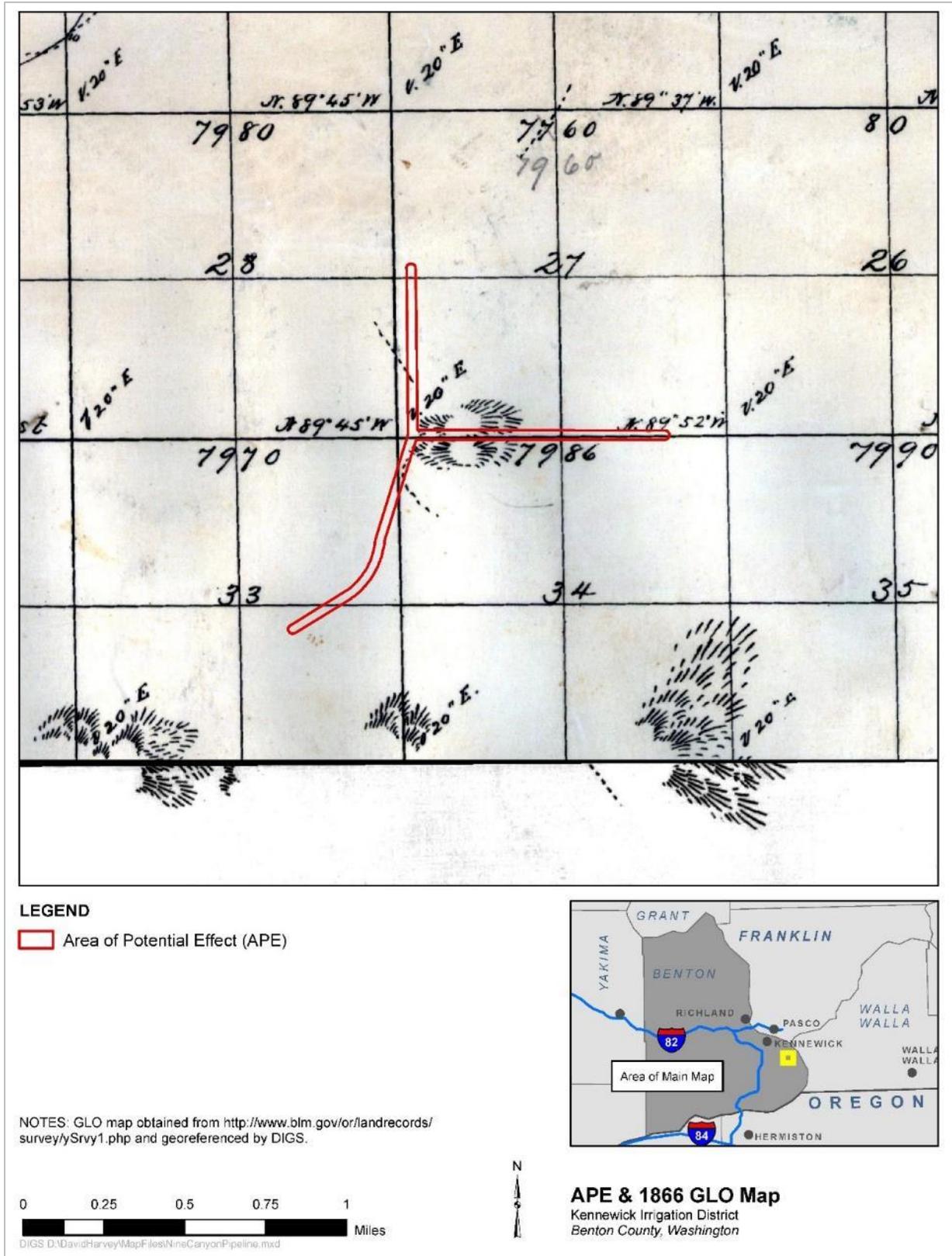


Figure 3. 1866 GLO Map of the Project APE

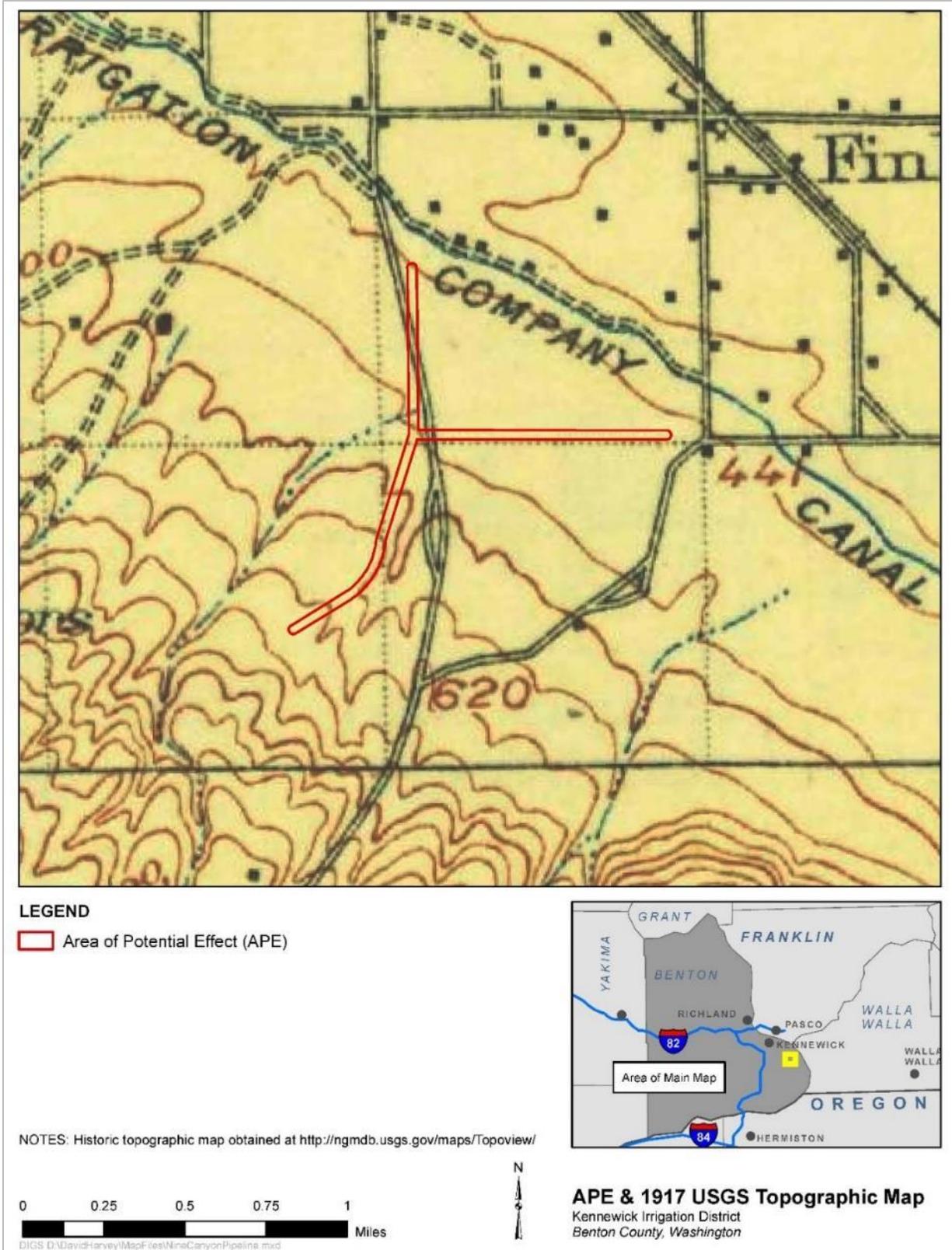


Figure 4. 1917 Topographic Map Showing the Project APE

### 6.3 Tribal Correspondence

On December 3, 2019, The Confederated Tribes of the Umatilla Indian Reservation (CTUIR) provided input on the KID Nine Canyon Pipeline Project to Seth Defoe, KID Land and Water Resources Manager. The letter stated:

The Confederated Tribes of the Umatilla Indian Reservation (CTUIR) Cultural Resources Protection Program (CRPP) has reviewed SEPA materials for the proposed Nine Canyon Pipeline Project. The project area is in close proximity to a historical property of religious and cultural significance to the CTUIR known as Piyuušmaamí Puštáy ('hills of snakes'). A trail is also known to have been present in the Project APE that was at one time utilized by CTUIR ancestors. Therefore, the CRPP supports an archaeological survey with subsurface testing conducted prior to ground disturbing activities associated with this project. If the pipeline will be replacing original and/or pipeline currently in the ground that is 50 years or older and is an associated/contributing component to the NRHP canal system it is recommended that that pipeline be evaluated to identify if the proposed project will have any impacts to the larger NRHP canal system.

### 6.4 WISAARD Website

The literature review included a review of the WISAARD website for previous CR surveys and documented cultural resources within the search area. The review was conducted for an area that extends one-half mile on each side of the APE, for a total width of one mile. The review of the WISAARD identified the following sources.

#### 6.4.1 Schroeder and Landreau

In 2012, Reiss-Landreau Research conducted a CR investigation for the *Nine Canyon Road Reconstruction, Excavation, and Embankment Project in support of the Benton County Road Safety Program*. The investigation documented an historic debris scatter within a borrow pit constructed about 1950; it was believed to have been used for the construction of Nine Canyon Road. The site was recommended not eligible for listing in the National Register (Schroeder and Landreau 2012).

#### 6.4.2 Miller

In 2003, the CTUIR conducted an additional survey and subsurface testing at historic site 45BN1279. The site is located east of the Project APE. The site contained four artifact concentrations and was adjacent to a two-track road. Artifacts identified at the site included: 10-gallon steel drums, a five gallon can, solder top cans, an angle iron, baked ceramics, glass fragments, key open top beverage cans, concrete blocks, woven wire, sheet metal, bricks, and barbed wire. Four shovel test probes were placed within the site boundaries. Only one was positive for artifacts within 15 cm of the surface. The age of the site ranged from the 1930s to about 1960. Artifacts appeared to be from a series of dumping events and lacked an intact subsurface concentration. The site was recommended not eligible for listing in the National Register (Miller 2003).

#### 6.4.3 Trost 2012

In 2012, Cascadia Archaeology conducted a *Cultural Resources Assessment for the KID 2012-2014 Capital Improvement Plan, Benton County, WA*. The assessment included irrigation rehabilitation and improvement projects for the KID canal systems. No archaeological resources were documented. Historic period resources such as siphons, drains and turnouts were observed and recorded (Trost 2012).

The literature review identified three CR investigations, one non-eligible archaeological site, and Tribal Correspondence within the one-mile search area. Two of the three prior investigations documented locations where dumping events have occurred. The Tribal Correspondence included a December 3, 2019 letter from the CTUIR to the KID noting that the Project APE is in close proximity to a historical property of religious and cultural significance known as Piyuušmaamí Puštáy ('hills of snakes'). No previous CR investigations or archaeological sites were documented within the Project APE.

