BUREAU OF RECLAMATION

Environmental Assessment

Acquisition of Grant County Parcel 170934000; Potholes Supplemental Feed Route

Columbia Basin Project, Grant County, Washington
Columbia-Pacific Northwest Region

U.S. Department of the Interior

November 2021

Mission Statements

The U.S. Department of the Interior protects and manages the Nation's natural resources and cultural heritage; provides scientific and other information about those resources; and honors its trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated Island Communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

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Acronyms and Abbreviations

Acronym or Abbreviation	Definition
AAI	All Appropriate Inquiries
AFO	Animal Feeding Operation
AST	Above-Ground Storage Tank
BA	Biological Assessment
CAFO	Concentrated Animal Feeding Operation
CBP	Columbia Basin Project
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
cfs	cubic feet per second
Corps of Engineers	U.S. Army Corps of Engineers
CSCSL-NFA	Confirmed and Suspected Contaminated Sites List – No Further Action
CUL	Cleanup Level
CWA	Clean Water Act
D&S	Reclamation Manual Directives and Standards
DAHP	Washington Department of Archaeology and Historic Preservation
Dairy	Business owned and operated by the Property Owners of Grant County Parcel 170934000
DOI	Department of the Interior
DOJ	Department of Justice
EA	Environmental Assessment
ECAP	Environmental Compliance Audit Program
ECBID	East Columbia Basin Irrigation District
Ecology	Washington Department of Ecology
EIS	Environmental Impact Statement
ELC	East Low Canal
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act

Acronym or Abbreviation	Definition
Federal parcel	Grant County Parcel 170917000
FONSI	Finding of No Significant Impact
FR	Federal Register
GHG	Greenhouse Gases
Land Acquisition Parcel	Grant County Parcel 170934000
Land Disposal Parcel	Grant County Parcel 170917000
mg/L	milligrams per liter
MPN	Most Probable Number
MTCA	Model Toxics Control Act
NAAQS	National Ambient Air Quality Standards
National Register	National Register of Historic Places
NCAQMD	North Coast Air Quality Management District
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMP	Nutrient Management Plan
NPDES	National Pollutant Discharge Elimination System
NWI	National Wetland Inventory
Property Owners	Current owners of the Land Acquisition Parcel (Grant County Parcel 170934000)
PSFR	Potholes Reservoir Supplemental Feed Route
QCBID	Quincy Columbia Basin Irrigation District
RCRA	Resource Conservation and Recovery Act
RCW	Revised Code of Washington
REC	Recognized Environmental Condition
Reclamation	Bureau of Reclamation
RMP	Resource Management Plan
SCBID	South Columbia Basin Irrigation District
SDWA	Safe Drinking Water Act
Settlement Agreement	Administrative Settlement Agreement between Reclamation and the Land Acquisition Parcel (Grant County Parcel 170934000) Property Owners
SPCC	Spill Prevention Control and Countermeasure Plan

Acronym or Abbreviation	Definition
Superfund Site	Moses Lake Wellfield Contamination Superfund Site
TPH	Total Petroleum Hydrocarbons
ug/L	micrograms per liter
Uniform Relocation Act	Uniform Relocation Assistance and Real Property Acquisition Policies Act
USFWS	U.S. Fish and Wildlife Service
VCP	Washington Department of Ecology Voluntary Cleanup Program
VOCs	Volatile Organic Compounds
WAC	Washington Administrative Code
WA DNR	Washington Department of Natural Resources
WDFW	Washington Department of Fish and Wildlife
White Shield	White Shield, Inc.
WOTUS	Waters of the United States

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Chapter 1 Purpose and Need

1.1 Introduction

The U.S. Department of the Interior, Bureau of Reclamation (Reclamation) prepared this Environmental Assessment (EA) consistent with the purpose and goals of the National Environmental Policy Act (NEPA; 42 U.S.C. 4321 et seq.) and pursuant to the Council on Environmental Quality's (CEQ's) implementing NEPA regulations at 40 CFR Parts 1500-1508. Additionally, this EA was prepared consistent with the Department of the Interior NEPA regulations (43 CFR Part 46); longstanding federal judicial and regulatory interpretations; and Administration priorities and policies including Secretary's Order No. 3399 requiring bureaus and offices to use "the same application or level of NEPA that would have been applied to a proposed action before the 2020 Rule went into effect."

This EA will address the proposed land acquisition of Grant County Parcel 17093400 (Land Acquisition Parcel; see Section 1.2) and associated proposed actions including possible issuance of a use authorization (license) for residential occupancy, residential and non-residential relocation, and remediation[1] of the Land Acquisition Parcel. This EA is tiered[2] to, and incorporates by reference,[3] Reclamation's 2007 *Potholes Reservoir Supplemental Feed Route Environmental Assessment* (PSFR EA). Even though Reclamation is authorized by the PSFR *Finding of No Significant Impact* (PSFR FONSI) to acquire and remediate land, Reclamation determined that additional environmental compliance is needed for the proposed land acquisition of the Land Acquisition Parcel to disclose the findings of the All Appropriate Inquiries (AAI) investigation because contamination was identified (see Section 3.3).

Should a determination be made that acquiring the Land Acquisition Parcel will not result in significant environmental impacts, a Finding of No Significant Impact (FONSI) will be prepared to document that determination and provide a rationale for approving the selected alternative. If not, then a decision will be made to either select the No Action alternative or issue a notice of intent to prepare an Environmental Impact Statement.

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[1] Remediation is an action of reversing or stopping environmental damage. For the purposes of this document, remediation will also include activities that are generally referred to as reclamation activities which restore land that has been degraded by human activities to its natural state. Reclamation activities may include removal of structures, remediation of contamination, restoration (e.g., revegetation), and other activities that would restore natural functions and ecosystems.

[2] 40 CFR 1501.11

[3] 40 CFR 1501.12

1.2 Location/Action Area

The Land Acquisition Parcel is approximately 103 acres in area and is described as Grant County Parcel 170934000 located in Section 15, Township 20 North, Range 28 East, Willamette Meridian. Access to the property is from County Road 10 NE along the northern and eastern boundaries.

1.3 Background

The Columbia Basin Project (CBP) is a multi-purpose, federally authorized Reclamation project which directly benefits local, state, and national economies. The CBP is the largest Reclamation Project in the Pacific Northwest and delivers irrigation water to approximately 680,000 acres in east central Washington (Figure 1). Irrigation water is delivered primarily by three federal irrigation districts: East Columbia Basin Irrigation District (ECBID), Quincy Columbia Basin Irrigation District (QCBID), and South Columbia Irrigation District (SCBID). Irrigation water from the CBP is often used more than once before it returns to the Columbia River near Pasco. Potholes Reservoir collects runoff from the north, via drains and wasteways that empty into the canal system, to be reused by farms in the south. Irrigators use about 2.5 million acre-feet of Columbia River water each year. Reusing water gives irrigators an additional 1 million acre-feet of water, for a total of 3.5 million acre-feet of water use.

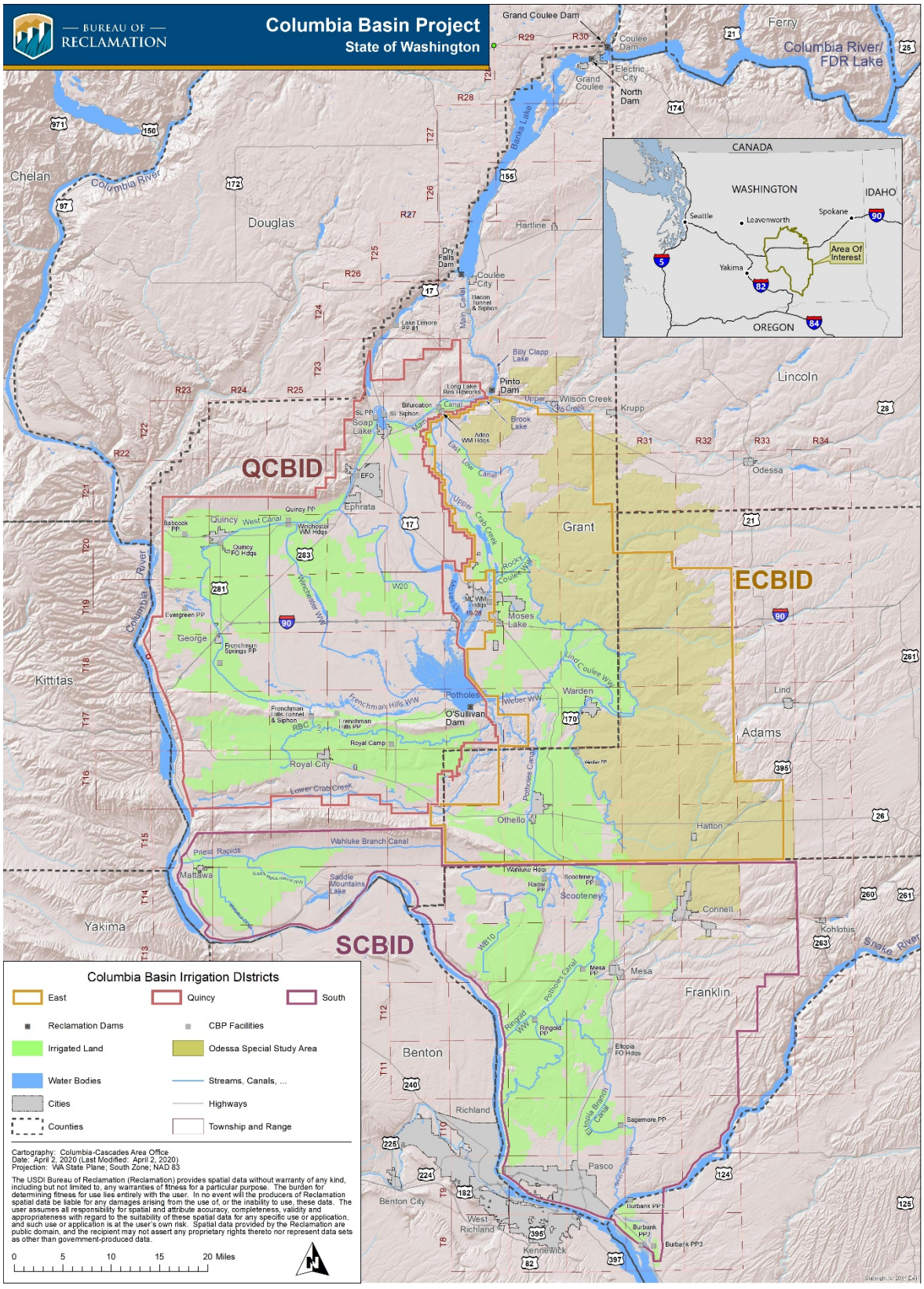

Figure 1. Map of the CBP, denoting the service area for the three irrigation districts: ECBID, QCBID, and SCBID

In accordance with Reclamation's 2007 decision to implement Alternative 2 – Crab Creek and Frenchman Hills Wasteway, from the Potholes Reservoir Supplemental Feed Route Finding of No Significant Impact and Environmental Assessment (PSFR FONSI and EA; Reclamation 2007), Reclamation is actively pursuing the full buildout of the Potholes Supplemental Feed Route (PSFR; Figure 2). The PSFR is a water conveyance feature associated with the CBP and is being developed to ensure Reclamation's ability to deliver irrigation water as the CBP develops and matures. Specifically, Crab Creek and Frenchman Hills Wasteway will be utilized to convey irrigation water to Potholes Reservoir and to then be reused in the southern end of the CBP. Reclamation has completed construction of the Frenchman Hills Wasteway[4] and has been acquiring land in support of the Crab Creek[5] portion of the PSFR.

[4] Frenchman Hills Wasteway refers to the lowest section of the West Canal that drains irrigation water into Potholes Reservoir. Under the PSFR, the manner in which water was routed into the Frenchman Hills Wasteway changed. More information can be found in the PSFR EA at https://www.usbr.gov/pn/programs/ea/wash/potholes/ea-potholessup2007.pdf.

[5] Crab Creek is a natural, perennial stream (i.e., containing water year-round) in the Columbia basin of central Washington. Reclamation currently uses the southern part of Crab Creek to convey water from the East Low Canal to Potholes Reservoir. The full buildout of the Crab Creek portion of the PSFR would allow Reclamation to utilize the full length of Crab Creek to carry irrigation water to Potholes Reservoir; therefore, reference graphics only show Crab Creek. Sometimes Crab Creek is divided into three parts – Upper Crab Creek, from its source to Brook Lake; Middle Crab Creek, from Brook Lake to and including Potholes Reservoir; and Lower Crab Creek, from below Potholes Reservoir to the Columbia River. More information can be found in the PSFR EA at https://www.usbr.gov/pn/programs/ea/wash/potholes/ea-potholessup2007.pdf.

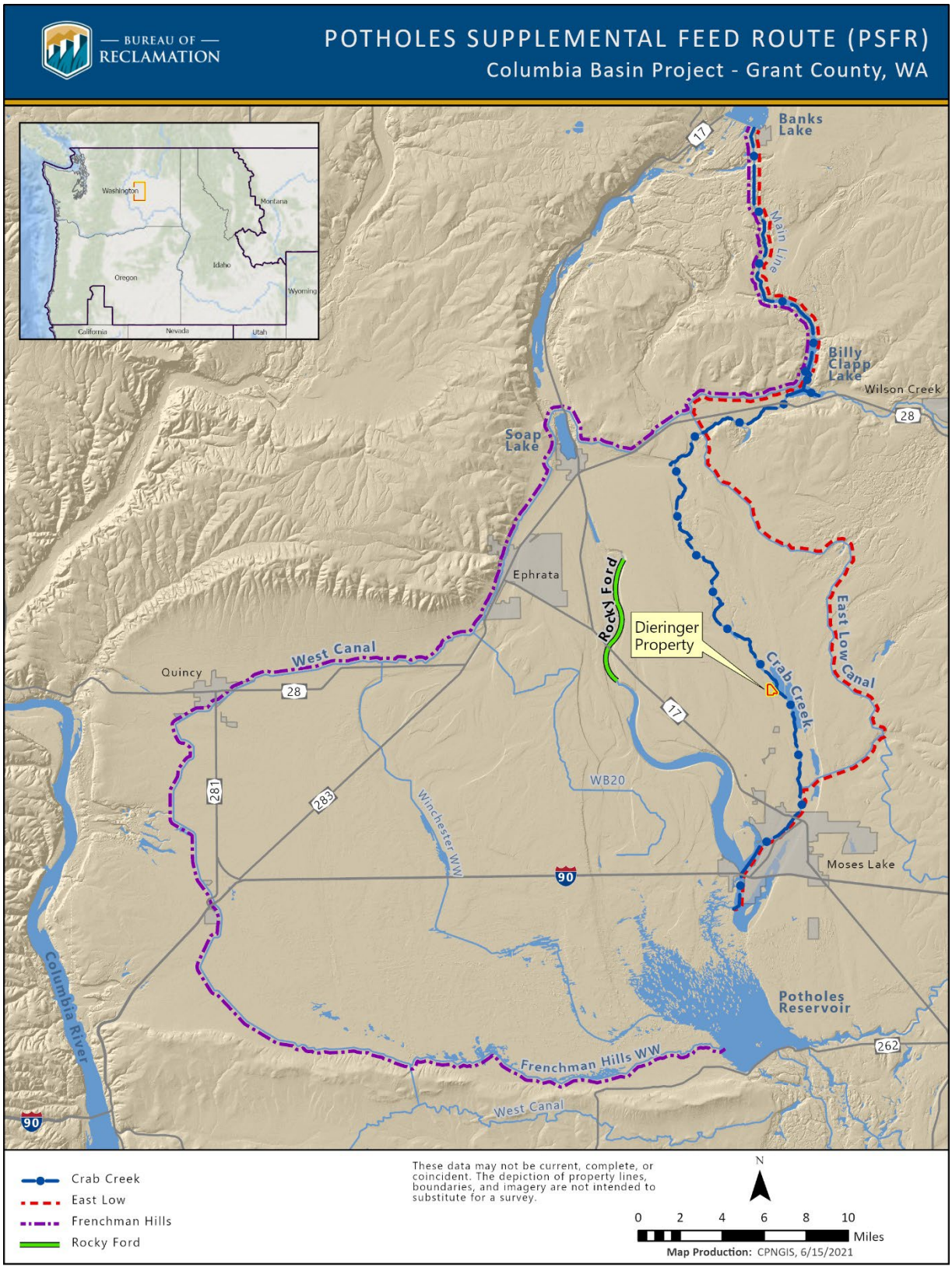

Figure 2. Overview of the PSFR; the Crab Creek portion of the PSFR would utilize the full length of Crab Creek to carry irrigation water to Potholes Reservoir

Based on current irrigation water projections, the Crab Creek portion of the PSFR is likely to be required to be operational as soon as the 2024 irrigation season. On July 14, 2021, a drought emergency[6] was declared for most of the state of Washington, including Grant, Adams, and Franklin Counties that are served by the CBP. Reclamation has acknowledged that use of the Crab Creek portion of the PSFR during the 2021 irrigation season would have been beneficial if it had been operational.

The 2021 water season began with low soil moisture and low precipitation, which limited return flows into Potholes Reservoir (Reclamation 2021). In more typical years there are return flows to Potholes Reservoir in April and May which help the reservoir reach an elevation of 1046.00 before feed is reduced through the summer (Figure 3). In 2021, there were substantially no return flows in excess of evaporative losses until August, which caused the reservoir to fall along the minimum storage guide curve (Figure 4). In mid-August, return flows arrived[7] at Potholes Reservoir and allowed the reservoir elevation to be held and returned to historical average elevations.

[6] Governor Inslee and the Washington State Department of Ecology (Ecology) issued a drought advisory for 29 counties in May 2021. On July 14, 2021, Ecology declared a drought emergency for most of the state (Ecology 2021a), including Grant, Adams, and Franklin counties. The Order and Determination by the Director can be accessed at: https://ecology.wa.gov/DOE/files/40/408b30b3-0d96-4d57-aad8-36e675448b08.pdf.

[7] Groundwater is recharged from the surface; precipitated water or irrigation water application flows into the soils down through the vadose zone to reach the zone of saturation, where groundwater flow occurs. The rate of infiltration is a function of soil and antecedent conditions (a function of wetness conditions based on factors such as temperature and natural water storage) and time. The groundwater then moves from higher pressure areas to lower pressure areas. It may move entirely in the subsurface to Potholes Reservoir, or it may surface and get captured as surface water within the CBP (e.g., at the Frenchman Hills Wasteway or in lower Crab Creek) and transported to Potholes Reservoir; in both instances, this is considered feed water.

