



# Environmental Assessment

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Reactivation and Use of Three Former Borrow Sites in the 100-F,  
100-H, and 100-N Areas

U.S. Department of Energy  
Richland Operations Office  
Richland, Washington 99352

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## ACRONYMS AND ABBREVIATIONS

bcm	bank cubic meter
BRMaP	<i>Hanford Site Biological Resources Management Plan</i>
CERCLA	<i>Comprehensive Environmental Response, Compensation, and Liability Act of 1980</i>
DOE	U.S. Department of Energy
EA	environmental assessment
HCP EIS	<i>Final Hanford Comprehensive Land-Use Plan Environmental Impact Statement</i>
ISS	interim safe storage
NEPA	<i>National Environmental Policy Act of 1969</i>
USFWS	U.S. Fish and Wildlife Service
WAC	<i>Washington Administrative Code</i>



## METRIC CONVERSION CHART

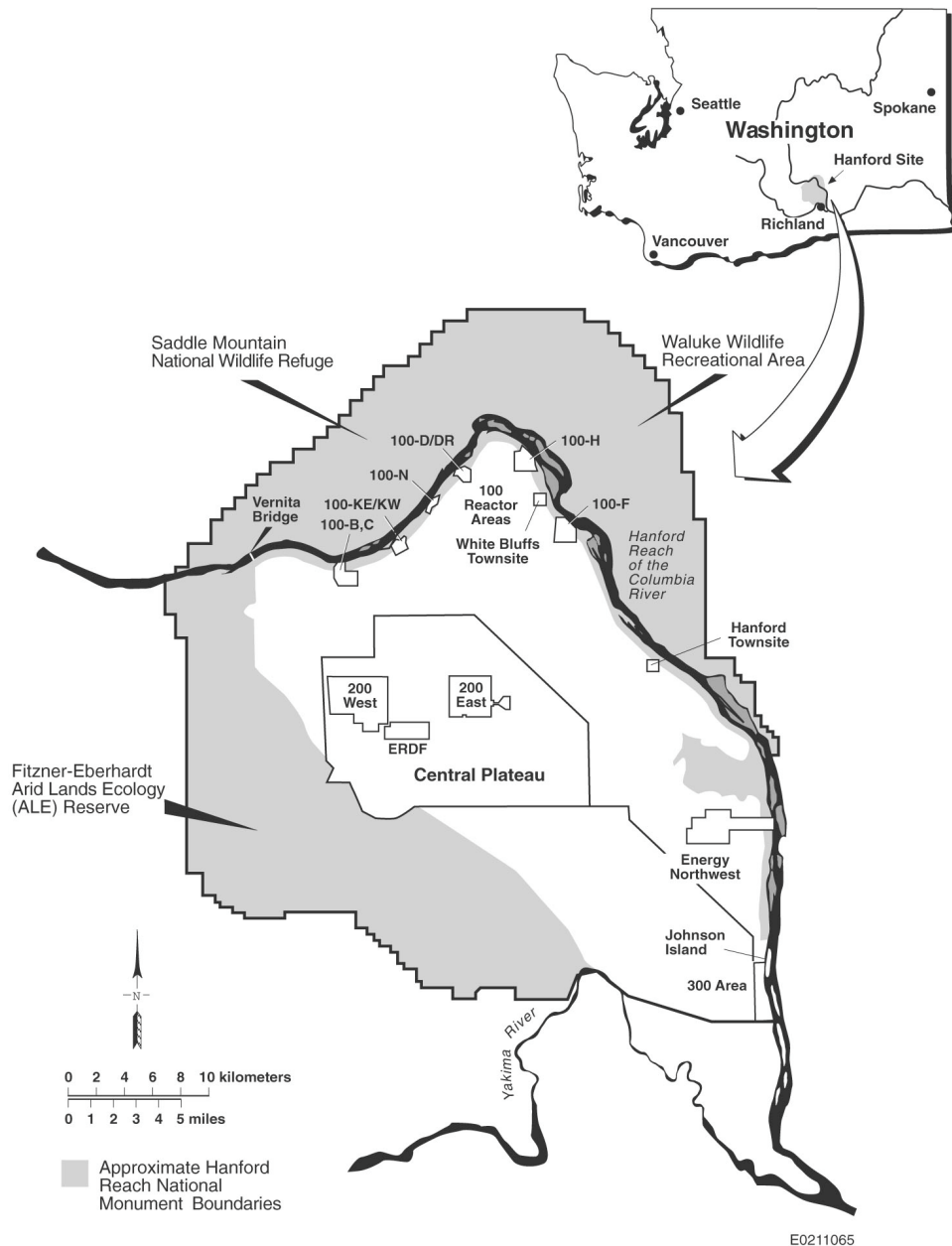
Into Metric Units			Out of Metric Units		
<i>If You Know</i>	<i>Multiply By</i>	<i>To Get</i>	<i>If You Know</i>	<i>Multiply By</i>	<i>To Get</i>
<b>Length</b>			<b>Length</b>		
inches	25.4	millimeters	millimeters	0.039	inches
inches	2.54	centimeters	centimeters	0.394	inches
feet	0.305	meters	meters	3.281	feet
yards	0.914	meters	meters	1.094	yards
miles	1.609	kilometers	kilometers	0.621	miles
<b>Area</b>			<b>Area</b>		
sq. inches	6.452	sq. centimeters	sq. centimeters	0.155	sq. inches
sq. feet	0.093	sq. meters	sq. meters	10.76	sq. feet
sq. yards	0.836	sq. meters	sq. meters	1.196	sq. yards
sq. miles	2.6	sq. kilometers	sq. kilometers	0.4	sq. miles
acres	0.405	hectares	hectares	2.47	acres
<b>Mass (weight)</b>			<b>Mass (weight)</b>		
ounces	28.35	grams	grams	0.035	ounces
pounds	0.454	kilograms	kilograms	2.205	pounds
ton	0.907	metric ton	metric ton	1.102	ton
<b>Volume</b>			<b>Volume</b>		
teaspoons	5	milliliters	milliliters	0.033	fluid ounces
tablespoons	15	milliliters	liters	2.1	pints
fluid ounces	30	milliliters	liters	1.057	quarts
cups	0.24	liters	liters	0.264	gallons
pints	0.47	liters	cubic meters	35.315	cubic feet
quarts	0.95	liters	cubic meters	1.308	cubic yards
gallons	3.8	liters			
cubic feet	0.028	cubic meters			
cubic yards	0.765	cubic meters			
<b>Temperature</b>			<b>Temperature</b>		
Fahrenheit	subtract 32, then multiply by 5/9	Celsius	Celsius	multiply by 9/5, then add 32	Fahrenheit
<b>Radioactivity</b>			<b>Radioactivity</b>		
picocuries	37	millibecquerel	millibecquerels	0.027	picocuries



## 1.0 PURPOSE AND NEED FOR AGENCY ACTION

The U.S. Department of Energy (DOE) needs to restore areas after remedial action. The purpose of this action is to supply raw aggregate material (approximately 1,104,000 bank cubic meters [bcm]) to be used as backfill for restoration projects in the 100-F, 100-H, 100-N, and 100-K Areas of the Hanford Site near Richland, Washington (Figure 1-1).

**Figure 1-1. Hanford Site Map.**







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## 2.0 BACKGROUND

Historically, mineral resources extracted on the Hanford Site have been used (1) as aggregate for concrete and roads, (2) as cap material for interim stabilization, (3) as backfill for closing waste sites, and (4) as general construction aggregate. Associated land-use commitments in general, and borrow sites specifically, have been and continue to be addressed when considering activities on the Hanford Site. Land use on the Hanford Site has been addressed in the *Final Hanford Comprehensive Land-Use Plan Environmental Impact Statement* (herein referred to as the HCP EIS) (DOE 1999). Appendix D of the HCP EIS identifies preferred sources of borrow material on the Hanford Site. The preferred sources of borrow material are also documented in the *Draft Industrial Mineral Resources Management Plan* (DOE-RL 2000a). The *Draft Industrial Mineral Resources Management Plan* was intended to provide a framework for the planning, operations, and closure/restoration of borrow pits and quarries and was developed as part of a series of resource management plans needed to implement the HCP EIS.

Several borrow areas were evaluated for continued use in the *Environmental Assessment for Use of Existing Borrow Areas, Hanford Site, Richland, Washington* (DOE 2001). The *Environmental Assessment for Use of Existing Borrow Areas, Hanford Site, Richland, Washington* was performed as fulfillment of a DOE commitment in the HCP EIS to perform a specific *National Environmental Policy Act of 1969* (NEPA) analysis addressing gravel quarries and borrow sites (DOE 1999). Some of the borrow sources identified in DOE-RL (2000a) and DOE (2001) that are intended to support remedial action backfill requirements in the 100-F, 100-H, 100-N, and 100-K Areas present certain challenges, such as limited fill material availability or limited expansion capability, locations that are substantial distances from the remedial action sites, locations that are near sensitive species, or fiscal considerations that cause them to be less preferable sources of fill material. For these reasons, the reopening of former borrow sites located in the 100-F, 100-H, and 100-N Areas is being evaluated as a Proposed Action to meet backfill requirements. These borrow sites were formerly used for fill material during construction and operation phases at the Hanford Site, but have since been abandoned. The former borrow sites were not restored to native habitat and can easily be reopened with few or no impacts to natural resources. The framework for the planning, operation, closure, and restoration of borrow pits and quarries, including procedures for reexcavation of former borrow sites and opening of new borrow sites, is addressed in the *Draft Industrial Mineral Resources Management Plan* (DOE-RL 2000a), and also in the *Mitigation Action Plan for the 100 and 600 Areas of the Hanford Site* (DOE-RL 2001d). The closure of alternate borrow sites (described in Section 3.2) that are not selected for use under the Proposed Action is not within the scope of this environmental assessment (EA).

Environmental restoration projects in the 100-F, 100-H, 100-K, and 100-N Areas of the Hanford Site will require approximately 1,104,000 bcm of fill material over a period of approximately 10 years (until 2012) both to backfill remedial action waste sites and to fill voids at the Interim Safe Storage (ISS) reactor sites. The projected needs for raw aggregate material over the remedial action period are listed in Table 2-1.

**Table 2-1. Projected Borrow Needs for Remediation Projects in the 100-F, 100-H, 100-K, and 100-N Areas.**

Activity	Required Volume (bcm)
<b>100-F Area</b>	
Remedial action	250,000
ISS (F Reactor)	10,700
Total =	260,700
<b>100-H Area</b>	
Remedial action	100,000
ISS (H Reactor)	10,700
Total =	110,700
<b>100-K Area</b>	
Remedial action	300,000
K East ISS (KE Reactor)	32,100
K West ISS (KW Reactor)	32,100
Total =	364,200
<b>100-N Area</b>	
Remedial action	347,000
ISS (N Reactor)	21,400
Total =	368,400
<b>Grand Total =</b>	<b>1,104,000</b>

To meet the backfill quantity requirements, three borrow sources located adjacent to the remediation areas have been identified and are being considered for use under the Proposed Action. The sites addressed in the Proposed Action ensure availability of material to satisfy backfill requirements, minimize haul distances from borrow sources to remedial action sites, reduce impacts to natural and cultural resources, and reduce costs associated with the excavation and transportation of materials by approximately \$1.9 million. The Proposed Action is compared to Alternative Actions using existing borrow sites identified in the *Draft Industrial Mineral Resources Management Plan* (DOE-RL 2000a) and *Environmental Assessment for Use of Existing Borrow Areas, Hanford Site, Richland, Washington* (DOE 2001). Potential impacts from the Proposed Action as well as the Alternative Actions are identified and compared.

### 3.0 PROPOSED ACTION AND ALTERNATIVES

The Proposed Action and the Alternative Actions are discussed in the following sections.

#### 3.1 PROPOSED ACTION

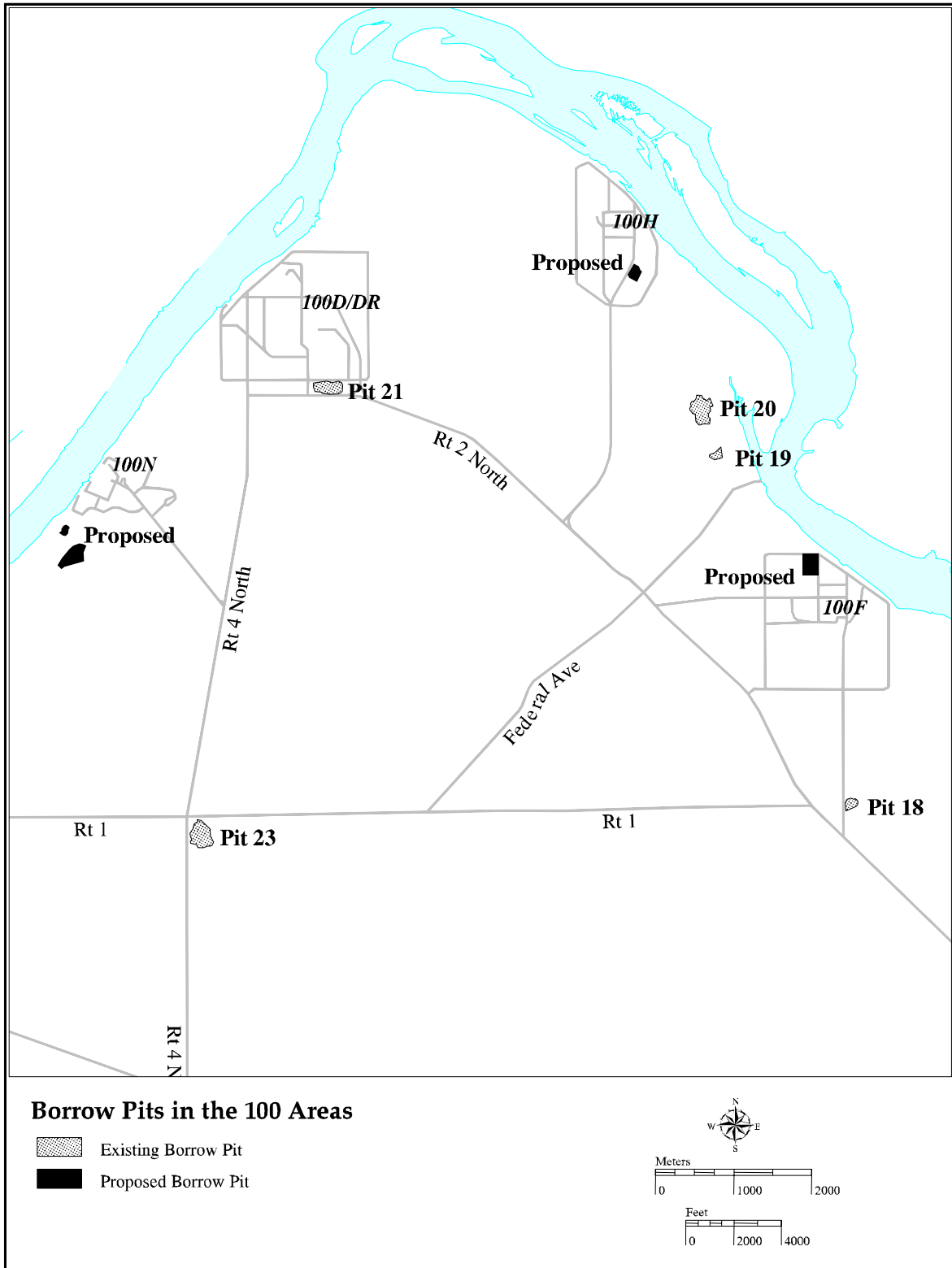
The DOE proposes to obtain borrow materials from formerly used borrow pits in the 100-F, 100-H, and 100-N Areas on the Hanford Site that were not included in the *Draft Industrial Mineral Resources Management Plan* (DOE-RL 2000a) or in the previous EA (DOE 2001). These former borrow pits are located within the “Pre-existing, Nonconforming” land-use areas associated with the 100-F, 100-H, and 100-N Reactor Areas of the Hanford Site, as described in the HCP EIS (DOE 1999). The “Nonconforming” land-use area designation, as described in the HCP EIS, allows for continued remediation activities in support of DOE missions for site cleanup in both “Conservation (mining)” and “Preservation” designated areas. Portions of the proposed borrow sites in the 100-F and 100-N Areas are located within 0.4 km (0.25 mi) of the Columbia River in an area designated as the Hanford Reach National Monument.

Under the Proposed Action, the DOE would reopen and activate three former borrow sites. The first is a former borrow site located north of the 105-F Reactor that is within the 100-F Reactor Area perimeter boundary. This site would provide the material needed for backfill of liquid waste sites at the 100-F Area remediation project and the reactor ISS project. The second is an area adjacent to a former borrow site located in the 100-H Area of the Hanford Site that would be excavated to support backfill needs for miscellaneous remaining waste site remediation and the ISS project in the 100-H Area. The third is a former borrow site and associated spoil pile located southwest of the 100-N Hanford Generating Plant that would provide borrow material for the 100-N and 100-K Area remedial action projects and ISS projects. The locations of the three proposed borrow sites are shown in Figure 3-1.

The total volume of materials to be recovered over the duration of remedial actions in the 100-F, 100-H, 100-K, and 100-N Areas is estimated to be approximately 1,104,000 bcm (Table 2-1). The Proposed Action would involve the removal of topsoil and vegetation at the three former borrow sites in preparation for excavation and transport of aggregate fill material. Prior to any material being excavated for use as backfill, the material would be sampled and the top 30 cm (12 in.) of topsoil would be stockpiled for redistribution across the disturbed area to facilitate successful site restoration. The sites would be developed in small sections to ensure only the area needed for material is disturbed. Borrow material would be excavated on an as-needed basis.

**Proposed Action and Alternatives**

**Figure 3-1. Locations of Proposed Action and Alternative Action Borrow Sites.**



ERC:dhf:11/21/02:/home/dhfsenske/projects/marceate/190hnpits/ap-100pits.aml:Rev. 2 Database: 11/21/02 3:18 PM

## **Proposed Action and Alternatives**

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Excavation of fill material would be limited to the dimensions and volumes estimated in this EA. However, backfill needs have not been estimated for solid waste burial ground remediation in these areas, and additional impacts would be evaluated should the footprint of excavation exceed greater than 10% of the footprint area estimated in this EA. The Proposed Action would take place over a period of approximately 10 years, in accordance with commitments to clean up the 259 km<sup>2</sup> (100 mi<sup>2</sup>) associated with the Columbia River Corridor before calendar year 2012, as stated in the *April 2001 Report to Congress Hanford Site Columbia River Corridor Cleanup* (DOE-RL 2001a).

A portion of the proposed borrow site in the 100-N Area contains two solid waste sites consisting of nonhazardous, nonradioactive debris, which would require removal before excavation of borrow material. Solid wastes associated with these sites would be removed and disposed appropriately, and confirmatory sampling to verify proper cleanup of the solid waste sites would be performed prior to its use.

The Proposed Action would also include ensuring adequate access is provided to the borrow locations. Existing haul roads would require upgrades, and new roads would be constructed for the transportation of borrow material within the *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* (CERCLA) remedial action areas. Appropriate utilities would be provided, and may include portable generators or extension of power lines for lighting, installation of trailers for personnel, and portable toilets.

Conventional industrial equipment would be used to excavate and transport the borrow material. For example, scrapers, power shovels, or front-end loaders could be used to excavate materials.

Ecological and cultural resource reviews have been performed for the proposed borrow areas. Such reviews would also be performed annually to renew Hanford Site excavation permits and to prevent additional impacts should the status of any of the borrow areas change during that time. This would include the construction of any new haul roads, as needed.

Mitigation activities for potential habitat loss from borrow site excavation and construction of haul roads would be performed as necessary. Topsoil from the expansion areas of the borrow sites and surface materials from construction of roads would be stockpiled for future use in restoration when closing the sites. Mitigation actions performed, including revegetation of borrow sites and haul roads, would be consistent with resource management plans that have been developed for the Hanford Site, including the following:

- *Bald Eagle Site Management Plan for the Hanford Site, South-Central Washington* (DOE-RL 1994)
- *Hanford Site Biological Resources Mitigation Strategy* (DOE-RL 2003)
- *Draft Industrial Mineral Resources Management Plan* (DOE-RL 2000a)
- *Threatened and Endangered Species Management Plan: Salmon and Steelhead* (DOE-RL 2000b)

## **Proposed Action and Alternatives**

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- *Mitigation Action Plan for the 100 and 600 Areas of the Hanford Site* (DOE-RL 2001d)
- *Hanford Site Biological Resources Management Plan* (BRMaP) (DOE-RL 2001c)
- *Draft Hanford Cultural Resources Management Plan* (DOE-RL 2001b)
- Other plans under preparation (e.g., *Draft Aesthetic and Visual Resources Management Plan*).

### **3.2 ALTERNATIVES TO THE PROPOSED ACTION**

Alternatives to the Proposed Action are described in the following subsections.