## 7 Research Design

The research design for this project is intended to provide the KID with relevant information consistent with the Washington SEPA requirements, specifically SEPA checklist Question 13. The components of Question 13 are as follows:

- a. Are there any buildings, structures, or sites located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers? If so, specifically describe.
- b. Are there any landmarks, features, or other evidence of Native American or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.
- c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with the Tribes and DAHP, archaeological surveys, historic maps, geographic information system data, etc.
- d. Discuss proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.

The goal of this research design is to determine whether there are any constraints on the development of the Project APE by identifying cultural resources, determining their extent, and evaluating their eligibility for listing in state or national historic registers. Based on the material obtained through ethnographic information and the literature review, there is a potential for both prehistoric and historic period cultural materials. Ethnographic information indicates that the Project APE is in close proximity to a historical property of religious and cultural significance known as Piyuušmaamí Puštáy ('hills of snakes') (Hunn 2015).

Previous CR investigations in the general area have identified opportunistic dumping locations to the east and south of the Project APE. These dumping locations appear to be random events. Historically, the Project APE has a potential to contain agricultural items or isolated artifacts. It is doubtful any of the historic trails identified in the 1866 GLO map will be identified during the field investigation, due to agricultural development and related ground disturbing activities.

## 8 Objectives

The objectives of the literature review and CR investigation were to determine whether the APE contains historic properties or those cultural resources listed in or eligible for listing in the National Register, and to determine what actions, if any, would be necessary to mitigate any potential adverse effects to the historic properties due to project-related activities.

## 9 Expectations

The soils of the project area contain “Pleistocene outburst flood deposits of gravel and sandy gravel deposits with interbedded silt lenses . . .” (<https://geologyportal.dnr.wa.gov/>). The literature review indicates that no previous CR investigations have been conducted within the APE. The 1866 GLO Map indicates two trail segments crossed the Project APE. The 1917 topographic map indicates no buildings or features were documented within the APE at that time. The literature review identified three CR investigations within the one-mile search area.

Based on the ethnographic information and the literature review, the expectations are that there is a low potential for prehistoric resources and increased potential for historic period archaeological resources. As stated previously, Native Americans (i.e., CTUIR ancestors) reportedly traveled through the general project area using a prehistoric trail. However, due to the agricultural and historic period road development in the area, it is doubtful any prehistoric features or artifacts will be identified within the Project APE. If present, prehistoric resources would be expected to be isolated finds such as projectile points. The Project APE is in close proximity to an historical property of religious and cultural significance known as Piyuušmaamí Puštáy (‘hills of snakes’). Historic period resources may be related to agricultural development of the area such as trash scatters or isolated artifacts.