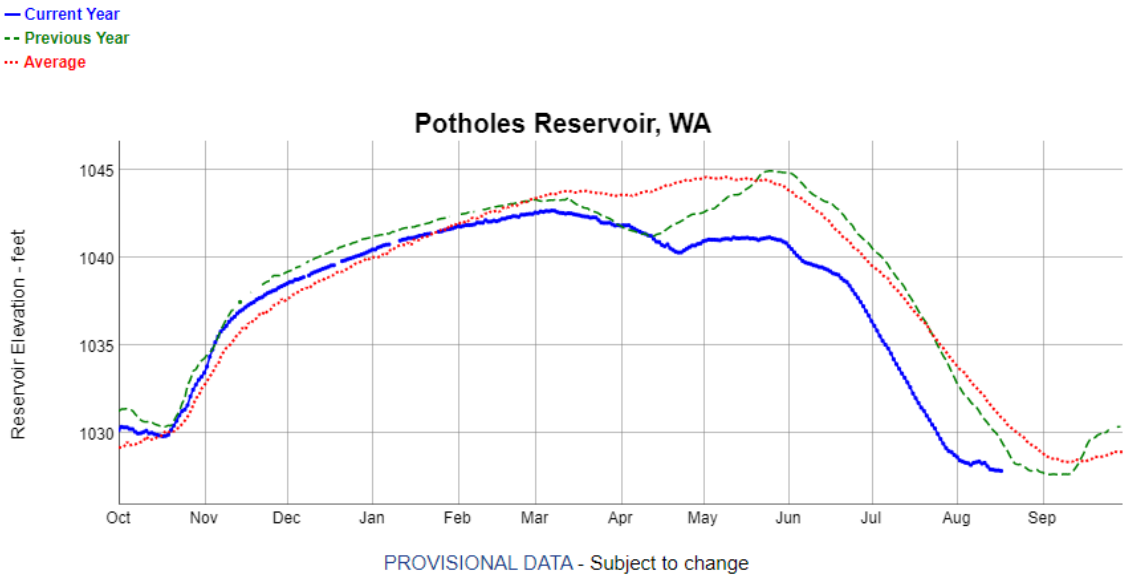

Figure 3. Reservoir elevations vs. time of year

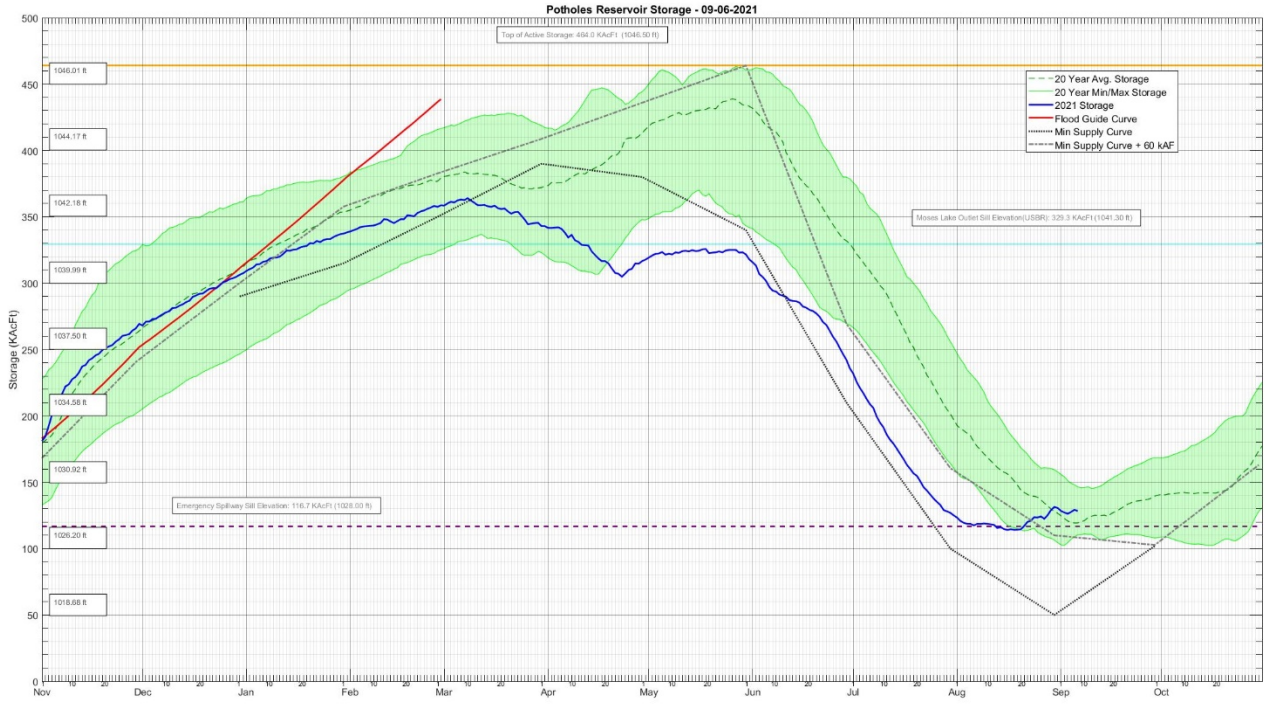

Figure 4. Reservoir storage and minimum storage guide curve

Feed to Potholes Reservoir was impacted by a variety of factors and reduced by an early onset of warmer than predicted weather and operational restrictions at the Rocky Coulee Wasteway due to canal leakage. This limited the flow of Rocky Coulee Wasteway to 1,200 cubic feet per second (cfs). Additionally, residential development at the lower end of the Rocky Coulee wasteway has

further restricted flow, reducing the total capacity that can be conveyed down the wasteway to substantially below its rated capacity. The lower flows in Rocky Coulee Wasteway increased the time required to fill Moses Lake and delayed the arrival of feed water at Potholes Reservoir. Available feed was further reduced by pumping at the EL-47.5 Pumping Plant.

On June 1, 2021, Potholes Reservoir was short 128,000 acre-feet of water. The fall of the reservoir along the minimum storage guide curve was managed by maintaining the East Low Canal at 4,300 cfs flow and diverting all excess water into the Potholes Reservoir. Additionally, all feed water that could be provided via the West Canal was diverted into Potholes Reservoir. Total feed provided to Potholes Reservoir this year was 319,556 acre-feet of water, of which 268,581 acre-feet was provided through the East Low Canal; 50,975 acre-feet was provided by the West Canal through August 1, 2021. Flow of 1,000 cfs was required during the months of June, July, and August to manage the water level elevation of Potholes Reservoir in 2021; this water must be provided by a secondary source, such as the Crab Creek portion of the PSFR, when a year similar to 2021 occurs.

In accordance with 40 CFR 1501.12, Reclamation is incorporating by reference the Background section (Section 1.1) of the PSFR EA.[8] A brief summary from the PSFR EA and an update on actions taken under the PSFR FONSI are provided below.

The PSFR FONSI and EA disclosed the effects of operating the PSFR and anticipated Reclamation working with landowners to mitigate the impacts of the PSFR. This mitigation was disclosed and could involve purchasing land, constructing dikes, purchasing easements, land improvement, or other measures (e.g., removal of solid waste, closure of underground storage tanks or septic systems, and removal of any structures, or other appropriate remedial action). The PSFR FONSI committed Reclamation to conduct an AAI[9] prior to acquisition of property to support the future operation of the PSFR. Reclamation also committed in the PSFR FONSI to remove any hazardous substances[10] that could be exposed to higher levels of surface or groundwater, prior to final implementation of the PSFR.

Studies, done prior to and after the PSFR EA, indicate PSFR operation would inundate portions of properties along Crab Creek, including its side channels, and property acquisition is critical to

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[8] The PSFR EA is available at https://www.usbr.gov/pn/programs/ea/wash/potholes/ea-potholessup2007.pdf.

[9] Reclamation has replaced the Environmental Site Survey terminology used in the PSFR FONSI and EA with an All Appropriate Inquiries (AAI). An AAI is the process of evaluating a property's environmental conditions and assessing potential liability for any contamination. An AAI must be conducted to obtain certain protections from liability under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA). The AAI rule is codified in Code of Federal Regulations (CFR) at 40 CFR Part 312, with reporting requirements provided at 40 CFR 312.21 and 312.22 (EPA 2014).

[10] The Department of the Interior has established policies for the acquisition of property, or interests in property, for the government to be fully aware of the nature and extent of any associated potential liability. Departmental Manual 602, Chapter 2 requires that a pre-acquisition AAI be completed prior to acquisition of property or interests in property, including those identified as necessary to support operation of the PSFR. The Acquisition Approval Memorandum is the outcome of an approval process Reclamation must take when an acquisition of real property includes known contamination. The Acquisition Approval Memorandum would allow Reclamation to acquire contaminated land and designate appropriated funds towards remediation, if any.

eliminate impacts to landowners. The PSFR EA initially identified approximately 190 parcels as necessary for the PSFR operations to function properly. Through test flows and additional studies, the number of parcels required to be acquired was adjusted to 140 parcels. To date, Reclamation has completed acquisitions on approximately 110 parcels.

The PSFR EA and FONSI identified Grant County Parcel 17093400 (Land Acquisition Parcel) as a critical area necessary for implementation of the Crab Creek portion of the PSFR (Figure 3). Reclamation has been in land purchase discussions with the owners of the Land Acquisition Parcel (Property Owners) since 2009. According to the Property Owners, the increased test flows in Crab Creek created changes in water levels and flow paths that do not normally occur. As soon as the flow was increased in Crab Creek, the emergent wetland on the Land Acquisition Parcel, south of the dairy facilities operated by the owners (Dairy), began to fill with water. This emergent wetland is within the west channel of Crab Creek, which is an intermittent[11] section of Crab Creek. When the test flow was stopped, the water level quickly receded. There was no observed overland flow that contributed to water in the emergent wetland; therefore, it is assumed that the surfacing groundwater was a result of saturated soils and hydrologic head.

The photograph in Figure 5 helps illustrate the changes in water levels and flow paths, showing inundation on the Land Acquisition Parcel during the 2006 test flows in Crab Creek. Reclamation had tested flows of up to 1,000 cfs in Crab Creek, but the flows in Crab Creek are unknown at the time of this photo. Groundwater, visible in the foreground of the photograph, reportedly rose on the Land Acquisition Parcel in the west channel of Crab Creek in response to the increased flows in Crab Creek. There was no live flow in the west channel of Crab Creek that flowed into this area. Two effluent storage lagoons on the southwest portion of the Land Acquisition Parcel are not visible in Figure 5.

The photograph in Figure 6 shows a portion of the Land Acquisition Parcel in the middle left of the picture (the Dairy structures are on the very left edge and the associated hayfield is from the left to center). The body of water in the lower left of the photograph is where groundwater elevations rose; this resulted in the west channel of Crab Creek overtopping despite there being no flow in the west channel of Crab Creek above the site. Two effluent storage lagoons on the southwest portion of the Land Acquisition Parcel are not visible in this photograph. Walker Road enters from the bottom edge of the photograph and ends at the building near the center of photograph. Road 10 roughly bisects the photograph from left to right. Crab Creek is left to right in the upper half of Figure 6.

[11] Intermittent streams flow only during the wetter periods of the year. For more information, visit https://www.nws.usace.army.mil/Missions/Civil-Works/Regulatory/Permit-Guidebook/Streams/.

Figure 5. Inundation on the Land Acquisition Parcel during the 2006 test flows in Crab Creek (see text for description)

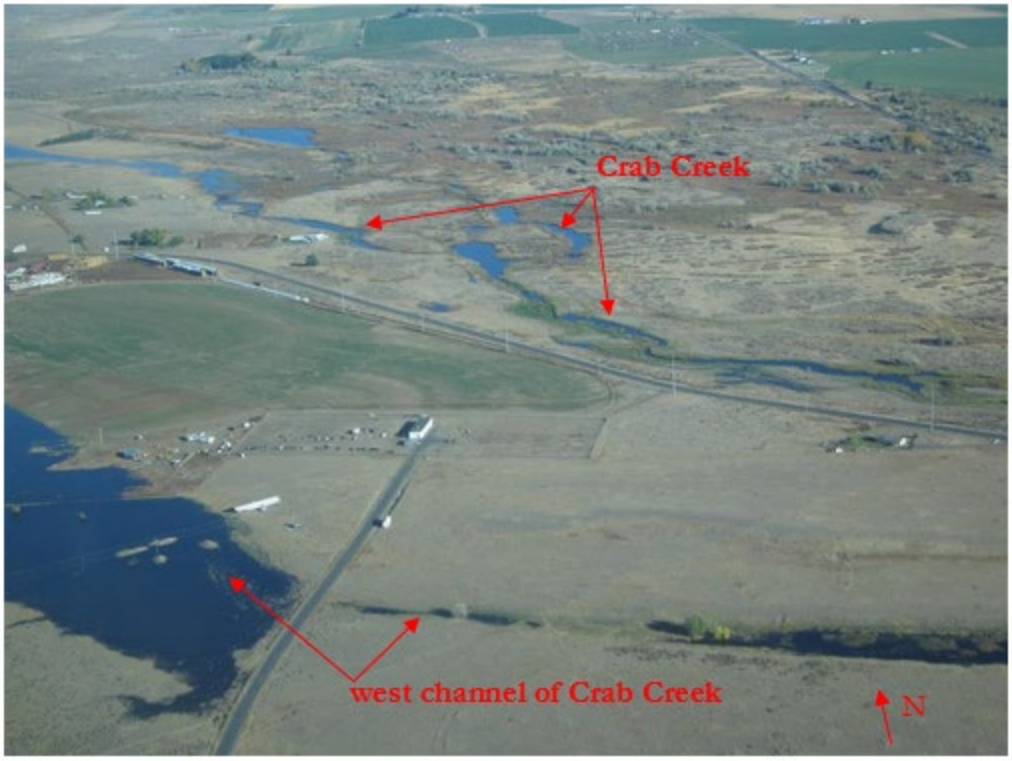

Figure 6. A portion of the Land Acquisition Parcel in the middle left of the picture (see text for description)

Water in the emergent wetland creates an access issue because it divides the northeast portion of the Land Acquisition Parcel, where the Dairy is located and a center pivot irrigation system is used, from the southwest portion of the property, where two unlined effluent storage lagoons are located. The effluent lagoons need to be accessed by the Property Owners to manage effluent water and to complete necessary maintenance.

As part of Reclamation's pre-acquisition AAI, samples were collected from the Land Acquisition Parcel (Figure 7) which resulted in the identification of hydrocarbon contamination (a recognized environmental condition (REC)) above regulatory thresholds. The contamination was reported to the Washington Department of Ecology (Ecology). Ecology investigated the release, determined that contamination existed and would need to be cleaned up pursuant to requirements of the Model Toxics Control Act (MTCA), and notified the Property Owners. In addition, Ecology added the Land Acquisition Parcel to its database of known or suspected contaminated sites that need remedial action. The Land Acquisition Parcel is now identified as cleanup site number 15421 (Ecology 2021d). Discussion of the AAI findings can be found in Section 3.3.

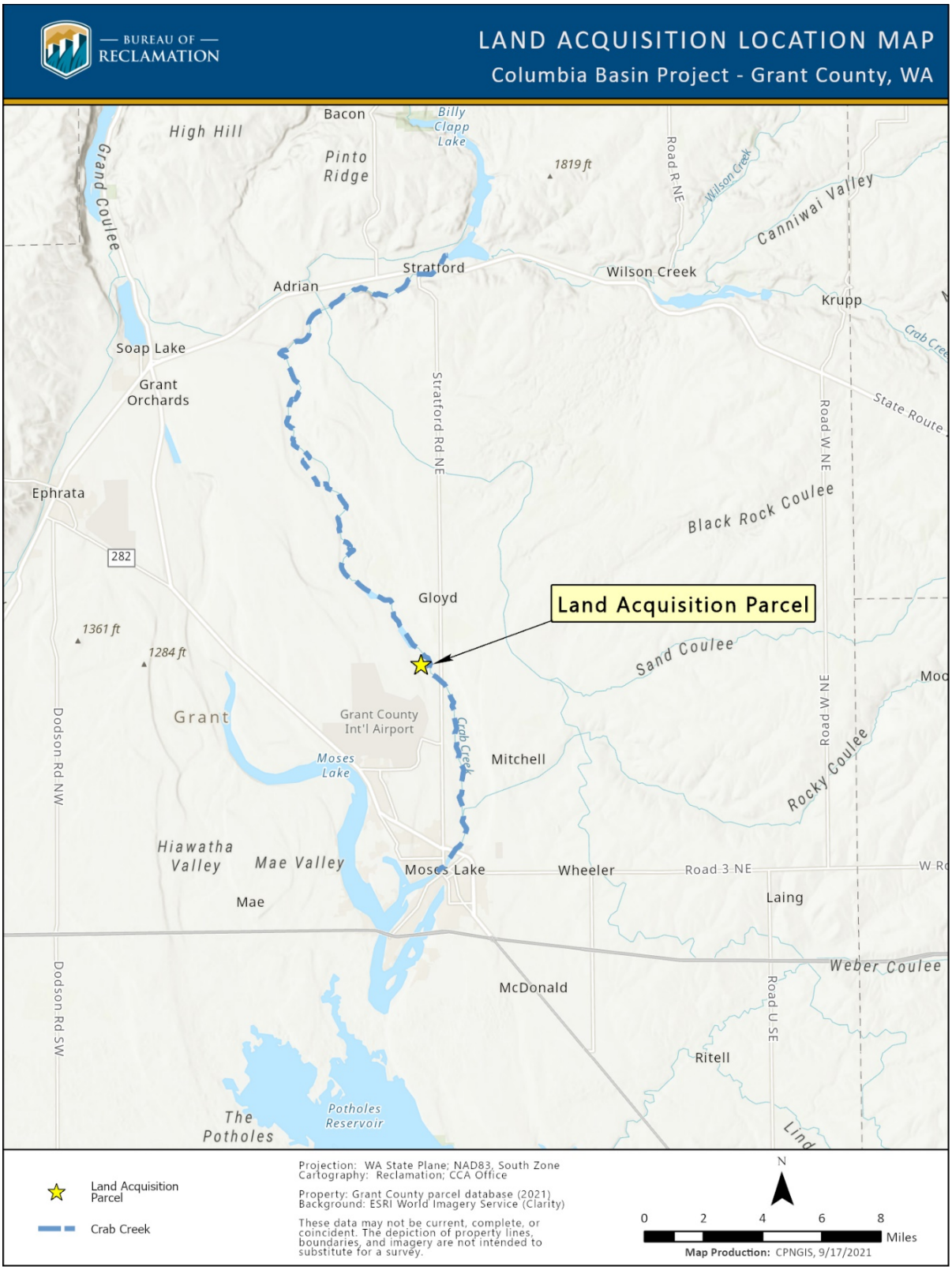

Figure 7. Crab Creek portion of the PFSR and location of the Land Acquisition Parcel

1.4 Proposed Action

In support of the full buildout of the PSFR, Reclamation proposes to acquire the Land Acquisition Parcel (Figure 8). The approximate 103-acre Land Acquisition Parcel is located north of Moses Lake, Washington (Figure 7) in the northern area of the CBP known as Gloyd Seeps. The Land Acquisition Parcel was impacted by test flows in 2006 and identified in the 2007 PSFR EA as a necessary parcel to be acquired. The Land Acquisition Parcel currently contains an operating dairy,[12] developed agricultural land, one attached residence,[13] and one employee-owned non-attached residence.[14]

[12] The operating dairy is a business owned and operated by the Property Owners of Grant County Parcel 170934000 and is referenced as the Dairy.

[13] An attached residence is one that is considered part of the real property acquisition, as in buying a parcel containing a single-family residence.

[14] A non-attached residence sits on the parcel but is not a part of the real property acquisition. In this instance, the employee-owned residence is on the parcel but not part of the parcel acquisition because it is considered mobile. Therefore, the removal or acquisition of the real property (residence only) would be handled under the Uniform Relocation Act. See Sections 2.3.3 and 2.4.2.

Figure 8. Location of the Land Acquisition Parcel

There are other processes described in this document that are necessary to undertake the land acquisition. Since they are federal actions, they are described within the discussions of alternatives (Chapter 2) and analysis (Chapter 3) and include the following:

- License Issuance;
- Closure of Land Acquisition Parcel to the Public; and
- Remediation of the Land Acquisition Parcel.

1.5 Purpose and Need for Action

The 2007 PSFR EA stated that the purpose of the PSFR is to increase the reliability of transporting water from Banks Lake to Potholes Reservoir in order to offset current limitations of the CBP. In addition, the 2007 EA documented Reclamation's responsibility to deliver water to SCBID under Article 13(a) of the *Amendatory, Supplemental, and Replacement Repayment Contract between the United States of America and the South Columbia Basin Irrigation District,* which states:

> "The water supply available for irrigation of the lands entitled to receive water from each of the canals systems shall be delivered by the United States at the Bifurcation Works of the Main Canal in the case of the West and East Low Canals, and at the outlet works of O'Sullivan Dam in the case of the Potholes Canal."

Consistent with the 2007 EA, the acquisition[15] of the Land Acquisition Parcel will make progress towards full buildout and implementation of the Crab Creek portion of the PSFR. Reclamation's purchase of the Land Acquisition Parcel is to mitigate the impacts of ponding on the Land Acquisition Parcel due to increased water flows in Crab Creek which would make continued residential use, and operation of a dairy, incompatible with the operation of the PSFR, and to ensure a reliable supply of unpolluted water to SCBID in the southern half of the CBP.