#### **3.2.1 No-Action Alternative**

Under the No-Action Alternative, excavation of borrow materials would continue for site maintenance activities and remediation under CERCLA records of decision. Backfill material would be extracted from the existing Pits 18, 21, and 23. Remedial actions in the 100-F and 100-H Areas would use Pits 18 and 21, respectively, and the 100-N and 100-K Area remedial actions would use Pits 21 and 23.

Pit 18 is located along F Avenue and Route 2 North (Figure 3-1). This pit has been used intermittently over the past several years for small quantities of backfill material. The use of Pit 18 for backfill material would require construction of a 9-m (30-ft)-wide by 2.4-km (1.5-mi)-long access road adjacent to F Avenue to provide safe access from the pit to the remediated waste sites in the 100-F Area during backfill operations. The area surrounding Pit 18 is high-quality habitat dominated by mature rabbitbrush with minor amounts of sagebrush, and disturbance or destruction of such a resource would require mitigation and restoration (DOE-RL 2001c).

Pit 21 is located south of the 100-D Area and north of Route 2 North. The southern portion of the site is bounded by Route 2 North and has been restored and revegetated with native species. The northern edge of this pit is bounded by power lines, and the eastern boundary of the site is restricted by a road. Any expansion of this borrow site would be restricted to the western boundary. This alternative would require construction of new haul roads from Route 2 to the 100-H, 100-N, and 100-K Reactor Areas.

Pit 23 is located south of Route 1 and east of Route 4 North. The site has been used intermittently for backfill material over the past several years. Route 4 North and Route 1, respectively, would be used to transport material to the 100-N and 100-K Reactor Areas. Additionally, new or upgraded haul roads would be required to transport fill material to the respective remediation areas.

## **Proposed Action and Alternatives**

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### **3.2.2 Use of Pits 19 and 20 and Construction of New Haul Roads to Supply Fill Material for the 100-F and 100-H Areas**

In lieu of using the borrow sites described under the Proposed Action or No-Action Alternative, this alternative would consist of using existing borrow areas (Pits 19 and 20) to support backfill requirements for remedial actions in the 100-F and 100-H Areas. Pits 19 and 20 are located along the Columbia River shoreline between the 100-F and 100-H Areas (Figure 3-1), within the bald eagle nest/roost restricted use area (Appendix A, Figure A-1) as identified in the *Bald Eagle Site Management Plan* (DOE-RL 1994). Pits 19 and 20 are located within the “Preservation” land-use area as designated in the HCP EIS (DOE 1999) and have been recommended for closure in the *Draft Industrial Mineral Resources Management Plan* (DOE-RL 2000a). Use of Pits 19 and 20 to support backfill requirements in the 100-F and 100-H Areas would require improvement or construction of haul roads and would be restricted to times of the year when eagles are not present. Additional material would need to be identified to support backfill requirements in the 100-K and 100-N Areas.

### **3.2.3 Use of Other Existing Onsite Borrow Material Sources**

This alternative would use other existing onsite borrow pits as a source of backfill for remedial action projects in the 100-F, 100-H, 100-K, and 100-N Areas. There are six active borrow sites (i.e., Pits 30, 31, 32, 33, 34, and 35) identified in the 200 Areas and two active borrow sites (Pits 6 and 9) located in the 300 Area that would be potential sources of onsite fill material. These locations are identified and described in both the *Draft Industrial Mineral Resources Management Plan* (DOE-RL 2000a) and *Environmental Assessment for Use of Existing Borrow Areas, Hanford Site, Richland, Washington* (DOE 2001). This alternative would require upgrading existing roads or the construction of new roads.

### **3.2.4 Procurement of Offsite Materials**

Procurement of offsite materials could be used to supplement existing available fill material, or as an exclusive source. This alternative would require establishing contracts with offsite commercial entities. Offsite commercial suppliers of borrow materials are available. Local entities include Acme Materials and Construction Company, Central Pre-Mix Concrete Company, Transtate Asphalt Company, and EUCON Corporation.





## 4.0 AFFECTED ENVIRONMENT

The following subsections describe the general Hanford Site environment, as well as the specific site environments for the locations of the Proposed and Alternative Actions. Supplementary detail regarding the habitat and environs of the Hanford Site can be found in the *Hanford Site 2001 Environmental Report* (PNNL 2002a) and *Hanford Site National Environmental Policy Act (NEPA) Characterization* (PNNL 2002b).

### 4.1 GENERAL HANFORD SITE ENVIRONMENT

The Hanford Site lies within the Pasco Basin of the Columbia Plateau in southeastern Washington State. The site occupies an area of approximately 1,517 km<sup>2</sup> (~586 mi<sup>2</sup>) located north of the city of Richland and the confluence of the Yakima and Columbia Rivers (DOE 1999). This large area has restricted public access and provides a buffer for the smaller areas on the Hanford Site that historically were used for production of nuclear materials, waste storage, and waste disposal. The Columbia River flows eastward through the northern part of the Hanford Site, then turns south, forming the eastern site boundary (PNNL 2002b).

The Hanford Site has a semiarid climate with 15 to 18 cm (6 to 7 in.) of annual precipitation, most of which takes place during the winter months. Average daily maximum temperatures range from 2°C (35°F) in late December and early January to 36°C (96°F) in late July. Monthly average wind speeds are lowest during the winter months, averaging 10 to 11 km/h (6 to 7 mph), and highest during the summer, averaging 13 to 14 km/h (8 to 9 mph) (PNNL 2002b), with infrequent periods of high winds of up to 128 km/h (80 mph). Tornadoes are extremely rare; no destructive tornadoes have occurred in the region surrounding the Hanford Site. The probability of a tornado hitting any given location on the Hanford Site is estimated at 1 chance in 100,000 during any given year. The region is categorized as one of low to moderate seismicity.

The vegetation on the Hanford Site is a shrub-steppe community of sagebrush and rabbitbrush with an understory consisting primarily of cheatgrass and Sandberg's bluegrass. As discussed in PNNL (2002b), natural plant communities have been altered by Euro-American activities that have resulted in the proliferation of nonnative species. Of the 590 species of vascular plants recorded for the Hanford Site, approximately 20% of all species are considered nonnative. The biodiversity inventories conducted by The Nature Conservancy of Washington between 1994 and 1999 (TNC 1999) identified 85 additional taxa, establishing the actual number of plant taxa on the Hanford Site at 675. Cheatgrass is the dominant nonnative species.

Several species of both plants and animals are under consideration for formal listing by the federal government and Washington State. Details are provided in PNNL (2002b) and are incorporated by reference in this EA. Relatively undisturbed areas of the mature shrub-steppe vegetation are high-quality habitat for many plants and animals and have been designated as "priority habitat" by Washington State.

## Affected Environment

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Most mammals known to inhabit the Hanford Site are small, nocturnal species, such as pocket mice and jackrabbits. Large mammals found on the Hanford Site are deer and elk, although the elk exist almost entirely on the Fitzner-Eberhardt Arid Lands Ecology Reserve. Coyotes and raptors are the primary predators. Several species of small birds nest in the steppe vegetation. Semiannual peaks in avian variety and abundance occur during migration seasons.

Threatened and endangered plants and animals identified on the Hanford Site, as listed by the federal government (16 U.S.C. 1531 and Title 50 *Code of Federal Regulations* Part 402) and Washington State (*Washington Administrative Code* [WAC] 232-012-297 and Washington Natural Heritage Program 1997), generally are not found in the vicinity of the borrow sites. No plants or mammals on the federal list of threatened and endangered wildlife and plants are known to be on the Hanford Site. There are, however, two species of birds (Aleutian Canada goose and bald eagle) on the federal list of threatened and endangered species that have been observed on the Hanford Site. Additional details regarding the protection and enhancement of bald eagle habitat on the Hanford Site are provided in the *Bald Eagle Site Management Plan for the Hanford Site, South-Central Washington* (DOE-RL 1994).

The Columbia River provides valuable habitat for aquatic organisms, and the Hanford Reach represents the only remaining significant spawning habitat for stocks of upriver bright fall chinook salmon and white sturgeon. The Upper Columbia River spring run chinook salmon, Middle Columbia River steelhead, and Upper Columbia River steelhead have been placed under the protection of the *Endangered Species Act of 1973*. These fish spawn in, or migrate through, the Hanford Reach. Additional details regarding the protection and enhancement of stocks of spring chinook salmon and steelhead within the Hanford Reach of the Columbia River are found in the *Threatened and Endangered Species Management Plan: Salmon and Steelhead* (DOE-RL 2000b).

### 4.2 SPECIFIC SITE ENVIRONMENT

Site-specific ecological resource reviews, cultural reconnaissance surveys, and literature searches were conducted for each of the Proposed Action areas. Results of these surveys are detailed in the following subsections and in Appendix B, “Ecological and Cultural Resource Reviews for Proposed Borrow Site Locations.” None of the alternatives presented would be located within a 100-year floodplain or wetland.

#### 4.2.1 100-F Area Proposed Action Location

The proposed 100-F borrow area is within the perimeter of the 100-F Reactor Area (Figure 3-1 and Appendix A, Figure A-2). This area is a “Pre-existing, Nonconforming” land-use as described in the HCP EIS (DOE 1999). A portion of the proposed borrow site in the 100-F Area is located within 0.4 km (0.25 mi) of the Columbia River, in the area designated as the Hanford Reach National Monument. This site was surveyed for impacts to ecological and cultural resources, and the survey results were documented in Ecological Resource Reviews 00-ER-014 (BHI 2000b) and 02-ER-029 (BHI 2002b, Appendix B). The results of the ecological survey did not find any plant or animal species of concern in the area. That field investigation found that

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the eastern portion of the proposed borrow area has been used in the past as a source for borrow material and is highly disturbed. The vegetation in the previously mined area consists of a very sparse stand of small-stature gray rabbitbrush and a variety of understory species. The estimated ground area covered with vegetation in this exposed cobble area is less than 5%. To the west of this area, the soils have been previously disturbed, and the vegetative community is dominated by cheatgrass and sparse Sandberg's bluegrass with only a few rabbitbrush (BHI 2000b). No cultural resources were observed during the survey. The depth from the design excavation floor of the proposed action location to the groundwater interface is 3.3 m (10.7 ft).

### 4.2.2 100-H Area Proposed Action Location

The proposed 100-H borrow area is within the perimeter of the 100-H Reactor Area. It is adjacent to a previously used borrow area and is currently being used as a container queue for the 100-H Reactor ISS project (Figure 3-1 and Appendix A, Figure A-3). No vegetation is present on this site, and no plant or animal species of concern have been identified. The surface of the site is covered with a layer of compacted gravel over the native soil (BHI 2002b). No cultural resources were observed during the survey or have been previously documented (BHI 2002c, Appendix B). The depth from the design excavation floor of the proposed action location to the groundwater interface is 8.1 m (26.7 ft).

### 4.2.3 100-N Area Proposed Action Location

The proposed 100-N borrow area is adjacent to and south of the Hanford Generating Plant. The site was previously used as a borrow area during construction at the 100-N Area during the 1960s (Figure 3-1 and Appendix A, Figure A-4). The site includes a spoil pile that was left during construction that would be removed to grade and used for fill material. The spoil pile area of the proposed borrow site is located within 0.4 km (0.25 mi) of the Columbia River in the area designated as the Hanford Reach National Monument. The vegetation in the previously used borrow area and the surrounding area is dominated by cheatgrass and Sandberg's bluegrass. The vegetation in the previously mined area consists of a very sparse stand of small-stature gray rabbitbrush. No plant or animal species of concern were identified in the proposed borrow area (BHI 2002b). One traditional cultural site, *Mooli Mooli*, is located northeast of the project area. This area consists of rounded mounds of river-deposited sand and cobble of spiritual significance to Native American Tribes. Electrical transmission towers and a series of interconnecting railroad tracks isolate this cultural resource from the project area. The depth from the design excavation floor of the proposed action location to the groundwater interface is 12.0 m (39.4 ft).

### 4.2.4 Alternative Action Locations

The active borrow areas being considered for Alternative Actions under this EA include Pits 18, 19, 20, 21, and 23. Site conditions and natural resources associated with these areas are described below.

Pit 18 is located along F Avenue and Route 2 North (Figure 3-1). This pit has been used intermittently over the past several years for small quantities of backfill material. Previous resource reviews for this pit include 00-ER-001, 98-ER-010, and 97-ER-027 (BHI 2000a, 1998,

## Affected Environment

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and 1997a, respectively). Field surveys have documented that the active portions of Pit 18 are not vegetated, while the inactive area has naturally revegetated with native species. The area surrounding Pit 18 is high-quality habitat dominated by mature rabbitbrush with minor amounts of sagebrush, and disturbance or destruction of such a resource would require mitigation and restoration (DOE-RL 2001c).

Pits 19 and 20 are located along the Columbia River shoreline between the 100-H and 100-F Areas (Figure 3-1), within the bald eagle roost/nest restricted use area (Appendix A, Figure A-1) as identified in the *Bald Eagle Site Management Plan* (DOE-RL 1994). A pair of bald eagles has occupied a nest within 300 m of this location during each of the last 5 years. The 800-m buffer area surrounding the nest is restricted as long as the eagles are present, which would make these pits unavailable for use during that time. In 1999, nesting activities lasted from November through July. Habitat associated with Pits 19 and 20 consists mainly of cheatgrass, Sandberg's bluegrass, and a few rabbitbrush. Pits 19 and 20 have been recommended for closure in the *Draft Industrial Mineral Resources Management Plan* (DOE-RL 2000a) based on proximity to culturally sensitive areas and the known eagle roost/nest area.

Pit 21 is located south of the 100-D Area and adjacent to Route 2 North (Figure 3-1). Several ecological and cultural resource reviews were performed at the site between 1996 and 2002 (i.e., 96-ER-023, 97-ER-40, 99-ER-023, 99-ER-044, 00-ER-006, 00-ER-006a, 02-ER-027, and 02-ER-029 [BHI 1996, 1997b, 1999a, 1999b, 2000c, 2001a, 2002a, and 2002b, respectively]). The active portion of the borrow area is nonvegetated. The southern portion of the pit is inactive and has been revegetated with native species. Vegetation near the borrow area includes cheatgrass, Sandberg's bluegrass, globemallow, and tumbled mustard, with some incidence of sagebrush and rabbitbrush shrubs nearby. No plant or animal species of concern have been associated with Pit 21. No cultural resources have been documented in the area surrounding Pit 21.

Pit 23 is located at the southeast corner of the intersection of Route 1 and Route 4 North (Figure 3-1). The site has been used intermittently for backfill material over the past several years. The north and west boundaries of the pit are limited by Route 1 and Route 4 North, respectively. The south and west boundaries contain mature shrubs including sagebrush. Several ecological and cultural resource reviews were performed at the site between 1998 and 2000 (i.e., 98-ER-010, 00-ER-001, 00-ER-001a, 00-ER-001b [BHI 1998, 2000a, 2000d, and 2001b, respectively]). The active portion of the borrow area is nonvegetated. Vegetation surrounding the borrow area includes cheatgrass and Sandberg's bluegrass, with some incidence of sagebrush and rabbitbrush shrubs. No plant or animal species of concern have been associated with Pit 23. No cultural resources have been documented in the area surrounding Pit 23.

Other alternative borrow sites listed in Section 3.2.3 are located in the 200 and 300 Areas of the Hanford Site. Pits 30 and 31 are located adjacent to Route 1 in the 200 Area. Pits 32 and 33 are located in the 200 East Area, east of Route 4 North. Pits 34 and 35 are located in the 200 West Area, south of Route 1. Pits 6 and 9 are located in the 300 Area. Piper's daisy (*Erigeron piperianus*) (Washington State Sensitive Species) has been identified in Pits 30, 32, 33, and 35. Small evening-primrose (*Camissonia minor*) (Washington State Review Species) has been

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identified in Pit 31, and the potential habitat for dwarf evening primrose (*Camissonia pygmaea*) (Washington State Threatened Species) and gray cryptantha (*Cryptantha leucophaea*) (Washington State Sensitive Species, Federal Species of Concern) has been identified in Pit 9. No species of concern have been observed in Pits 6 and 34.

### 4.3 SOCIOECONOMIC ENVIRONMENT

The cities of Kennewick, Pasco, and Richland (Tri-Cities) constitute the nearest population centers and are located southeast of the Hanford Site. The 1999 estimated population distribution is as follows: Kennewick, 50,950; Pasco, 26,600; and Richland, 36,880 (DOE 2001). The DOE, Richland Operations Office and its contractors dominate the local employment picture with almost one-quarter of the total nonagricultural jobs in Benton and Franklin Counties. Ninety-three percent of Hanford Site personnel reside in the Benton and Franklin County areas. Therefore, work activities on the Hanford Site play an important role in the socioeconomics of the Tri-Cities and other parts of Benton and Franklin Counties (PNNL 2002b). Other counties are less affected by changes in Hanford Site employment.



## **5.0 ENVIRONMENTAL IMPACTS**

### **5.1 IMPACTS OF THE PROPOSED ACTION**

Impacts from construction and routine operation of the proposed borrow sites are described in the following subsections.

#### **5.1.1 Excavation of Borrow Materials**

No radiological or toxicological exposure to personnel or the general public would be expected to occur as a result of routine excavation operations, either loading or offloading activities. The materials would be handled in a manner consistent with commercial industrial quarry activities. Hanford Site personnel handle these types of materials daily. The use of appropriate personal protective clothing, specific training, and equipment safeguards would be adequate to ensure the safe recovery and handling of this material.

#### **5.1.2 Air Quality**

The Hanford Site operates under WAC 173-400-040, "General Standards for Maximum Emissions," established by the Washington State Department of Ecology, which is designed to protect existing ambient air quality. Small quantities of gaseous, particulate, or thermal discharges would occur from typical construction and operation activities. Sources would include trucks, tractors, and construction equipment. Construction of haul roads within the CERCLA remediation areas, excavation and loading of fill material, and offloading of material may release dust into the air. Wind erosion of exposed surfaces may also contribute to dust emissions at the active borrow locations and haul roads. Dust suppression methods such as watering would be implemented. No substantial increases in overall emissions would be envisioned to result from the Proposed Action. Additionally, no radiological or toxicological exposure to personnel or the general public would be expected to occur as a result of routine excavation operations, either loading or offloading activities.

#### **5.1.3 Water Quality**

Construction and operation activities at the borrow locations may include sprinkling clean water for dust control, as necessary. The source of water used for dust suppression is the existing Hanford Site water system, which meets groundwater quality criteria standards. There would be minimal infiltration to groundwater, and the Proposed Action is not anticipated to impact the Columbia River.

#### **5.1.4 Land Use**

In accordance with land-use designations in the HCP EIS (DOE 1999), the extraction of mineral resources is prohibited in the "Preservation" designation except for remediation activities taking place in the Columbia River Corridor. Remediation activities would continue in the 100 Areas and would be considered a "Pre-existing, Nonconforming use" in the "Preservation" land-use



## Environmental Impacts

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designation within the Columbia River Corridor. The 100-F, 100-H, and 100-N Area borrow sources discussed in the Proposed Action are within the “Preservation” area under the HCP EIS; however, extraction of mineral resources at these sites would be an authorized “Nonconforming use” in accordance with remediation activities in the Columbia River Corridor.

The estimated surface area needed to meet projected requirements for fill material (Table 2-1) for the Proposed Action sites at the 100-F, 100-H, and 100-N Areas would be approximately 0.14 km<sup>2</sup> (0.05 mi<sup>2</sup>), 0.025 km<sup>2</sup> (0.01 mi<sup>2</sup>), and 0.18 km<sup>2</sup> (0.07 mi<sup>2</sup>), respectively. The additional areas required for the upgrade or construction of haul roads within the CERCLA remedial action areas are estimated to be 0.01, 0.015, and 0.02 km<sup>2</sup> (0.004, 0.006, and 0.008 mi<sup>2</sup>) for borrow sites at the 100-F, 100-N, and 100-K Areas, respectively. No new roads would be required for the transportation of fill material in the 100-H Area. The total disturbed surface area for the borrow locations and haul roads would be approximately 0.39 km<sup>2</sup> (0.15 mi<sup>2</sup>).

Specific actions that might be considered on a site-specific basis include grading or sloping; surface compaction; stabilization; stockpiling of removed overburden; replacing or adding soil; amending existing soils; planting native vegetation; and diversion, channeling, or collection of precipitation.

### 5.1.5 Ecological Resources

As indicated by ecological resource reviews performed for the proposed borrow sites (Appendix B), no impacts to plant or animal species of concern would be anticipated under the Proposed Action. No disturbance to bald eagles would result under the Proposed Action because the proposed borrow areas are not located in proximity to eagle roosting/nesting areas. Additionally, certain restrictions could be applied as a result of these surveys (e.g., limitations of excavation activities during migratory bird nesting seasons and bald eagle winter roosting seasons). Shorter length of haul distances required under the Proposed Action as compared to Alternative Actions would also minimize impacts to native vegetation between the borrow sites and the reactor areas. Additionally, impacts to native vegetation at the proposed borrow sites and use of haul roads would be offset by mitigation actions upon closure of these borrow sites and their associated support areas.