## 10 Field Methods

An archaeological survey was planned to be conducted in 20-meter transects for the entire length and width of the Project APE. Shovel test units (STUs) were to be hand excavated to a depth of 90 cm, when possible, and placed at 500-foot intervals (Figure 5). Soil types will be documented for each STU. Auger testing was planned for STUs from 90 cm to 120 cm. All soils will be screened through ¼-in. wire mesh. All STUs will be backfilled. Selection for shovel test locations will be random and approximately 500 ft apart. Global Positioning System (GPS) points and photographs will be collected for each shovel test location. If field conditions change, the project archaeologist will determine the best approach for collecting adequate data. If archaeological sites are identified during the field investigation, they will be documented and recorded. Artifacts will be field analyzed for material type, form, style, and function, if possible. No artifacts will be collected.

## 11 Survey Results

An archaeological pedestrian survey and subsurface testing of the proposed pipeline route in the Project APE was conducted on January 28 and 29, 2020. The archaeological survey of the Nine Canyon Pipeline Project was conducted by Jim Sharpe and Stacie Sexton, both of whom meet the Secretary of Interior Professional Qualifications Standards for Archaeology. Weather during the field work was partly cloudy and about 50 degrees. They conducted the archaeological survey in 20-meter transects and hand excavated STUs to a depth of 90 cm, when possible. All soils were screened through ¼-in. wire mesh. Global Positioning System (GPS) points and photographs were collected for each shovel test location. Shovel test locations were randomly selected and surveyed approximately 500 ft apart.

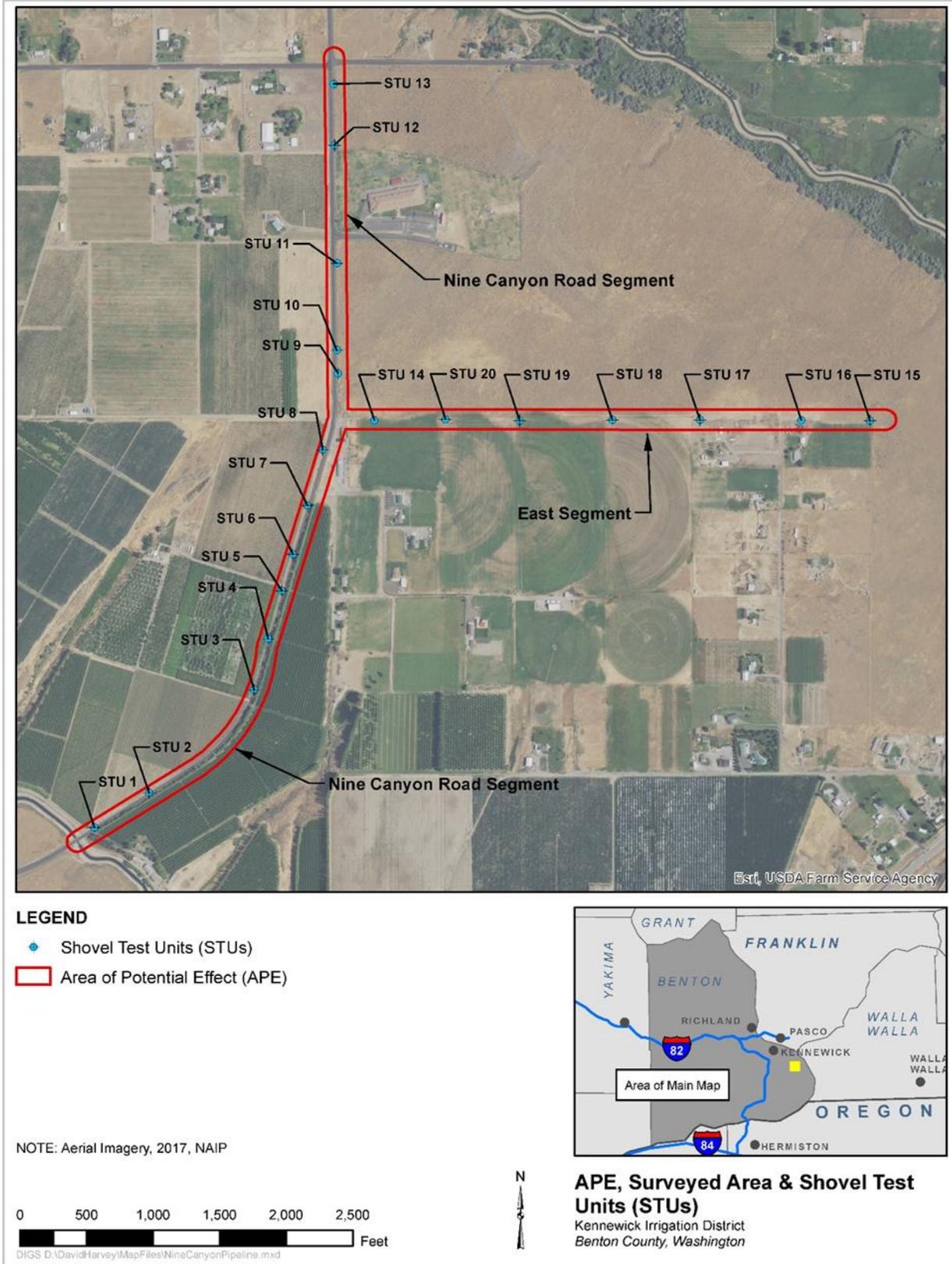


Figure 5. Project APE, Pipeline Segments and STU Locations

For the purposes of the survey and this report, the proposed pipeline route was divided into two segments, the Nine Canyon Road Segment and East Segment.

### 11.1 Nine Canyon Road Segment

The Nine Canyon Road Segment parallels the Nine Canyon Road Right-of Way between the National Register-eligible Kennewick Main Canal Division IV and Erickson Road. North of the canal, the proposed pipeline is on the west side of Nine Canyon Road for approximately 3,770 ft where it crosses to the east side of the road and proceeds north approximately 2,750 ft to Erickson Road (Figures 6 and 7).

From the Kennewick Main Canal north to the East Segment, the proposed pipeline route is along the Nine Canyon Road Right-of-Way and located about 5 ft from the west edge of the asphalt for approximately 3,770 ft. The Nine Canyon Road segment is mostly on an upper terrace above the old Columbia River channel.