1.6 Legal Authority

Implementation authority for the PSFR includes the Reclamation Project Act of 1939, the Columbia Basin Project Act of 1943, and House Document 172 (H. Doc. No. 172)[16] submitted by the Secretary to the President and Congress in 1945.

Under the Reclamation Project Act of 1939 (53 Stat. 1187, 43 U.S.C. §389), projects could be authorized for multiple purposes, and the construction costs would be allocated among the

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[15] Reclamation acquires land and/or interests in land for project purposes by purchase, donation, exchange, patent reservations, withdrawals, and condemnation (Reclamation Manual Directives and Standards (D&S LND 06-01). See Section 1.6, Legal Authority, of this EA for more information.

[16] House Document 172, 79th Cong., 1st Sess., *Joint Report on Allocation & Repayment of the Costs of the Columbia Basin Project*, Reclamation Report of Oct. 30, 1944, approved by the Secretary on Jan. 31, 1945.

projects' various purposes: irrigation, municipal and industrial water supply, hydroelectric power generation, flood control, and navigation. The legislation allowed the costs of these multipurpose projects to be shared among the various beneficiaries so that the projects, including those that provided irrigation, would be economically viable. Since 1939, appropriated funds have been used to construct most reclamation projects (GAO 1997).

The CBP Act of 1943 (57 Stat. 14, 16 U.S.C. §835), as amended, grants authority to Reclamation under the direction of the Secretary of the Interior to construct, operate, and maintain the CBP, including the authority to sell, exchange, or lease such lands to assist in the permanent settlement of farm families, protect CBP land, and facilitate CBP development.

The 1943 Act subjected the CBP to requirements of the Reclamation Project Act of 1939. Section 9(a) of the 1939 Act gave authority to the Secretary to approve a finding of feasibility and thereby authorize construction of a project upon submitting a report to the President and Congress. Transmittal of H. Doc. No. 172 to the President on March 27, 1945, and then to the House Irrigation and Reclamation Committee, fulfilled these requirements. When the Secretary recommended a project to Congress, the feasibility report and Reclamation's Regional Director's report were customarily printed as a House Document. H. Doc No. 172 envisioned a phased implementation to provide a water supply for the irrigation of approximately 1,029,000 acres of irrigable lands in each of the counties of Grant, Adams, Franklin, and Walla Walla. Further, H. Doc. No. 172 envisioned phased construction of the CBP and recognized that the works comprising the project may have to be modified, added to, or parts omitted as the necessity for changes developed over the course of construction. Any required changes would not result in any substantial increase in the area of lands to be served, nor otherwise result in a substantial change in the ultimate objectives of the CBP. A Department of the Interior Solicitor's opinion[17] has also concluded that the feasibility requirements of Section 9(a) for irrigation development of the CBP were met in 1945 upon the transmittal of H. Doc. No. 172 to the President and Congress.

In addition to the above authorities, Reclamation acquires land and/or interests in land for project purposes by purchase, donation, exchange, patent reservations, transfer, withdrawals, and condemnation (Reclamation Manual Directives and Standards (D&S) LND 06-01). Reclamation will dispose of or relinquish lands or interests in land no longer needed for Reclamation purposes by transfers, withdrawal revocations, sales, reconveyances, exchanges, etc. (D&S LND 08-02). The following are principal authorities governing Reclamation land management, acquisition, and disposal activities (other authorities can be found in D&S LND 06-01 and LND 08-02):

- The Reclamation Act of 1902 (Ch. 1093, 32 Stat. 388), and acts amendatory thereof and supplementary thereto;
- The Act of August 1, 1888 (25 Stat. 357; 40 USC 3113), and acts amendatory thereof and supplementary thereto;

[17] Solicitor Opinion (Frank Berry) M-36626, 68 I.D. 305, July 11, 1961, p. 5.

- The Declaration of Taking Act of 1931[18] (46 Stat. 1421; 40 USC 3114), and acts amendatory thereof and supplementary thereto; and
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Uniform Relocation Act, 84 Stat. 1894; 42 USC 4601), as amended.

On federally-owned land, Reclamation is authorized to execute use authorizations on land, facilities, and waterbodies under its jurisdiction and does not divest itself of overall management responsibilities by doing so (D&S LND 08-01). Reclamation issues use authorizations in accordance with the Reclamation Act of 1902, and acts amendatory thereof and supplementary thereto, as well as the regulations promulgated under 43 CFR Part 429 and the CBP Act of 1943.

1.7 Public Involvement

Reclamation sought public and agency comment to identify issues to be considered in this EA during a 15-day public comment period, from October 12 to October 26, 2020. To fulfill the public involvement requirement under 40 CFR Part 1506.6 and the Regulations Implementing the Procedural Provisions of NEPA, as amended (85 FR 43304, July 16, 2020), Reclamation published a paid scoping advertisement in the Columbia Basin Herald, the Grant County Journal, the Wenatchee World, and the Tri-City Herald. The paid advertisement ran once per week for two consecutive weeks, in each newspaper, between October 12 and 26, 2020. Reclamation received no comments during the public comment period. Prior to issuing any decisions on this matter, Reclamation may exercise further public involvement per 40 CFR 1501.6, if applicable.

Chapter 2 Alternatives

2.1 Introduction

This chapter describes the alternatives analyzed in this EA. The alternatives include a No Action alternative and an action alternative (Alternative B).

The federal land acquisition process is similar to private land acquisitions, through negotiations (offers and counter-offers), site inspections, appraisals, and the issuance of a final offer. For the federal land acquisition process followed by Reclamation, a project need and the land to support

[18]The U.S. Federal Government has the power to acquire private property for public use. The legislation related to this power is the Declaration of Taking Act. An acquisition under the Declaration of Taking Act is done by condemnation. The condemnation or taking of the land is to be done in accordance with constitutional provisions and be carried out under the judicial process for the benefit of the public by the government.

the project need are identified, a site inspection and an appraisal meeting federal guidelines are completed, and an offer is made to the landowner as a prospective willing (voluntary) seller. Negotiations through the federal land acquisition process can sometimes take many years to come to an amicable agreement to complete the acquisition on a voluntary basis. There are times when negotiations come to an impasse for a variety of reasons. If negotiations reach an impasse, the federal agency issues a final offer to the landowner to complete the acquisition as a voluntary willing seller. The final offer can be accepted by the landowner or not. If the final offer is accepted, then a land purchase agreement documenting the terms of the acquisition is executed. If the final offer is declined, the federal agency may invoke eminent domain proceedings through the United States Department of Justice (DOJ) to acquire the land or interests in land on a non-voluntary basis from an unwilling seller.

To facilitate understanding of Alternative B, the list below identifies important disclosures.

- Negotiations between Reclamation and the owners of the Land Acquisition Parcel are still ongoing. The terms of the current negotiations are not disclosable until full agreement is reached and an agreement executed; thus, negotiations are discussed in the following chapters as a process with certain expectations.
- The alternatives and analysis in this EA acknowledge that Reclamation would evaluate the need for additional environmental compliance as actions are considered in the future. This may be necessary for a variety of reasons. For example, the exact methodologies and actions to remediate the Land Acquisition Parcel are not known at this time and are subject to review by and coordination with Ecology's Voluntary Cleanup Program (VCP), and Reclamation does not know the extent of modifications or restoration that may be needed to operate the PSFR.

2.2 Alternative A – No Action

Under Alternative A, Reclamation would not acquire the Land Acquisition Parcel nor accept any financial responsibility for remediation or cleanup of the known contamination. The Property Owners would continue to reside on the Land Acquisition Parcel and operate their Dairy under their Milk Producer License from the Washington State Department of Agriculture and consistent with their Dairy Nutrient Management Plan (NMP) overseen by the Grant County Conservation District. The Property Owners would be responsible for working with Ecology to address the known contamination. Since the Crab Creek portion of the PSFR has not been used since issuance of the PSFR FONSI, for the purposes of this EA, Alternative A assumes Reclamation would not increase flows in Crab Creek to facilitate delivery of additional water to Potholes Reservoir in order to provide SCBID with a reliable supply of water; however, Reclamation would continue to use the lower section of Crab Creek as it is presently used.

2.3 Alternative B – Acquisition of Grant County Parcel 170934000 (Acquisition)

Under Alternative B, federal acquisition of the Land Acquisition Parcel would typically include the following Reclamation actions:

- Acquisition of the Land Acquisition Parcel (Figure 4) under one of the authorized acquisition methods;
- Possible issuance of a short-term use authorization (license) for the Property Owners to continue to occupy the attached residence, operate their Dairy, salvage certain fixtures from, and/or conduct any required cleanup activities on the Land Acquisition Parcel;
- Payment under the Uniform Relocation Act for the Property Owners and tenant (and family) residential relocations and any eligible non-residential relocation benefits;
- Closure to use by the public; and
- Remediation of the Land Acquisition Parcel.

2.3.1 Land Acquisition

Reclamation would acquire, in fee simple, the Land Acquisition Parcel consisting of an irregularly-shaped, single tax parcel approximately 103 acres in area, listed as Grant County Parcel 170934000. Reclamation has received permission from DOI to accept the Land Acquisition Parcel with known contamination (see Section 3.3) and would accept cleanup responsibility for the identified Recognized Environmental Conditions (RECs) and concerns up to $6 million and as specified in the Acquisition Approval Memorandum.[19] Title to the Land Acquisition Parcel would transfer from the Property Owners to the United States via a deed that meets the requirements set out in the current version of the DOJ Title Standards and subject to acceptable reservations and outstanding rights of record. Acquisition of the property would include all buildings, improvements, any fixtures attached thereto, and appurtenant water rights owned by the Property Owners.

If the Property Owners are willing sellers, the Land Purchase Agreement would likely include a stipulation that the cattle be off the Land Acquisition Parcel at the end of any license. At the time of closing, Reclamation[20] would have title and possession of the Land Acquisition Parcel. Reclamation would likely acquire the property at a value above the appraised market value. Reclamation would likely allow salvage of only the dairy equipment fixtures identified in the 2014 federal appraisal as having a salvage value. Any fixture that was not given a salvage value in

[19] In accordance with Department of the Interior and Reclamation policy, Reclamation has received approval from the Assistant Secretary for Policy, Management and Budget to acquire the property with identified contamination and assume associated financial responsibility.

[20] Technically, title will go to "The United States of America and its assigns" whether by purchase or condemnation. It would be "on behalf of the Department of the Interior, Bureau of Reclamation" or similar description. Reclamation would only have administrative jurisdiction. For ease of explaining actions, Reclamation will be used as the proposed, future property owner.

the appraisal would likely not be offered or available for salvage. The irrigation equipment would likely be retained by Reclamation to facilitate remediation and rehabilitation of the Land Acquisition Parcel.

If the Property Owners are unwilling sellers, Reclamation would acquire the Land Acquisition Parcel through an eminent domain proceeding completed through the DOJ. An eminent domain action is also known as condemnation and is a cash-for-land transaction. DOJ would file a complaint and Declaration of Taking as well as deposit the estimated just compensation with the court.[21] Reclamation would take title (fee simple) to the Land Acquisition Parcel on the date of the Declaration of Taking filing but would not have immediate possession. Possession, in whole or part, would be determined by the court. Reclamation's payment for the property would occur in compliance with the Declaration of Taking Act of 1931 (46 Stat. 1421; 40 USC 3114) and acts amendatory thereof and supplementary thereto, as well as with any judgement of the court.

Regardless of the manner of acquisition, Reclamation would work with the tenant as owner of the privately-owned, unattached residence (mobile home) separately from the purchase of the Land Acquisition Parcel. Reclamation would evaluate the need for additional environmental compliance as actions are determined.

2.3.2 License for Residential Occupancy and Continued Dairy Operations

Contemporaneous with the transfer of the Land Acquisition Parcel, Reclamation may issue the Property Owners a short-term license to utilize the attached residence in its existing location, operate their Dairy, remove personal property and any approved salvage items, and conduct any required cleanup activities outside of the remediation responsibilities that Reclamation would be assuming. The term of the license would be in accordance with the Administrative Settlement and based on the associated schedules for remediation and cleanup of the Land Acquisition Parcel and implementation of the PSFR. The removal of manure, sludge, straw, and feed by the Property Owners is optional, but any removal of these materials would need to be completed by/before the end of the license.

The license would require the Property Owners to comply with federal, state, and local laws and regulations, as appropriate, for the authorized uses. Under the license, the Property Owners would also be required to participate in Reclamation's Environmental Compliance Audit Program (ECAP) as defined in D&S ENV 15-03.

2.3.3 Uniform Relocation Act

Reclamation would provide relocation assistance and benefits to the Property Owners and an eligible tenant (and family) in association with the purchase of the Land Acquisition Parcel and in accordance with the Uniform Relocation Act. Under the Uniform Relocation Act, the Property Owners are eligible for both residential and non-residential benefits, and the tenant

[21] A lengthier, optional process would delay title transfer until after a trial to determine just compensation, any appeals, and eventual payment.

(and family) are eligible for residential benefits. The non-residential relocation benefits will also be consistent with Reclamation's 2018 Determination of the Office of Regional Director[22] with regard to the eligibility of certain items for relocation. Relocation benefits for the tenant may include purchase of their mobile home if it cannot be relocated, which may require additional environmental compliance.

Reclamation would work with relocation contractors to provide the Property Owners and tenant (and family) relocation assistance, as well as to determine the eligibility of relocation benefits within the bounds prescribed by the Uniform Relocation Act.

2.3.4 Remediation

Remediation of the Land Acquisition Parcel would be initiated by the current Property Owners. The Property Owners would begin decommissioning the Dairy as part of their relocation. Reclamation would then continue decommissioning the remaining Dairy fixtures and appurtenances located on the Land Acquisition Parcel after the Property Owners have vacated the property. This may include removal of all remaining structures, facilities, waste, and manure. Disposal, including any recycling, would comply with federal, state, and local laws.

While the Approval Memorandum allows Reclamation to acquire contaminated land and designate appropriated funds towards remediation of identified RECs, it is Reclamation's intent to work with the Property Owners and Ecology's VCP, through an executed agreement, to remediate contamination. Reclamation would remediate any identified contamination, in addition to the known petroleum-contaminated soil as specified in the Administrative Settlement and Approval Memorandum, and decommission the two effluent lagoons.

Reclamation would remediate the petroleum contamination prior to operating the Crab Creek portion of the PSFR. Reclamation would further evaluate restoration or other improvement opportunities that could be made to support CBP and PSFR purposes after the Property Owners depart from the Land Acquisition Parcel. Improvements to the Land Acquisition Parcel may include but are not limited to recontouring the floodplain along the western channel of Crab Creek; increasing hydraulic interaction between the western channel of Crab Creek and groundwater to reinvigorate the channel; directing water towards the main channel of Crab Creek; removing or treating noxious weeds; and revegetating disturbed areas with native grasses, shrubs, and trees. Reclamation would evaluate the need for additional environmental compliance as possible actions are considered.

Contemporaneous with receiving title, Reclamation would close the Land Acquisition Parcel to use by the public in accordance with the regulations promulgated under 43 CFR Part 423.12. This closure would be due to the known RECs on the Land Acquisition Parcel, the occupancy license, and the need for Reclamation to conduct remediation activities. When determined appropriate, Reclamation would remove the closure and make the lands available for use by the

[22] This Determination may be modified pursuant to a future decision by the Department of the Interior Office of Hearings, Docket No. DIR 2019-0028

public. Reclamation would work with the Washington Department of Fish and Wildlife (WDFW) to integrate the Land Acquisition Parcel into their management plan as discussed in the PSFR EA and FONSI.

2.4 Preferred Alternative

Reclamation has determined that the Preferred Alternative for this project is Alternative B – Acquisition.

2.5 Alternatives Considered but Eliminated from Further Consideration

Federal agencies are required to explore and evaluate all reasonable alternatives and to discuss the reasons for eliminating any alternatives not analyzed in detail (40 CFR 1502.14(a)). As described below, Reclamation eliminated alternatives and alternative elements (smaller portions of alternatives) due to lack of feasibility and/or excessive costs

2.5.1 Construct Improvements

Reclamation considered, but eliminated from further consideration, constructing improvements on the Land Acquisition Parcel that would allow the Property Owners to continue Dairy operations and the residential use to continue at their present locations when flows are increased in Crab Creek. The report titled *Technical Memorandum Alternative A – Crab Creek* (Barry et al. 2007), prepared in support of the PSFR EA, considered the following improvements to mitigate standing or flowing water in the emergent wetland located on the Land Acquisition Parcel:

- Construct two lined, 4,000,000-gallon lagoons to replace the existing lagoons;
- Construct a protective earth berm to isolate the Dairy and irrigated land from the adjacent future water body;
- Construct two pump stations and a pipeline to convey wastewater from the Dairy to and from the storage lagoons; and/or
- Construct a stormwater collection and pumping system to convey water to the lagoons.

A federal realty appraisal was completed on the Land Acquisition Parcel, through the Office of Valuation Services (now referred to as the Appraisal Valuation Services Office), providing a fair market value (Big Bend 2014). After receiving the appraisal, Reclamation dismissed the alternative of constructing improvements from further analysis after considering the costs for the improvements exceeded the value of the property and existing infrastructure.

2.5.2 Land Acquisition with Land Exchange (Exchange Agreement)

Reclamation considered, but eliminated from further consideration, an Exchange Agreement alternative that included cash payment and exchanging federal land for the Land Acquisition

Parcel. Five different land exchange options, varying in size from approximately 160 to 633 acres, were presented to the Property Owners. The federal parcel considered for exchange, in part and in whole, was Grant County Parcel 170917000 (Land Disposal Parcel), which is located within approximately 2 miles of the Land Acquisition Parcel. A land exchange would have provided a site for the Property Owners to reestablish their Dairy and to relocate their associated residence. This alternative also included allowing the Property Owners to continue to operate their Dairy and reside in their residence on the Land Acquisition Parcel for a time while working to reestablish and relocate to the Land Disposal Parcel without being impacted by the increased water from the PSFR.

The Exchange Agreement would have included:

- Acquisition of the Land Acquisition Parcel (Grant County Parcel 170934000; Figure 9);
- Disposal of the Land Disposal Parcel (Grant County Parcel 170917000; Figure 9), either in its entirety or a portion thereof, from the United States to the Property Owners;
- Issuance of a short-term use authorization (license) of up to 2 years for the Property Owners to continue to reside on and operate their Dairy in its current configuration;
- Payment under the Uniform Relocation Act for the Property Owners and tenant (and family) residential relocations and any eligible non-residential relocation benefits;
- Decommissioning of the Dairy located on the Land Acquisition Parcel; and
- Remediation of the Land Acquisition Parcel.