### 5.1.6 Cultural Resources

As indicated by previous cultural resource reviews in the project location (Appendix B), no cultural resources are known to exist within the proposed borrow areas in the 100-H and 100-N Areas. Letters from the State Historic Preservation Officer and Wanapum were received and concurred with the findings of these reviews. These letters are also included in Appendix B. The location of these proposed borrow sites would not compromise any known traditional cultural places as defined by Native American Tribes. No impacts would be incurred on *Mooli Mooli*, which is isolated from the project area by electrical transmission lines and railroad tracks. However, historic lamp fixtures are present at the proposed 100-F Area borrow location, which would require removal for preservation or appropriate disposition. If cultural resources were to be encountered during operations and/or expansion, all work would stop immediately and the Hanford Cultural Resource staff would be notified.

## **Environmental Impacts**

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### **5.1.7 Aesthetic and Visual Resources**

The construction and operation of borrow sites and associated CERCLA remedial action area haul roads under the Proposed Action would minimize additional impacts to aesthetic and visual resources, because they would be located away from high traffic areas and would not be visible to the general visiting population. The proposed borrow locations are not within the viewshed of the Columbia River or other Traditional Cultural Places defined by the Native American Tribes. Additionally, these areas would be revegetated to blend in with the surrounding terrain.

### **5.1.8 Transportation**

Potential impacts of incident-free, intra-site truck transport of borrow materials have been considered. Typically, incident-free impacts are based on consideration of traffic congestion and pollutants emitted from the vehicles during normal transportation. Occasional interference with the local traffic flow would be mitigated by appropriate administrative controls (e.g., warning signs and traffic markers) and scheduling truck traffic during nonpeak hours. The haul roads used for the Proposed Action would avoid interference with normal traffic flows because they would not use or intersect any primary Hanford Site routes.

The types of pollutants that could be present and might impact the public include sulfur oxides, particulates, nitrogen oxides, carbon monoxide, hydrocarbons, and photochemical oxidants. The shorter driving distances afforded under the Proposed Action would minimize emissions from transportation of borrow material. Vehicle emissions resulting from the Proposed Action are not anticipated to substantially impact the existing air quality on the Hanford Site. Pollution prevention policies and procedures have been established for the Hanford Site. Administrative controls such as vehicle maintenance and the consideration of alternative fuel sources would also minimize potential impacts.

### **5.1.9 Reasonably Foreseeable Accidents Considered and the Potential Effects**

The reasonably foreseeable accidents under the Proposed Action for excavation and use of borrow areas and construction of haul roads within the CERCLA remedial action areas would be typical construction and transportation accidents. Public health and safety would not be affected because the area is closed to the general public. Typical construction hazards would exist; however, the risk of severe accidents would be low because haul roads would be restricted to operational use only.

### **5.1.10 Socioeconomic Impacts**

The Proposed Action would use existing personnel at the Hanford Site; therefore, the Proposed Action would have no socioeconomic impacts.

### **5.1.11 Environmental Justice Impacts**

## Environmental Impacts

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Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, requires that federal agencies identify and address, as appropriate, high and disproportionate adverse human health or socioeconomic effects of their programs and activities on minority and low-income populations. Minority populations and low-income populations are present near the Hanford Site (PNNL 2002b). The analysis of the impacts in this EA indicates that there would be minimal impacts to both the offsite population and workforce by implementing the Proposed Action. The offsite health impacts from the Proposed Action analyzed in this EA are expected to be minimal. Therefore, it is not expected that there would be any high and disproportionate adverse impacts to any minority or low-income portion of the community.

### 5.1.12 Cumulative Impacts

In analyzing the impacts of the Proposed Action, increased dust particulate releases to the atmosphere would occur temporarily during the construction and operation of the borrow sites and haul roads. However, these types of air releases are anticipated to be minor, and watering of soil would mitigate dust particulate releases. Waste generation is expected to be minimal.

Because borrow site usage would be concurrent with remedial action activities in the 100 Areas, cumulative impacts to traffic flow may result from the Proposed Action. Occasional interference with normal traffic flow with borrow material transport activities could be mitigated by scheduling truck traffic during nonpeak hours. However, impacts to traffic flow in the 100 Areas under the Proposed Action would be minimized relative to the alternative actions because of the proximity of the borrow sites to the remedial action projects.

No cumulative impacts to natural resources would be expected from the activation or operation of the borrow sites concurrent with remedial action activities in the 100 Areas. Impacts to ecological resources would be expected to be minimal because habitat value is low at all Proposed Action locations. Restoration actions taken to reestablish native species and the shrub community after operation of the borrow sites and haul roads is complete will increase habitat value beyond that of pre-excavation conditions.

Because the Proposed Action would involve only existing personnel, no change is expected in the overall workforce on the Hanford Site or within Benton and Franklin Counties. There would be no adverse socioeconomic impacts or any high and disproportionate adverse impacts to any minority or low-income portion of the community. Because there are no substantial impacts from this Proposed Action, there would be no substantial addition to Hanford Site cumulative impacts.

## **Environmental Impacts**

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### **5.2 IMPACTS FROM ALTERNATIVE ACTIONS**

#### **5.2.1 Impacts from the No-Action Alternative**

Impacts resulting from the No-Action Alternative may include disturbance of native species in and surrounding Pit 18. Additional habitat would be impacted by construction of a haul road from Pit 18 adjacent to F Avenue, and construction of new haul roads from Pit 21 to the 100-H, 100-K, and 100-N Areas. Disturbance of native species would occur in and surrounding Pit 23. Impacts to aesthetic and visual resources would result from siting Pit 18 adjacent to the existing major road (Route 2), and activities sited in Pit 23 would be within the viewshed of Gable Mountain, which is a known religious/ceremonial location identified by Tribal representatives. Impacts to cultural and aesthetic resources could result from the construction of a haul road from Pit 21 to the 100-N Area. The shortest distance from Pit 21 to the 100-N Area is an area containing rounded mounds of river-deposited sand and cobble known as *Mooli Mooli*, which is a culturally significant landform and a protected geological resource of the Hanford Reach National Monument related to the Missoula ice age floods. To avoid such impacts under the No-Action Alternative, Route 2 North, Route 4 North, and Route 1 would be used to transport materials to the 100-N and 100-K Areas.

Impacts resulting from the No-Action Alternative would also include increased heavy truck traffic on Route 1, Route 2 North, and Route 4 North, which would impact existing traffic conditions and degrade roads. Increased haul distances to the 100-F, 100-H, 100-K, and 100-N Areas from Pits 18, 21, and 23 as compared to the shorter haul distances from the 100-F, 100-H, and 100-N Area Proposed Action locations would increase impacts to air quality and transportation resources and risks. Mitigation actions would be required to prevent impacts to ecological resources associated with Pits 21 and 23.

#### **5.2.2 Impacts from Using Pits 19 and 20 and Construction of New Haul Roads to Supply Fill Material for the 100-F and 100-H Areas**

Impacts resulting from this Alternative Action would include potential disturbance to cultural and ecological resources. Longer haul distances to the 100-F Area from Pits 19 and 20 as compared to the shorter haul distances of the Proposed Action locations would increase impacts to air quality, transportation resources, and risks. Availability of these sites would be limited to times of the year when bald eagles were not present. Mitigation actions would be required to prevent impacts to cultural and ecological resources associated with Pits 19 and 20.

#### **5.2.3 Impacts from the Use of Other Onsite Borrow Material Sources**

Impacts resulting from the use of other onsite borrow material sources would include increased transportation impacts resulting from longer haul distances, increased fuel consumption, and increased traffic on prominent Hanford Site roadways, increasing the likelihood of a vehicular accident.

## **Environmental Impacts**

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Potential impacts to natural resources would include impacts to sensitive plant species in and around the Alternative Action borrow sites. Expansion of Pit 35 would potentially impact the White Bluffs Road, which is an identified historical/cultural pre-Hanford feature.

### **5.2.4 Impacts from the Procurement of Offsite Materials**

Potential transportation impacts would increase with the amount proportional to the volume of materials procured from offsite. The use of offsite borrow materials would result in increased public exposure to vehicular exhaust emissions, increased fuel consumption due to greater travel distance, and more road miles generally open to the public, which could increase the likelihood of a vehicular accident. Impacts to offsite ecological and cultural resources may occur under this alternative.

## **6.0 PERMITS AND REGULATORY REQUIREMENTS**

Particulate emissions are regulated by the Washington State Department of Ecology pursuant to WAC 173-400, "General Regulations for Air Pollution Sources." Additionally, a notification of the Proposed Action would be issued to the U.S. Fish and Wildlife Service (USFWS) per Public Law 100-605 because of the proximity of the proposed borrow sites to the Columbia River.

During the preparation of this EA, the USFWS was consulted concerning interactions with the Hanford Reach National Monument. Consistent with the DOE's authority to manage lands within the Monument as necessary to carry out the environmental cleanup mission, activation and use of the proposed borrow sites would be allowable under the June 9, 2000 Presidential Proclamation. DOE will consult with the USFWS prior to any construction activities.

Hanford Site excavation permits for the excavation of aggregate materials would be required to prevent unplanned disturbance or infiltration. The transportation of the borrow materials would comply with the applicable regulations, orders, and guidance promulgated by agencies such as the DOE, Occupational Safety and Health Administration, and U.S. Department of Transportation. These agencies have developed comprehensive regulations covering the performance of shipping, packaging, vehicle safety, routing of shipments, and physical protection.



## 7.0 CONSULTATION AND COORDINATION

During the preparation of this EA, the USFWS was consulted concerning interactions with the Hanford Reach National Monument.

Before approval of this EA, a draft version was made available to the following for a 30-day comment period:

- Confederated Tribes of the Colville Reservation
- Nez Perce Tribe
- Confederated Tribes of the Umatilla Indian Reservation
- Yakama Nation
- Wanapum
- U. S. Environmental Protection Agency
- USFWS
- Washington State Department of Ecology
- Washington State Department of Fish and Wildlife
- State Historic Preservation Officer
- Oregon Office of Energy
- Benton and Franklin Counties
- City of Richland
- Hanford Natural Resource Trustee Council
- Hanford Advisory Board
- Heart of America Northwest
- Physicians for Social Responsibility.

The draft EA was made available in the DOE reading room (Consolidated Information Center at Washington State University Tri-Cities) and the Richland Public Library, and was placed on the Hanford Site Web site (<http://www.hanford.gov/docs/ea/ea1454.html>).

Copies of comments and DOE responses are provided in Appendix C.





## 8.0 REFERENCES

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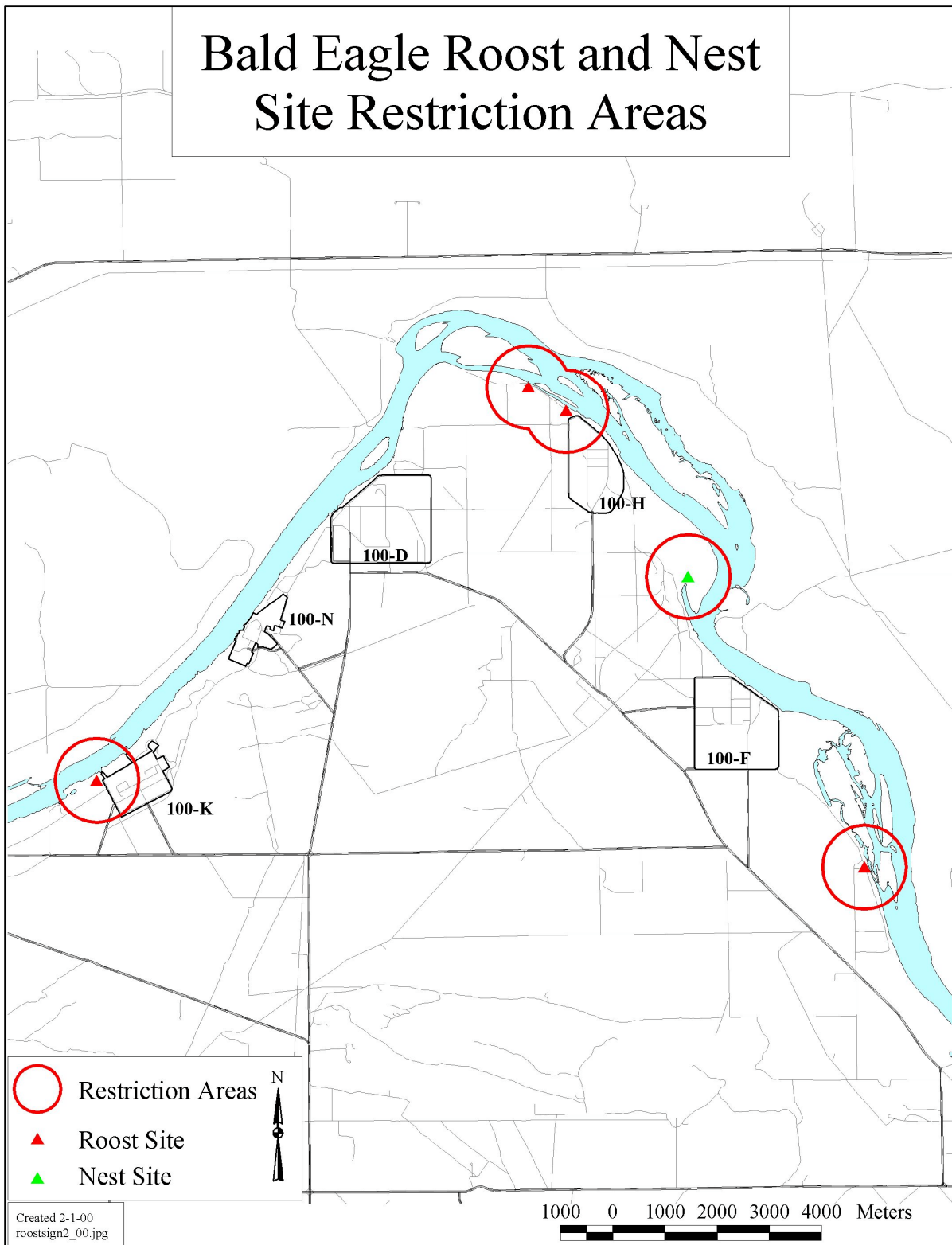
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**APPENDIX A**  
**PROPOSED BORROW SITE LOCATIONS**



Figure A-1. Bald Eagle Roost/Nest Restricted Area Map.





**Appendix A – Proposed Borrow Site Locations**

**Figure A-2. Map of Proposed 100-F Area Borrow Site.**

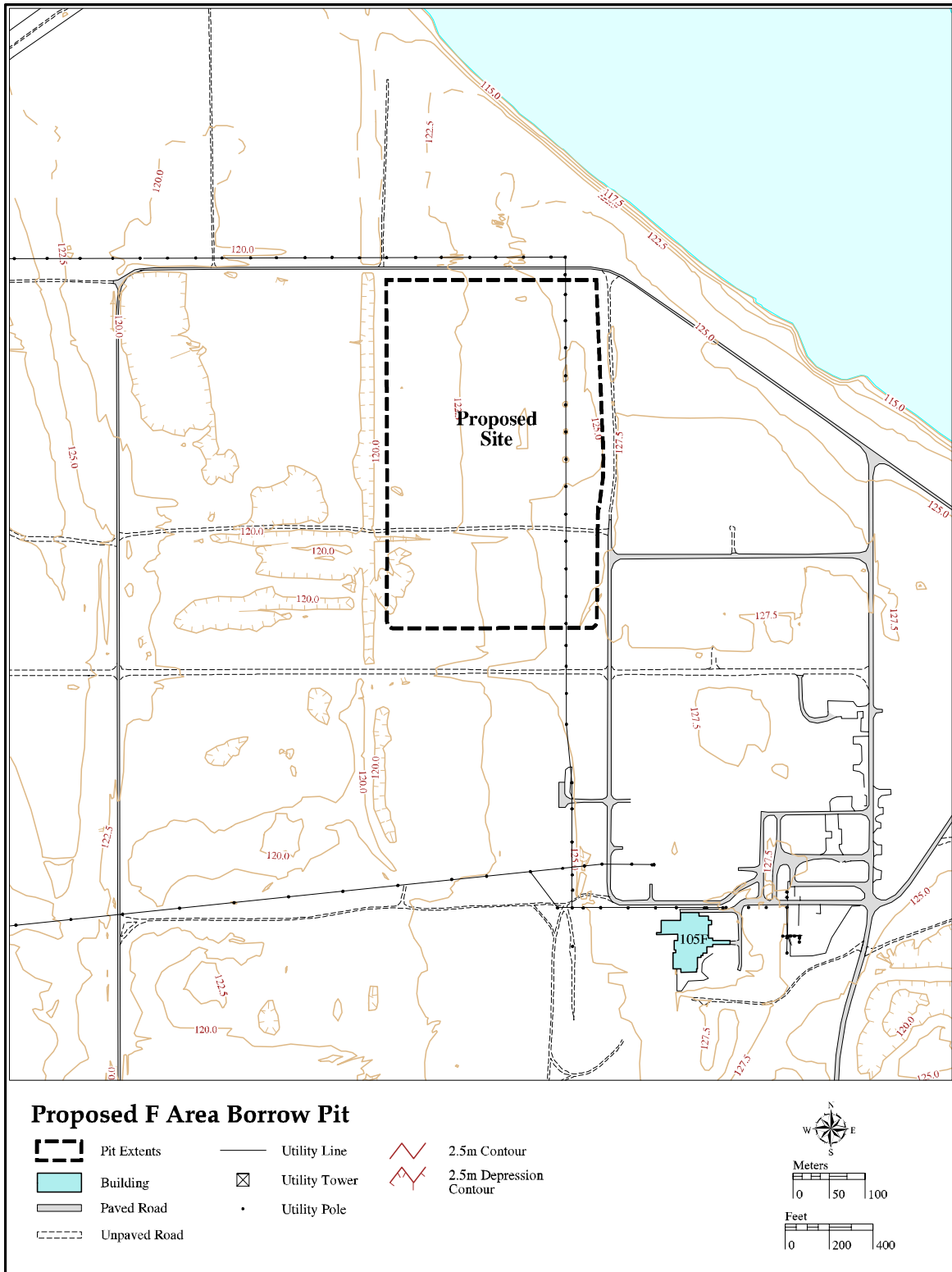
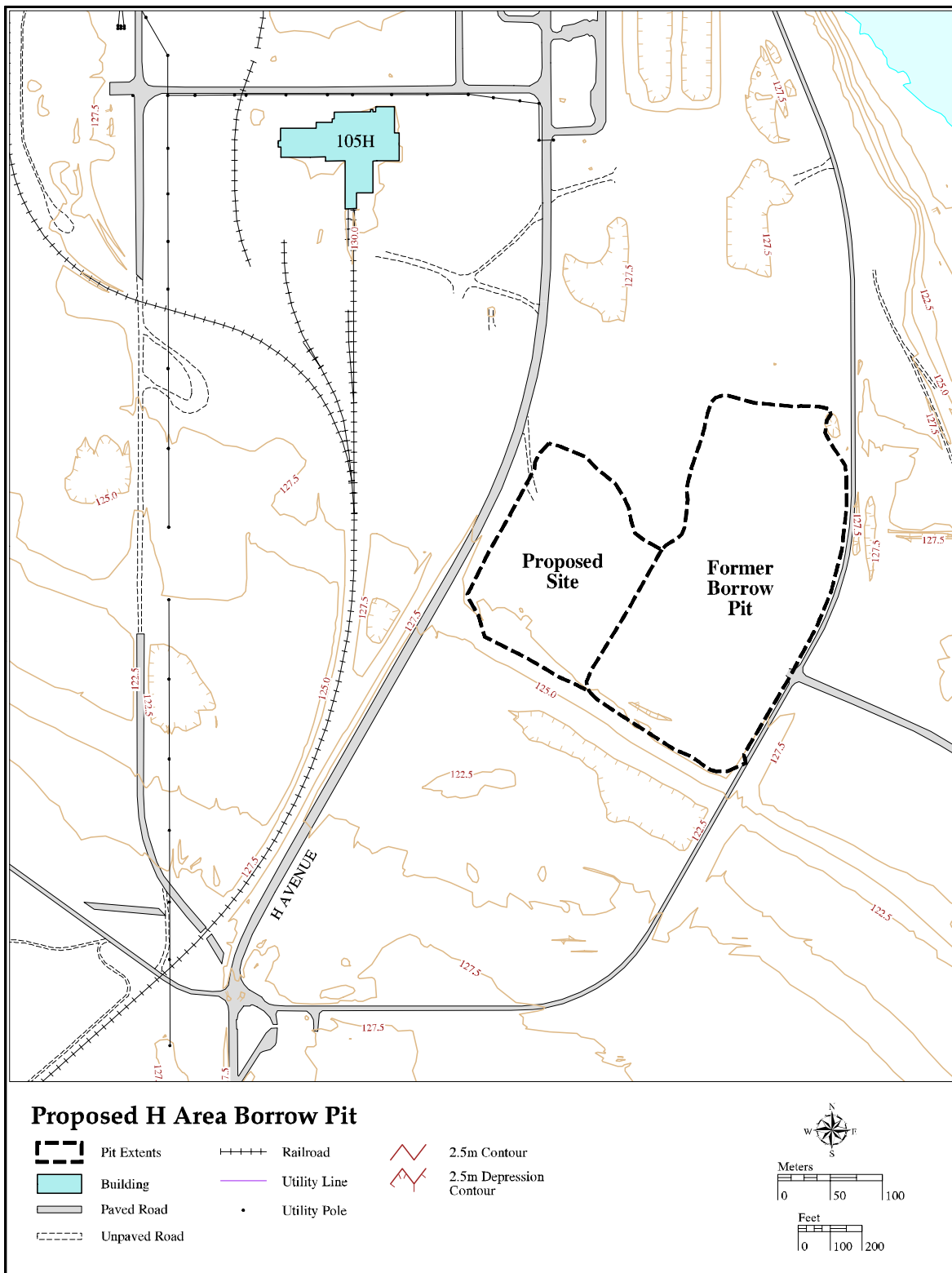