Near the pipeline route are underground utilities about 5 ft from the edge of the road and an underground irrigation pipe about 12 ft from the edge of the asphalt. The underground utilities in this area are electrical power lines, buried 36 in. below grade. At the present time, the entire route is farmland with a shallow drainage ditch parallel to the west side of Nine Canyon Road. STUs 1-8 were completed for this portion of the project. Shovel testing at STU 1 encountered an unexpected buried underground utility at 30 in. below grade. Because this underground utility was unexpected and not identified from the U-dig investigation, the decision was made to eliminate any auger testing to avoid possibly hitting other unidentified utilities.



**Figure 6. Project APE on the West Side of Nine Canyon Road North of the Kennewick Main Canal, Aspect Northeast**



**Figure 7. Project APE on the East Side of Nine Canyon Road, Extending North to Erickson Road, Aspect North**

STUs 1-8 were completed for this section of the Nine Canyon Road Segment. Subsurface testing indicates the soils were at least 37 in. deep in most areas tested. It is highly likely that the 37-in.-deep upper portions of the soils within the Project APE were disturbed from the installation of underground utilities, installation of private irrigation systems, and land leveling for agricultural fields. No cultural resources were identified within this segment. Due to previous ground disturbance, no evidence of the 1866 GLO documented trails was identified.

At the intersection with the East Segment, the pipeline route crosses Nine Canyon Road to the east side of the road and extends north to Erickson Road for approximately 2,750 ft. The pipeline will be placed 25 ft east of the centerline of the road. Vegetation consists primarily of cheatgrass and rye. STUs 9-13 were completed along this segment of the route. With the exception of STU 10, all other STUs were on the old Columbia River channel, and the soils are very shallow with fine-grained sand and consolidated compact gravels. No cultural resources were identified from the archaeological survey and shovel testing for this project segment.

## 11.2 East Segment

The East Segment begins on the east side of Nine Canyon Road and extends along a Benton County Right-of-Way approximately 4,200 ft (Figure 8). Current land use is an unimproved access road, irrigated pasture, and rangeland. From Nine Canyon Road east about 250 ft, the soils are part of the upper terrace above the old Columbia River channel and contain deep deposits of sandy soil. East of this point for the remainder of the East Segment, the geologic matrix transforms to shallow soils of fine-grained sand and consolidated cobbles associated within the old Columbia River channel. STUs 14-20 were completed for this segment.

During the archaeological field work, local resident and property owner David McKenzie stated that an historic dump used in the 1940s and 1950s was in the immediate vicinity of the Project APE on the east side of Nine Canyon Road. By the early 1960s the dump was discontinued and buried east of Nine Canyon Road (McKenzie 2020). He provided a copy of a soil sampling report completed in 1996 by White Shield Environmental, Inc. (Funderburk and Fricke 1996).



**Figure 8. Project APE East Segment from Nine Canyon Road, within a Benton County Right-Of-Way, Aspect East**

With the information obtained from David McKenzie (2020), NCRS conducted additional research to determine if the Project APE may be within the buried debris east of Nine Canyon Road. A 1955 historic aerial photograph with the possible debris area was obtained from the Benton County Road Department. Using the Geographic Information System (GIS), the Project APE was overlaid onto the aerial photograph. The results indicate that there is a high probability that the proposed pipeline may cross through the buried debris. The Project APE appears to be north and outside the area tested by White Shield in 1996 (Figure 9).

White Shield sampled soil east of Nine Canyon Road and south of the Project APE. A hand-drawn site sample area map in their report indicates that a dump was located east of Nine Canyon Road and extended east to the nearby gravel road and barn (Figure 10). Notes in the upper left corner of the map state a “dump used in 1940s and 1950s, car bodies, wire, general farm junk, put beside road then bladed downhill and covered by dirt; now overgrown with sage and weed” (Funderburk and Fricke 1996, n.p. ).

White Shield conducted seven soil borings reaching depths from 6 to 15 ft adjacent to and south of the East Pipeline Segment (Funderburk and Fricke 1996). Soil samples were analyzed for pesticides, volatile organics, semi-volatile organics, and rare earth and refractory alkaline metals. The results showed no discernable amounts of contaminants (Funderburk and Fricke 1996).

During the White Shield soil sampling in 1996, the dump was not formally documented as an archaeological site and remains undocumented. At the present time, the dump appears to be outside the Project APE and was therefore not documented on a Washington State archaeological site form as part of this cultural resource’s investigation. Information associated with the dump is provided in this report. In the event the project encounters buried debris associated with the dump during construction, the decision to formally document the dump on a site form will be determined. During installation of the pipeline in the vicinity of the dump site a professional archaeologist will monitor construction activities for the presence of cultural resources associated with the dump site.