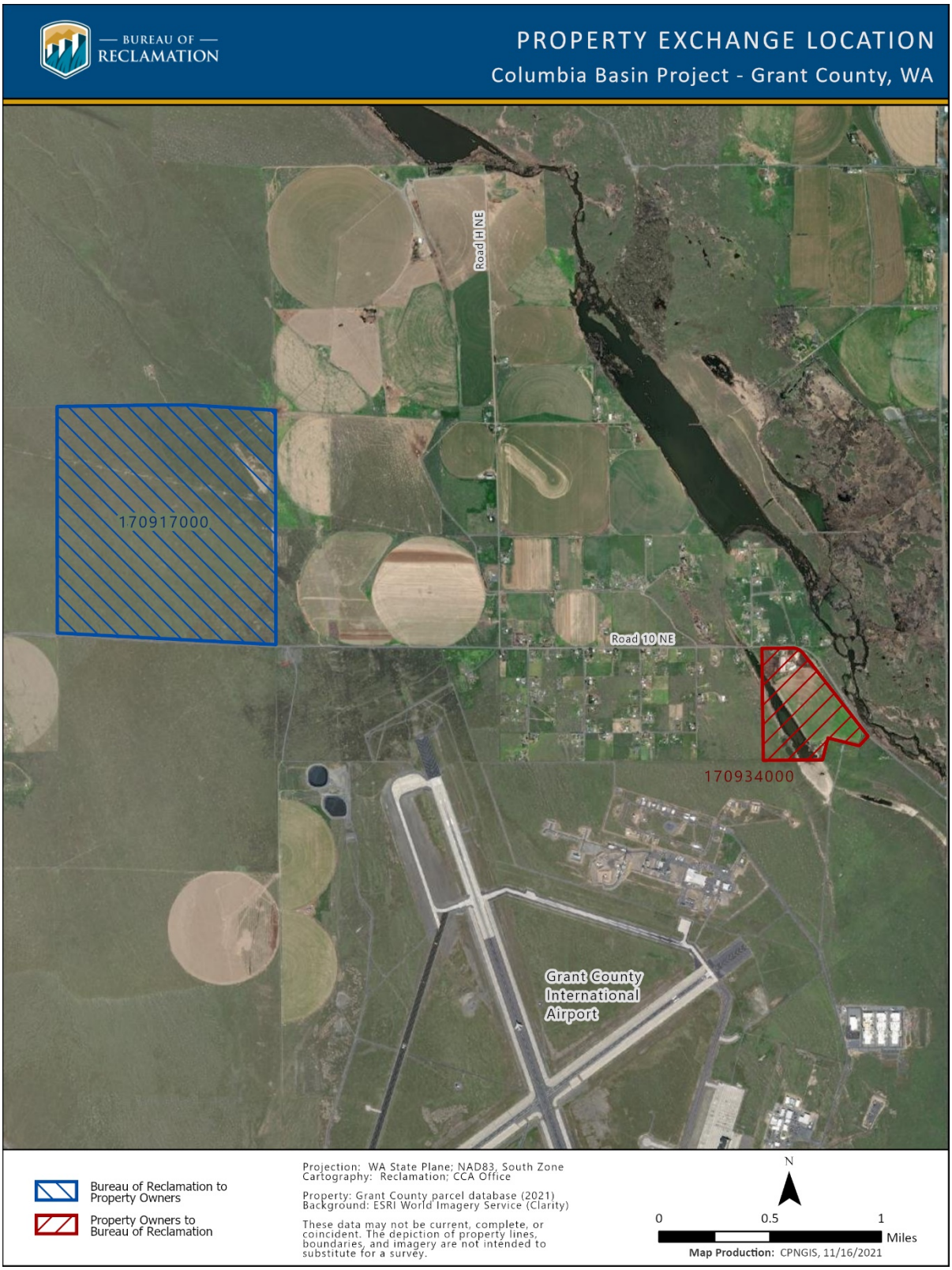

Figure 9. Locations of the Land Acquisition Parcel and the Land Disposal Parcel as identified in the Exchange Agreement Alternative

Reclamation considered, but later eliminated from further consideration, the Exchange Agreement alternative because the Property Owners were unable to agree to relocating from the Land Acquisition Parcel by December 31, 2023 without substantial increases in funding. Reclamation did not deem it feasible to have a dairy on the property after 2022 due to the time needed for Reclamation to remediate contamination and prepare the site prior to operating the PSFR in 2024. Allowing continued residence on the Land Acquisition Parcel into 2023 and potentially beyond presented unacceptable risks for completing preparation of the land and operating the PSFR.

Chapter 3 Affected Environment and Environmental Consequences

This chapter describes existing physical, biological, social, and cultural resources that could be affected by the action and identifies potential environmental consequences, beneficial or adverse, to those resources that could result from implementing each of the two alternatives. The Affected Environment section describes the existing environment upon which the alternatives could have an effect, and the Environmental Consequences section describes the potential effects of those alternatives, if implemented, on the resources evaluated. The No Action alternative describes the conditions of a specific resource if Reclamation takes no action and provides the basis to compare the proposed action. In general, the affected environment (analysis area) addressed in this EA is the 103 acres of the Land Acquisition Parcel.

For each topic or resource category, the impact analysis follows the same general approach. First, the existing conditions are established for the affected area, then the impacts of the No Action alternative and the action alternative are disclosed. The effects are based on quantifiable impacts, reviews of relevant scientific literature and previously prepared environmental documents, and the best professional judgment of the EA team resource specialists.

The level and depth of the environmental analysis corresponds to the degree of effects anticipated for each resource. Effects of the action may be described as direct or indirect. "Degree" of effects of the action may be considered short- or long-term, and adverse or beneficial, as appropriate. Direct impacts are caused by an action and occur at the same time and place as the action. Indirect impacts are caused by an action and occur later or are farther removed from the area but reasonably foreseeable.

Impact duration definitions are provided below.

Short-term effect: Recovers in less than 3 years and contributes to a beneficial effect or has no adverse effect.

Long-term effect: Takes more than 3 years to recover and does not contribute to the long-term beneficial effect.

Long-term beneficial effect: Takes more than 3 years to recover and contributes to the long-term beneficial effect.

Cumulative effects are addressed for those resources directly or indirectly impacted by the proposed action. Where appropriate, effects of past and present actions on specific resources are captured in the affected environment sections. Effects of reasonably foreseeable future actions are included in Section 3.13.

Resources evaluated in this document were selected based on Reclamation requirements, compliance with laws, statutes, executive orders, public and internal scoping, and on the potential for resources to be affected by the alternatives. Resources analyzed in detail are arranged from resources that are most impacted to those that are less impacted, with one exception: Reclamation has included "Land Use" as the first resource analyzed so the reader can become familiar with the Land Acquisition Parcel. The organization of the rest of Chapter 3 is not intended to diminish the importance of any resource in any way but is intended to assist the reader in understanding how impacts from one resource area may affect subsequent resources.

Several resources were eliminated from further analysis because they did not occur on, or would not be impacted on, the Land Acquisition Parcel; details of future actions are unknown; or they were previously analyzed in the PSFR EA and that analysis is incorporated by reference. Please see Table 1 for resources that are not analyzed in Chapter 3.

Table 1. Resources eliminated from analysis

Resource	Rationale for Elimination from Further Analysis
Threatened and Endangered Species	Reclamation analyzed the impacts of the PSFR on threatened and endangered species, in compliance with Section 7 of the Endangered Species Act (ESA), in the 2007 PSFR EA and determined that implementation of the PSFR would have no impact on Upper Columbia spring Chinook salmon (*Oncorhynchus tshawytscha*), Upper Columbia steelhead (*Oncorhynchus mykiss*), pygmy rabbit (*Brachylagus idahoensis*), bull trout (*Salvelinus confluentus*), and Ute ladies'-tresses (*Spiranthes diluvialis*). The present alternatives were reviewed in context of the ESA conclusions from the 2007 PSFR EA, with consideration given to any potential new or unforeseen impacts related to the current proposed action. After this review, there are no new, different, or previously unconsidered impacts. The proposed actions would have no impact on ESA-listed threatened and endangered species or associated critical habitat[23].

23 Reclamation consulted on the effects to aquatic listed species and designated critical habitat caused by CBP withdrawals of water from and return flows to the Columbia River, including those that might enter and leave the PSFR, under the Columbia River System Operations biological opinions. The Columbia River System includes Grand Coulee Dam, which includes among its many purposes serving as the primary diversion structure for the CBP. Reclamation is currently consulting with the U.S. Fish and Wildlife Service on the effects of CBP operations on ESA-listed terrestrial species and critical habitat.

Resource	Rationale for Elimination from Further Analysis
State Species of Concern	The Gloyd Seeps area is important for the northern leopard frog (*Rana pipens*) as it contains the only three confirmed occurrences of this species in the State of Washington since 1995 (Germaine and Hays 2007). The most recent occurrence of a northern leopard frog was in 2003, approximately 4.5 miles north of the Land Acquisition Parcel. Reclamation has determined that the alternatives would have no impact on the northern leopard frog because extensive surveys have been done by WDFW over the years, there has been no recent observation of the northern leopard frog, and their dispersal over 4.5 miles is unlikely. Reclamation continues to work with the Washington State Department of Fish and Wildlife to manage lands along Crab Creek, which may include methods to mitigate impacts caused by increased flows and exploring opportunities for habitat improvement (Reclamation 2007). Reclamation would evaluate the need for additional environmental compliance if additional actions are considered in the future.
Fish and Wildlife	Reclamation analyzed fish and wildlife in the 2007 PSFR EA. There are no new, different, or previously unconsidered impacts. Reclamation continues to work with the Washington State Department of Fish and Wildlife to manage lands along Crab Creek, which may include methods to mitigate impacts caused by increased flows and exploring opportunities for habitat improvement (Reclamation 2007). Reclamation would evaluate the need for additional environmental compliance if additional actions are determined.
Floodplains	While the Land Acquisition Parcel was identified in the 2007 PSFR as experiencing increased ponding as a result of PSFR test flows, acquiring the Land Acquisition Parcel would have no impact on the floodplain. Reclamation may later consider whether floodplain modifications actions are needed for conveying PSFR flows and would then evaluate the need for additional environmental compliance at that time.
Hydrology	Reclamation analyzed the changes to the hydrology in the 2007 PSFR EA. There are no new, different, or previously unconsidered impacts. Acquiring the Land Acquisition Parcel would have no impact on the hydrology.
Vegetation including Invasive Species/Noxious Weeds	Vegetation modifications were analyzed in the 2007 PSFR EA and included the removal or treatment of noxious weeds and revegetation of disturbed areas with native grasses, shrubs, and trees. A site visit was completed in early April 2020. At that time, heavy cattle grazing made it difficult to identify plants in the area. Reclamation would evaluate the existing site conditions once the cattle have been removed and vegetation is growing to assess the presence of noxious weeds and other vegetation. The need for additional environmental compliance will be evaluated as existing vegetation is known and as restoration actions are considered. As mentioned in the PSFR EA, Reclamation will work with WDFW to

Resource	Rationale for Elimination from Further Analysis
	incorporate the Land Acquisition Parcel into the management plan, which includes invasive species/noxious weed controls.
Paleontology	No known paleontological resources exist on the Land Acquisition Parcel.
Recreation	Recreational use of the Land Acquisition Parcel does not currently exist outside of the Property Owners' use. The Land Acquisition Parcel would be closed to public use, contemporaneously with the acquisition due to the known RECs, the possible residential occupancy license, and the need for Reclamation to conduct remediation. Since public recreation does not currently exist on the Land Acquisition Parcel, a change in ownership and the closure of the property will not impact recreational opportunities. However, if the closure is later removed, recreational opportunities would be expanded to the Land Acquisition Parcel.

3.1 Land Use and Agricultural Setting

Reclamation has established its land management objectives in the CBP Scattered Tracts Resource Management Plan (Reclamation 1998), stating it "aims to balance competing and conflicting demands for differing uses and to maximize compatibility with surrounding land uses, while affording an appropriate level of resource protection and enhancement." This approach is intended to preserve lands required for CBP purposes and for recreational, natural, cultural, and other resource values, as well as to allow for the sale, exchange, or lease of federal lands suitable for agriculture or other uses to assist in the permanent settlement of the CBP.

3.1.1 Affected Environment

The Land Acquisition Parcel is approximately 103 acres and includes one attached residence, one unattached residence, developed agricultural land, and a commercial-sized Dairy (Figure 8). The Dairy is authorized under a Milk Producer License from the Washington State Department of Agriculture and, along with the agricultural land, is operated under a Dairy NMP. The Dairy NMP is based on maximum nutrient and wastewater production for up to 1,120 cows, which may include 500 milking cows, 60 dry cows, 470 heifers, and 90 calves between the Land Acquisition Parcel and another property about 1.5 miles away owned by the Property Owners. The Dairy has typical improvements for an operation of its size, including a small pasture and associated dairy structures. The associated dairy structures include a 43,000 square foot loafing shed, a 4,500 square foot milking parlor, a calf shed and shop, a commodity shed, a sick pen, two silage storage facilities, and a poultry shelter (White Shield 2021b). Other amenities for the property include two pivot irrigation systems (only one center pivot irrigation system is used for applying effluent water agronomically to the field, and the second pivot is no longer used at all), two water wells, a solids/effluent separator, and two effluent storage ponds (Figure 10). The property has a known water right with the Department of Ecology for domestic use and irrigation.

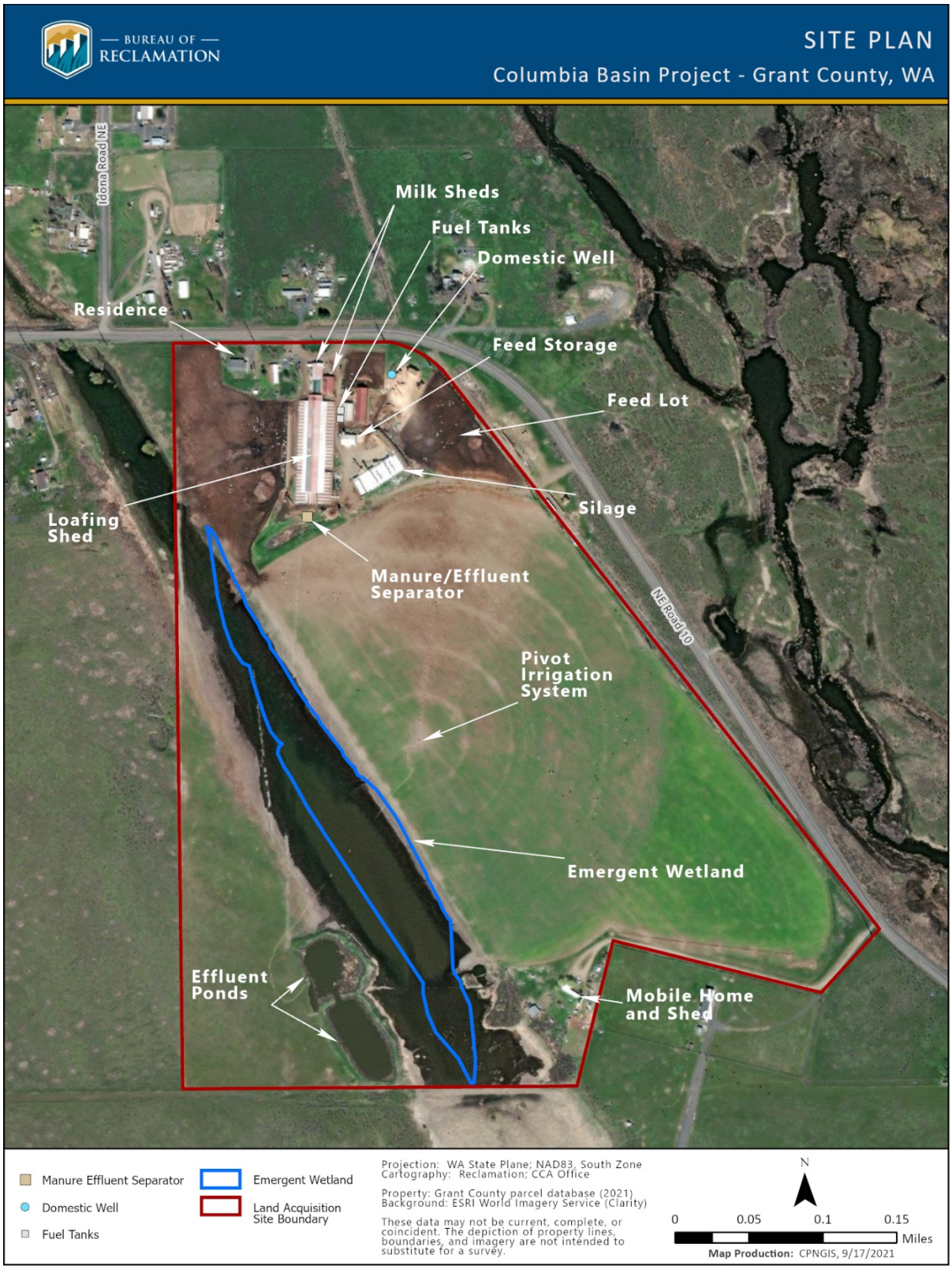

Figure 10. Layout of the site. The size of the emergent wetland, within the west channel of Crab Creek, is approximate and has not been delineated.

Approximately 52 acres of the property are irrigated farmland. Overall, the irrigated land is regarded as a fair quality hay and small grain field. It lacks high quality soils that are consistent enough to be used for potato crops, due to either gravelly or rocky soil composition. Prior to the pasture, field corn and triticale had been raised.

3.1.2 Environmental Consequences

Alternative A – No Action

Reclamation does not anticipate any changes to land use under Alternative A. The Property Owners would continue to reside on the property and operate and maintain the Dairy, as it is now, under their Milk Producer License and Dairy NMP. Based on correspondence, the Dairy maintains approximately 1,300 animals including calves, heifers, milk cows, and dry cows; however, this number changes daily and not all animals are on the Land Acquisition Parcel. The Dairy milks between 550 and 600 cows on site, and calves and heifers are raised at another site approximately 1.5 miles away (Bay 2020). All Dairy structures would remain and the 52 acres of pasture would continue to be farmed. However, the Property Owners would need to work with the VCP to remediate the known hydrocarbon contamination. This would be a beneficial effect, but a duration cannot be assigned since the length of time for the Property Owners and the VCP to work together and complete cleanup actions cannot be determined.

Reclamation would not acquire the Land Acquisition Parcel and therefore may not be able to fully implement the PSFR by using the Crab Creek portion as described in the PSFR EA. Therefore, Reclamation may need to consider other options to facilitate delivery of additional water to Potholes Reservoir in order to provide SCBID with a reliable supply of water.

Alternative B – Acquisition

Under Alternative B, Reclamation anticipates indirect long-term beneficial effects on the Land Acquisition Parcel as a result of acquiring and returning the parcel to a more natural state through remediation, restoration, and implementation PSFR operations. During the term of the license, no new impacts are expected; therefore, the impacts of the Property Owners residing in the attached residence and operating the Dairy on the Land Acquisition Parcel, as done currently, would be as described in Alternative A but have a fixed end point defined in the license. Since the license would require the Property Owners to comply with all federal, state, and local laws, including the Dairy's Milk Producer License and NMP, no new impacts are expected.

With Reclamation's acquisition of the land and any issuance of a license, the use of the land would become subject to federal oversight and additional laws and regulations, including Reclamation's ECAP. The first ECAP audit would most likely occur within a month of Reclamation taking title. In addition, 43 CFR 423.28 states "you must not bury, deposit, or scatter human or animal remains, or place memorials, markers, vases, or plaques on Reclamation facilities, lands, or waterbodies. This section does not apply to the burial of parts of fish or wildlife taken in legal hunting, fishing, or trapping." Therefore, any deceased cattle cannot be buried on the Land Acquisition Parcel after Reclamation takes title.

If the property owners continue to reside on the property and operate and maintain the Dairy under any license term, farming activities may be allowed to continue but would be limited to those actions that can be completed by the end of the license. Decommissioning of the Dairy would begin with the Property Owners, which would include removal of their personal property and any dairy equipment fixtures approved for salvage. Cattle would be removed from the Land Acquisition Parcel by/before the end of the license. The removal of manure, sludge, straw, and feed by the Property Owners is optional, but any removal of these materials would need to be completed by/before the end of the license. At the end of the license, Reclamation would prioritize and decommission the remaining dairy appurtenances. Those structures that would be impacted by operation of the PSFR would receive the highest priority.

During the license, Reclamation would continue coordination with Ecology's VCP to identify cleanup protocols and a timeline to remediate known contamination pursuant to requirements of the MTCA. Reclamation would begin conducting remediation and restoration activities before commencing PSFR flows down Crab Creek. Reclamation would decommission the lagoons in accordance with Washington Department of Agriculture requirements.

PSFR flows through Crab Creek would likely increase the inundation rate and size of the emergent wetland on the Land Acquisition Parcel. Over time, it is possible that because of the hydrologic connectivity to Crab Creek, and the additional flow, the wetland may become a permanent wetland rather than an ephemeral (seasonal) wetland. Benefits of a year-round wetland would include water filtration and storage, processing of nutrients (e.g., carbon), stabilization of shorelines, and support of plants and animals. Large numbers of waterfowl utilize the wetlands in the Crab Creek reach.