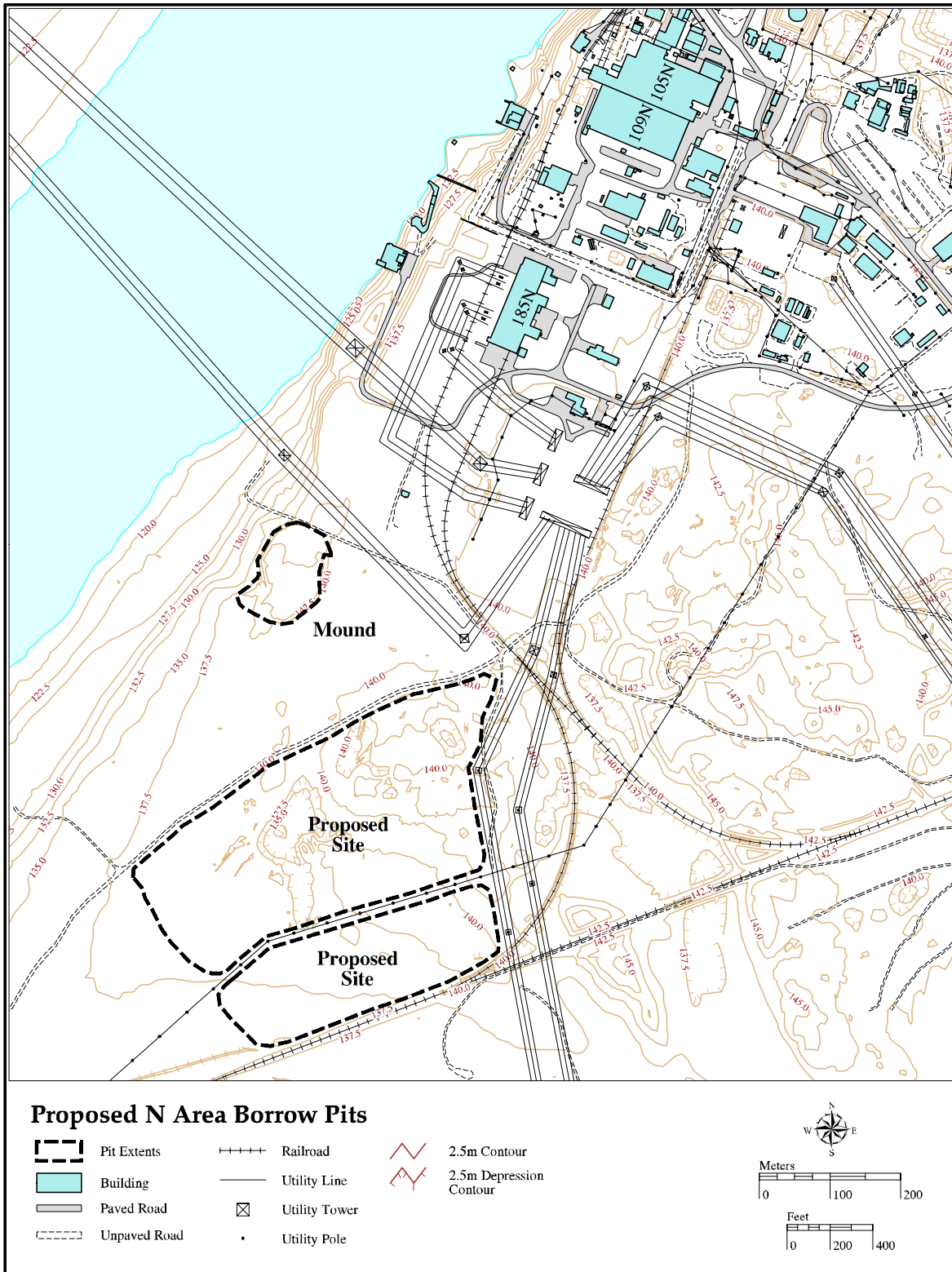
Figure A-3. Map of Proposed 100-H Area Borrow Site.



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**Appendix A – Proposed Borrow Site Locations**

**Figure A-4. Map of Proposed 100-N Area Borrow Site.**



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**APPENDIX B**

**ECOLOGICAL AND CULTURAL RESOURCE REVIEWS  
FOR PROPOSED BORROW SITE LOCATIONS**



102946


Environmental  
Restoration  
Contractor **ERC Team**  
**Interoffice Memorandum**

Job No. 22192  
Written Response Required. No  
Due Date: N/A  
Actions: N/A  
Closes CCN: N/A  
OU: N/A  
TSD: N/A  
ERA: N/A  
Subject Code: 6500

**TO:** M. A. Buckmaster, X9-11

**DATE:** September 25, 2002

**COPIES:** R. C. Havenor, X9-11  
K. A. Gano, H0-23  
A. L. Johnson, H0-23  
T. F. Kisenwether X9-11  
J. K. Linville, H9-01  
T. E. Marceau, H0-23  
J. J. Sharpe, H9-01  
Document and Info Services, H0-09

**FROM:** D. D. Teel   
Natural Resources & Environmental  
Site Closure  
H0-23/372-9633

**SUBJECT: ECOLOGICAL RESOURCES REVIEW TO ACTIVATE AND EXPAND  
BORROW PITS AT 100-F, 100-H, & 100-N (02-ER-029)**

This memo is in response to your September 23, 2002, request for an Ecological Resources Review to activate and expand 3 former borrow sites to provide backfill material for the Remedial Action projects at 100-F, 100-H, 100-N, & 100-K. The proposed site at 100-F is located within the 100-F Area perimeter road and has been used as a borrow site previously during the 1970s (attachment 1). The proposed site at 100-H would be located adjacent to the recently revegetated borrow site to include the container queue area (attachment 2). The proposed site at 100-N is located south of the Hanford Generating Plant and was previously used as a borrow site during construction of the Generating Plant in the 1960s. A mound of excavated material was left just north of the former borrow site that is being considered for removal, at the request of the Wanapum Tribe, to return the site to the original contour. This mound of material would also be used to supply backfill for both 100-N and 100-K Remedial Action projects (attachment 3).

**Ecological Review**

The proposed borrow areas were surveyed for ecological resources by Natural Resources staff on September 16, 2002. The site at 100-F was previously surveyed for ecological resources in April 2000, and the results documented in a letter report (00-ER-014) from D. D. Teel to D. L. Schilperoort, dated May 15, 2000 (CCN 242768). That review described the vegetation in the former borrow area as a very sparse stand of small-stature gray rabbitbrush (*Chrysothamnus nauseosus*) with scattered understory species. The estimated ground area covered with vegetation in the rocky soils was less than 5%. The expansion area to the west was described as lightly disturbed and the vegetation has recovered to a community dominated by cheatgrass (*Bromus tectorum*) and Sandberg's bluegrass (*Poa sandbergii*). No plant or animal species of concern or sensitive habitats were observed in the proposed area and "no adverse impacts to ecological resources are anticipated from using this area as a borrow site." The conditions at this site have not changed since the original review.

**102946**

M. A. Buckmaster  
Page 2

The proposed site at 100-H Area is adjacent to a previously used borrow area and is currently being used as a container queue for 100-H Reactor Interim Safe Storage Project. No vegetation is present on this site and no plant or animal species of concern were identified. The surface of the site is covered with a layer of compacted gravel over the native soil. Prior to using the site for a borrow area, the gravel must be removed and the native soil stockpiled for use in restoring the pit.

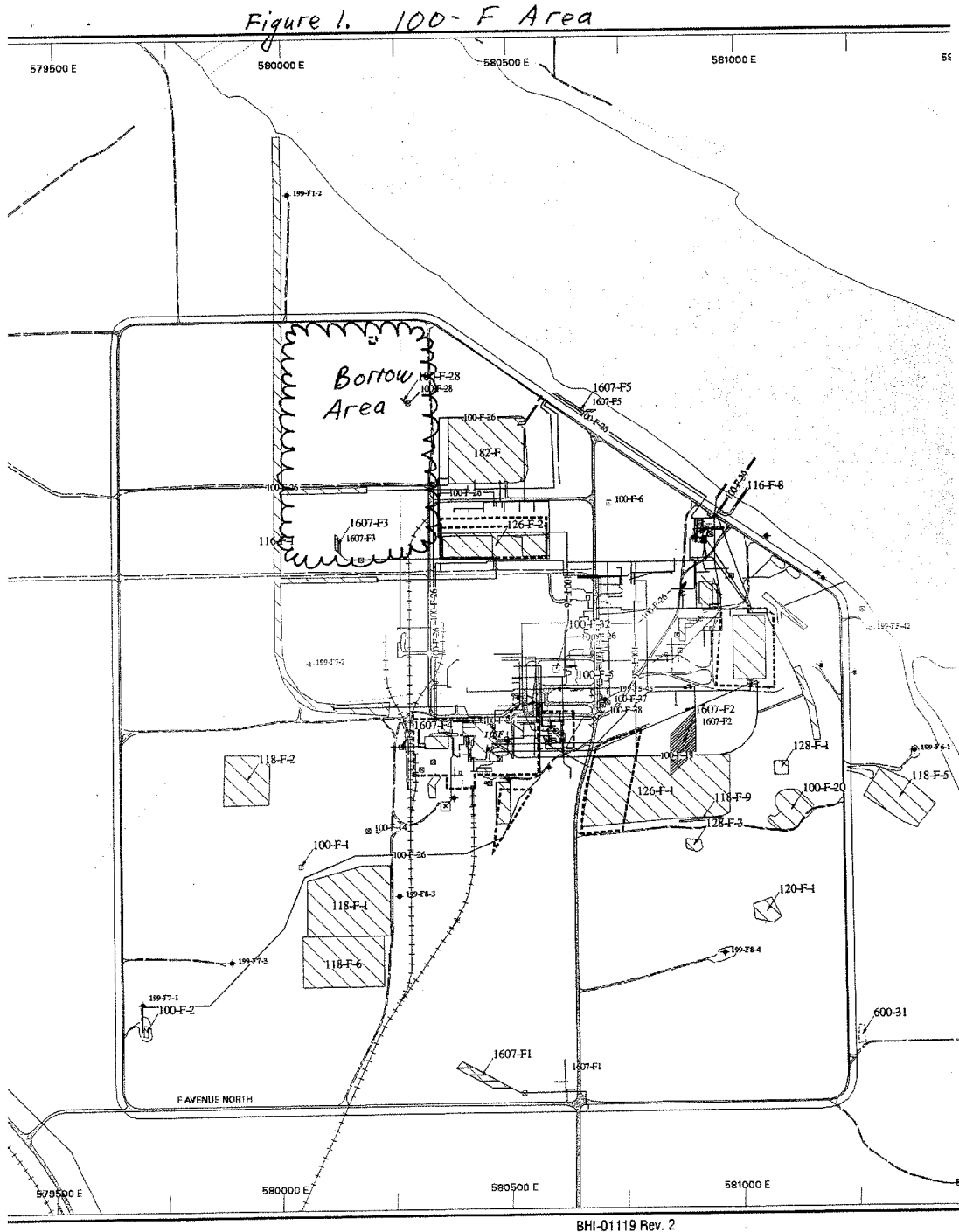
The proposed 100-N borrow area is adjacent to and south of the Hanford Generating Plant. The vegetation in the previously used borrow area and the surrounding area is dominated by cheatgrass and Sandberg's bluegrass. In the previously mined area, there is a very sparse stand of small stature gray rabbitbrush. The mound of material north of the proposed borrow pit is dominated by a community of gray rabbitbrush with an understory of Sandberg's bluegrass and cheatgrass. No plant or animal species of concern were identified in the proposed borrow area or the mound area.

There is always a potential for ground nesting birds to occur at all of these sites between March and July. If nesting birds are encountered, contact Ken Gano (372-9316) to determine appropriate mitigation actions. Prior to any material being excavated for use as backfill, the top 12 inches of topsoil will be stockpiled for redistribution across the disturbed pit areas to facilitate successful revegetation. The borrow site at 100-N appears to contain a significant amount of fine-grained material. The operation of this pit should be planned such that this fine-grained material can be placed on the surface of the backfilled waste sites to enhance the success of the revegetation efforts.

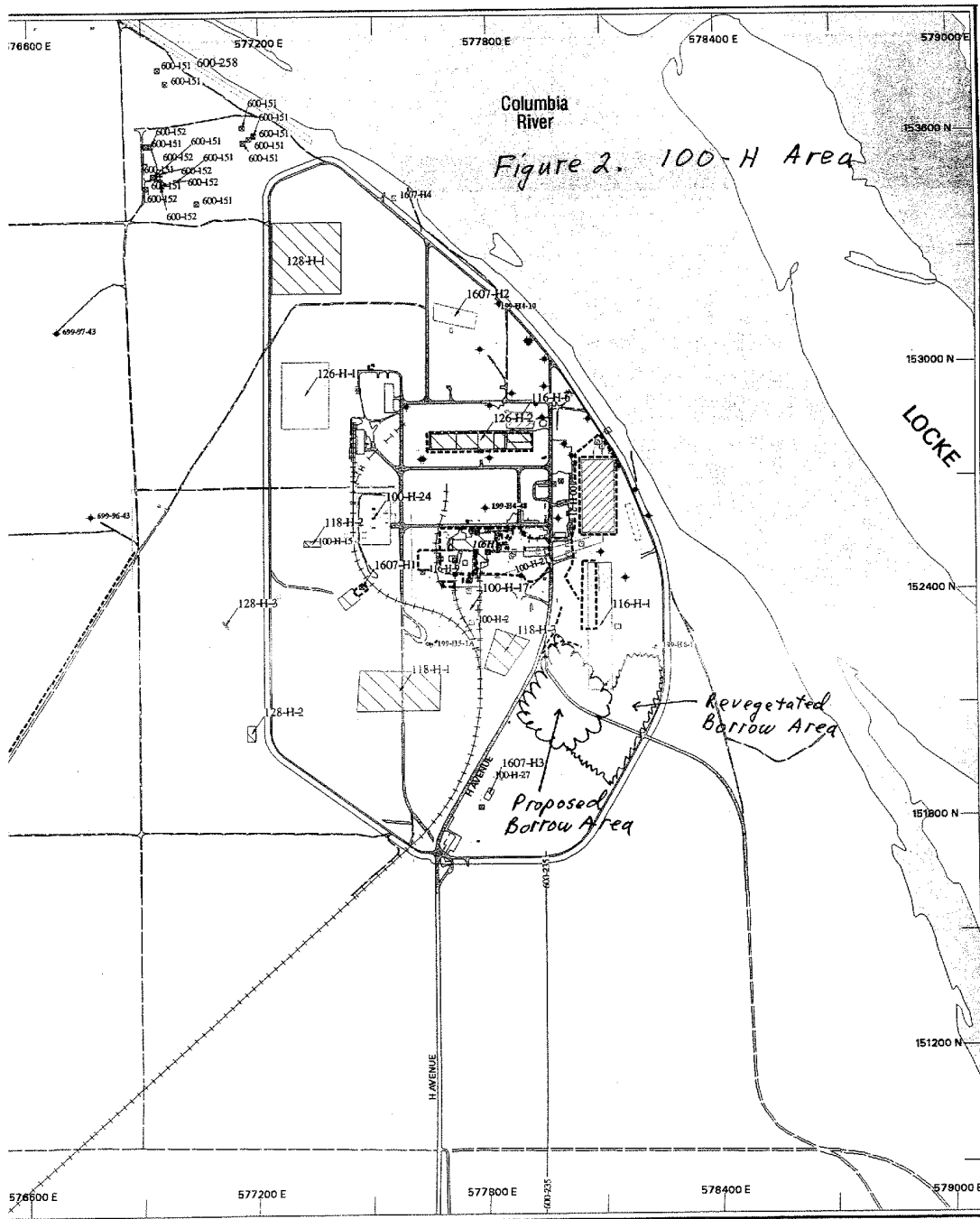
If there are any changes in the scope of activities that could result in additional disturbance outside the description of this project or the timing of the project is such that grading/clearing activities could impact nesting birds between March and July, please contact Ken Gano or Jenifer Linville on 372-9570.

DDT:tle

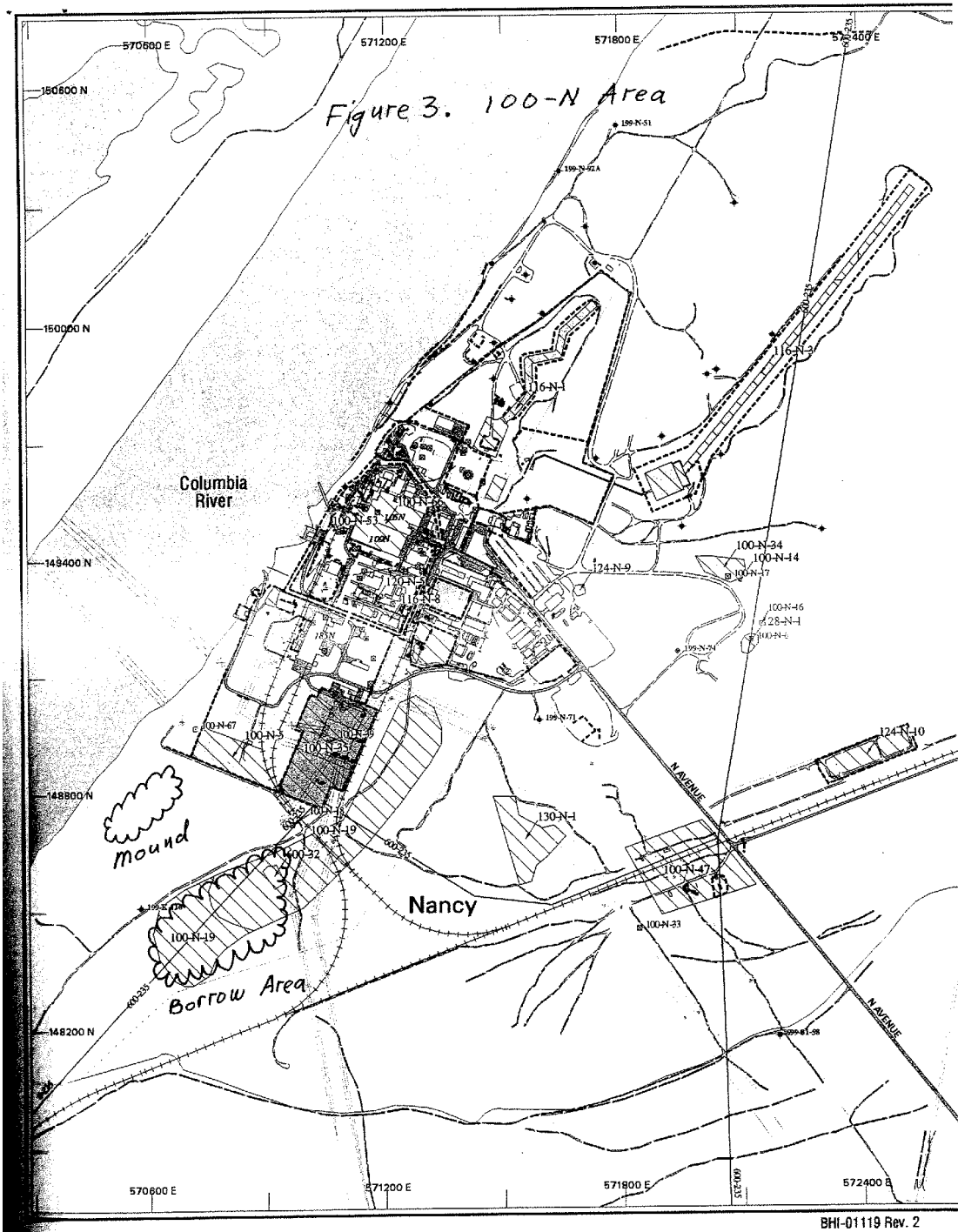
Attachments - 3







BHI-01119 Rev. 2



Environmental  
Restoration  
Contractor **ERC Team**  
**Interoffice Memorandum**

103599

~~103586~~ *11/1/02*

Job No. 22192  
Written Response Required No  
Due Date: N/A  
Actionee: N/A  
Closes CCN: N/A  
OU: N/A  
TSD: N/A  
ERA: N/A  
Subject Code: 6500

TO: M. A. Buckmaster, X9-11

DATE: November 4, 2002

COPIES: R. C. Havenor, X9-11  
K.A. Gano, H0-23  
A.L. Johnson, H0-23  
T. F. Kisenwether, X9-11  
J. K. Linville, H9-01  
T.E. Marceau, H0-23  
E. Prendergast, K6-75  
J.J. Sharpe H9-01  
Document and Info Services H0-09

FROM: *D. D. Teel*  
D. D. Teel, Manager  
Natural Resources & Environmental  
Site Closure  
H0-23/372-9633

NO HISTORIC  
PROPERTIES

SUBJECT: **CULTURAL RESOURCE REVIEW TO ACTIVATE AND EXPAND BORROW PITS  
AT 100-F, 100-H, AND 100-N AREAS (HCRC # 2003-100-001)**

This memo is in response to your request of September 23, 2002, for a Cultural Resource Review to activate and expand three former borrow sites (Figure 1) to provide backfill material for the Remedial Action projects at the 100-F, 100-H, 100-K, and 100-N Areas. The request to use these sources will be evaluated through an Environmental Assessment (EA) under the National Environmental Policy Act (NEPA). This Cultural Resources Review (CRR) provides input for the EA. The Hanford Cultural Resources Management Plan classifies this project as a Class III Undertaking: New Construction in a Disturbed Low-Sensitivity Area.