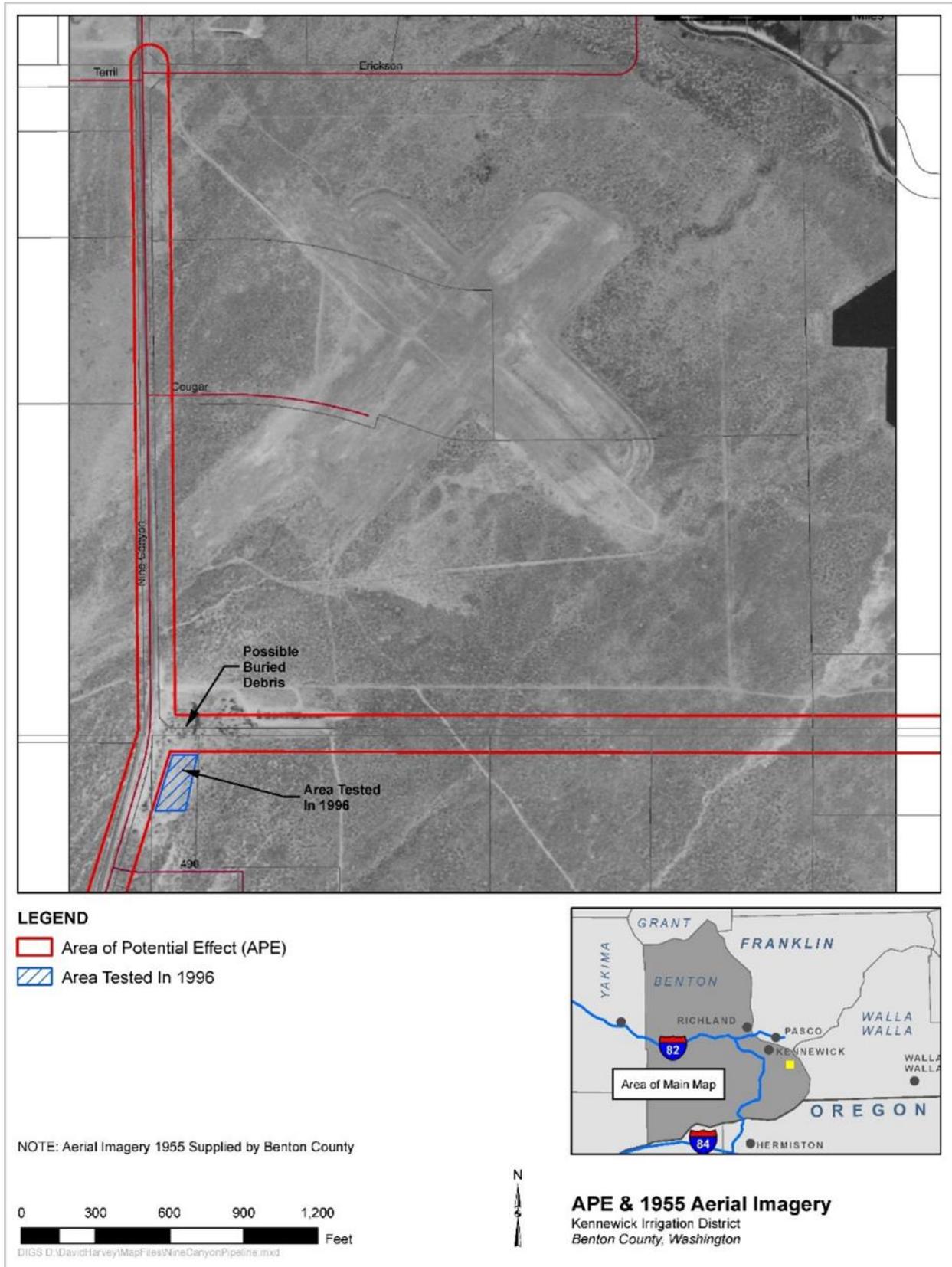


Figure 9. Aerial Photograph of the APE Showing Buried Debris and Area Tested in 1996

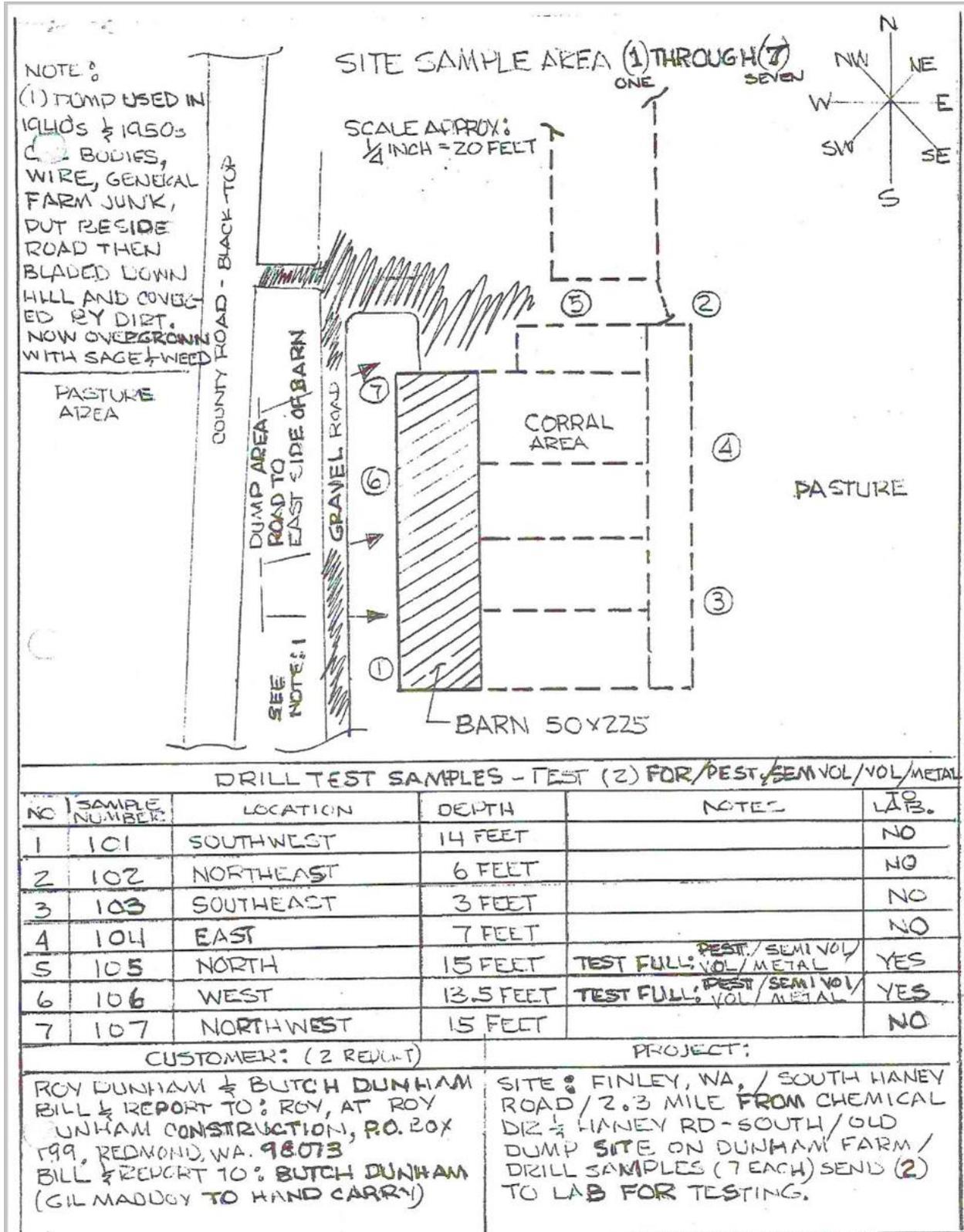


Figure 10. Location of Buried Debris and Soil Sampling Locations on the Site Sample Area Map

NCRS conducted an archaeological survey of the dump site area in the East Segment, and no artifacts were observed in the area of possible buried debris. Shovel test probes were placed in the general area of the possible debris area with negative findings. However, due to the potential for buried hazardous debris associated with the possible dump, no shovel testing was conducted between Nine Canyon Road and STU 14. Based on the information from the White Shield Report, the debris was bladed downhill and covered by dirt making any buried debris out of its original context and doubtfully eligible for listing in the National Register.

No debris possibly associated with the buried dump were observed during the archaeological survey or shovel testing. Overall, both the subsurface testing and the archaeological survey resulted in negative findings for this segment.

### 11.3 Summary of Shovel Test Units

A total of 20 STUs were completed for both the Nine Canyon Road and East Segments with negative findings. STUs 1-13 were completed for the Nine Canyon Road Segment. A crushed metal can was identified in STU 13 but was within angular road gravels and out of context. STUs 14-20 were completed for the East Segment.