Additional restoration actions would be determined by Reclamation staff with the intent to return the Land Acquisition Parcel to a more natural, pre-dairy state. Essentially, the use of the parcel for a dairy operation would change to undeveloped land used to implement the PSFR and for CBP purposes.

Under Alternative B, the use of the Land Acquisition Parcel for a dairy operation would change to a lower intensity (undeveloped) land use to implement the PSFR and for CBP purposes. After receiving title, Reclamation would close the property to public use for the duration of the occupancy license and remediation activities. It is possible that the closure would also cover some initial restoration activities. When determined appropriate, Reclamation would remove the closure and make lands available for use by the public. The property would be available for use and/or occupancy as determined appropriate and compatible with CBP purposes by Reclamation and as allowable under 43 CFR Part 429. In addition, Reclamation would work with WDFW to integrate this property into its management plan as discussed in the PSFR EA and FONSI.

3.2 Hazardous and Toxic Materials

In accordance with Departmental Manual 602, Chapter 2, a pre-acquisition AAI must be conducted by the agency considering acquisition of the property. A pre-acquisition AAI aids in

the determination of the potential of, and extent of liability for, hazardous substances or other environmental remediation or injury. This includes but is not limited to a determination of the absence or presence of hazardous substances or conditions that indicate an existing or past release, or a material threat of a release on the real property, into the air, soil, sediment, groundwater, surface water, or any structures located on the real property. Acquisitions of real property that could require the cleanup of petroleum, hazardous substances, or other environmental conditions, or could otherwise result in associated liabilities or potential costs of remediation to the Department, are allowable with the appropriate approval as noted in Departmental Manual 602, Chapter 2.

ECAP audits completed pursuant to D&S ENV 15-03 provide environmental regulatory compliance assistance on the use of hazardous materials, remediation of hazardous waste sites, environmental mitigation, and operation activities on Reclamation-managed federal lands. Specifically included as auditable facilities are those that use, treat, or store hazardous substances or petroleum products, or that may generate a hazardous waste. The general audit categories include hazardous material management, spill prevention control and countermeasure plans (SPCC), above-ground storage tanks (ASTs), underground storage tanks, waste minimization, emergency response and community Right-to-Know Act, Toxic Substances Control Act, Safe Drinking Water Act (SDWA), lands acquisition/disposal, pest management, hazard communication, underground injection control, and environmental disposal liability.

The list below summarizes classifications of ECAP findings that are regulatory requirements based on the threat to human health or the environment as an estimate of the risk associated with the discrepancy.

- Class 1 findings indicate a major threat to human health or the environment that could result in death or major property damage.
- Class 2 findings indicate a moderate threat to human health or the environment that could result in significant injury, illness, or property damage.
- Class 3 findings indicate a minor threat to human health or the environment that could result in injury, illness, or property damage.
- Class 4 findings are not regulatory discrepancies. Class 4 findings concern accepted industry best management practices or standards.

The MTCA is known as Washington's environmental cleanup law, and Ecology oversees its implementation. The MTCA is found in Chapter 70.105D of the Revised Code of Washington (RCW). The following list identifies some of the MTCA responsibilities (Ecology 2021c).

- Fund and direct the investigation, cleanup, and prevention of sites that are contaminated by hazardous substances
- Track known or suspected contaminated sites in Washington
- Develop rules and polices that set cleanup standards
- Fund the Toxics Cleanup Program that has primary responsibility for implementing and enforcing the MTCA

Under the MTCA, a property owner can independently cleanup a site or elect to have an Ecology-supervised cleanup. Regardless of which cleanup path is chosen, all cleanups must meet Washington state standards listed in the MTCA. Property owners can elect to work with Ecology's VCP that helps property owners who are independently cleaning up their sites, or Ecology can supervise the cleanup (Ecology 2021d). The VCP helps property owners meet the MTCA standards. When cleanups are successfully completed, by working with or joining the VCP, property owners receive a No Further Action Opinion.

3.2.1 Affected Environment

As part of a Phase I AAI and with the approval of the Property Owners, an environmental professional from White Shield, Inc. (White Shield) conducted visual inspections of the Land Acquisition Parcel on March 10, 2016 and on July 2, 2020. The purpose of the site visits was to identify visible indications of hazardous or potentially hazardous substances that were historically used or are currently used, generated, stored, or disposed of on the Land Acquisition Parcel. An initial Phase II AAI, also conducted by White Shield and with approval of the Property Owners in January and July of 2020, tested soils, surface water, and groundwater. A follow-up Phase II AAI, agreed to by the Property Owners, was also conducted by White Shield in December 2020.

As part of Reclamation's pre-acquisition AAI, samples were collected from the Land Acquisition Parcel which resulted in the identification of hydrocarbon contamination above regulatory thresholds. The contamination was reported to the Washington Department of Ecology (Ecology). Ecology investigated the release, determined that contamination existed and would need to be cleaned up pursuant to requirements of the Model Toxics Control Act (MTCA), and notified the Property Owners. In addition, Ecology added the Land Acquisition Parcel to its database of known or suspected contaminated sites that need remedial action. The Land Acquisition Parcel is now identified as cleanup site number 15421 (Ecology 2021d). At the request of the VCP, Reclamation conducted follow-up sampling, with approval of the Property Owners, in September of 2021. Discussion of the AAI findings can be found in Section 3.3. To find out more about the AAIs and the testing results, please see the respective sections for soils (Section 3.3), surface water (Section 3.4), and groundwater (Section 3.5).

Since soils, surface water, and groundwater each have their own resource section in which the sampling results are discussed, the rest of the Affected Environment discussion will focus on other issues that may impact the Land Acquisition Parcel. As part of the AAI process, an environmental records database review identified three areas of potential concern as listed below.

- The Rocket Research Company facility is located approximately 1,950 feet southwest and topographically-upgradient of the Land Acquisition Parcel. This facility was identified as a Confirmed and Suspected Contaminated Sites List – No Further Action (CSCSL-NFA) facility in the 2015 Environmental Site Assessment.
- The General Dynamics facility is located 2,323 feet southwest and topographically downgradient of the Land Acquisition Parcel. This facility was listed in multiple

databases in 2016. The facility is now operated by SGI Carbon, which was not listed in the databases in 2020.

- The Land Acquisition Parcel appears to be located within the limits of the former Larson Air Force Base, which is associated with the Moses Lake Well Contamination Superfund Site (Superfund Site).

The visual inspections identified the presence of three above ground storage tanks (ASTs), used to store diesel fuel, with no secondary containment. The lack of secondary containment presents a threat of release and is, thus, considered a REC.

3.2.2 Environmental Consequences

Alternative A – No Action

Under the No Action Alternative, short-term effects are expected as the Property Owners work with the VCP to remediate the hydrocarbon contamination. It is anticipated that the VCP would encourage the installation of secondary containment to prevent further releases of diesel. No new or direct impacts are expected as the Property Owners would continue to reside on the property and operate and maintain the Dairy, as it is now, and would continue complying with their Milk Producing License and Dairy NMP.

The three database listed properties would have no direct or indirect impact on the activities occurring on the Land Acquisition Parcel. Reclamation assumes that the Land Acquisition Parcel will not be adversely affected by the three database listed properties as described below.

- Rocket Research Company: Based on the topographic gradient and the distance to the site, the unmapped facilities do not appear to represent RECs. Furthermore, having received No Further Action status, the site has been delisted and was not listed in the 2016 and 2020 environmental databases.
- General Dynamics: Given the substantial distance and downgradient location of the General Dynamics facility, risks posed by the presence of this facility appear to be minimal and the facility is not considered an REC.
- Former Larson Air Force Base/Superfund Site: The directional flow of groundwater is to the southwest, further away from the Land Acquisition Parcel. According to the U.S. Environmental Protection Agency (EPA), the contaminants are now being confined within the deeper aquifer for cleanup at the nearby wastewater treatment facility. The Superfund Site does not represent an REC.

Alternative B – Acquisition

Under Alternative B, short-term effects are expected as Reclamation works with the VCP to remediate the hydrocarbon contamination. Since contamination was identified, approval for the acquisition has been obtained in accordance with Departmental Manual 602, Chapter 2. However, Reclamation would not accept financial responsibility beyond what has been authorized in the Approval Memorandum or for any additional environmental conditions or concerns.

As a condition of the license, Reclamation would require the installation of secondary containment for the three ASTs. With Reclamation's acquisition of the land and any issuance of a license, the use of the land would become subject to federal oversight and additional laws and regulations, including Reclamation's ECAP. The first ECAP audit would most likely occur within a month of Reclamation taking title. Any findings would be identified, assigned a Class ranking, and documented in a report that would be given to the Property Owners. The Property Owners would need to provide a written response to the ECAP report, a corrective plan, and a timeline within 30 days of completion of the audit for any Class 1, 2, or 3 ECAP audit findings.

3.3 Soils and Geology

3.3.1 Affected Environment

The Land Acquisition Parcel is mantled by Malaga soil, which is described as a deep profile of well-drained to excessively drained soil developed on the surface of gravelly flood deposits laid down during the episodic Lake Missoula outburst floods that inundated the Columbia Plateau. Depending on location, the soil ranges from a few inches to many feet in thickness.

Bedrock in the region consists of the Columbia River Basalt Group, which is hydrogeologically recognized as a multi-aquifer system. The Roza Member of the Mid-Miocene Wanapum Basalt underlies the Ringold Formation locally. Regionally, the top of the Wanapum Basalt slopes to the southwest. The basalt flows comprising the Roza are highly fractured and/or jointed, and are often characterized by brecciated surfaces and bases, the combination of which are known as the inter-basalt zone. This zone is typically more porous and permeable than the interiors of the flows, thus facilitating the storage and movement of groundwater. The Roza crops out on the Land Acquisition Parcel to the northeast across Road 10 NE and is mantled by a thin (6 inches or less) layer of topsoil.

An updated Phase I Environmental Site Assessment was completed in July 2020 by White Shield in accordance with ASTM 1527 standards (White Shield 2020a). At Reclamation's request, an initial sampling was completed in July 2020 (White Shield 2020b). The sampling conducted by White Shield discovered three locations with diesel and/or lube range organics (NWTPH-Dx) above Method A Cleanup Levels (WAC 173-340 MTCA). The diesel-contaminated area is where the AST holding diesel is located. The second sample containing lube and diesel range organics was taken from over the manure/effluent separator and-handling intake and where the collection sump is located. The third location, lagoon sludge, was high in lube range organics. The three areas of hydrocarbon contamination are depicted in Figure 11. Trace amounts of metals, volatile organic compounds (VOCs), and herbicides/pesticides were also found below regulatory limits. Due to the history of the land use in the area as a former defense site and for agricultural purposes, these latter results addressing metals, VOCs, and herbicides/pesticides were identified as ambiguous and low risk (White Shield 2020b).

Figure 11. Hydrocarbon contamination was found in soils associated with the fuel tanks, manure/effluent separator, and the effluent ponds

Follow-up sampling was conducted in the fall of 2020 to determine the extent of the diesel contamination around the AST (White Shield 2021a). Boreholes were drilled to varying depths, and samples were collected and analyzed for diesel- and lube oil-range organics. Results indicated the extent of the contamination was surface level and that extensive excavation would not likely be required for post-acquisition remediation. A follow-up report was written by White Shield regarding lagoon closure and contamination concerns (White Shield 2021b). The report indicated average concentrations of 3,613 mg/kg of total petroleum hydrocarbon (TPH) lube oil with a Method-A cleanup level (CUL) of 2,000 mg/L.

Based on the reports referenced above, Reclamation determined that additional samples were needed to verify and determine levels of contamination before the running PSFR water through the Land Acquisition Parcel. The Property Owners conducted an independent sampling event which tested a single composite sample. The results of the sample indicated non-detect levels for analytes tested, indicating some discrepancies in the data or seasonal variations based on the use of the site. Reclamation conducted additional sampling in September 2021. The results indicated no detections for analytes tested, including hydrocarbons, in the pivot irrigation area; diesel concentrations were high for a sample collected from a concrete lined manure pit, but the lab indicated there was likely interference from organic material; the collection sump sample came back with similar results as the manure pit sample; and the results for the samples collected at the ASTs were the same as previous results. Reclamation has submitted the results to the VCP. The VCP has indicated that more testing is needed to provide clarification and to inform the site remediation plan.

Unverified reports of past diesel and hydraulic oil spillage on the Land Acquisition Parcel were received after initial sample results were received and discussed with the Property Owners. Reclamation continues to share sampling results with the Property Owners; likewise, the Property Owners have shared the results of samples collected by them and analyzed at a lab of their choosing.

Hydrocarbon spills can occur anywhere that oil is being stored, transported, or transferred from one tank to another (e.g., fueling a farm vehicle). When oil is spilled on land it can penetrate the soil and spread sub-surface. Often the surface oil stain is much smaller than the sub-surface stain. Remediation is conducted by removing layers of soil until the staining is no longer visible, and soil sampling results indicate that the remaining soil hydrocarbon levels are below MTCA CULs. It is important to conduct sampling, as a visual inspection of the soils is inconclusive for determining contamination levels. The longer spills remain on the ground, the more long-term damage can happen to the environment. Spilled oil on land can prevent water absorption by the soil, can impact plant life, and could leach into groundwater or enter waterways as surface water run-off.

3.3.2 Environmental Consequences

Alternative A – No Action

Soil contamination with hydrocarbons above MTCA cleanup levels has been identified in three locations on the property: at the ASTs, at the manure handling system, and in the sludge of the

manure lagoons. The soils associated with the manure handling system and the sludge in the effluent lagoons would need additional sampling to determine if contamination persists. At a minimum, the soil associated with the ASTs would require remediation under Alternative A. Indirect, short-term effects to soils would be expected as a result of excavating the contaminated soil. Disposal would be coordinated with the Grant County Health District for approvals to dispose of removed soils at the approved disposal facility. Soil disturbance would be confined to the area of the surface and sub-surface staining, and a bit wider and deeper to ensure clean margins. Currently, the hydrocarbon contamination appears locked in the soils proximal to the ASTs and has not contaminated groundwater. The known contamination would persist until the Property Owners completed remediation efforts pursuant to the MTCA. The Property Owners could file a VCP application and seek funding from the MTCA for the remediation efforts. Once a property is added to Ecology's database of known or suspected contaminated sites that need remedial action, it remains in the database. If contamination is remediated to below MTCA levels, a No Further Action opinion would be issued and Ecology's database would be updated with the No Further Action notation, signifying that the Property Owners have completed cleanup actions.

It is unknown how long select soils may have been contaminated on the Land Acquisition Parcel. Sampling of the AST spill area and groundwater wells in the area revealed that the hydrocarbon contamination is currently confined to the soil and has not entered the groundwater table. The contaminated soils should be removed from the site as soon as possible, with coordination and oversight by the VCP. Additional testing would be needed to confirm if contamination exists in other soils, such as the manure/effluent separator and effluent ponds. The berms around the effluent lagoons were not compromised as a result of groundwater surfacing in the West Channel of Crab Creek during the 2006 test flows conducted to inform the PSFR EA; therefore, there was no release of hydrocarbons into surface water from erosion of the berms.

Alternative B – Acquisition

Under Alternative B, the impacts of contaminated soil are the same as under Alternative A. Reclamation would continue working with the VCP to develop and implement a remediation plan, which would result in indirect, short-term impacts. Reclamation has received approval through an Acquisition Approval Memorandum to acquire and accept financial responsibility to remediate the known contamination. Reclamation has been coordinating with Ecology as a prospective buyer of the Land Acquisition Parcel and has filed a VCP application. Ecology has requested additional sampling of the Land Acquisition Parcel to inform the remediation plan that would be developed by the two agencies. Reclamation would like the Property Owners' continued participation in the process. Reclamation would work with Ecology under the VCP until a No Further Action opinion was issued for the Land Acquisition Parcel.

As soon as is feasible, Reclamation would begin to remediate the diesel range and lube oil range organics found during the initial Phase II AAI, to be verified with subsequent testing. A remediation plan would be developed for the releases associated with the ASTs and effluent lagoon sludge. The plans would provide for appropriate remediation and would include estimated costs. Additional NEPA compliance may be conducted to cover remediation actions

once details are known. Soil testing would be coordinated with a licensed laboratory. Disposal would be coordinated with the Grant County Health District for approvals to dispose of removed soils at the approved disposal facility. All remediation would be overseen by Reclamation's Columbia-Pacific Northwest Regional Office Hazardous Materials Coordinator.

3.4 Surface Water Resources

The Clean Water Act (CWA) establishes the basic structure for regulating discharges of pollutants into Waters of the United States (WOTUS) and regulating quality standards for surface waters.

The Water Quality Standards Regulation (40 CFR 131) establishes the requirements for states and Tribes to review, revise, and adopt water quality standards. It also establishes the procedures for EPA to review, approve, disapprove, and promulgate water quality standards pursuant to Section 303 (c) of the CWA. The National Toxics Rule (40 CFR 131.36) describes the chemical-specific, numeric criteria for priority toxic pollutants. WAC 173-201-A contains water quality standards for surface waters of the State of Washington (WAC 2019).

3.4.1 Affected Environment

Surface water on the Land Acquisition Parcel includes a natural emergent wetland (see Figure 7), the intermittent west channel of Crab Creek, and the man-made effluent lagoons and open sump pit. The Dairy does not currently operate under a National Pollutant Discharge Elimination System (NPDES) permit from Ecology. Surface water analysis of the Land Acquisition Parcel completed by White Shield indicates that the sump pit and effluent lagoons contained a wide range of chemical contaminants at concentrations less than their corresponding regulatory standards and CULs. Their presence in the effluent lagoon samples is not surprising when considering that the source of the water directed into the lagoons is the industrial portion of the Dairy operation on the Land Acquisition Parcel. Although there were contaminants in the effluent lagoons and sump pit, no direct impacts to surface waters on the Land Acquisition Parcel were observed by White Shield. A possible exception would be during precipitation events that could cause runoff to enter water bodies downstream, potentially impacting the surface water quality. Groundwater is where the noted contaminants would eventually be deposited, through land application and infiltration of the effluent lagoon wastewater mixed with the sump pit water to dilute the contaminants (White Shield 2020b). However, the Dairy NMP requires the Property Owners to sample the nutrient content prior to land application of the effluent lagoon decant and only apply the amount of decant that the land can absorb and utilize. Likewise, the land application is restricted to certain times of the year to further reduce the possibility of contaminating surface water or groundwater.

The Dairy is assumed to be an animal feeding operation[24] (AFO). EPA defines AFOs as agricultural enterprises where animals are kept and raised in confined situations. AFOs congregate animals, feed, manure, urine, dead animals, and production operations on a small area of land. The Dairy is not considered a concentrated animal feeding operation[25] (CAFO) in the Dairy NMP. Any AFO that discharges manure or wastewater into a natural or man-made ditch, stream, or other waterway is defined as a CAFO, regardless of size. CAFOs are regulated by the EPA or state program under delegated authority under the CWA. The Property Owners have developed a Dairy NMP in consultation with Moses Lake Conservation District. The objective of the Dairy NMP is for AFO owners and operators to take voluntary actions to minimize potential air and water pollution from storage facilities, confinement areas, and land application areas. Dairy inspections are conducted to ensure compliance with the Dairy NMP, and the resultant reports do not document a discharge of manure or wastewater to a water source. In addition, the Property Owners assert there are no discharges to WOTUS associated with the Dairy operation that would require them to secure an NPDES permit from Ecology

The current Dairy NMP provides guidance for managing waste for a total of 1,120 dairy cows which may include up to 500 milking cows, 60 dry cows, 470 heifers, and 90 calves. Nutrients are recycled and applied to 325 acres of land managed by the Property Owners, including the 52 acres of the Land Acquisition Parcel. The Dairy NMP was reviewed and approved by the Moses Lake Conservation District on June 18, 2002. The Moses Lake Conservation District then certified that the Property Owners "constructed or otherwise put in place the elements necessary to implement" the NMP on December 16, 2003. Specific objectives of the Dairy NMP are to

- Prevent contaminated wastewater discharge from the Dairy to streams, drainage ditches, or other surface waters;
- Prevent migration of contaminants from the Dairy facility to the underlying aquifer;
- Agronomically[26] recycle the dairy nutrients produced through soil and crops to the fullest extent; and
- Meet the requirements of the Dairy Nutrient Management Act of 1998 (RCW 90.64) and the CWA, and comply with federal, state, and local laws regarding water quality standards.