**LITERATURE REVIEW**

A records and literature review was conducted for this project on October 2, 2002, by Thomas E. Marceau, Cultural Resources Supervisor. His findings are presented by project area.

**100-F Area:**

The proposed site at 100-F (Figure 2) is located within the 100-F Area perimeter road and was used previously as a borrow area during the 1970s. The borrow area will be expanded in phases to encompass an area bounded by the perimeter road on the north, existing access roads on the east and south, and the Lewis Canal on the west. Five archeological sites are recorded north, east, and southeast of the proposed project area. Site 45-BN-606 (the Lewis Canal Site) is situated more than 400 meters (¼ mile) north of the outer perimeter road near the junction of Lewis Canal and the Columbia River. This site was documented in the *Excavation Report for Archaeological Sites 45-BN-888 and 45-BN-606 on the Hanford Site, Richland, Washington* (Marceau et al. 2002a). A series of sites (i.e., 45-BN-435, 45-BN-433, 45-BN-432, and 45-BN-431) occur parallel to the Columbia River from more than 400 meters to more than 1,200 meters (¾ mile) east and southeast of the project area (Chatters et al. 1992). Sites 45-BN-433 and 45-BN-432 were test excavated in 1992 (Wright 1993). Testing indicated that these two sites were actually a single site artificially separated by an outfall line. Test excavations conducted in 2001 near UPR-100-F-2 likewise indicated that sites 45-BN-432 and

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**Bechtel Hanford, Inc. – CH2M Hill Hanford, Inc. – Eberline Services Hanford, Inc.**

103599

~~103586~~ *dmw*

M. A. Buckmaster  
Page 2

45-BN-431 were likely sections of the same linear site (Marceau et al. 2002b). No direct or indirect effects will occur to these sites due to borrow pit expansion or operation. Portions of the proposed expansion area were surveyed for cultural resources as part of the Lewis Canal Remedial Action project in 1997 (HCRC # 97-100-013). No cultural resources were observed during that survey. Areas proposed for expansion not covered by the 1997 survey were surveyed on October 28, 2002, and the results are reported below.

**100-H Area:**

The proposed borrow site at 100-H (Figure 3) currently functions as the queue (i.e., container transfer area) for the 100-H Remedial Action project. This location forms the western boundary of the borrow area established as a source for gravel for backfill of remediated liquid waste sites in the 100-H Area. One archaeological/traditional cultural site exists east of the proposed project area (Chatters et al. 1992). Site 45-BN-176 is located more than 900 meters (½ mile) east of the expansion area. No direct or indirect effects will occur to this site due to expansion. The existing borrow pit (dug to permissible depth and now revegetated) and the proposed expansion area were surveyed for cultural resources in support of their current uses in 1999 (HCRC # 97-100-013a). No cultural resources were observed during that survey.

**100-N Area:**

The proposed borrow sites at 100-N (Figure 4) are located south of the Hanford Generating Plant. [Note: Because projections for borrow material needed were adjusted upwards subsequent to the initial project notification, the perimeter of the expansion area at 100-N has been revised in Figure 4 that accompanies this CRR]. Both areas, a mound of excavated material and an existing borrow pit, are associated with construction of the Hanford Generating Plant in the 1960s. Three archeological sites and a traditional cultural site exist northwest, north, and northeast of the proposed project area. The hills comprising *Mooli Mooli*, a traditional cultural site with spiritual significance, form and arch to the north, east, and southeast of the 100-N Area. The eastern edge of the existing borrow pit lies within 400 meters of *Mooli Mooli*. However, two electrical transmission lines and a series of interconnecting railroad tracks are located between the proposed expansion area and *Mooli Mooli* isolating this section of the hills from the project area. These barriers can not be crossed. Sites 45-BN-149 and 45-BN-179/180 are located within 200 meters (¼ mile) of the backfill mound. However, the mound rests on a high Pleistocene terrace well above the Holocene terrace containing the archaeological sites (Chatters et al. 1992). Consequently no direct or indirect effects will occur to these sites due to removal of the mound. Additionally, it may be argued that use of these areas will have a beneficial effect on *Mooli Mooli* since the mound area will be returned to original grade and the borrow area will be recontoured following use. Also, as a condition of use, both areas will be revegetated with native plants. These actions will restore the project area to its pre-impact condition by removing visual intrusions on the landscape.

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M. A. Buckmaster  
Page 3

~~103586~~ *Ann*  
103599

### **FIELD WORK**

On October 25, 2002, each of the proposed borrow pits was inspected by Wanapum Elders Rex Buck, Jr, and Lester Umtuch accompanied by Annabelle Rodriguez (RL Cultural and Historical Resources Program Manager) and Mr. Marceau. The purpose of the inspection was to identify any Traditional Cultural Places (TCPs) or other places of Native American interest that may be affected by the reactivation/expansion of these pits. No TCPs or areas of interest were identified during this on-site inspection.

On October 28, 2002, James J. Sharpe (CHI Cultural Resources Specialist) and Mr. Marceau walked the areas proposed for expansion of the 100-F Area borrow pit not surveyed during the field inspection for Lewis Canal in 1997. Vegetation of gray rabbitbrush, thistles, and cheatgrass indicated the area had received previous ground disturbance. During the survey, a small scatter of Hanford-era debris (i.e., metal pipe, scrap iron, and broken glass) was observed adjacent to the shoulder of the east/west oriented gravel road. Near the eastern edge of Lewis Canal, three small white ceramic fragments and a bottle base fragment from the pre-Hanford era were observed in a back dirt pile. This back dirt is believed to have been bladed out of the Lewis Canal during its original construction.

Aerial photographs (AAR-10A-50) taken in 1941 indicate that no pre-Hanford farms were located in the project area. Hanford era photographs (Negative 3740) indicate that soils from Lewis Canal were deposited in this area about 40 feet east and west of the canal during construction. Given these conditions, the pre-Hanford artifacts observed are isolated materials out of context and are not considered eligible for inclusion in the National Register of Historic Places.

### **FINDINGS**

- The TCP inspection resulted in negative findings for all project areas.
- No cultural resources exist within the proposed project areas at 100-H or 100-N.
- The archaeological survey at 100-F resulted in the discovery of a few non-diagnostic artifacts that individually or collectively do not qualify for eligibility for listing in the National Register.
- No additional cultural resource work will be required for this project.

The State Historic Preservation Office (SHPO) and the Tribes have 30 days from their receipt of this document to provide an opinion. Following receipt of their comment, if any, we will notify the Project of any additional conditions required in order for this project to proceed.

If any changes occur relative to the work scope or areas to be impacted, it is imperative that you contact the Cultural Resources Staff for additional review/action that might be required. Please use HCRC # 2003-100-001 for further correspondence concerning this project.

This interoffice memorandum has been reviewed and signed by Annabelle Rodriguez, Manager Cultural Resources Program, DOE/RL, as official documentation.

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**Appendix B – Ecological and Cultural Resource Reviews  
for Proposed Borrow Site Locations**

DOE/EA-1454

Rev. 0

M. A. Buckmaster  
Page 4

~~103586~~ *dm*  
*1/17/02*

103599

**REFERENCES**

Chatters, J.C., H.A. Gard, and P.E. Minthorn, 1992, "Fiscal Year 1991 Report on Archaeological Surveys of the 100 Areas, Hanford Site, Washington," PNL-8143, UC-600, Pacific Northwest Laboratory, Richland, Washington.

HCRC # 97-100-013, April 1997, "Survey Report for the Lewis Canal (116-F-1)."

HCRC # 97-100-013a, February 1999, "Ecological and Cultural Resources Review for 100-H Area Group 4 Access Roads, Temporary Borrow Areas, and Air Monitoring Stations."

Marceau, T.E., J.J. Sharpe, K.R. Fecht, and D.L. Olson, 2002a, *Excavation Report for Archaeological Sites 45-BN-888 and 45-BN-606 on the Hanford Site, Richland, Washington*, BHI-01645, Bechtel Hanford, Inc., Richland, Washington.

Marceau, T.E., J.J. Sharpe, K.R. Fecht, and D.L. Olson, 2002b, *Report of Archaeological Excavations Conducted at UPR-100-F-2 on the Hanford Site, Richland, Washington*, BHI-01649, Bechtel Hanford, Inc., Richland, Washington.

Wright, M.K., 1993, "Fiscal Year 1992 Report on Archaeological Surveys of the 100 Areas, Hanford Site, Washington," PNL-8819, UC-900, Pacific Northwest Laboratory, Richland, Washington.

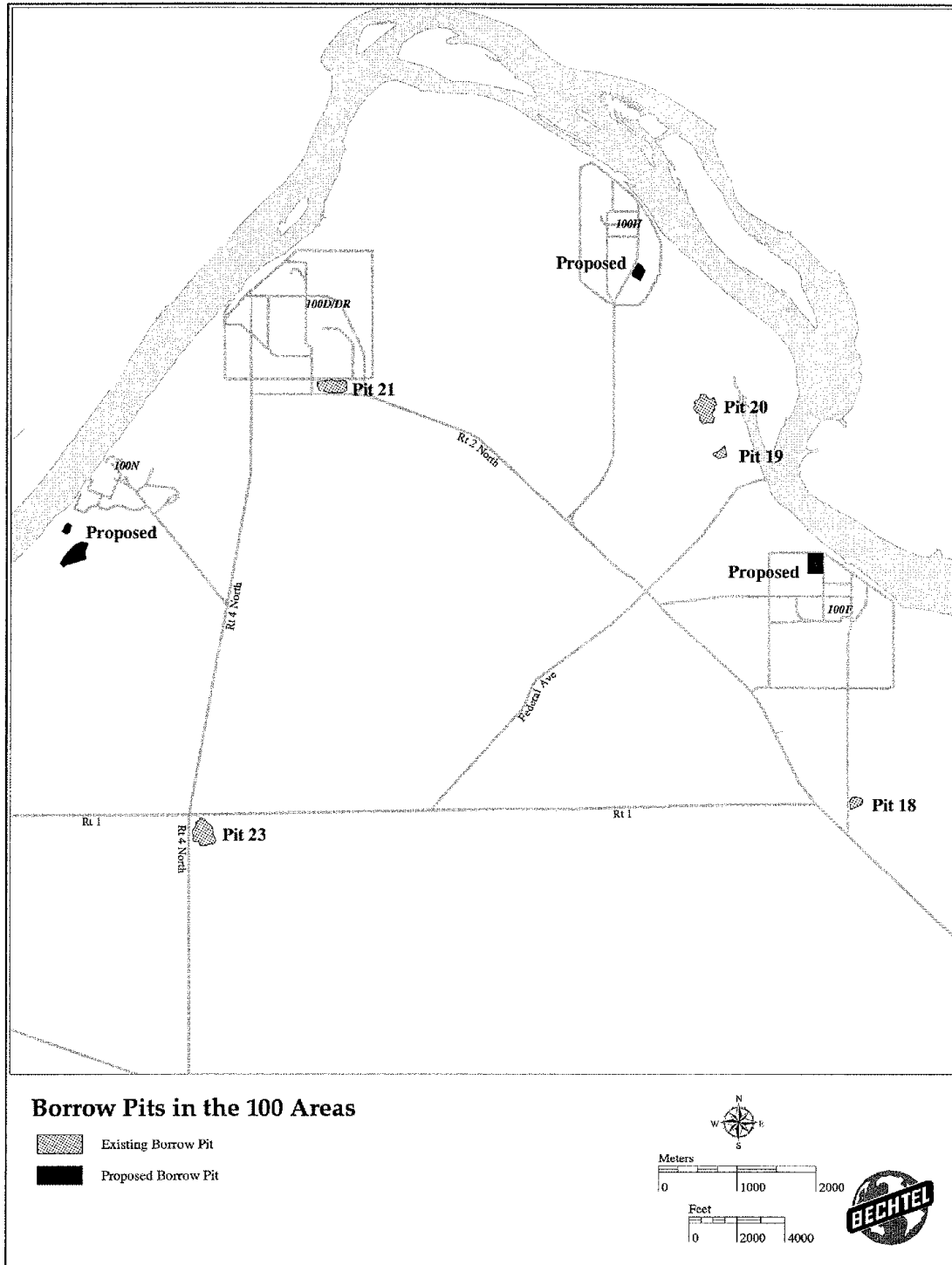
Attachment: (maps)

Author  
Signature *James J. Sharpe*  
James J. Sharpe  
Cultural Resources Specialist

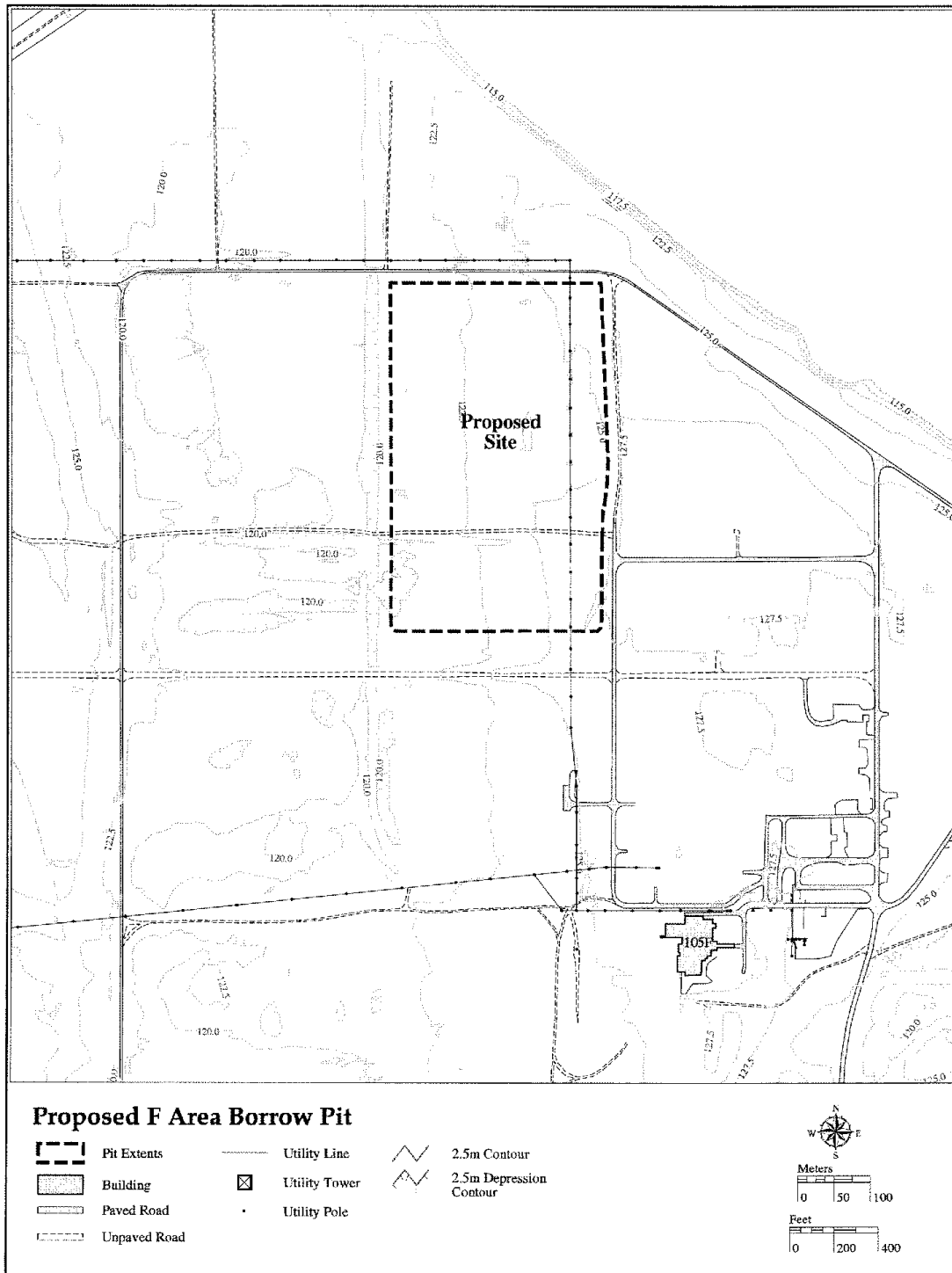
Approval  
Signature *Thomas E. Marceau*  
Thomas E. Marceau  
Cultural Resources Supervisor

Review and  
Concurrence  
Signature *Annabelle L. Rodriguez*  
Annabelle L. Rodriguez, Manager  
Cultural Resources Program  
DOE, Richland

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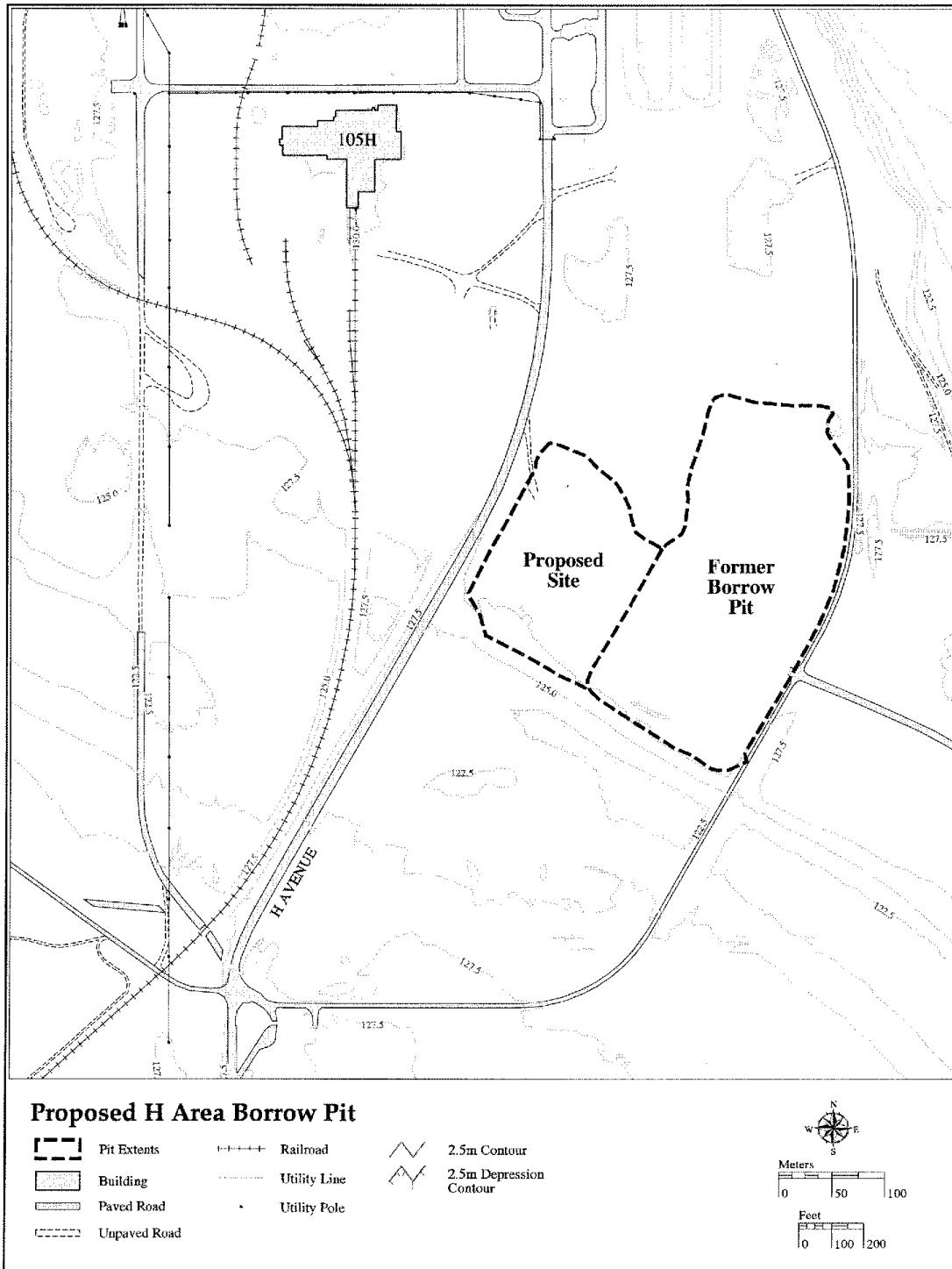