Shovel testing indicates that STUs 1-8 contain the deepest geologic deposits up to 37 in. below grade suggesting this is an upper terrace above the old Columbia River Channel. The remaining STUs 9-20 were in shallow compact deposits within the old Columbia River Channel with geologic deposits not exceeding a depth of 17 in. which covered very compact Pleistocene deposits. Table 2 provides a summary of each of the 20 STUs.

**Table 2. Summary of STUs**

STU #	GPS Coordinates*	Size**	Description	Findings
1	0340687, 5110681	30 x 33 x 76 cm deep (12 x 13 x 30 in.)	0-25 cm (0-10 in.): Angular road fill gravel. 25-76 cm (10-30 in.): fine-grained sand.	Underground utility cable encountered at 76 cm. Testing was terminated.
2	0340815, 5110755	38 x 33 x 98 cm deep (15 x 13 x 39 in.)	0-15 cm (0-6 in.): Root zone with fine-grained sand. 15-98 cm (6-39 in.): Grayish brown fine-grained sand.	Negative
3	0341066, 5110980	32 x 31 x 87 cm deep (13 x 12 x 34 in.)	0-10 cm (0-4 in.): Root zone with fine-grained sand. 10-87 cm (4-34 in.): Grayish brown fine-grained sand.	Negative
4	0341103, 5111095	32 x 31 x 84 cm deep (13 x 12 x 33 in.)	0-15 cm (0-6 in.): Root zone with fine-grained sand. 15-84 (6-33 in.): Grayish brown fine-grained sand.	Negative
5	0341139, 5111203	35 x 30 x 80 cm deep (14 x 12 x 32 in.)	0-10 cm (0-4 in.): Rootzone with fine-grained sand.	Negative

**Table 2. Summary of STUs**

STU #	GPS Coordinates*	Size**	Description	Findings
			10-80 cm (4-32 in.): Grayish brown fine-grained sand. Hard compact soils at 80 cm.	
6	0341168, 5111285	33 x 31 x 93 cm deep (13 x 12 x 36 in.)	0-10 cm (0-4 in.): Rootzone with fine-grained sand. 10-93 cm (4-36 in.): Grayish brown fine-grained sand.	Negative
7	0341206, 5111395	35 x 36 x 95 cm deep (14 x 14 x 37 in.)	0-10 cm (0-4 in.): Rootzone with fine-grained sand. 10-95 cm (4-37 in.): Fine-grained sand.	Negative
8	0341247, 5111521	38 x 33 x 92 cm deep (15 x 13 x 36 in.)	0-30 cm (0-12 in.): Roots, leaves and blow sand. 30-50 cm (12-20 in.): Angular basalt road fill. 50-92 cm (12-36 in.): Fine-grained sand.	Negative
9	0341290, 5111694	36 x 31 x 40 deep (14 x 13 x 16 in.)	0-15 cm (0-5 in.): Root zone with fine-grained sand. 15-40 cm (5-16 in.): Fine-grained sand and angular basalt road fill. Large rock in the bottom of the unit terminated testing.	Negative
10	0431290, 5111748	40 x 37 x 42 cm deep (16 x 14 x 17 in.)	0-5 cm (0-2in): Root zone with fine-grained sand. 5-42 cm (2-17 in.): Fine-grained sand with compact cobbles throughout with caliche on the bottom of the cobbles.	Negative
11	0431299, 5111945	30 x 26 x 24 cm deep (12 x 14 x 10 in.)	0-7 cm (0-3 in.): Root zone with fine-grained sand. 7-24 cm (3-10 in.): Fine-grained sand with compact gravels.	Negative
12	0431305, 5112215	32 x 32 x 35 cm deep (13 x 13 x 14 in.)	0-25 cm (0-10 in.): Root zone with fine-grained sand. 25-35 cm (10-14 in.): Fine-grained sand with compact gravels at the bottom of the unit.	Negative

**Table 2. Summary of STUs**

STU #	GPS Coordinates*	Size**	Description	Findings
13	0341309, 5112355	32 x 27 x 28 cm deep (13 x 11 x 11 in.)	0-12 cm (0-5 in.): Root zone with fine-grained sand. 12-28 cm (5-11 in.): Compact angular road fill gravels. One crushed out-of-context metal can fragment.	
14	0341368, 5111583	32 x 29 x 15 cm deep (13 x 12 x 6 in.)	0-15 cm (0-6 in.): Root zone with gravels, very compact and consolidated.	Negative
15	0342501, 5111532	29 x 23 x 7 cm deep (12 x 9 x 3 in.)	0-7cm (0-3 in.): Fine-grained sand with rounded cobbles, very compact and consolidated.	Negative
16	0342344, 5111540	27 x 23 x 8 cm deep (11 x 9 x 3 in.)	0-8 cm (0-3 in.): Fine-grained sand with rounded cobbles, very compact and consolidated.	Negative
17	0342112, 5111551	24 x 23 x 15 cm deep (10 x 9 x 6 in.)	0-15 cm (0-6 in.): Fine-grained sand with rounded cobbles, very compact and consolidated.	Negative
18	0341912, 5111560	32 x 32 x 27 cm deep (12 x 12 x 11 in.)	0-17 cm (0-11 in.): Fine-grained sand with rounded cobbles, very compact and consolidated.	Negative
19	0341700, 5111568	30 x 29 x 43 cm deep (12 x 11 x 17 in.)	0-43 cm (0-17 in.): Fine-grained sand with rounded cobbles, very compact and consolidated.	Negative
20	0341531, 5111578	24 x 24 x 12 cm deep (9 x 9 x 5 in.)	0-12 cm (0-5 in.): Fine-grained sand with rounded cobbles, very compact and consolidated.	Negative

Note: \*GPS Coordinates (NAD 83)

\*\*Size is in cm (metric) and inches (standard) units.

## 12 Summary of Results of the Cultural Resources Investigation

The geology of the Project APE contains primarily very fine-grained sand and compact consolidated Pleistocene gravels. No geomorphic features are present within the APE. Ethnographically, the Cayuse, Umatilla, and Walla Walla Tribes traditionally used the general project area for trails, trade, hunting, grazing, myth age sites, materials and medicines, plant foods and seasonal camps. Winter villages were located near the Columbia, Snake and Yakima Rivers (Hunn 2015). In addition, the project area is in close proximity to a historical property of religious and cultural significance known as Piyuušmaamí Puštáy ('hills of snakes'). Piyuušmaamí Puštáy is described as follows:

A chain of hills beginning southwest of Richland, Washington, and extending southeast to the Columbia River in the vicinity of Crescent and Badger Islands. This feature on the

landscape refers to a mythical snake transformed into a mountain chain whose head has now been inundated by the Columbia River. Hills in this chain include Red Mountain, Candy Mountain, and Badger Mountain (Hunn 2015).