The NPDES permit program is authorized to state governments by the EPA to perform many permitting, administrative, and enforcement aspects of the 1972 CWA. The Property Owners would be required to secure an NPDES permit if the Dairy has a discharge of pollutants to WOTUS.

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[24] The EPA has conditions that must be met to be considered an AFO. More information can be found at https://www.epa.gov/npdes/animal-feeding-operations-afos.

[25] AFOs that meet the regulatory definition of a CAFO are regulated under the NPDES permitting program; see the link above for more information.

[26] 40 CFR Part 503.14 requires that biosolids must be applied to land at the appropriate agronomic rate, which is the sludge application rate designed to provide the amount of nitrogen needed by the crop or vegetation grown on the land.

The effluent lagoons and pit are located along the southern boundary of the Land Acquisition Parcel. Analytical results for surface water samples collected from the Land Acquisition Parcel by White Shield during the initial Phase II AAI (White Shield 2020a) are summarized below.

- Coliform Bacteria: The irrigation sump pit and effluent lagoons contained 790 and 9,200 colonies most probable number (MPN) per 100 ml, respectively. This exceeds the recommended limit of 1/100 colonies MPN per 100 ml for drinking water. However, neither of the two sample sources is used for drinking water, and the level of coliform bacteria in the waters is not surprising or unusual given the nature of the surface waters and their uses.
- Nitrate: Nitrate was not detected in the irrigation sump sample. The absence of nitrate in the sump sample is likely due to the heavy growth of algae and aquatic plants in the sump pit; these plants actively consume nitrate. Nitrate was detected in the water sample collected from the effluent lagoon at a concentration less than the federal standard of 10 milligrams per liter (mg/L).
- Total Phosphate: Phosphate was detected at relatively low concentrations in the irrigation sump sample. The effluent lagoon sample contained 94 mg/L total phosphate. This likely reflects the decomposition of organic material comprising the sludge in the lagoon bottom.
- Diesel Range and Lube Oil Range Organics: Diesel range organics were detected in water samples collected from the irrigation sump and effluent lagoons at concentrations of 0.67 micrograms per liter (ug/L, or parts per billion) and 2.8 ug/L, respectively, well below their respective MTCA Method A CUL of 500 ug/L. Lube oil range organics were detected in the water samples collected from the irrigation sump and the effluent lagoon at concentrations of 1.4 ug/L and 7.8 ug/L, respectively, which are also well below their MTCA Method A CUL of 500 ug/L.
- VOCs: Acetone, a common solvent, was detected in samples from the irrigation sump and the effluent lagoon at concentrations of 6 ug/L and 37 ug/L, respectively. There are currently no standard CULs for acetone, although the reported concentrations are relatively low.
- Carbon Disulfide: Carbon disulfide was detected at a concentration of 0.52 ug/L in the sump pit water sample. Its presence is likely due to a biogenic process such as anerobic decomposition of plant materials in the sump. Given the low concentration, carbon disulfide is not considered to be of environmental significance on the Land Acquisition Parcel.
- Toluene: Toluene was detected at a concentration of 2.3 ug/L in the sample from the irrigation sump, well below both the EPA and MTCA CUL of 1,000 ug/L. Its presence is unexplained, although as a component of diesel and gasoline, it is ubiquitous anywhere diesel- or gasoline-powered equipment is used. Given the low concentration, the presence of toluene is not considered to be of environmental significance on the Land Acquisition Parcel.
- Metals: Arsenic was detected in the effluent lagoon at a concentration of 5.0 ug/L. The MTCA Level A CUL is 5.0 ug/L, half of the less stringent EPA CUL of 10 ug/L. The

presence of arsenic in the effluent lagoon water may be related to the breakage of basaltic boulders when the lagoon was dozed from the hillside. While somewhat anomalous, the presence of arsenic does not appear to present a significant environmental issue at the Land Acquisition Parcel.

- Pesticides: Two pesticides (Heptachlor and Endosulfan) were detected in the water samples collected from the irrigation sump and the effluent lagoon at concentrations less than their recommended MTCA and EPA Drinking Water CULs. Seven additional pesticides were detected in the water sample collected from the effluent lagoon. Of these seven, one (gamma-Chlordane) was present at a concentration (0.100 ug/L) greater than its MTCA CUL of 0.06 ug/L but less than its EPA standard of 2 ug/L. The concentrations of the remaining six pesticides detected in the effluent lagoon water were either less than their respective MTCA CULs or were pesticides for which standard MTCA CULs have not been disseminated (meaning that they must be specifically calculated for a site).
- Herbicides: The once commonly used herbicide Dinoseb was detected at 0.52 ug/L in the water sample from the effluent lagoon, and pentachlorophenol (a once widely used wood preservative) was detected at a concentration of 0.049 ug/L in the sump pit water sample. These concentrations are both significantly less than the corresponding 7 ug/L (Dinoseb) and 1 ug/L (pentachlorophenol) EPA drinking water standards. The presence of these herbicides in the two samples is somewhat inexplicable. Dinoseb was once used by the Department of Defense and is a persistent contaminant. Its presence may reflect the area's former use by the Department of Defense as an airbase. The pentachlorophenol may simply represent the presence of some old scraps of preserved wood in the effluent lagoon. The low concentrations reported for the surface water samples and the absence of these compounds in groundwater samples suggest these substances pose little risk to the Land Acquisition Parcel. Herbicides are not considered to be of environmental significance for this resource.

During September 2021, and at the VCP's request, Reclamation collected additional surface water samples from the effluent lagoons. Hydrocarbon (diesel and oil range organics) results showed trace amounts, which are below regulatory limits. Reclamation provided the results to the Property Owners and the VCP. Reclamation will continue to work with the VCP to determine if additional sampling is necessary and develop and implement a remediation plan.

3.4.2 Environmental Consequences

Alternative A – No Action

Under Alternative A, Reclamation anticipates that the surface water quality would remain unchanged. If the Dairy NMP were followed, nutrients would be contained to the effluent lagoons or applied at an agronomic rate to the land. Following the Dairy NMP provides the best method of ensuring that there is no point source pollution and minimal non-point source pollution caused by runoff. Generally, non-point source pollution would be contained to the Land Acquisition Parcel, except in large storm or flood events where it may contribute non-point source pollution to Crab Creek in the form of nutrients. Past Dairy inspections have

shown that the Property Owners are compliant with their Dairy NMP and have not had any significant discharges to waters of the state.

Alternative B – Acquisition

Reclamation anticipates that surface water quality would improve over time under Alternative B as an indirect effect of federal ownership and restoration actions. The number of coliform bacteria present in the surface water would decrease with the cattle being moved off the Land Acquisition Parcel. Surface water quality would likely improve once the Dairy was decommissioned and nutrients were no longer stored on or applied to the land. The elimination of heavy livestock grazing would also likely improve soil stability and reduce erosion. PSFR flows through Crab Creek would likely increase the inundation rate and size of the emergent wetland on the Land Acquisition Parcel. Over time, it is possible that because of the hydrologic connectivity to Crab Creek, and the additional flow, the wetland may become a permanent wetland rather than an ephemeral (seasonal) wetland. Benefits of a year-round wetland would include water filtration and storage, processing of nutrients (e.g., carbon), stabilization of shorelines, and support of plants and animals. Large numbers of waterfowl utilize the wetlands in the Crab Creek reach.

During their occupancy of the Land Acquisition Parcel, the Property Owners would be required to comply with their Milk Producing License and follow their Dairy NMP. The Dairy NMP specifies manure application rates and the timing of applications to reduce the potential for contaminating WOTUS. The Property Owners and the Dairy operations would be integrated into Reclamation's ECAP and subject to audits. If the Dairy had a discharge to WOTUS while operating on federally-owned land, they may be required to secure a NPDES permit.

Decommissioning of the Dairy would begin with the Property Owners. Reclamation would continue the decommissioning of the Dairy and remove any remaining manure, waste, or effluent that could not be safely integrated into the soil. Reclamation would then identify any improvements needed to operate the PSFR. This may include seeding, drainage or channel improvements, and noxious weed treatments. The types of improvements needed for the Land Acquisition Parcel cannot be fully identified until after acquisition. These improvements may result in temporary impacts to water quality due to construction. Any actions and impacts would be analyzed in future NEPA compliance as potential improvements and appropriate best management practices are more clearly identified.

3.5 Groundwater Resources

EPA established the basic structure for the protection of national groundwaters in the Safe Drinking Water Act (SDWA) of 1974 (42 U.S.C. §300f et seq). EPA has included additional regulations to provide for increased protection of the nation's groundwaters through the National Primary Drinking Water Regulation and the Ground Water Rule (EPA 2007). This final rule was effective on January 8, 2007 (EPA 40 CFR Parts 9, 141 and 142[EPA-HQ-OW-2002-0061; FRL-8231-9] RIN 2040-AA97).

Washington State has drafted regulations for the protection of groundwaters within the state. Washington Administrative Code (WAC) 173-200-010 implements the Water Pollution Control Act (Chapter 90.48 RCW) and the Water Resources Act of 1971 (Chapter 90.54 RCW) applies to all groundwaters of the state (WAC 1990) and cleanup actions under the MTCA (Chapter 70.105D RCW). The intent of the regulation is to maintain the highest quality of the State's groundwaters with established groundwater quality standards which, together with the state's technology-based treatment requirements, provide for the protection of the environment and human health and protection of existing and future beneficial uses of groundwaters.

3.5.1 Affected Environment

Groundwater on the Land Acquisition Parcel is relatively uncontaminated by the chemical substances tested for, indicating that groundwater beneath the property presents little environmental risk to the property itself or downgradient properties. The Property Owners are currently participating in an agricultural waste management program. Manure is hauled offsite for use as fertilizer elsewhere. Although there is a presence of a range of contaminants, water in the effluent lagoons does not appear to have adversely affected downgradient groundwater quality in the groundwater monitoring well installed by Reclamation. There is no threat of contamination from the Moses Lake Wellfield Contamination Superfund Site located south of the Land Acquisition Parcel near Grant County Airport (White Shield 2020a). Two groundwater monitoring wells were installed on the Land Acquisition Parcel to support Phase II AAI testing, and these wells have been incorporated into the PSFR well monitoring program.

The Dairy produces a significant amount of liquid and solid wastes including silage leachate , which needs to be closely managed to prevent both surface and groundwater quality issues. To manage the waste materials on the Land Acquisition Parcel, solid waste/wastewater is passed through a solids separator. Separated solids are temporarily stored near the manure separator on an asphalt pad and then stacked and stored within the pens where the material originated. The separated wastewater is pumped through a 4-inch PVC pipeline to two effluent lagoons. Some of the clarified wastewater is pumped back from the effluent lagoons and recycled to the barns and used for manure flushing. According to the Dairy NMP, the excess liquid waste and solid waste are either land-applied by the center pivot to the Land Acquisition Parel or hauled by tank truck or manure spreader to lands west of the Land Acquisition Parcel to be applied to other farmland owned by the Property Owners.

The best way to determine if groundwater beneath the Land Acquisition Parcel is contaminated is to collect samples from wells near the Land Acquisition Parcel. Groundwater samples were collected from four wells; one well is located upgradient of the Land Acquisition Parcel on Reclamation land while the three remaining wells are located on the Land Acquisition Parcel. Analytical results for the groundwater samples collected during the initial Phase II AAI (White Shield 2020a) are summarized below.

- Coliform Bacteria: Coliform bacteria were not detected in any of the four well samples.
- Nitrate: Nitrate was detected in all four of the wells sampled. The only well in which the water sample nitrate concentration exceeded the recommend limit of 10 mg/L was the

upgradient well on Reclamation land, which contained 12 mg/L. The reason for the elevated nitrate concentration is unknown. Nitrate concentrations in samples collected from downgradient wells on the Land Acquisition Parcel were less than the recommended 10 mg/L limit. Nitrate in groundwater is not considered to be an environmental issue for the Land Acquisition Parcel.

- Total Phosphate: Phosphate was detected at relatively low concentrations in all the well samples. The low concentrations of phosphorous in the four wells sampled suggest that phosphorous in groundwater is not a serious environmental concern, especially when considering the 0.15 mg/L concentration of phosphorous in the upgradient well (10-NE19-1). Standards for phosphorous in groundwater have not been published.
- Diesel Range and Lube Oil Range Organics: Lube oil range organics were detected in the water sample collected from the upgradient well at a concentration of 0.42 ug/L; this concentration level is well below the MTCA Method A CUL of 500 ug/L. Petroleum hydrocarbons in groundwater are not considered to be an environmental issue for the Land Acquisition Parcel.
- VOCs: Acetone, a common solvent, was detected in the groundwater sample collected from upgradient well at a concentration of 5 ug/L. This is a very low concentration. At this time, a standard CUL for acetone has not been developed. Given the absence of acetone in the three well samples on the Land Acquisition Parcel, environmental risks appear to be moderately low.
- Metals: Arsenic was detected in the water sample collected from the well west of the effluent lagoons and had a concentration of 3.6 ug/L. The MTCA Level A CUL is 5.0 ug/L, half of the less stringent EPA CUL of 10 ug/L. The presence of arsenic in the well is likely due to the breakage of basalt boulders when the well was recently drilled, as arsenic is a common constituent of basaltic rocks. While somewhat anomalous, the presence of arsenic does not appear to present a significant environmental issue at the Land Acquisition Parcel.
- Pesticides: There were no pesticides detected in the four groundwater well samples.
- Herbicides: There were no herbicides detected in the four groundwater well samples.

There is no threat of Land Acquisition Parcel groundwater contamination from the Superfund Site. The directional flow of the groundwater beneath the Superfund Site suggests that it would not impact the Land Acquisition Parcel (White Shield 2020a). In addition, the contaminants are being confined within the deeper aquifer for cleanup at the nearby wastewater treatment facility (EPA 2019). More information can be found in Section 3.2 of this EA.

3.5.2 Environmental Consequences

Alternative A – No Action

Groundwater on the Land Acquisition Parcel is within regulatory standards, indicating the groundwater beneath the property presents little environmental risk to the Land Acquisition

Parcel itself or downgradient properties (White Shield 2020a). Reclamation anticipates that the groundwater quality would remain unchanged under Alternative A. If the Dairy NMP continued to be followed, nutrients would be contained to the effluent lagoons or applied to the land at an agronomic rate. Past Dairy inspections report that the Property Owners are compliant with their Dairy NMP and have not had any significant discharges to WOTUS.

Alternative B – Acquisition

Under Alternative B, Reclamation anticipates that the groundwater quality would remain unchanged while the Property Owners continue their Dairy operations, and that groundwater quality may improve slightly once the Dairy was decommissioned resulting in short-term effects. Groundwater on the site is within regulatory standards, indicating the groundwater beneath the property presents little environmental risk to the property itself or downgradient properties (White Shield 2020a). Reclamation anticipates that the groundwater quality would remain unchanged or improve slightly under Alternative B. Once the Dairy was decommissioned, groundwater quality (e.g., nitrate concentrations) might improve because nutrients would no longer be stored on or applied to the Land Acquisition Parcel. PSFR flows through Crab Creek would likely increase the inundation rate and size of the emergent wetland on the Land Acquisition Parcel. Over time, it is possible that because of the hydrologic connectivity to Crab Creek, and the additional flow, the wetland may become a permanent wetland rather than an ephemeral (seasonal) wetland. Benefits of a year-round wetland would include water filtration and storage, processing of nutrients (e.g., carbon), stabilization of shorelines, and support of plants and animals. Large numbers of waterfowl utilize the wetlands in the Crab Creek reach.

As part of Dairy decommissioning, the Property Owners, with possible assistance from Reclamation, would remove any remaining manure, waste, or effluent that could not be effectively integrated into the soils under the Dairy NMP. Reclamation would then identify any improvements needed to operate the PSFR. This may include seeding, drainage or channel improvements, and noxious weed treatment. The types of improvements needed for the Land Acquisition Parcel cannot be fully identified until after the acquisition of the property. These improvements may result in temporary impacts to water quality due to construction. Any actions and impacts from future improvements would be analyzed in future NEPA compliance as potential improvements are more clearly identified.

3.6 Wetlands

Under Executive Order (EO) 11990 (Federal Register 1977), each agency shall provide leadership and act to minimize the destruction, loss, or degradation of wetland and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities (42 FR 26961).

As defined by the EPA and the U.S. Army Corps of Engineers (Corps of Engineers) in the *Federal Manual for Identifying and Delineating Jurisdictional Wetlands* (Federal Interagency Committee for Wetland Determination 1989), wetlands are "those areas that are inundated or saturated by surface or groundwater at a frequency and duration to support, and that under normal

circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." Jurisdictional wetlands originally regulated under Section 404 of the Clean Water Act (EPA 1972) have undergone increasing regulation (Clean Water Act 1977 and 1987; Farm Bills 1985 and 1990) and are important for the protection of aquatic species and waterfowl, water purification, and flood control. On September 18, 1991, the Corps of Engineers issued a public notice stating that, pending revisions to the 1989 manual, use of the 1987 Corps of Engineers Wetland Delineation Manual would be mandatory. The 1987 manual differs from the 1989 manual but three criteria must still be met; those three criteria are summarized below.

- Wetland hydrology – Areas exhibiting surface or near-surface saturation or inundation at some point in time (greater than 12.5 percent of growing season, which was defined by number of frost-free days) during an average rainfall year.
- Hydrophytic vegetation – Frequency of occurrence of wetland indicator plants (plant life growing in water, soil, or substrate that is periodically deficient in oxygen as a result of excessive water content).
- Hydric soils – Landscape positions identified by saturation, flooding, or ponding long enough during the growing season (generally 7 days) to develop characteristic color changes in the upper part of the soil as a result of anaerobic conditions.

Wetland areas are areas that are typically saturated with surface water or groundwater that creates an environment supportive of wetland vegetation (i.e., swamps, marshes, and bogs). The Corps of Engineers *Wetlands Delineation Manual (Technical Report Y-87-1)* defines wetlands as areas inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. For an area to be considered a jurisdictional wetland, it must meet the following criteria: more than 50 percent of the dominant plant species must be categorized as Obligate, Facultative Wetland, or Facultative on lists of plant species that occur in wetlands; the soil must be hydric; and wetland hydrology must be present.

The CWA Section 404, which regulates WOTUS, is jointly administered by EPA and the Corps of Engineers. On June 9, 2021, EPA and the Corps of Engineers announced their intent to initiate a new rulemaking process that restores the protections in place prior to the 2015 WOTUS implementation and develops a durable definition of WOTUS. The agencies are interpreting WOTUS consistent with the pre-2015 regulatory regime until further notice (EPA 2021).

In September 2020, EPA also implemented a CWA Section 401 Certification Rule (Federal Register 2020) under the 1972 federal CWA. The federal rule changed the process for submitting requests for Section 401 water quality certifications. As the clean water certifying agency, Ecology has the authority in Washington state under Section 401 of the CWA to review and approve, approve with conditions, or deny proposed projects, actions, and activities directly affecting WOTUS. Under Section 401 of the CWA, federal agencies cannot issue a license or permit before Ecology decides a water quality certification is required or they waive their right to review. Any conditions that the certifying agency sets then become conditions of the federal

permit or license (Ecology 2021b). Ecology also issues NPDES permits to cover discharges to surface waters for non-federal entities operating on private land.

The U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) is a publicly available resource that provides information on the abundance, characteristics, and distribution of U.S. wetlands (USFWS 2020). The mapping function is a tool that integrates NWI data and additional natural resource information to make a prediction about the presence of wetlands in a given area, but those predictions have not been field-verified.