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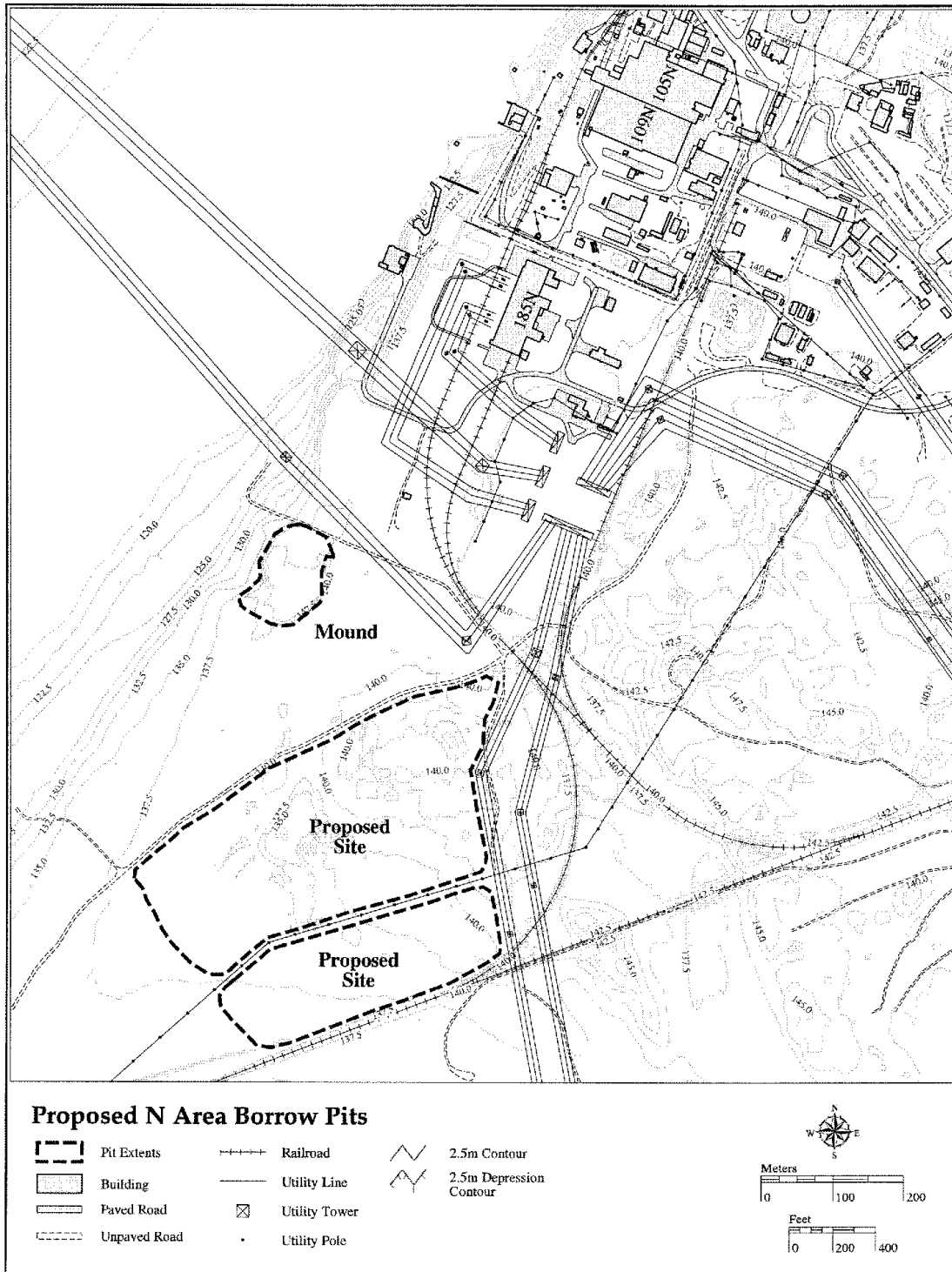


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STATE OF WASHINGTON

OFFICE OF COMMUNITY DEVELOPMENT

**Office of Archaeology and Historic Preservation**

1063 S. Capitol Way, Suite 106 • PO Box 48343 • Olympia, Washington 98504-8343 • (360) 586-3065 Fax Number  
(360) 586-3067 • <http://www.oahp.wa.gov>

November 27, 2002

Mr. Joel Hebdon  
Regulatory Compliance & Analysis Division  
Richland Operations Office  
PO Box 550  
Richland, WA 99352

Log No: 112602-12-DOE  
Re: Proposed Borrow Pits at 100-F, H and N Areas  
HCRC # 2003-100-001

Dear Mr. Hebdon;

Thank you for providing a copy of the cultural resources survey assessment of the proposed Activation and Expansion of Borrow Pits at 100-F, 100-H and 100-N Areas of the Hanford site.

We concur with their professional recommendations and your finding of no historic properties effected. We would appreciate receiving any correspondence or comments from concerned tribes or other parties that you receive as you consult under the requirements of 36CFR800.4(a)(4).

These comments are based on the information available at the time of this review and on the behalf of the State Historic Preservation Officer in conformance with Section 106 of the National Historic Preservation Act, as amended, and its implementing regulations 36CFR800. Should additional information become available, our assessment may be revised.

In the event that archaeological or historic materials are discovered during project activities, work in the immediate vicinity should be discontinued, the area secured, and this office notified. Thank you for the opportunity to comment and a copy of these comments should be included in subsequent environmental documents.

Sincerely,

Robert G. Whitlam, Ph.D.  
State Archaeologist  
(360) 586-3080  
email: [robw@cted.wa.gov](mailto:robw@cted.wa.gov)

**RECEIVED**

DEC 03 2002

**DOE-RL/RLCC**

**Appendix B – Ecological and Cultural Resource Reviews  
for Proposed Borrow Site Locations**

DOE/EA-1454

Rev. 0

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WANAPUM

---

December 2, 2002

Annabelle Rodriguez  
Department of Energy  
Richland Operations Office  
PO Box 550  
Richland, WA 99352

SUBJECT: HCRC#2003-100-001

Dear Annabelle,

This letter is in regard to work that seeks to expand borrow pits at 100-F, 100-H, and 100-N. We appreciate the work DOE is doing to ensure protection of our important cultural resources in the area. We would like to address the cultural resources review and have the following comments.

It appears that the project will not impact cultural sites of any sort, we concur with these findings. However, there are areas just outside of the footprint of the project that are in need of recontouring and revegetation due to previous work in the area. Lester Umtuch and I recognized several such areas on our visit to the site with Tom Marceau in October.

Because activities at the site are scheduled for mitigation by recontouring and revegetation, we request that at the same time work crews restore portions of the old borrow areas, spoilage dumps and other scars that were caused prior to NHPA and other relevant laws that deal with cultural resources.

Please feel free to contact me at (509) 932-3571 extension 3113 if you have any questions. Alternatively, my address is:

Rex Buck Jr.  
PO Box 878  
Ephrata, WA 98823

Sincerely,



Rex Buck Jr.  
Wanapum

**RECEIVED**

DEC 05 2002

**DOE-RL/RLCC**



**Department of Energy**  
Richland Operations Office  
P.O. Box 550  
Richland, Washington 99352

**MAR 19 2003**

03-RCA-0176

Mr. Rex Buck, Jr.  
Wanapum  
P.O. Box 878  
Ephrata, Washington 98823

Dear Mr. Buck:

RESPONSE TO COMMENTS ON CULTURAL RESOURCE REVIEW (CRR) FOR  
REACTIVATION AND USE OF THREE FORMER BORROW SITES IN THE 100-F, 100-H,  
AND 100-N AREAS (HCRC#2003-100-001)

The U.S. Department of Energy, Richland Operations Office (RL) has received your comments on the subject CRR and would like to thank you for your consideration and support of the proposed action for the reactivation and use of three former borrow sites. The proposed action is intended to prevent impacts to natural resources and will be performed in accordance with applicable management plans. Mitigation, recontouring, and revegetation of the Remedial Action sites as well as the Proposed Action locations will be performed in compliance with the "Mitigation Action Plan for the 100 and 600 Areas of the Hanford Site (DOE/RL-2002-19, Rev. 0) and the Hanford Site Biological Resources Management Plan" (DOE/RL-96-32, Rev. 0). The spoilage dumps at the 100-N site referred to in your comments will be addressed under the interim remedial action Record of Decision for the 100-NR-1 and 100-NR-2 Operable Units. A copy of your comments and this response will be placed in the Waste Site Information Database file for this site to track this commitment.

If you have any questions, please contact Annabelle Rodriguez, of my staff, on (509) 372-0277.

Sincerely,

A handwritten signature in black ink, appearing to read "Joel Heddon".

Joel Heddon, Director  
Regulatory Compliance and Analysis Division

RCA:ALR

cc: Admin. Record (H6-08)

**APPENDIX C**

**PUBLIC COMMENT LETTERS/DOE RESPONSES ON  
DRAFT DOE/EA-1454**





*Nez Perce*

ENVIRONMENTAL RESTORATION & WASTE MANAGEMENT  
P.O. BOX 365 • LAPWAI, IDAHO 83540-0365 • (208) 843-7375 / FAX: 843-7378

January 17, 2003

Paul F. X. Dunigan, Jr.  
Richland Operations Office  
P.O. Box 550  
Richland, Washington 99352

Re: Comments on *Draft Environmental Assessment (EA) For New Borrow Sites at 100-F, 100-H, and 100-N Areas, Hanford Site, Richland, Washington (DOE/EA-1454)*

Dear Mr. Dunigan:

Since 1855, reserved treaty rights of the Nez Perce Tribe in the Mid-Columbia have been recognized and affirmed through a series of Federal and State actions. These actions protect Nez Perce rights to utilize their usual and accustomed resources and resource areas in the Hanford Reach of the Columbia River and elsewhere. Accordingly, the Nez Perce Tribe Department of Environmental Restoration and Waste Management Program (ERWM) responds to actions that impact the Hanford ecosystem.

The ERWM has reviewed the *Draft Environmental Assessment (EA) For New Borrow Sites at 100-F, 100-H, and 100-N Areas, Hanford Site, Richland, Washington (DOE/EA-1454)*. We recognize the need for using geologic materials to support many different Hanford activities and feel that if borrow materials are needed at Hanford that the proposed alternative in this document is a prudent course of action. We feel that this action minimizes environmental impacts by utilizing sites that are already disturbed and that have been used in the past for similar purposes.

We support your position to follow the guidance in the Hanford Biological Resources Management Action Plan in the event that any of the existing borrow sites are expanded. We were also pleased to see that no new borrow sites are being proposed at the Hanford Site. In the past there have been proposals to develop borrow areas at Gable Mountain and Gable Butte which the tribe could not support.

If you have any questions please contact Dan Landeen of my staff at 208-843-7375.

Sincerely,

Patrick Sobotta  
ERWM Program Director

Cc: Kevin Clarke

**RECEIVED**

JAN 22 2003

**DOE-RL/RLCC**





**Department of Energy**  
Richland Operations Office  
P.O. Box 550  
Richland, Washington 99352

**MAR 17 2003**

03-ERD-0080

Mr. Patrick Sobotta  
Environmental Restoration/Waste Management Program  
Nez Perce Tribe  
P.O. Box 365  
Lapwai, Idaho 83540-0365

Dear Mr. Sobotta:

RESPONSE TO COMMENTS ON ENVIRONMENTAL ASSESSMENT DOE/EA-1454 FOR  
REACTIVATION AND USE OF THREE FORMER BORROW SITES IN THE 100-F, 100-H,  
AND 100-N AREAS

The U.S. Department of Energy, Richland Operations Office (RL), has received your comments on the subject Environmental Assessment (EA) and would like to thank you for your consideration and support of the proposed action for the reactivation and use of three former borrow sites. The proposed action is intended to prevent impacts to natural resources and will be performed in accordance with applicable management plans.

If you have additional questions concerning the proposed action, please contact Mr. Chris Smith, Environmental Restoration Division, at (509) 372-1544. Questions on the NEPA process can be directed to me at (509) 376-6667.

Sincerely,

A handwritten signature in cursive script that reads "Paul F. X. Dunigan, Jr.".

Paul F. X. Dunigan, Jr.  
NEPA Compliance Officer

NCO:JKL

cc: Administrative Record (100 Area)



Confederated Tribes and Bands  
of the Yakama Indian Nation

Established by the  
Treaty of June 9, 1855

Mr. Keith Klein  
U.S. Department of Energy  
P.O. Box 550  
Richland, Washington 99352

January 27, 2003

Dear Mr. Klein:

The Confederated Tribes and Bands of the Yakama Nation recently received a draft Environmental Assessment titled "*Environmental Assessment for Reactivation and Use of Three Former Borrow Sites in the 100-F, 100-H, and 100-N Areas*" DOE/EA-1454, and wherein, the document lists the Yakama Nation as a consulted tribal government. Yet, the United States of America through the U.S. Department of Energy (USDOE) has not initiated consultation to date on this matter with the Yakama Nation even though this proposed action would impact Yakama Nation ceded areas and reserved treaty resources. Furthermore, the act of simply recording these comments should not be construed as consultation. USDOE has a trust responsibility to protect treaty rights and resources, and Department obligations are discussed in USDOE's "American Indian and Alaska Native Tribal Government Policy" that define consultation to include timely communication, coordination, cooperation, and collaboration..."

The proposed action is tiered to the document titled *Draft Industrial Mineral Resources Management Plan, (Plan) DOE/RL-2000-61* that is the framework for identifying sources, planning, operations, and closure/restoration of borrow pits and quarries, and developed to implement the HCP EIS. Since this Plan guides or prescribes alternative uses of federal resources, upon which future agency action will be based, as is the case here with this proposed action, a National Environmental Policy Act (NEPA) analysis is required for the Plan (40 CFR §1508.18). The appropriate level of analysis for the Plan would be a Supplemental Environmental Impact Statement (SEIS) to bound the full impacts of mineral resource needs for CERCLA, RCRA and solid waste disposal activities. In the meantime, Yakama Nation awaits meaningful dialogue on this issue that may impact Yakama reserved rights and resources.

This EA is premature given that no NEPA analysis has occurred for the framework document, i.e. Plan. In addition, the EA also is fundamentally flawed in that it fails to fully assess the cumulative impacts from other programs activities such as the Office of River Protection RCRA activities and solid waste program that need similar materials found on the Hanford Site. It also fails to adequately address consequences to the environment including impacts to resources protected by the Hanford Reach National Monument Proclamation since several of the proposed borrow sites would fall within its boundary. Since this proposed action is part of a much larger action, which has not been properly bound and analyzed, the Yakama Nation has determined that an EIS analysis is required.

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JAN 28 2003

**DOE-RL/RLCC**

Post Office Box 151, Fort Road, Toppenish, WA 98948 (509) 865-5121

Other issues include: 1) an analysis of whether the proposed sites could provide the material needed. This was not presented in the document and continues to promote a piecemeal approach to assess impacts to the environment; 2) The analysis fails to bound the needs for other activities in the 100-Area that may need materials for capping, such as that mentioned on page 3-3 for solid waste burial ground remediation; 3) No analysis was presented on associated activities such as construction of new haul roads, and 4) All impacts associated with the proposed action must be fully mitigated. USDOE has a responsibility as a natural resource trustee to restore resources and loss services resulting from CERCLA related response activities. Therefore, a formal agreement between USDOE and the Yakama Nation will be required to document agreed upon mitigation measures for the impacts of natural and cultural resources and loss of services resulting from the proposed action. Otherwise, the Yakama Nation reserves the right to file a natural resource damage assessment claim for resources impacted and services lost resulting from this proposed action.

The no-action alternative described in the document is not a no-action alternative since actions would be taken that would impact resources as a result of construction of new haul roads and impair tribal religious/ceremonial view sheds.

Alternatives dealing with off-site procurement of materials need to include an alternative utilizing rail as the mode of transportation, which would be more cost effective and energy efficient than trucks.

In closing, the USDOE needs to initiate consultation on the proposed action and for the Plan. Please contact me at (509) 452-2502 to arrange a meeting to begin discussion on the issues raised here. Upon receipt of this letter, we would appreciate receiving several copies of the Plan so that my technical staff may review it prior to our meeting. Thank you.

Sincerely,



Russell Jim, Manager  
Environmental Restoration/Waste Management Program

Cc:

Carroll Palmer, Deputy Director, YN DNR

Roy Schepens, USDOE-ORP

Paul Dunigan Jr., NEPA Compliance Officer, USDOE-RL



**Department of Energy**  
Richland Operations Office  
P.O. Box 550  
Richland, Washington 99352

03-ERD-0057

**FEB 19 2003**

Mr. Russell Jim, Manager  
Environmental Restoration/  
Waste Management Program  
Confederated Tribes and Bands  
of the Yakama Indian Nation  
P. O. Box 151, Fort Road  
Toppenish, Washington 98948

Dear Mr. Jim:

**ENVIRONMENTAL ASSESSMENT FOR REACTIVATION AND USE OF THREE  
FORMER BORROW SITES IN THE 100-F, 100-H, AND 100-N AREAS**

Thank you for your letter dated January 27, 2003, to the U.S. Department of Energy, Richland Operations Office (RL). As you requested, RL will provide you several additional copies of the Environmental Assessment (EA).

The comment period on the EA began on December 19, 2002, and ended January 23, 2003. We have attached responses to your comments and documentation of our efforts to initiate consultation with the Yakama Nation. When we received no response from you on our correspondence asking for consultation, we assumed -- apparently incorrectly -- the Yakama Nation did not want a higher level of consultation. I sincerely hope that we can complete our new intergovernmental agreement so we can avoid such misunderstandings in the future. In any case, we appreciate your comments to the EA and hope our responses to your comments help you understand why we believe the recommended action in the EA is protective of human health and the environment, results in the least impact to cultural resources, and does not require an Environmental Impact Statement.

If you need further information or assistance, please contact me or your staff may contact Chris Smith, Environmental Restoration Division. at (509) 372-1544.

Sincerely,

A handwritten signature in black ink, appearing to read "Keith A. Klein".

Keith A. Klein  
Manager

ERD:DCS

Attachment

cc: See Page 2

Mr. Russell Jim  
03-ERD-0057

-2-

**FEB 19 2003**

cc w/attach:  
Nicholas Ceto, EPA  
Dennis Faulk, EPA  
John Price, Ecology  
Michael Wilson, Ecology

**ENCLOSURE**

**Comments and Responses to the Environmental  
Assessment for Reactivation and Use of Three  
Former Borrow Sites in the 100-F, 100-H, and  
100-N Areas (DOE/EA-1454)**

## Appendix C – Public Comment Letters/DOE Responses

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### Response to Yakama Nation Comments on *Draft Environmental Assessment (EA) for Reactivation and Use of Three Former Borrow Sites in the 100-F, 100-H, and 100-N Areas (DOE/EA-1454)*

1. COMMENT: The Confederated Tribes and Bands of the Yakama Nation recently received a draft Environmental Assessment titled “*Environmental Assessment for Reactivation and Use of Three Former Borrow Sites in the 100-F, 100-H, and 100-N Areas*” DOE/EA-1454, and wherein, the document lists the Yakama Nation as a consulted tribal government. Yet, the United States of America, through the U.S. Department of Energy (USDOE) has not initiated consultation to date on this matter with the Yakama Nation even though this proposed action would impact Yakama Nation ceded areas and reserved treaty resources.

RESPONSE: Consultation with the Confederated Tribes and Bands of the Yakama Nation (Yakama Nation) was initiated following standard *National Environmental Policy Act* (NEPA) procedure. A record of our efforts to consult and requests for comments is presented below:

October 2, 2002 - *Project Notification/Area of Potential Effect* [Email and fax sent to Mr. Russell Jim (Environmental Restoration/Waste Management) by Ms. Annabelle Rodriguez (Department of Energy), "Request for Cultural Resources Review" form, 2 pages of text on the project, results of cultural resources literature review, and 4 maps.] No comments were received, and no requests were made to inspect the project areas.

October 9, 2002 - *Notice of Intent to Prepare an Environmental Assessment* [Letter to Russell Jim from Paul Dunigan (Department of Energy).] No comments or questions were received.

November 20, 2002 - *Cultural Resources Review to Activate and Expand Borrow Pits at 100-F, 100-H, and 100-N Areas* (HCRC #2003-100-001). [Letter to Russell Jim from Joel Hebdon (Department of Energy), 4 pages of text identifying known cultural resources with an impact assessment for each, and 4 maps.] No comments were received.