The 1866 GLO map indicates that two small segments of trails were present on and near Nine Canyon Road within the Project APE at that time.

The literature review identified three CR investigations, one non-eligible archaeological site, and Tribal Correspondence within the one-mile search area. No previous CR investigations or archaeological sites were documented within the Project APE. Previous CR investigations indicate that historically opportunistic dumping was a common practice in the Project APE.

Local resident David McKenzie (2020) stated that an historic dump used during the 1940s and 1950s is buried east of Nine Canyon Road possibly within the East Segment in the Project APE. A hand-drawn site sample map from the White Shield soil sampling report indicates that dump was initially on the east side of Nine Canyon Road and extended east to the nearby gravel road and barn (Funderburk and Fricke 1996). Notes in the upper left corner of the site sample map describe a “dump used in 1940s and 1950s, car bodies, wire, general farm junk, put beside road then bladed downhill and covered by dirt. Now overgrown with sage and weed” (Funderburk and Fricke 1996, n.p.).

Seven soil borings reaching depths from 6 to 15 ft below grade were taken south of the East Segment. Soil samples were analyzed for pesticides, volatile organics, semi-volatile organics and RERA metals. The results showed no contaminants (Funderburk and Fricke 1996).

Based on the findings of the literature review and local landowner information, the APE has high potential to contain historic period cultural resources in the area where the possible buried debris associated with the dump site is located and a low potential for prehistoric materials. NRCS conducted the archaeological survey and shovel testing which resulted in negative findings. The survey confirmed extensive ground disturbance has occurred within the Project APE. Farm-related debris was bladed and covered with soil east of Nine Canyon Road at the beginning of the East Segment of the proposed pipeline route in the Project APE. As a result, any possible artifacts associated with the buried material will be out of context. If such artifacts are present within the Project APE, it is doubtful they will be eligible for listing in the National Register.

### **13 Conclusions and Recommendations**

The findings from this CR investigation conclude that, as currently proposed, the construction of the Nine Canyon Pipeline will require CR monitoring. NRCS recommends that KID monitor the excavation of approximately the first 300 ft of the East Segment where possible buried debris associated with the dump site may be present. Although no important archaeological resource discoveries are anticipated, if significant cultural resources (i.e., prehistoric resources; burial artifacts) are identified during project construction activities, work in the area must stop and the KID contacted.

This CR survey report was developed to answer all components of the SEPA checklist Question 13, which are as follows:

- a) Are there any buildings, structures, or sites located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers? If so, specifically describe.**

The National Register-eligible Kennewick Main Canal Division IV intersects with Nine Canyon Road at the south end of the Project APE. Directly west of Nine Canyon Road, the proposed Nine Canyon

Pipeline Project will divert water from the canal through a turnout (headgate) into the Nine Canyon Pipeline. Drawing water from the canal will not adversely affect the characteristics that make the Kennewick Main Canal Division IV eligible for listing in the National Register. No other historic period buildings, structures or sites were identified within the Project APE during this CR investigation. However, there is a potential for buried debris associated with a historic dump located east of Nine Canyon Road. The dump, used during the 1940s and 1950s, contained car bodies, wire, and general farm junk that was located beside the road then bladed downhill and covered by dirt (Funderburk and Fricke 1996).

**b) Are there any landmarks, features, or other evidence of Native American or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.**

Ethnographically, the Cayuse, Umatilla, and Walla Walla Tribes traditionally used the general project area for trails, trade, hunting, grazing, myth age sites, materials and medicines, plant foods and seasonal camps. Winter villages were located near the Columbia, Snake and Yakima Rivers (Hunn 2015). In addition, the Project APE is in close proximity to a historical property of religious and cultural significance known as Piyuušmaamí Puštáy ('hills of snakes') (Hunn 2015).

A review of archaeological site and survey data available on the WISAARD website, analysis of historic maps and GIS data, and archaeological survey fieldwork conducted to support this proposed pipeline project identified the potential for an historic dump within the Project APE. The dump site is located in the vicinity of the East Segment, beginning east of Nine Canyon Road and extending for approximately 300 ft.

**c) Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with the Tribes and the DAHP, archaeological surveys, historic maps, geographic information system data, etc.**

Information provided by the CTUIR indicates ethnographically, the Cayuse, Umatilla, and Walla Walla Tribes traditionally used the general Project APE for trails, trade, hunting, grazing, myth age sites, materials and medicines, plant foods and seasonal camps (Hunn 2015). Winter villages were located near the Columbia, Snake and Yakima Rivers (Hunn 2015). In addition, the project area is in close proximity to a historical property of religious and cultural significance known as Piyuušmaamí Puštáy ('hills of snakes') (Hunn 2015).

As part of this survey report, a review was conducted that included archaeological site and survey data available on the WISAARD website, analysis of historic map and GIS data, and archaeological fieldwork. A local resident provided additional information regarding the potential of historic period buried debris within the Project APE. Based on that information, further research was conducted to determine if there is a potential for buried debris in the proposed pipeline segment extending east of Nine Canyon Road.

**d) Discuss proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.**

The Project APE is in close proximity to a historical property of religious and cultural significance to the CTUIR known as Piyuušmaamí Puštáy ('hills of snakes') (Hunn 2015).

The findings of the literature review and archaeological investigation indicate that the Project APE has potential to contain historic period archaeological materials associated with possible buried debris beginning east of Nine Canyon Road and extending for approximately 300 ft. Three options are recommended to the KID to avoid, minimize, or compensate for loss, changes, and disturbance to resources.

- **Option 1:** Conduct CR monitoring for the first 300 ft of the East Segment in the Project APE. If artifacts are observed, additional subsurface testing, archaeological site recording and possible assessment of the findings will be necessary to determine if the site is eligible for listing in the National Register. This option may cause a delay in the construction schedule in the area of the discovery.
- **Option 2:** Conduct ground penetrating radar to determine if subsurface anomalies associated with possible dump debris are present within the first 300 ft of the East Segment in the Project APE. If anomalies are identified, NCRS recommends KID conduct soil sampling to determine if contaminants are present. If no contaminants are present, NCRS recommends KID conduct additional archaeological subsurface testing to determine if the site contains artifacts that may be eligible for listing in the National Register.
- **Option 3:** NCRS recommends that KID relocate the East Segment pipeline north and east of the possible debris area.