3.6.1 Affected Environment

Wetland scientists from Shannon & Wilson, Inc. (Shannon & Wilson) visited the Crab Creek West Channel in September 2019 to identify potential wetlands using methods described in the 1987 Corps of Engineers *Wetlands Delineation Manual* and the *Regional Supplement to the Corps of Engineers' Wetland Delineation Manual: Arid West (Version 2.0)* (Corps of Engineers 2010). Their study area did not include the Land Acquisition Parcel but did include areas up to the Land Acquisition Parcel's southern boundary and its interface with the west channel of Crab Creek. Based on the *Wetland Delineation Report - Crab Creek West Channel Conveyance Improvement Project* (Shannon & Wilson 2019), Wetland A starts southeast of the Land Acquisition Parcel boundary and continues onto the Land Acquisition Parcel and is classified as a Category II depressional wetland with palustrine emergent scrub-shrub and palustrine emergent vegetation. The portion of the wetland that crosses onto the Land Acquisition Parcel was not surveyed by Shannon & Wilson but was categorized by the conditions on the neighboring property that were assumed to continue onto the Land Acquisition Parcel.

The intermittent west channel of Crab Creek runs through the Land Acquisition Parcel in a northwesterly direction. Water may flow through the west channel when Crab Creek flows are high. However, the Property Owners have reported that water can appear and pond on the Land Acquisition Parcel without direct flow input from the west channel of Crab Creek. According to the NWI mapping, there is an emergent wetland on the property. From the Property Owners' description, it appears that this seasonally inundated wetland (or swale) is hydrologically connected to flows in Crab Creek; as water levels in Crab Creek increase, the emergent wetland becomes wetted.

The path of a center pivot irrigation system crosses the emergent wetland (or swale) area in the western portion of the Land Acquisition Parcel. When dry, the lagoons are accessed by a two-track road that crosses the swale.

3.6.2 Environmental Consequences

Alternative A – No Action

Reclamation anticipates no changes to the wetland under Alternative A, and that the Property Owners would continue to use their center pivot and the two-track road that cross the swale. Based on current information, there are no discharges to WOTUS that require the Property Owners to have a NPDES permit. More discussion about surface water quality of the wetland is in Section 3.4.

Alternative B – Acquisition

Reclamation anticipates no change to the wetland during continued Dairy operations and decommissioning, and remediation actions under Alternative B; however, long-term beneficial effects are expected after implementation of the PSFR. PSFR flows through Crab Creek would likely increase the inundation rate and size of the emergent wetland on the Land Acquisition Parcel. Over time, it is possible that because of the hydrologic connectivity to Crab Creek, and the additional flow, the wetland may become a permanent wetland rather than an ephemeral (seasonal) wetland. Benefits of a year-round wetland would include water filtration and storage, processing of nutrients (e.g., carbon), stabilization of shorelines, and support of plants and animals. Large numbers of waterfowl utilize the wetlands in the Crab Creek reach.

Reclamation anticipates the Property Owners utilizing the center pivot to water their hay crop in 2021 and possibly in 2022, and to continue to use the two-track road that crosses the swale. No new impacts are expected with the continuation of these actions.

Since Reclamation would hold title to the Land Acquisition Parcel, the Dairy operations would be subject to ECAP audits and would need to continue comply with the Milk Producing License and Dairy NMP. The Property Owners would be required to ensure there are no releases to WOTUS during Dairy operations and maintenance, decommissioning or salvage. These actions might include the removal of manure solids from the feed lots or infrastructure associated with effluent transfer to the lagoons. During the 2019 wetland surveys, the surveyors observed "cattle grazing in and adjacent to the wetland" (Shannon & Wilson 2019). Based on the additional information in the report, these cattle were in the wetland on the Land Acquisition Parcel. As part of the ECAP audits, Reclamation would review the condition of the fencing to ensure cattle remain outside of the channel and wetland. Releases to WOTUS would be regulated under the CWA and also monitored under Reclamation's ECAP.

Reclamation would work with Ecology's VCP to design a remediation plan for the Land Acquisition Parcel that included protection of WOTUS, including the emergent wetland. Access to the effluent lagoons is currently via the swale. As part of remediation activities, Reclamation may work with the Property Owners to design and implement a temporary crossing that reduced potential impacts to the wetland while minimizing interference with any ongoing farming activities. Reclamation would assess the need for additional NEPA and permitting as plans were developed for the suite of remediation activities, including restoration.

3.7 Cultural Resources

This section provides a summary of the cultural resource identification completed for the Proposed Action, including anticipated impacts on cultural resources under NEPA. Cultural resources are locations of human activity, occupation, or use. They include expressions of human culture and history in the physical environment, such as precontact or historic archaeological sites, buildings, structures, objects, districts, or other places. Cultural resources can also include natural features, plants, and animals that are considered important to a culture,

subculture, or community or that allow the group to continue traditional lifeways and spiritual practices.

Historic properties as defined by 36 CFR Part 800, the implementing regulations of Section 106 of the National Historic Preservation Act (NHPA; 54 USC § 300101 et seq.), are cultural resources eligible for inclusion in the National Register of Historic Places (National Register). Historic properties may be districts, sites, buildings, structures, artifacts, ruins, objects, works of art, natural features important in human history at the National, state, or local level, or properties of traditional religious and cultural importance to an Indian Tribe.

3.7.1 Affected Environment

A Class I inventory and field inspection were conducted on the Land Acquisition Parcel in May 2020 by Reclamation's Ephrata Field Office archaeologist. The Land Acquisition Parcel was determined to be disturbed by Dairy and farming activities.

3.7.2 Environmental Consequences

Alternative A – No Action

There would be no effect to cultural resources under Alternative A.

Alternative B – Acquisition

Reclamation's acquisition of the Land Acquisition Parcel and issuance of a license for occupancy and Dairy operations and maintenance would have no effect upon historic properties and qualifies for a *Finding of No Potential to Cause Effects* as specified in Item Number 20[27] of the Reclamation "NoPE List.."[28] A search of the general vicinity revealed no known historic properties within or near the area of potential effect. As a result, acquisition and issuance of a license would have no effect upon historic properties. The continued farming operations would remain entirely within the existing disturbed areas with no change in land use. Any future undertakings on the Land Acquisition Parcel, including decommissioning of existing facilities, would be subject to NHPA Section 106 review requirements.

Reclamation's archaeologist recommends that the stipulation listed below be included in any license.

1. Due to the potential for encountering significant cultural resources, the licensee shall ensure that all activities associated with this license remain within existing disturbed areas

[27] NoPE List, Item Number 20. Acquisition of land or easements for Reclamation purposes.

[28] Creation of the no potential to cause effects list (NoPE list) of undertakings is intended to expedite the Section 106 compliance process by documenting a set of agency actions (undertakings) that will not affect historic properties. The NoPE list frequently indicates that a specific exemption would apply when the undertaking occurs "within previously disturbed areas." The definition for "previously disturbed areas" means an area where past construction or operation and maintenance activity is sufficient in severity and extent to have destroyed the physical nature and integrity of an historic property, assuming such properties are, or were, present prior to the disturbance. The NoPE List was finalized in September 2007.

and that no new ground disturbance or changes in land use will occur. If the licensee find that new ground disturbance or a change in land use on the Land Acquisition Parcel is required during the term of the license, they must consult with and receive prior written approval from Reclamation to determine if further archaeological measures, including cultural resources inventories, are necessary. If the potential for affecting cultural resources is high, Reclamation may formulate further stipulations to prevent the loss of significant cultural values.

The licensee shall immediately provide an oral notification to Reclamation of the discovery of any and all antiquities or other objects of archaeological, paleontological, cultural, historic, or scientific interest on the Land Acquisition Parcel by the Property Owners or any person working on their behalf. The licensee shall follow up with a written report of their finding(s) to Reclamation within 48 hours. Objects under consideration include, but are not limited to, historic or prehistoric ruins, human remains, funerary objects, and artifacts discovered as a result of activities under the license. The licensee shall immediately cease the activity area of the discovery, make a reasonable effort to protect such discovery, and wait for written approval from Reclamation before resuming the activity. Protective and mitigative measures specified by Reclamation shall be the responsibility of the licensee.

3.8 Indian Trust Assets

Indian Trust Assets (ITAs) under Secretarial Order 3175 are legal interests in property held in trust by the United States for federally recognized Tribes or individual Indians. Indian trust has three components: (1) the trustee, (2) the beneficiary, and (3) the trust asset. ITAs include land, minerals, federally reserved hunting and fishing rights, federally reserved water rights, and instream flows associated with trust land. Beneficiaries of the Indian trust relationship are federally recognized Tribes with trust lands, with the United States acting as the trustee. ITAs cannot be sold, leased, or otherwise encumbered without approval of the United States. The characterization and application of the United States trust relationship have been defined by case law that interprets Congressional acts, executive orders, and historic treaty provisions.

The federal government, through treaty, statute, or regulation, may take on specific, enforceable fiduciary obligations that give rise to a trust responsibility to federally recognized Tribes and individual Indians possessing trust assets. Courts have recognized an enforceable federal fiduciary duty with respect to federal supervision of Indian money or natural resources held in trust by the federal government, where specific treaties, statutes, or regulations create such a fiduciary duty.

Reclamation assesses the effect of its programs on Tribal trust resources and federally recognized Tribes, which is consistent with President Clinton's 1994 memorandum, *Government-to-Government Relations with Native American Tribal Governments* (Federal Register 1994). Reclamation is tasked to actively engage federally recognized Tribes and consult with them on a Government-to-Government level when its actions affect ITAs. The Department of the Interior (DOI) Department Manual, Part 512.2 ascribes the responsibility for ensuring protection of ITAs to

the heads of bureaus and offices. DOI is required to "protect and preserve ITAs from loss, damage, unlawful alienation, waste, and depletion."

The general policy of the DOI is to perform its activities and programs in a way that protects ITAs and avoids adverse effects whenever possible. Reclamation complies with procedures contained in the DOI Departmental Manual, Part 512.2 guidelines that protect ITAs. Reclamation carries out its activities in a manner that protects trust assets and avoids adverse impacts when possible. When Reclamation cannot avoid adverse impacts, it would provide appropriate mitigation or compensation. Reclamation is responsible for assessing whether the proposed action has the potential to affect ITAs.

3.8.1 Affected Environment

Historically, the government and the Tribes have offered varied opinions as to what constitutes an ITA and which Tribe holds title to those ITAs. This document neither judges the validity of nor defines the rights claimed by any Tribal government or member.

While the majority of ITAs are located on-reservation, ITAs also occur off-reservation. Consequently, several American Indian Tribes and bands have interests in the general area. The majority of the area in and surrounding the Land Acquisition Parcel is within lands ceded in the Yakama Treaty of June 9, 1855. The treaty established the Yakama Reservation and reserved rights and privileges to hunt, fish, and gather roots and berries on open and unclaimed lands to the 14 signatory Tribes and bands.

In addition to the Yakama Nation, the Spokane Tribe of Indians, Wanapum, the Nez Perce Tribe, and the Confederated Tribes of the Colville Indian Reservation may also have interests in the general area.

3.8.2 Environmental Consequences

Alternative A – No Action

There would be no effect to ITAs under Alternative A.

Alternative B – Acquisition

No ITAs were identified within a 25-mile radius of the Land Acquisition Parcel; therefore, there would be no impacts on ITAs for Alternative B. Reclamation used its Tessel mapping database to determine the presence of ITAs in the general area. This database includes known instances of trust land, reservation land, and village and community sites. The database is updated frequently by the Bureau of Indian Affairs. Some Tribes may include other aspects of the environment in their definition of trust assets. These may include water rights, water quality, fishing, hunting, and gathering activities.

3.9 Indian Sacred Sites

EO 13007, dated May 24, 1996, instructs federal agencies to promote accommodation of access and protect the physical integrity of American Indian sacred sites. Sacred site means any specific, discrete, narrowly delineated location on federal land that is identified by an Indian Tribe, or Indian individual determined to be an appropriately authoritative representative of an Indian religion, as sacred by virtue of its established religious significance to, or ceremonial use by, an Indian religion. A sacred site can only be identified if the Tribe or appropriately authoritative representative of an Indian religion has informed the agency of the existence of a site. The Tribes have not identified any religious or ceremonial sites in the general area around the Land Acquisition Parcel; therefore, under all alternatives, there would be no impacts to Indian sacred sites.

3.10 Visual and Aesthetic Resources

Visual resources consist of natural and human-made features that give an environment its aesthetic qualities. To determine whether a proposed action would appear compatible with existing features or would contrast noticeably within the setting, the landscape character needs to be evaluated. Views are considered sensitive when they have high scenic quality and are potentially subject to degradation through environmental processes or human uses.

Scenic quality is a measure of the overall impression or appeal of an area created by the physical features of the landscape, such as natural features (landforms, vegetation, water, color, adjacent scenery, and scarcity) and human-made features (roads, buildings, railroads, other built elements, and agricultural patterns).

Visual resources represent the aesthetic quality of the environment as perceived through the subjective visual sense only. As such, many people have differing definitions of what constitutes an aesthetically pleasing environment, and there are different methodologies for assessing the visual quality of a landscape and potential visual impacts.

Sections 101 (42 USC Section 4331) and 202 (42 USC Section 4342) of NEPA mandate that federal agencies recognize the importance of visual resources and include a visual or aesthetic assessment and impact analysis of projects proposed on federal lands or projects supported by federal funds.

3.10.1 Affected Environment

Existing views of the Land Acquisition Parcel are primarily from public vantage points along Road 10 NE, which wraps around two sides of the property. The tallest structures include the milking parlor and bale stacks. These items are in keeping with the agricultural character of the area. Dairy structures are expected to conform to county height limits for agricultural zoned land.

3.10.2 Environmental Consequences

Alternative A – No Action

There would be no change to visual or aesthetic resources under Alternative A. Existing activities would continue as-is.

Alternative B – Acquisition

Initially, views would remain as they are presently. Once initiated, Dairy decommissioning, remediation, and restoration actions may be visible but would be short-term effects. Large equipment is commonly visible and associated with the agricultural community, so its presence would not be atypical of other actions occurring within the community.

Once the Property Owners have removed their personal property and any approved salvage items and vacated the Land Acquisition Parcel, any remaining fixtures not needed for the remediation efforts, as well as structures, including the attached and non-attached residences, would be removed. These activities would be viewable from Road 10 NE but would likely be short-term in duration, lasting less than a year. Structures would likely be removed by excavator and disposed of by dump truck at an appropriate off-site disposal facility.

Remediation of soils and effluent lagoon materials with diesel range and lube range oil contamination would be conducted to MTCA standards, in coordination with the VCP. The remediation plan has not been developed or approved at this time. Decommissioning of the effluent lagoons is dependent on completing remediation of the lagoons. Reclamation will evaluate the need for additional environmental compliance as remediation plans advance.

Reclamation's full restoration plans are currently undefined; however, the intent is to return the Land Acquisition Parcel to a more natural state. Reclamation will evaluate the need for additional environmental compliance as restoration plans are developed. Revegetation efforts may also be visible to those traveling on Road 10 NE, as large equipment may be used for grading and scarring of the surface soils. Seeding with native grasses would likely be done mechanically and may also be visible from Road 10 NE. As the native grasses revegetate the Land Acquisition Parcel, they would be visibly accepted like other crops grown in the area.

3.11 Air Quality, Odor, and Greenhouse Gases

Under the Clean Air Act, 42 USC § 7401 et seq., EPA established National Ambient Air Quality Standards (NAAQS) to protect air quality and prevent air pollution from reaching levels harmful to public health and the environment. These standards identify six criteria pollutants of concern for human health and the environment: carbon monoxide (CO), lead, nitrous oxide (N_2O), ozone, particulate matter, and sulfur dioxide.

Ecology maintains a monitoring network that measures the levels of these pollutants. If an area's monitoring results do not exceed the NAAQS, EPA designates this area an "attainment area." According to Ecology, the project area and Grant County currently meet air quality standards (Ecology 2020a). Ecology and other clean air agencies monitor the air quality of the state via a

monitoring network of 55 monitoring stations. The closest air quality station to the two parcels is located on Balsam Street in Moses Lake, Washington. No areas of Grant County are current areas of concern for particle pollution.

Businesses that emit or are responsible for air pollution in Washington may be required to report their emissions to Ecology, dependent on the business' permit or regulations that require reporting. Ecology collects information on criteria pollutants, metals, greenhouse gases (GHG), and toxics. No state or federal regulations for GHG emissions from farm operations or small businesses currently exist.

Odor refers to the combined effects of a mixture of gasses on the sense of smell. Odor emissions from a dairy are generated during incomplete anaerobic decomposition of organic matter in manure.

Emissions relevant to livestock operation include particulate matter and fugitive dust. GHG related to dairy cows include methane (CH_4) from enteric fermentation and methane and N_2O emissions from manure application. Livestock and agriculture, as an industry, contributes to GHG emissions.

According to EPA, total GHG emissions in the U.S. in 2018 were 6,677 million metric tons of CO_2 equivalent (EPA 2020a). The breakdown by economic sector is 10 percent agriculture, 12 percent commercial and residential, 22 percent industry, 27 percent electricity, and 28 percent transportation. For these figures, GHG emissions from agriculture come from livestock (such as cows), agricultural soils, and rice production; percentages may not add up to 100 due to independent rounding. Agricultural emissions are further broken down by EPA (EPA 2020b) as summarized below.

- Various management practices on agricultural soils can lead to increased availability of nitrogen in the soil and result in emissions of N_2O. Specific activities that contribute to N_2O emissions from agricultural lands include the application of synthetic and organic fertilizers, the growth of nitrogen-fixing crops, the drainage of organic soils, and irrigation practices. Management of agricultural soils accounts for just over half of the N_2O emissions from the agriculture economic sector (note that management of croplands and grasslands can also lead to emissions or sequestration of CO_2). However, these emissions and removals are included under the land use, land-use change, and forestry economic sectors.
- Livestock, especially ruminants such as cattle, produce CH_4 as part of their normal digestive processes. This process is called enteric fermentation and it represents over a quarter of the emissions from the agriculture economic sector.
- The way in which manure from livestock is managed also contributes to CH_4 and N_2O emissions. Different manure treatment and storage methods affect how much of these greenhouse gases are produced. Manure management accounts for about 12 percent of the total GHG emissions from the agriculture economic sector in the United States.
- Smaller sources of agricultural emissions include CO_2 from liming and urea application, CH_4 from rice cultivation, and CH_4 and N_2O from burning crop residues.

Direct emissions from dairy cattle represent 1.2 percent of total U.S. GHG emissions, according to the latest EPA inventory of GHG emissions. U.S. GHG emissions from dairy cattle, agriculture, and other emissions is summarized in Table 2. All data are from the 1990 to 2018 *EPA Inventory of U.S. Greenhouse Gases Emissions and Sinks* report (EPA 2020c).

Table 2. GHG emissions from dairy cattle and agriculture, as well as from other sources

Source	Million Metric Tons of CO_2 Equivalents	Percent of total U.S. GHG Emissions
Dairy cattle enteric fermentation (CH_4, "cow burps")	43.6	0.7
Dairy cattle manure (CH_4)	32.3	0.5
Dairy cattle manure (N_2O)	6.1	0.1
Total direct emissions from dairy cattle	82	1.2
All other agriculture emissions	536.5	8.0
Waste (CH_4, e.g., landfills, wastewater treatment plant)	134.4	2.0
Transportation	1825.4	27.3
Electricity	1752.8	26.3
All other human-caused emissions	2345.5	35.1
TOTAL U.S. GHG emissions	6676.6	100.0

GHG, generally known as carbon pollution, is regulated by Ecology. Facilities that emit at least 10,000 metric tons of carbon pollution annually report their GHG emissions (Ecology 2020b). There are five entities within the Moses Lake, Washington area that participate in the GHG reporting program: SGL Composites LLC, REC Silicon, J.R. Simplot Company, Basic American Foods, and El Oro Cattle Feeders, LLC.

3.11.1 Affected Environment

The air quality area of analysis is the air basin administered by Ecology's Eastern Regional Office. The Land Acquisition Parcel is located within the air basin managed by Ecology and is the location of an active Dairy operation. GHG emissions, as produced by the operating Dairy, are less than reportable levels. The Dairy is not operating under an air quality permit and is not required to report GHG emissions. Odors may emanate from the Land Acquisition Parcel under day-to-day operations and may increase when manure is being moved to another property.