2. COMMENT: The proposed action is tiered to the document titled *Draft Industrial Mineral Resources Management Plan* (Plan), (DOE/RL-2000-61) that is the framework for identifying sources, planning, operations and closure/restoration of borrow pits and quarries, and developed to implement the HCP EIS. Since this Plan guides or prescribes alternative uses of federal resources, upon which future agency action will be based, as is the case required for the Plan (40 CFR 1508.18)[, the] appropriate level of analysis for the Plan would be a Supplemental Environmental Impact Statement (SEIS) to bound the full impacts of mineral resource needs for CERCLA, RCRA and solid waste disposal activities.

RESPONSE: The *Draft Industrial Mineral Resources Management Plan* (DOE/RL-200-61) fulfills a commitment made in the *Final Hanford Comprehensive Land-Use Plan Environmental Impact Statement* (HCP EIS). It is a proposed management tool that provides direction for planning, operation, and closure/restoration of borrow pits on the Hanford Site. It will provide guidance when NEPA evaluation would be required, such as the expansion of

## Appendix C – Public Comment Letters/DOE Responses

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existing borrow sites or establishment of new borrow sites. The previous borrow pit EA *Use of Existing Borrow Areas Hanford Site* (DOE/EA-1403) evaluated impacts of continuing to use existing borrow sites. This EA fulfilled the commitment in the Record of Decision for the HCP EIS for NEPA review of borrow areas. The current EA (DOE/EA-1454) evaluates impacts of reopening borrow areas that were not addressed in the previous EA (DOE/EA-1403).

3. COMMENT: This EA is premature given that no NEPA analysis has occurred for the framework of the document, i.e. Plan. In addition, the EA also is fundamentally flawed in that it fails to fully address the cumulative impacts from other program activities such as the Office of River Protection RCRA activities and solid waste program that need similar materials found on the Hanford Site.

RESPONSE: The cumulative impact analysis, as defined by the Council on Environmental Quality (CEQ), identifies effects that result from the proposed action and the effects of past, present, and *reasonably foreseeable future actions* (40 CFR 1508.7). The scope of the Office of River Protection's Resource Conservation and Recovery Act (RCRA) activities, and final remediation planning for 200 Area Plateau CERCLA activities have not yet been fully defined. Therefore, because these actions are not ripe for decision at this time, DOE has chosen to reserve broad areas of the Hanford Site under the Conservation/Mining land use. More recent NEPA documents [e.g. DOE/EA-1403, *Draft Hanford Site Solid (Radioactive and Hazardous) Waste Program EIS* (DOE/EIS-0286D), and DOE/EA-1454] assign these committed resources to specific actions. These resources were committed and reserved as Conservation/Mining land use areas in the HCP-EIS. Cumulative impacts are addressed in each of the appropriate NEPA documents.

4. COMMENT: It also fails to adequately address consequences to the environment including impacts to resources protected by the Hanford Reach National Monument Proclamation since several of the proposed borrow sites would fall within its boundary.

RESPONSE: The use of borrow materials in support of the overall objective and USDOE's commitment of preserving the Columbia River Corridor by encouraging waste removal, site remediation and restoration within the Columbia River Corridor is consistent with the HCP EIS and subsequent Record of Decision. Remedial action and waste management activities are allowed as "Pre-existing, Non-conforming uses." Use of borrow materials within this "Pre-existing, Nonconforming" land-use designation continues to support the overall objective and USDOE's commitment of preserving the Columbia River Corridor and protection of ecological and cultural resources by encouraging waste removal, site remediation and restoration within the river corridor. Consultations with the U.S. Fish and Wildlife Service, the managing agency of the Hanford Reach National Monument (Monument), determined that use of borrow materials in support of river corridor restoration is consistent with management objectives for the Monument.

5. COMMENT: Since this proposed action is part of a much larger action, which has not been properly bound and analyzed, the Yakama Nation has determined that an EIS analysis is required.



**Appendix C – Public Comment Letters/DOE Responses**

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RESPONSE: The Proposed Action is for the purpose of fulfilling the backfilling needs of CERCLA Remedial Action activities in the 100-F, 100-H, 100-K, and 100-N reactor areas, as required by various Records of Decisions (RODs) issued for the 100 Area waste sites.

6. COMMENT: Other issues include an analysis of whether the proposed sites could provide the material needed. This was not presented in the document and continues to promote a piecemeal approach to assess impacts to the environment.

RESPONSE: Excavation needs and available volumes were calculated during the development of the EA. Excavation needs are presented in Table 2-1 on page 2-2 of the document. The Proposed Action sites, as presented in the EA, are capable of fulfilling the foreseeable volume requirement for remedial action activities within the 100-F, 100-H, 100-K, and 100-N reactor areas. Excavation will only be performed on an as-needed basis as a measure to reduce any additional potential impacts.

7. COMMENT: The analysis fails to bound the needs for other activities in the 100-Area that may need materials for capping, such as that mentioned on page 3-3 for solid waste burial ground remediation.

RESPONSE: As stated in Section 3.1 of the EA, backfill needs have not been estimated for solid waste burial ground remediation in the 100-F, 100-H, 100-N, and 100-K Areas, therefore only foreseeable backfill needs can be evaluated at this time. Potential future impacts of additional fill material requirements would be evaluated should the footprint of Proposed Action excavation exceed greater than 10% of the footprint area estimated in this EA. Addressing fill requirements for other 100-Area activities not associated with the 100-F, 100-H, 100-N and 100-K Areas is not within the scope of this document.

8. COMMENT: No analysis was presented on associated activities such as construction of new haul roads.

RESPONSE: The intent is to use existing roads for the Proposed Action to the extent practicable. This could include upgrading the roads by resurfacing and/or widening or constructing new roads within the active boundaries of the CERCLA Remedial Action Projects. These areas have been previously reviewed for ecological impacts due to remediation activities and no impacts to plant or animal species of concern are anticipated. Most of the remaining alternatives would require construction of new roads that would impact some relatively undisturbed areas

9. COMMENT: All impacts associated with the proposed action must be fully mitigated. USDOE has a responsibility as a natural resource trustee to restore resources and [lost] services resulting from CERCLA related response activities. Therefore, a formal agreement between USDOE and Yakama Nation will be required to document agreed upon mitigation measures for the impacts [to] natural and cultural resources and loss of services resulting from the proposed action.

## Appendix C – Public Comment Letters/DOE Responses

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RESPONSE: The *Mitigation Action Plan for the 100 and 600 Areas of the Hanford Site* (MAP) (DOE/RL-2001-22, Rev. 0), which was reviewed by the Hanford Natural Resources Trustee Council (NRTC), covers borrow sites for the 100 Area Remedial Action projects and was referenced in the EA. The EA commits to complying with the MAP as well as the *Hanford Site Biological Resources Management Plan* (BRMaP) (DOE/RL-96-32) and the *Biological Resources Mitigation Strategy* (BRMiS) (DOE/RL-96-87). By following these management plans, the planned restoration of these sites will result in a net benefit to habitat value by planting native grasses and shrubs in areas of low-quality habitat.

10. COMMENT: The no-action alternative described in the document is not a no-action alternative since actions would be taken that would impact resources as a result of construction of new haul roads and impair tribal religious/ceremonial view sheds.

RESPONSE: In this case, the No-Action Alternative is the action as it had been planned before the reopening of the former borrow areas was proposed. The Council on Environmental Quality has addressed the “no action alternative” as question 3 (46 FR 18026). Section 1502.14(d) requires the alternatives analysis in the EIS to “include the alternative of no action.” There are two distinct interpretations of “no action” that must be considered, depending on the nature of the proposal being evaluated. The first situation might involve an action such as updating a land management plan where ongoing programs initiated under existing legislation and regulations will continue, even as new plans are developed. In these cases “no action” is “no change” from current management direction or level of management intensity. To construct an alternative that is based on no management at all would be a useless academic exercise. Therefore, the “no action” alternative may be thought of in terms of continuing with the present course of action until that action is changed. Consequently, projected impacts of alternative management schemes would be compared in the EIS to those impacts projected for the existing plan. In this case, alternatives would include management plans of both greater and lesser intensity, especially greater and lesser levels of resource development.

The second interpretation of “no action” in such cases would mean the proposed activity would not take place, and the resulting environmental effects from taking no action would be compared with the effects of permitting the proposed activity or an alternative activity or an alternative activity to go forward.

By definition, the No-Action Alternative is not exempt from incurring impacts, but rather it is the environmental baseline against which impacts of the Proposed Actions and Alternatives can be compared. Regrading and recontouring of remediated waste sites is a commitment under the various RODs for the 100 Areas, and would be performed in the absence of any proposed or alternative actions. For remedial action activities in the 100-F, 100-H, 100-K, and 100-N Areas, existing Pits 18, 19, 20, 21, and 23 had been identified as sources of backfill material. Upon further analysis, this intended use of existing borrow sites was not determined preferable due to environmental and operational considerations and limitations. Therefore this EA was developed to identify a Proposed Action to reactivate former borrow areas in already disturbed areas, and explore alternative actions that would provide less impact to the environment.

11. COMMENT: Alternatives dealing with off-site procurement of materials need to include an alternative utilizing rail as the mode of transportation, which would be more cost effective and energy efficient than trucks.

RESPONSE: Utilization of Hanford Site railways for transport of material is not considered a reasonable alternative. The railroad is not in an operable condition. Existing tracks do not connect borrow sites to the areas where the material is needed.

-----Original Message-----

From: Paula\_Call@r1.fws.gov [mailto:Paula\_Call@r1.fws.gov]

Sent: Tuesday, January 28, 2003 12:55 PM

To: kagano@bhi-erc.com

Cc: Paul\_F\_Jr\_Dunigan@RL.gov; daniel\_haas@fws.gov;

Michael\_Ritter@r1.fws.gov

Subject: Borrow pit EA

Ken,

Thanks for getting us another copy of the draft EA for Reactivation and Use of Three Former Borrow Sites in the 100-F, 100-H, and 100-N Areas to review. The provisions in the EA look great. We hope your work will help raise the standard for how borrow pits are managed on the Hanford Site in the future. To meet your time schedule, here is basically what we'll say in a letter to DOE regarding the EA.

The project area is located within the corridor of the Hanford Reach of the Columbia River Wild and Scenic River study area. The Hanford Reach segment has been found eligible and suitable for inclusion in the National Wild and Scenic Rivers System (16 U.S.C. 1271-1287), and is under interim protection, as per Public Law (P.L.) 100-605, as amended by Section 404 (Hanford Reach Preservation) of P.L. 104-333. Federal agencies cannot undertake any action which could preclude the river's designation into the National System. We have concerns with the closure, recontouring and revegetation of the borrow pits; however, upon review of applicable requirements within the referenced Draft Industrial Mineral Resources Management Plan, DOE/RL-2000 61, we believe that our concerns are addressed if the DOE follows the restoration plan as outlined in DOE/RL-2000 61.

Paula Call  
Hanford Reach National Monument/  
Saddle Mountain National Wildlife Refuge  
3250 Port of Benton Blvd.  
Richland, WA 99352  
(509) 371-1801  
(509) 375-0196 (Fax)



**Department of Energy**  
Richland Operations Office  
P.O. Box 550  
Richland, Washington 99352

03-ERD-0078

**MAR 17 2003**

Ms. Melinda Brown  
Nuclear Waste Program  
State of Washington Department of Ecology  
1315 West Fourth Avenue  
Kennewick, Washington 99336-6018

Dear Ms. Brown:

RESPONSE TO COMMENTS ON ENVIRONMENTAL ASSESSMENT DOE/EA-1454 FOR REACTIVATION AND USE OF THREE FORMER BORROW SITES IN THE 100-F, 100-H, AND 100-N AREAS

The U.S. Department of Energy, Richland Operations Office (RL), has received your comments on the subject Environmental Assessment (EA) and would like to thank you for taking the time to review our document. The comments were considered in preparing the final EA. Responses to the comments are enclosed and resulting changes made to the EA are noted.

If you have additional questions concerning the proposed action, please contact Mr. Chris Smith, Environmental Restoration Division, at (509) 372-1544. Questions on the *National Environmental Policy Act of 1969* (NEPA) process can be directed to me at (509) 376-6667.

Sincerely,

A handwritten signature in cursive script that reads "Paul F. X. Dunigan, Jr.".

Paul F. X. Dunigan, Jr.  
NEPA Compliance Officer

NCO:JKL

Enclosure

cc w/encl:  
Administrative Record (100 Area)

**ENCLOSURE**

**Comments and Responses to the Environmental  
Assessment for Reactivation and Use of Three  
Former Borrow Sites in the 100-F, 100-H, and  
100-N Areas (DOE/EA-1454)**

**COMMENTS AND RESPONSES TO THE ENVIRONMENTAL ASSESSMENT FOR REACTIVATION AND USE OF THREE FORMER BORROW SITES IN THE 100-F, 100-H, AND 100-N AREAS (DOE/EA-1454)**

Comment: The project area is located within the corridor of the Hanford Reach of the Columbia River Wild and Scenic River study area. The Hanford Reach segment has been found eligible and suitable for inclusion in the National Wild and Scenic Rivers System (16 U.S.C. 1271-1287), and is under interim protection, as per Public Law (P.L.) 100-605, as amended by Section 404 (Hanford Reach Preservation) of P.L. 104-333. Federal agencies cannot undertake any action which could preclude the river's designation into the National System. We have concerns with the closure, recontouring and revegetation of the borrow pits; however, upon review of applicable requirements within the referenced *Draft Industrial Mineral Resources Management Plan* (DOE/RL-2000 61), we believe that our concerns are addressed if the DOE follows the restoration plan as outlined in DOE/RL-2000 61.

Response: Thank you for your consideration and support of DOE's proposed action for the reactivation and use of three former borrow sites. The proposed action is intended to prevent impacts to natural resources and will be performed in accordance with applicable management plans, and shall not preclude these areas from eligibility for inclusion within the Monument.



STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

1315 W. 4th Avenue • Kennewick, Washington 99336-6018 • (509) 735-7581

January 23, 2003

Mr. Paul F. X. Dunigan, Jr  
United States Department of Energy  
Richland Operations Office  
P.O. 550  
Richland, Washington 99352

Dear Mr. Dunigan:

Re: Draft Environmental Assessment (EA) for New Borrow Sites at 100-F, 100-H, and 100-N Areas, Hanford Site, Richland, Washington (DOE/EA-1454)

The Washington State Department of Ecology has reviewed the *Draft Environmental Assessment for New Borrow Sites at 100-F, 100-H, and 100-N Areas, Hanford Site, Richland, Washington*. We conducted our review to evaluate the proposal by the United States Department of Energy, Richland Operations for the continued use of several areas on the Hanford Site as mineral extraction areas. We have identified several issues that need to be resolved to avoid significant environmental impacts to those areas.

We appreciate the opportunity we had to review the draft of the Environmental Assessment. If you have any questions concerning our comments, please contact me at (509) 736-3027.

Sincerely yours,

A handwritten signature in black ink that reads "Melinda Brown".

Melinda Brown, External Budget Coordinator  
Nuclear Waste Program

cc: Chris Smith, DOE RL  
Nick Ceto, USEPA  
Dennis Faulk, USEPA  
Larry Gadbois, USEPA  
Ken Gano, BHI  
Dan Haas, USFWS  
Lauri Vigue, WDFW  
Ken Niles, OOE  
Administrative Records



<b>REFERENCE</b>	<b>COMMENTS</b>
<p>P. 2-1, Section 2.0, paragraph 1</p>	<p>The sentence states that preferred sources of borrowed materials are listed in Appendix D of the <i>Comprehensive Land Use Plan (CLUP) Environmental Impact Statement</i>, which is an accurate statement only for 10 sites described there. None of the sites discussed in DOE/EA-1454 is listed or evaluated in the CLUP. It appears that previous evaluations of existing borrow pits in the CLUP and an EA <i>Use of Existing Borrow Areas, Hanford Site</i>, that followed the CLUP, when combined with evaluation of the sites described in DOE/EA-1454 are related actions that should have been addressed in one environmental document.</p>
<p>Same page, section, paragraph</p>	<p>The USDOE states that some of the sites evaluated in the CLUP and EA that were evaluated for use in remedial action backfill “present challenges,” thereby causing a need for reopening the former borrow sites. Justification for using the former borrow sites appears to be that they were not restored to native habitat and therefore can be reopened with few or no impacts to natural resources. Ecology asserts that the creation of the borrow sites resulted in impacts to the environment that the Federal government did not evaluate because the National Environmental Policy Act did not require Federal agencies to do so until 1970. The combination of the creation of the borrow sites, their abandonment without any mitigation or remediation, their possible reuse after extended disuse, and retirement appear to be related actions.</p>
<p>P. 4-2, Section 4.2.1, paragraph 1</p>	<p>The Record of Decision for the CLUP states: “<i>The remainder of land within the Columbia River Corridor outside the quarter-mile buffer zone will be designated for Conservation (Mining). This designation will allow for DOE-permitted sand, gravel and basalt mining activities and support BLM’s mission of multiple use. Sand, gravel and basalt mining will be permitted only in support of governmental missions or to further the biological function of wetlands (e.g., conversion of a gravel pit to a wetland by excavating to groundwater). A Conservation (Mining) designation will allow USDOE to provide protection to sensitive cultural and biological resource areas, while allowing access to geologic resources.</i>” The text states that a portion of the 100-F Area borrow site is within 0.4 km (0.25 mi) of the Columbia River, within the Hanford Reach National</p>

	<p>Monument. Ecology views use of the area within the 0.25 mi buffer zone as at variance with USDOE’s commitment to maintain a buffer zone. That ecological and cultural resources were performed does not negate the CLUP ROD’s designation. Ecology does not support removing mineral resources from within the buffer zone.</p>
P. 4-3, Section 4.2.3	<p>As with the 100-F Area, Ecology does not support removing mineral resources from within the buffer zone in the 100-N Area, as is planned in this EA.</p>
P. 5-2, Section 5.1.4 Land Use, paragraph 2	<p>The EA states that additional areas [beyond the borrow pit sites] will be required at the 100-F and 100-N Areas for upgrade or construction of haul roads. The environmental impact of the construction of the new roads is not considered in the cultural or biological reviews contained in the Appendixes of DOE/EA-1454. Ecology does not support construction of new roads into those areas without a cultural/ecological review for State and Federal species of concern and Native American cultural artifacts. No information is provided about the location, size, or capacity of the roads, aside from additional areas required that are given in this section. That information is not sufficient to determine if significant adverse environmental impacts might result from upgrade or construction of the roads.</p>
P. 5-1, Section 5.1.3 Water Quality	<p>This section asserts that water sprinkling for dust control will not infiltrate to the groundwater in the borrow areas or affect the Columbia River; however, two of the sites have areas within 0.25 mi of the River. Ecology cannot evaluate the impact of the extraction of mineral resources upon recharge flows or groundwater because the depth of excavation compared to the groundwater levels is not presented. USDOE’s contention appears to be absent that information.</p>
Same page and section	<p>No source of water or method of sprinkling is identified in DOE-EA-1454. <u>Chapter 90.03 RCW Surface Water Code and Chapter 90.44 RCW Regulation of Public Ground Waters (wells)</u>. If USDOE plans to use water for dust suppression, it must have a legal water right. A water right permit is required for <u>all</u> surface water withdrawal and for any water from a well that will exceed 5,000 gallons per day. If in doubt, check with Department of Ecology, Water Resources. Temporary permits are usually obtainable in a short time-period</p>



**Department of Energy**  
Richland Operations Office  
P.O. Box 550  
Richland, Washington 99352

03-ERD-0078

**MAR 17 2003**

Ms. Melinda Brown  
Nuclear Waste Program  
State of Washington Department of Ecology  
1315 West Fourth Avenue  
Kennewick, Washington 99336-6018

Dear Ms. Brown:

RESPONSE TO COMMENTS ON ENVIRONMENTAL ASSESSMENT DOE/EA-1454 FOR REACTIVATION AND USE OF THREE FORMER BORROW SITES IN THE 100-F, 100-H, AND 100-N AREAS

The U.S. Department of Energy, Richland Operations Office (RL), has received your comments on the subject Environmental Assessment (EA) and would like to thank you for taking the time to review our document. The comments were considered in preparing the final EA. Responses to the comments are enclosed and resulting changes made to the EA are noted.

If you have additional questions concerning the proposed action, please contact Mr. Chris Smith, Environmental Restoration Division, at (509) 372-1544. Questions on the *National Environmental Policy Act of 1969* (NEPA) process can be directed to me at (509) 376-6667.

Sincerely,

A handwritten signature in cursive script that reads "Paul F. X. Dunigan, Jr.".