## 14 References

- Benson, J. R., J. V. Jermann, and D. E. Lewarch  
1989 *Cultural Resources Inventory of the Proposed Yakima Firing Center Expansion Area East-Central Washington*, Contract CACA67-86-D-0051, Sacramento, California.
- Chatters, J. C.  
1980 *Cultural Resources of the Columbia Basin Project: An Inventory of Selected Parcels*, University of Washington Reconnaissance Report No. 32, Seattle, Washington.
- Churchill, Thomas and Dennis Griffin  
2003 *Cultural Resources Survey of the Proposed BPA Schultz-Hanford Area Transmission Line Access Roads and Reroutes and the Columbia-Hanford Area Fiber Optic Line Locations Kittitas, Douglas, Grant and Benton Counties*. Archaeological Frontiers, Gresham, Oregon.
- Doncaster, Kelsey  
2008 *Historic Resources Survey for Amon Pump Plant Operators Residence Disposal in Kennewick, Washington*. U. S. Department of the Interior, Pacific Northwest Region.  
2011 *Historic Resources Survey Kennewick Main Canal Station 737+00 to 1008+17 Lining near Badger, Washington*. Bureau of Reclamation. On file at Department of Archaeology & Historic Preservation, Olympia, Washington.
- Franklin, J. F and C.T. Dyrness  
1973 *Natural Vegetation of Oregon and Washington*. U. S. Forest Service General Technical Report PNW-8, Portland, Oregon.
- Fridlund, P.  
1985 *Prosser 1910-20 Going Back*, Ye Galleon Press, Fairfield, Washington.
- Funderburk, Rick and Stuart Fricke  
1996 *Analytical Results from Site Investigation, Dunham Farms, Finley, Washington*. White Shield, Inc., Grandview, Washington.
- Galm, J. R., G. D. Hartmann, R. A. Masten, and G. O. Stephenson  
1981 *A Cultural Resources Overview of the Bonneville Power Administration's Mid-Columbia Project, Central Washington*, Eastern Washington University, Cheney, Washington.
- Green, G. S.  
1975 *Prehistoric Utilization in the Channeled Scablands of Eastern Washington*, Washington State University, Pullman, Washington.
- Gundy, F. J. S. Axton, S. Emerson, S. Gough, and C. T. Luttrell  
1998 *A Cultural Resources Overview of the United States Bureau of Reclamation's Scattered Tracts/Potholes Study Area Adams, Franklin, Grant and Walla Walla Counties*, Washington. Eastern Washington University Reports in Archaeology and History 100-105 Archaeological and Historical Services, Cheney, Washington.
- Hunn, Eugene, T. Morning Owl, Phillip Cash and Jennifer Karson Engum  
2015 *Čáw Pawá Láakni They are Not Forgotten - Sahaptian Place Names Atlas of the Cayuse, Umatilla, and Walla Walla*. Tamástlikt Cultural Institute, Pendleton, Oregon.
- Lewty, P. J.  
1987 *To the Columbia Gateway, the Oregon Railway, and the Northern Pacific, 1879-1884*, Washington State University Press, Pullman, Washington.

McGregor A. C.

1989 *Counting Sheep from Open Range to Agribusiness on the Columbia Plateau*. University of Washington Press, Seattle, Washington.

McKenzie, David.

2020 Personal Communication, Finley, Washington.

Miller, Carey

2003 *Addendum to the Proposed Interstate 82/State Route 397 Intertie Project: Testing and Recording at Site 45BN1279, Benton County, Washington*. Confederated Tribes of the Umatilla Indian Reservation, Pendleton, Oregon.

Morgan, V., R. Bruce, J. Creighton, and S. Emerson

2001 *A Cultural Resources Overview for the Priest Rapids Hydroelectric Generation Project (FERC Project No. 2114)*, Grant, Chelan, Douglas, Kittitas, and Yakima Counties, Washington, Ephrata, Washington.

Nelson, C.M.

1969 *The Sunset Creek Site (45-KT-28) and Its Place in Plateau Prehistory*, Report of Investigations No. 47, Laboratory of Anthropology, Washington State University, Pullman, Washington.

Orr, E.L. and W.N. Orr.

1996 *Geology of the Pacific Northwest*. The McGraw-Hill Companies Inc. New York.

Pfaff, Christine E.

2002 *Harvests of Plenty: A History of the Yakima Irrigation Project, Washington*. Bureau of Reclamation Yakima, Washington.

Rasmussen, Jack

n.d. *Soil Survey of Benton County Area, Washington*. United States Department of Agriculture, Soil Conservation Service, in cooperation with the Washington Agricultural Experiment Station.

Rice, D. G.

1980 *Overview of Cultural Resources on the Hanford Reservation in South Central Washington State*. Report submitted to the U. S. Department of Energy, Richland Operations Office, Richland, Washington.

Rowley, W. D.

2006 *The Bureau of Reclamation: Origins and Growth to 1945*. U. S. Department of Interior, Bureau of Reclamation, Denver, Colorado.

Schroeder, William and Christopher Landreau

2012 *County Road Administration Board 9 Canyon Road Reconstruction, Excavation, and Embankment Project, Phases I and II, Benton County, Washington*. Reiss-Landreau Research, Yakima, Washington.

Sharpe, J. J., and T. E. Marceau

2001 *Archaeological Excavation Report for Extraction Well C3662 in Support of the 100-KR-4 Pump and Treat Project*. U. S. Department of Energy, Richland Operations, Richland, Washington.

Steinmetz, Shawn and Catherine Dickson

2003 *A Cultural Resource Survey of the City of Kennewick's Zone 3, Zone 4, and one 5 Reservoirs, Benton County, Washington*. Umatilla Indian Reservation, Pendleton, Oregon.

Swanson, Earl H.

1962 *The Emergence of Plateau Culture*. Occasional Papers of the Idaho State College Museum No. 8, Pocatello, Idaho.

The Lane Real Estate Team

n.d. *The History of Finley, Washington*. On <http://www.joelane.com/finley-history.php>.

Thoms, A. V., S. J. Bobalick, K. Bohm, T. R. Metzger, D. Olson, and S. R. Samuels

1983 *Archaeological Investigations in Upper McNary Reservoir: 1981-1982*. Washington State University, Pullman, Washington.

Trost, Teresa

2012 *Cultural Resource Assessment for the Kennewick Irrigation District 2012-2014 Capital Improvement Plan, Benton County, Washington*. Cascadia Archaeology, Seattle, Washington.

U. S. Department of the Interior, Bureau of Reclamation

1955 Yakima Project, Annual Project History, 1955, Yakima, Washington.

1958 Yakima Project, Annual Project History, 1958, Yakima, Washington.

Walker, D. Jr. (ed)

1998 *Handbook of North American Indians: Plateau, Volume 12*. Smithsonian Institution Press, Washington, D.C.

Washington State Department of Natural Resources

2012 Washington State Geologic Information Portal. Electronic Document, (<https://geologyportal.dnr.wa.gov/>), accessed May 2019.