Paul F. X. Dunigan, Jr.  
NEPA Compliance Officer

NCO:JKL

Enclosure

cc w/encl:  
Administrative Record (100 Area)

**ENCLOSURE**

**Comments and Responses to the Environmental  
Assessment for Reactivation and Use of Three  
Former Borrow Sites in the 100-F, 100-H, and  
100-N Areas (DOE/EA-1454)**

## Appendix C – Public Comment Letters/DOE Responses

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### COMMENTS AND RESPONSES TO THE ENVIRONMENTAL ASSESSMENT FOR REACTIVATION AND USE OF THREE FORMER BORROW SITES IN THE 100-F, 100-H, AND 100-N AREAS (DOE/EA-1454)

Comment: Page 2-1, Section 2.0, paragraph 1: The sentence states that preferred sources of borrowed materials are listed in Appendix D of the *Comprehensive Land Use Plan (CLUP) Environmental Impact Statement*, which is an accurate statement only for 10 sites described there. None of the sites discussed in DOE/EA-1454 is listed or evaluated in the CLUP. It appears that previous evaluations of existing borrow pits in the CLUP and an EA *Use of Existing Borrow Areas, Hanford Site*, that followed the CLUP, when combined with evaluation of the sites described in DOE/EA-1454 are related actions that should have been addressed in one environmental document.

Response: Development of a single comprehensive document to address all borrow sites, including active, closed, former and abandoned sites is not within the scope of this EA. Borrow areas on the Hanford Site have been previously addressed in a series of documents, including the *Final Hanford Comprehensive Land Use Plan Environmental Impact Statement (HCP-EIS) (DOE/EIS-0222-F)*, *Environmental Assessment for Use of Existing Borrow Areas, Hanford Site, Richland, Washington (DOE/EA-1403)*, and the *Draft Industrial Mineral Resources Management Plan (DOE/RL-2001-61)*. The previous borrow pit EA (DOE/EA-1403) *Use of Existing Borrow Areas Hanford Site* evaluated impacts of continuing to use existing borrow sites. This EA fulfilled the commitment in the Record of Decision for the HCP-EIS for NEPA review of borrow areas. The current EA (DOE/EA-1454) evaluates impacts of reopening borrow areas that were not addressed in the previous EA (DOE/EA-1403). Subsequently, the *EA for Existing Borrow Areas (DOE/EA-1403)*, and *Draft Mineral Resource Management Plan (DOE/RL-2001-61)* were developed to characterize and describe existing borrow sites, and to offer specific guidance for the use, expansion, closure, and restoration of existing or new borrow sites. The *EA for Existing Borrow Areas (DOE/EA-1403)* assumed that expansion of existing borrow sites would not exceed 10% of the current site footprint. Volumes required for remedial actions in the 100-F, 100-N, 100-K, and 100-H areas are in excess of the 10% expansion footprint described in DOE/EA-1403, therefore, additional NEPA evaluation was required. This additional NEPA evaluation is detailed in the current document (DOE/EA-1454), and considered the Proposed Action to reactivate former borrow sites in low-quality habitat in lieu of expansion because impacts to the environment could be greatly reduced.

Comment: Page 2-1, Section 2.0, Paragraph 1: The USDOE states that some of the sites evaluated in the CLUP and EA that were evaluated for use in remedial action backfill “present challenges,” thereby causing a need for reopening the former borrow sites. Justification for using the former borrow sites appears to be that they were not restored to native habitat and therefore can be reopened with few or no impacts to natural resources. Ecology asserts that the creation of the borrow site resulted in

## Appendix C – Public Comment Letters/DOE Responses

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impacts to the environment that the Federal government did not evaluate because the National Environmental Policy Act did not require Federal agencies to do so until 1970. The combination of the creation of the borrow sites, their abandonment without any mitigation or remediation, their possible reuse after extended disuse, and retirement appear to be related actions.

Response: Evaluation of historical (construction era) environmental impacts that may have resulted from the creation of the former borrow sites described in the Proposed Action is not within the scope of this document. The *Draft Industrial Mineral Resources Management Plan* (DOE/RL-2000-61) states that the use of new borrow sites or expansion of existing borrow sites “will require additional reviews through the site selection and NEPA/CERCLA integrated processes before their use.” This evaluation occurred subsequent to the *Environmental Assessment for Use of Existing Borrow Areas* (DOE/EA-1403).

Reactivation of former borrow sites as stated in the Proposed Action, in addition to minimizing impacts to native vegetation or other natural or cultural resources and restoring native vegetation upon closure, would prevent impacts that may occur under the No-Action Alternative or Alternative Actions. Impacts anticipated under the No-Action Alternative and Alternative Actions that would be avoided by implementing the Proposed Action include: encroachment into the bald eagle buffer zone (as detailed in the *Bald Eagle Site Management Plan for the Hanford Site, South Central Washington* [DOE-RL-94-150]) near Pits 19 and 20; inconsistent use of materials at sites recommended for closure in the *Draft Industrial Mineral Resources Management Plan* (DOE/RL-2000-61); impacts to recognized high-quality and recovering habitat such as that surrounding Pit 18; impacts to native vegetation in restored sites such as Pit 21; and impacts to Washington state Sensitive, Review and Threatened plants and associated habitat in Pits 9, 30, 31, 32, 33, and 35. Implementation of the Proposed Action would ensure active site restoration as described in the *Draft Industrial Mineral Resources Management Plan*.

Comment: Page 4-2, Section 4.2.1, Paragraph 1: The Record of Decision [ROD] for the CLUP states: “*The remainder of land within the Columbia River Corridor outside the quarter-mile buffer zone will be designated for Conservation (Mining). This designation will allow for DOE-permitted sand, gravel and basalt mining activities and support BLM’s mission of multiple use. Sand, gravel and basalt mining will be permitted only in support of governmental missions or to further the biological function of wetlands (e.g., conversion of a gravel pit to a wetland by excavating to groundwater). A Conservation (Mining) designation will allow USDOE to provide protection to sensitive cultural and biological resource areas, while allowing access to geologic resources.*” The text states that a portion of the 100-F Area borrow site is within 0.4 km (0.25 mi) of the Columbia River, within the Hanford Reach National Monument. Ecology views use of the area within the 0.25 mi buffer zone as at variance with USDOE’s commitment to maintain a buffer zone. That ecological and cultural resources [reviews] were performed does not negate the CLUP ROD’s

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designation. Ecology does not support removing mineral resources from within the buffer zone.

Response: The proposed borrow site in the 100-F Area is located within an area that is considered a “Pre-existing, Nonconforming” land-use area under the CLUP and subsequent ROD. This designation, tied to the reactor area and associated remedial action and waste management, is accommodated by the Hanford Reach National Monument designation while remedial action activities are being performed.

Presidential Proclamation 7319 (June 9, 2000) states: “Nothing in this proclamation shall affect the responsibility of the Department of Energy under environmental laws, including the remediation of hazardous substances or the restoration of natural resources at the Hanford facility; nor affect the Department of Energy statutory responsibility to take other measures for environmental remediation, monitoring, security, safety, or emergency preparedness purposes; nor affect any Department of Energy activities on lands not included within the monument.”

Use of materials within this HCP-EIS “Pre-existing, Nonconforming” land-use designation continues to support the overall objective and USDOE’s commitment of preserving the Columbia River Corridor by encouraging waste removal, site remediation and restoration within the 100-F Area and along the Columbia River. Consultations with the U.S. Fish and Wildlife Service, the co-managing agency of the Hanford Reach National Monument, determined that use of borrow materials in support of river corridor restoration is consistent with management objectives for the Monument.

Comment: Page 4-3, Section 4.2.3: As with the 100-F Area, Ecology does not support removing mineral resources from within the buffer zone in the 100-N Area, as is planned in this EA.

Response: See response to previous comment.

Comment: Page 5-1, Section 5.1.3, Water Quality: This section asserts that water sprinkling for dust control will not infiltrate to the groundwater in the borrow areas or affect the Columbia River; however, two of the sites have areas within 0.25 miles of the River. Ecology cannot evaluate the impact of the extraction of mineral resources upon recharge flows or groundwater because the depth of excavation compared to the groundwater levels is not presented. USDOE’s contention appears to be absent that information.

Response: Per recommendation, the distance to groundwater from the design excavation depth for each of the proposed borrow sites was added to Section 4.2, “Specific Site Environment.” The depths from the design excavation floor of the proposed borrow sites to the groundwater interface are as follows: 100-F Area- 3.3 m (10.7 ft); 100-H Area- 8.14 m (26.7 ft); and 100-N Area- 12.0 m (39.4 ft). Dust suppression is a common practice in remedial action activities on the Hanford Site. Water used for

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dust suppression would meet groundwater quality criteria because dust suppression water would be taken from the existing Hanford water system. Therefore, dust suppression activities are exempt liquid discharges to soil. Additionally, dust suppression activities do not involve large volumes of water because high application rates would lead to surface pooling and muddy conditions not well suited for excavation activities. Infiltration to groundwater and the Columbia River is expected to be negligible due to the small quantities of water required for dust suppression and any water used in dust suppression will comply with groundwater standards.

Comment: Page 5-1, Section 5.1.3, Water Quality: No source of water or method of sprinkling is identified in DOE/EA-1454. Chapter 90.03 RCW Surface Water Code and Chapter 90.44 RCW Regulation of Public Groundwater (Wells). If USDOE plans to use water for dust suppression, it must have a legal water right. A water right permit is required for **all** surface water withdrawal and for any water from a well that will exceed 5,000 gallons per day. If in doubt, check with Department of Ecology, Water Resources. Temporary permits are usually obtainable in a short time period.

Response: The Pollution Prevention and Best Management Practices Plan for State Waste Discharge Permit ST4508, ST4509, ST4510, which was approved by Ecology states that following in Section 10.0, industrial wastewater that is discharged to the ground for beneficial use (e.g., irrigation, aesthetics, dust control) does not require permitting. However, industrial wastewater must meet the WAC 173-200 groundwater quality criteria standards at the point of discharge unless it can be demonstrated to the satisfaction of Ecology that the site-specific characteristics will degrade or attenuate contaminants before reaching the groundwater, and will not generate contaminants by discharging wastewater into the environment. The source of water used for dust suppression is the existing Hanford water system using the Department of Energy's (DOE's) federal water rights. Water from this system meets groundwater quality criteria standards and therefore is an exempt from additional permitting.

No additional permits are required for project-specific dust suppression in any of the Proposed Action locations.

Comment: Page 5-2, Section 5.1.4, Land Use, Paragraph 2: The EA states that additional areas [beyond the borrow pit sites] will be required at the 100-F and 100-N Areas for upgrade or construction of haul roads. The environmental impact of the construction of the new roads is not considered in the cultural or biological reviews contained in the Appendixes of DOE/EA-1454. Ecology does not support construction of new roads into those areas without a cultural/ecological review for State and Federal species of concern and Native American cultural artifacts. No information is provided about the location, size, or capacity of the roads, aside from additional areas required that are given in this section. That information is not sufficient to determine if significant adverse environmental impacts might result from upgrade or construction of the roads.



Response: The intent is to use existing roads for the Proposed Action to the extent practicable. This could include upgrading the roads by resurfacing and/or widening or constructing new roads within the active boundaries of the CERCLA Remedial Action Projects. These areas have been previously reviewed for cultural and ecological impacts due to remediation activities and no impacts to cultural resources or to plant or animal species of concern are anticipated. The No-Action Alternative and Alternative Actions would require construction of new roads that would impact some relatively undisturbed areas. As the comment states, compensatory mitigation could be required if the area threshold for shrub steppe habitat is exceeded. For this reason, the No-Action Alternative and Alternative Actions are less desirable than the Proposed Action.

U.S. DEPT. OF ENERGY  
FISH AND WILDLIFE DIVISION

DOE



P. 2/3

State of Washington  
**DEPARTMENT OF FISH AND WILDLIFE**

Mailing Address: 600 Capitol Way N, Olympia, WA 98501-1091 • (360) 902-2200; TDD (360) 902-2207  
Main Office Location: Natural Resources Building, 1111 Washington Street SE, Olympia, WA

January 22, 2003

Mr. Paul F.X. Dunigan, Jr.  
NEPA Compliance Officer  
U.S. Department of Energy  
Richland Operations Office  
P.O. Box 550  
Richland, WA 99352

Dear Mr. Dunigan;

RE: DRAFT ENVIRONMENTAL ASSESSMENT (EA) FOR REACTIVATION AND USE  
OF THREE FORMER BORROW SITES IN THE 100-F, 100-H, AND 100-N AREAS  
(DOE/EA-1454)

The Washington Department of Fish and Wildlife (WDFW) has completed review of the EA for the reactivation of three former borrow sites in the 100-F, 100-H, and 100-N Areas.

The mandate of WDFW is to preserve, protect, perpetuate, and manage the wildlife and food fish, game fish, and shellfish in the state waters and offshore waters. Wildlife, fish, and shellfish are the property of the state (RCW 77.04.012). The goal of our mitigation policy is to maintain the functions and values of fish and wildlife habitat, and we strive to protect the productive capacity and opportunities reasonably expected of a site in the future. In the long-term WDFW shall seek a net gain in productive capacity of habitat through restoration, creation and enhancement.

WDFW recommends the Department of Energy develop a mitigation action plan for reactivation of the former borrow sites in the 100-F, 100-H, and 100-N areas, based on the uncertainty of the actions as presented in the EA. Since different alternatives are presented, it is unclear which borrow sites would be utilized, for what purpose, and their impacts to natural resources. The information presented in this EA is hard to follow; for example, Figure 3-1 shows existing and proposed borrow pits, and the map seems to indicate the use of new borrow pits rather than existing sites or "reactivation".

Pit 18 is surrounded by high quality mature sagebrush, recognized as Level III in Biological Resources Mitigation Action Plan (BRMaP), which would require compensatory mitigation if impacted. What actions are taken to ensure that this area is protected? The Hanford Site Biological Mitigation Resources Mitigation Strategy Plan (BRMiS) recommends a ratio of 3:1 compensatory mitigation for Level III shrub steppe. WDFW strives for a shrub steppe mitigation

Paul F.X. Dunigan, Jr.  
January 22, 2003  
Page 2

ratio of 3:1, at minimum, since shrub steppe is difficult to replace, and time delays are certain before functions are fully restored.

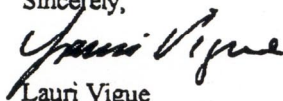
Timing restrictions for the bald eagle nest and roost are not indicated in this document. Specifically pits 19 and 20 are within the bald eagle restricted use area. According to the Bald Eagle Site Management Plan, temporal and spatial restrictions for nesting and roosting are November 15 through August 15. What actions are going to be taken by Department of Energy to ensure that the bald eagles are protected?

Road development was indicated in several sections of this EA, but the ecological survey performed did not consider the impacts of new road construction on ecological resources. If new roads become necessary, WDFW encourages the Department of Energy to route them in such a way that minimizes impacts to shrub steppe habitat, to reduce further fragmentation. If road development is found to impact shrub steppe habitat, compensatory mitigation is necessary.

The ecological review for this EA was performed at a time least likely to find nesting species on site (September 16, 2002). To adequately evaluate impacts to natural resources from these actions, an ecological survey should be conducted once, at minimum, during nesting season (March through July).

WDFW appreciates the opportunity to comment on this EA. I may be reached at (360) 902-2425 if you have questions.

Sincerely,



Lauri Vigue  
Fish and Wildlife Biologist

Cc: Ted Clausing, WDFW  
Melinda Brown, WDOE  
Larry Goldstein, WDOE  
Tom Zeilman, Yakama Indian Nation  
Don Steffek, USFWS



03-ERD-0081

**Department of Energy**  
Richland Operations Office  
P.O. Box 550  
Richland, Washington 99352

**MAR 17 2003**

Ms. Lauri Vigue  
Washington Projects Division/Habitat Program  
State of Washington Department of Fish and Wildlife  
600 Capitol Way North  
Olympia, Washington 98501-1091

Dear Ms. Vigue:

RESPONSE TO COMMENTS ON ENVIRONMENTAL ASSESSMENT DOE/EA-1454 FOR REACTIVATION AND USE OF THREE FORMER BORROW SITES IN THE 100-F, 100-H, AND 100-N AREAS

The U.S. Department of Energy, Richland Operations Office (RL), has received your comments on the subject Environmental Assessment (EA) and would like to thank you for taking the time to review our document. The comments were considered in preparing the final EA. Responses to the comments are enclosed and resulting changes made to the EA are noted.

If you have additional questions concerning the proposed action, please contact Mr. Chris Smith, Environmental Restoration Division, at (509) 372-1544. Questions on the *National Environmental Policy Act of 1969* (NEPA) process can be directed to me at (509) 376-6667.

Sincerely,

A handwritten signature in cursive script that reads "Paul F. X. Dunigan, Jr.".

Paul F. X. Dunigan, Jr.  
NEPA Compliance Officer

ERD:DCS

Enclosure

cc w/encl:  
Administrative Record (100 Area)



**ENCLOSURE**

**Comments and Responses to the Environmental  
Assessment for Reactivation and Use of Three  
Former Borrow Sites in the 100-F, 100-H, and  
100-N Areas (DOE/EA-1454)**

**Appendix C – Public Comment Letters/DOE Responses**

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**COMMENTS AND RESPONSES TO THE ENVIRONMENTAL ASSESSMENT FOR REACTIVATION AND USE OF THREE FORMER BORROW SITES IN THE 100-F, 100-H, AND 100-N AREAS (DOE/EA-1454)**

Comment: WDFW recommends the Department of Energy develop a mitigation action plan for reactivation of the former borrow sites in the 100-F, 100-H, and 100-N Areas.

Response: The *Mitigation Action Plan for the 100 and 600 Areas of the Hanford Site* (DOE/RL-2001-22, Rev. 0) covers borrow sites for the 100 Area Remedial Action projects and was referenced in the draft EA. Mitigation actions specific to borrow sites are also specified in the *Draft Industrial Mineral Resources Management Plan* (DOE/RL-2000-61, Rev. 0). The EA commits to complying with both of these documents as well as the *Hanford Site Biological Resources Management Plan* (BRMaP) (DOE/RL-96-32) and the *Biological Resources Mitigation Strategy* (BRMiS) (DOE/RL-96-87). By following these management plans, the planned restoration of these sites will result in a net benefit to habitat value by planting native grasses and shrubs in areas of low-quality habitat.

Comment: Figure 3-1 shows existing and proposed borrow pits, and the map seems to indicate the use of new borrow pits rather than existing sites or “reactivation”.

Response: The call-out for Figure 3-1 on Page 3-1 states: “The locations of the three proposed borrow sites are shown in Figure 3-1.” The figure clearly shows the proposed sites referred to in Section 3.1, Proposed Action.

Comment: Pit 18 is surrounded by high quality mature sagebrush, recognized as Level III in the Biological Resources Management Plan (BRMaP), which would require compensatory mitigation if impacted. What actions are taken to ensure that this area is protected?

Response: Pit 18 is not part of the Proposed Action described in Section 3.1. The use of Pit 18 is stated in the No-Action Alternative (Section 3.2.1) for the 100-F Area. In response to your comment, a field survey was performed at the site (Pit 18), and the habitat was verified as a rabbitbrush-dominated community, which is designated as Level II under the BRMaP. However, if the No-Action Alternative is implemented and this habitat is impacted, mitigation and restoration would be conducted following the guidance described in BRMaP.

Comment: Timing restriction for the bald eagle nest and roost are not indicated in this document. Specifically pit 19 and 20 are within the bald eagle restricted use area. According to the *Bald Eagle Site Management Plan*, temporal and spatial restrictions for nesting and roosting are November 15 through August 15. What actions are going to be taken by Department of Energy to ensure that the bald eagles are protected?

Response: The EA recognizes the temporal restrictions specified in the *Bald Eagle Site Management Plan* (DOE/RL-94-150) and specifically states in Section 4.2.4 that

these restrictions “would make these pits unavailable for use during that time.” For this reason, Pits 19 and 20 are not included in the Proposed Action.

**Comment:** Road development was indicated in several sections of this EA, but the ecological survey performed did not consider the impacts of new road construction on ecological resources. If new roads become necessary, WDFW encourages the Department of Energy to route them in such a way that minimizes impacts to shrub steppe habitat, to reduce further fragmentation. If road development is found to impact shrub steppe habitat, compensatory mitigation is necessary.

**Response:** The intent is to use existing roads for the Proposed Action to the extent practicable. This could include upgrading the roads by resurfacing and/or widening or constructing new roads within the active boundaries of the CERCLA Remedial Action Projects. These areas have been previously reviewed for cultural and ecological impacts due to remediation activities and no impacts to plant or animal species of concern are anticipated. Most of the remaining alternatives would require construction of new roads that would impact some relatively undisturbed areas. As the comment states, compensatory mitigation could be required if the area threshold for shrub steppe habitat is exceeded. For this reason, the Alternative Actions are less desirable than the Proposed Action.

**Comment:** The ecological review for this EA was performed at a time least likely to find nesting species on site (September 16, 2002).

**Response:** This observation is true. However, the habitat present determines the likelihood of it being used during the nesting season. None of the Proposed Action sites contain unique or high quality nesting habitat. To be consistent with BRMaP, bird surveys are conducted in project areas just prior to the activity if it occurs during the nesting season. If nesting birds are discovered, the activity is postponed or redirected until nesting is complete.