3.11.2 Environmental Consequences

Alternative A – No Action

Direct emissions from dairy cattle represent 1.2 percent of total U.S. GHG emissions; the GHG emissions that the Dairy operations produce are nominal and insignificant on a national and local level. No change is expected to air quality, odors, or GHGs under Alternative A. Disbursement of dust is subject to local wind patterns and speeds, moisture levels of the soil, and ground cover. Locally, regionally, and nationally, there would be no change in GHGs. Since Grant County is an attainment area, it is expected that these conditions would continue relative to the use of the Land Acquisition Parcel as an operating dairy. Fugitive dust may increase and be localized when milk trucks, or other vehicles or equipment, are entering and exiting the Land Acquisition Parcel on dirt roads.

Alternative B – Acquisition

Under Alternative B, the impacts would be the same as described in Alternative A, but the impacts of direct emissions from dairy cattle would end by/before the end of the license.

3.12 Environmental Justice and Socioeconomics

Environmental Justice

In August 1994, the Secretary of the Interior established an environmental justice policy based on EO 12898. This policy requires departmental agencies to identify and address any disproportionate environmental impacts of their proposed actions on minority and low-income populations and communities, as well as the equity of the distribution of benefits and risks of those decisions. Environmental Justice addresses the fair treatment of people of all races and incomes with respect to actions affecting the environment. Fair treatment implies that no group should bear a disproportionate share of negative impacts. In February 2021, EO 14008 emphasized the United States commitment to deliver environmental justice in communities across America.

Socioeconomics

Socioeconomics evaluates how population, employment, housing, and public services might be affected by the alternatives.

3.12.1 Affected Environment

Grant County was selected as the local study area. It is the fourth largest county in Washington state in terms of land area but is sparsely populated. Agriculture, land use, hydrology, and habitat in Grant County are heavily influenced by the CBP. Grant County has 15 incorporated cities and towns, and the urban areas surrounding them are considered urban growth areas. Outside of the urban growth areas, there is a significant amount of land suitable for agricultural use. Nearly 65 percent of Grant County is considered productive farmland using both dryland and irrigation techniques (White Bluffs 2018).

Grant County had a population of 97,733 people in 2019. Table 3 provides the number and percentage of population for seven racial categories: White, Black or African American, American Indian and Alaska Native, Asian, Native Hawaiian and Other Pacific Islander, Two or More Races, and Hispanic or Latino (U.S. Census Bureau 2019). Overall, Grant County has a slightly higher percent of American Indian and over three times the rate of Hispanic residents as Washington State. No impact types that would disproportionally affect American Indians have been identified; therefore, no further analysis was pursued for this group. Hispanics make up 42.2 percent of Grant County (approximately 41,240 people) compared to 13 percent in Washington State. Given the comparatively high proportion of Hispanics in the area, this group was carried forward for analysis.

Table 3. Race and Hispanic origin for Grant County and Washington State, 2019

Race and Hispanic Origin	Percent in Grant County	Percent in Washington State
White alone[a]	92.1	78.5
Black or African American alone, percent[a]	1.8	4.4
American Indian and Alaska Native alone [a]	2.3	1.9
Asian alone[a]	1.2	9.6
Native Hawaiian and Other Pacific Islander alone[a]	0.2	0.8
Two or More Races	2.4	4.9

Source: data from https://www.census.gov/quickfacts/fact/table/grantcountywashington/RHI725219

a - Includes persons reporting only one race

b - Hispanics may be of any race and so also are included in applicable race categories

Low-income populations are identified by several socioeconomic characteristics. Specific characteristics include income (median family and per capita), percentage population below poverty (families and individuals), unemployment rates, and substandard housing. Table 4 provides median household income, per capita income, and persons below poverty level for Grant County and the State (U.S. Census Bureau 2019).

Table 4. Socioeconomic characteristics for Grant County and Washington State, 2015-2019

Race and Hispanic Origin	Grant County	Washington State
Median household income	$55,556	$73,775
Per capita income (in 2019 dollars)	$41,141	$64,758
Persons in poverty[a]	13.9%	9.8%

Source: data from https://www.census.gov/quickfacts/fact/table/grantcountywashington/RHI725219

a - Estimates are not comparable to other geographic levels due to methodology differences that may exist between different data sources

Per capita income for Grant County is $41,141, less than the state's average of $64,758. Compared to Washington State at 9.8 percent, the study area at 13.9 percent has a higher percentage of persons below the poverty level. The CEQ indicates the poverty threshold to be the primary identifier of low-income populations (CEQ 1997). The effects on the low-income population will be reviewed to see if there are any disproportionate effects.

The top five industry sectors in Grant County are presented in Table 5. Per the Washington State Employment Security Department's website, agriculture was the top job-providing industry, and many of those jobs are seasonal (ESD 2020).

Table 5. 2019's top five Grant County industry sectors

Sector	Number of Jobs	Share of employment
1. Agriculture, forestry, and fishing	9,462	23.7%
2. Local government	6,984	17.5%
3. Manufacturing	4,591	11.5%
4. Retail Trade	3,451	8.7%
5. Health Services	2,796	7.0%
All other industries	12,602	31.6%

County-level data for dairy farming was not readily available for this analysis. Regional impact analysis data for the state of Washington from Neibergs and Brady (2013) is used and presented in Table 6. In 2011, the estimated output for Washington State dairy farming was $1.45 billion. The number of jobs was 6,184 which was a full-time equivalency job rate of 5,256 The associated labor income was $81.4 million in 2019 dollars (Neibergs and Brady 2013).

Table 6. Washington State dairy farming economic contribution

Direct Effect	2011 Values
Output (2019 dollars)	$1,448,707,000
Jobs	6,184
Labor Income (2019 dollars)	$81,392,000

The Dairy is family owned and operated. Based on correspondence, the Dairy maintains approximately 1,300 animals including calves, heifers, milk cows, and dry cows; however, this number changes daily, and not all animals are on the Land Acquisition Parcel. The Dairy milks

between 550 and 600 cows on site, and calves and heifers are raised at another site approximately 1.5 miles away (Bay 2020).

The Dairy's 550-600 milk cows are approximately 0.2 percent of the 280,000 milk cows in the dairy farming industry in Washington State (Table 7). The Dairy's milk cows are estimated to be 2 percent of the stock in Grant County.

Table 7. Numbers of milk cows for the state, county, and Dairy

Area of Applicability for Milk Cow Data (data year)	Milk Cow Number	Percent of State 2011 Milk Cows	Percent of County 2011 Milk Cows
Washington State (2011)	260,000[a]	--	--
Washington State (2019/2020)	280,000[b]	--	--
Grant County (2011)	24,500[a]	9%	-
Property Owners' Dairy (2020)	550-600[c]	0.2%[d]	2%

Sources: a – Neibergs and Brady 2013; b - USDA 2021; c- Bay 2020
d - 550-600 is 0.2% of 2011, 2019, and 2020 state totals

Table 8 shows the estimated economic contribution of a dairy farm that has 2 percent of the county milk cows and, therefore, is 2 percent of the milk farming industry.

Table 8. 2011 Economic contribution of 2 percent of Grant County dairy farming (2019 dollars)

Direct Effects	2% of County (0.2% of State)	Grant County (9% of State)
Output	$2,897,000	$130,384,000
Jobs	12	557
Labor Income	$163,000	$7,325,000

The numbers of small, medium, and large dairies in Grant County and Washington State are shown in Table 9. Grant County has 6.5 percent of the dairies in Washington State.

Table 9. Dairies by size category, 2019

Category	Number in Grant County	Number in Washington State
Dairies (small)	1	128
Dairies (medium)	5	108
Dairies (large)	16	105
Dairies (all)	22	341

Source: data from Washington State Department of Agriculture 2021 (WSDA 2021)

Note: Sizes are general summaries of farm size. For NMP purposes, size is determined by mature (milking + dry) animal numbers; a dairy herd of up to 199 animals is classified as Small, 200-699 is classified as Medium, and 700 or greater is classified as Large.

The Property Owners' Dairy represents 4.5 percent of the dairies in Grant County and 0.3 percent of state dairies. Summary data for the Dairy are shown in Table 10.

Table 10. Data for the Property Owners' Dairy operations

Size	Acres	Number of Milking Cows	Number of Dry Cows	Number of Heifers	Number of Calves
Medium	301-550	200-699	38-199	300-999	50-149

Source: data from Washington State Department of Agriculture 2021 (WSDA 2021)

Note: Size is a general summary of farm size. For Dairy NMP purposes, size is determined by mature (milking + dry) animal numbers; a dairy herd of 200-699 animals is classified as Medium.

The Dairy operator is not a minority; however, it is unknown if they are low-income. One employee is minority, but it is unknown if they are low-income. It is unknown if any other Dairy employees are low-income, minorities, or Native American. Hispanic and low-income populations may be affected by changes in employment at the Dairy.

3.12.2 Environmental Consequences

Alternative A – No Action

Under Alternative A, the Property Owners would continue to reside on the property and operate and maintain the Dairy, as it is now, under their Milk Producer License and Dairy NMP. The 52 acres of pasture would continue to be farmed. Reclamation does not anticipate any changes to the dairy industry or agriculture industry at large.

Alternative B – Acquisition

The Dairy operations would cease at the Dairy's current location by/before the end of the license. Farming activities on the property could continue but would be limited to those actions that could be completed by/before the end of the license. As of their 2020 Payroll Protection

Program loan application, which is publicly available, the Dairy had at least three jobs (PPP 2020).

Under the Uniform Relocation Act, the Property Owners and tenant (and family) would receive residential relocation payments and any eligible non-residential relocation benefits. The acquisition would result in displacement of a minority family residing on the Land Acquisition Parcel. However, the family would be eligible to receive relocation benefits in accordance with the Uniform Relocation Act, which includes compensation and assistance for finding comparable housing. Therefore, the family would be fairly compensated for the impact of displacement. Loss of the Dairy is not expected to have any broad adverse impacts on low-income groups.

The Dairy may cease operations indefinitely or reopen in a new location. This analysis assumes that the Dairy ceases to operate in the region and state in the long run. If milk cows were sold to other dairies or employees join other firms, these losses would not be realized.

The following is a discussion of the expected maximum yearly impact. It is assumed that a dairy's percentage of the state dairy farming industry's economic contribution is equal to the percent of the state milk cow stock involved with their specific operations. A dairy like the Property Owners' Dairy, with 2 percent of the county's milk cow stock, is expected to have an output of $2.9 million (2019 dollars), 12 jobs or 11 full-time equivalents, and $163,000 in labor income (see Table 8). This analysis assumes 12 jobs or 11 full-time equivalents, which is the expected employee count based on a medium-sized dairy.

The minority employee residing on the Land Acquisition Parcel and other employees, possibly minorities, not residing on the Land Acquisition Parcel may lose their jobs. Four full time equivalent jobs lost would be expected to be Hispanic employees since Grant County is 42 percent Hispanic.

The Property Owners' Dairy is estimated to be 2 percent of Grant County's dairy farming industry; its loss is expected to have negligible adverse impacts. Alternative B is expected to have no significant socioeconomic impacts. No disproportionately high and adverse human health or environmental effects on minority, Tribal, or low-income populations are expected. No impacts on population, housing, public services, or human health are expected. It is not anticipated that property would be used by the public or be involved in economic activity.

Acquisition of the Land Acquisition Parcel would allow Reclamation to complete the Crab Creek portion of the PSFR. Full buildout and implementation of the PSFR would provide the southern half of the CBP, specifically SCBID, with a reliable supply of water. This would help to support the continued development of the CBP which would have a positive socioeconomic effect.

3.13 Cumulative Impacts

"Cumulative impact" was defined in CEQ's 1978 NEPA implementing regulations, at 40 CFR 1508.7, as the "impact on the environment which results from the incremental impact of the

action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions." CEQ issued updated NEPA implementing regulations on July 16, 2020 which eliminated the definition of "cumulative" impacts and sought to clarify the meaning of "effects," consistent with the Supreme Court's holding in Public Citizen, 541 U.S. at 767-68, as those reasonably foreseeable and having a reasonably close causal relationship to the proposed action or alternatives. This section provides discussion of cumulative impacts consistent with both regulations.

Reclamation is pursuing other actions, identified specifically or generally in the PSFR EA, to prepare for the implementation of the PSFR. Reclamation is reviewing each PSFR project against the PSFR EA to determine if NEPA coverage exists for the undertaking; if not, Reclamation is completing NEPA compliance for the specific undertaking prior to implementation. Some of the work underway involves construction of an interceptor drain and gates at the Troutlodge Fish Hatchery; analysis, design, and future construction to mitigate for elevated groundwater levels at the Port of Moses Lake; channel modification work along the west channel of Crab Creek; monitoring and forecasting work; and a handful of land acquisitions. The aforementioned actions are consistent with the full buildout of the PSFR and would be foreseeable under all alternatives presented in this EA. Given the localized impacts of contamination on the Land Acquisition Parcel and Reclamation's intent to remediate, Reclamation does not anticipate modifications or additional impacts to resources. The reasonably foreseeable future impacts would be the same for all alternatives.

Reclamation has completed a majority of the land acquisitions in support of the PSFR. Reclamation evaluated each acquisition to determine compliance with the PSFR EA and completed additional NEPA, if necessary, for these acquisitions. If additional actions were required for an acquired property, such as building disposal, the appropriate level of NEPA and supporting analysis, such as cultural resources and evaluation of hazardous materials, was conducted prior to implementation of the required actions. These acquisition actions are consistent with the full buildout of the PSFR and would be foreseeable under all alternatives. The impacts of these past acquisitions were covered in the PSFR EA and would be the same for all alternatives presented in this EA.

Chapter 4 Consultation and Coordination

4.1 Introduction

Reclamation consulted with federal agencies, Tribes, and state and local agencies during preparation of this EA.

4.2 Consultation

Table 11 presents a summary of consultation activities completed for this project.

Table 11. Summary of consultation activities and outcomes

Entity	Purpose for Consultation or Coordination	Findings and Conclusions
Washington State Department of Agriculture	Guidance for decommissioning of the effluent lagoons.	Decommissioning the effluent lagoons will be completed in accordance with state guidelines.
Washington State Department of Ecology	Reporting hydrocarbon contamination and assistance with the VCP.	Remediation of the known hydrocarbon contamination on the Land Acquisition Parcel, to levels below the MTCA, will be in accordance with the VCP.
Confederated Tribes of the Colville Reservation and the Confederated Tribes of the Yakama Nation	The Tribes have actively participated in the development of the CBP Programmatic Agreement under the NHPA.	As part of the CBP Programmatic Agreement process, the Tribes have reviewed NoPE No. 20. Reclamation received no dissenting comments on NoPE 20.

4.3 Coordination

Reclamation prepared this EA with an interdisciplinary approach to comply with the mandate of the NEPA to "… utilize a systematic, interdisciplinary approach which will ensure the integrated use of the natural and social sciences and the environmental design arts in planning and in decision-making which may have an impact on man's environment" (40 CFR 1501.2(a)). The resource specialists involved with preparation of this EA are identified below.

- David Dodds, Natural Resource Specialist
- Elizabeth Heether, Environmental Protection Specialist
- Emily Orling, Natural Resource Specialist
- Gina Hoff, Water Quality Specialist
- Heidi McMaster, Environmental Protection Specialist
- Iris Maska, Economist
- Jennifer McConnell, Project Manager
- Julie McPherson, Recreation Specialist
- Juddson Sechrist, Supervisory Environmental Specialist
- Karina Bryan, Archaeologist

- Rebecca Doolittle, Resource Management Supervisor
- Sarah Maciel, Realty Specialist
- Sharla Luxton, Archaeologist
- Tara Hagen, Realty Specialist

Chapter 5 References

Text Citation	Bibliographic Reference
Barry et al. 2007	Barry, J., S. Clayton, D. Happala, R. Mitchell, E. Thomas, J. Young, and S. Schweissing. 2007. *Technical Memorandum Alternative A-Crab Creek*. Available online at: https://www.usbr.gov/pn/programs/ea/wash/potholes/index.html (last accessed September 10, 2021).
Bay 2020	Bay, K. 2020. Personal communication. E-mail re: Dairy acquisition from Mr. Kevin Bay to Mr. John Hockberger. August 4, 2020.
Big Bend 2014	Big Bend Agricultural Appraisals, Inc. 2014. *Appraisal Report on* ____[29] *Dairy Property*. Dated May 28, 2014. Reviewed and approved by the Department of the Interior, Office of Valuation Services on May 30, 2014.
CEQ 1997	Council on Environmental Quality (CEQ). 1997. *Environmental Justice: Guidance Under the National Environmental Policy Act*. 1997.
Corps of Engineers 2010	U.S. Army Corps of Engineers. 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)*. U.S. Army Engineer Research and Development Center, Vicksburg, Mississippi. ERDC/EL TR-10-3. May 2010.
Ecology 2020a	State of Washington Department of Ecology (Ecology). 2020. *Determining if Areas in Washington meet National Air Quality Standards*. Available online at: https://ecology.wa.gov/Regulations-Permits/Plans-policies/Areas-meeting-and-not-meeting-air-standards (last accessed October 14, 2020).
Ecology 2020b	State of Washington Department of Ecology (Ecology). 2020. *Greenhouse Gas Emissions Data*. Available online at: https://ecology.wa.gov/Air-Climate/Climate-change/Greenhouse-gases/Greenhouse-gas-reporting/Facility-greenhouse-gas-reports (last accessed October 14, 2020).
Ecology 2021a	State of Washington Department of Ecology (Ecology). 2021. *Ecology declares drought emergency*. Available online at: https://ecology.wa.gov/About-us/Get-to-know-us/News/2021/2021-Drought-Declaration (last accessed August 10, 2021).
Ecology 2021b	State of Washington Department of Ecology (Ecology). 2021. *Clean Water Act – Section 401 Water Quality Certifications*. Available online at: https://ecology.wa.gov/Regulations-Permits/Permits-certifications/401-Water-quality-certification (last accessed July 27, 2021).
Ecology 2021c	State of Washington Department of Ecology (Ecology). 2021. *Model Toxics Control Act*. Available online at: https://ecology.wa.gov/Spills-

[29] The Property Owners' name has been replaced with a blank line, shown as ____. This continues through this Reference Section.

Text Citation	Bibliographic Reference
	Cleanup/Contamination-cleanup/Rules-directing-our-cleanup-work/Model-Toxics-Control-Act (last accessed July 28, 2021)
Ecology 2021d	State of Washington Department of Ecology (Ecology). 2021. *Voluntary Cleanup Program*. Available online at: https://ecology.wa.gov/Spills-Cleanup/Contamination-cleanup/Voluntary-Cleanup-Program (last accessed July 28, 2021)
Ecology 2021d	State of Washington Department of Ecology (Ecology). 2021. Letter from Ecology to the ____, dated May 13, 2021.
EPA 1972	U.S. Environmental Protection Agency (EPA). 1972. Clean Water Act, enacted as the Federal Water Pollution Control Act. June 30, 1948 (Clean Water Act; 1972 amendments). Citation: 33 U.S.C §§ 1251 et seq.
EPA 2007	United States Environmental Protection Agency (EPA). 2007. *National Primary Drinking Water Regulations: Ground Water Rule*. 40 CFR Parts 9, 141 and 142 [EPA-HQ-OW-2002-0061; FRL-8231-9] RIN 2040-AA97) Federal Register, Volume 71 Issue 216 (Wednesday, November 8, 2006). Available online at: https://www.govinfo.gov/content/pkg/FR-2006-11-08/html/06-8763.htm (last accessed September 2, 2020).
EPA 2014	United States Environmental Protection Agency (EPA). 2014. *Brownfields Fact Sheet AAI: Reporting Requirements and Suggestions on Report Content.* EPA 560-F-14-003. February 2014. Available online at: https://www.epa.gov/sites/default/files/2015-05/documents/aai_reporting_factsheet.pdf (last accessed July 27, 2021).
EPA 2019	U.S. Environmental Protection Agency (EPA). 2019. *Moses Lake Wellfield Superfund Groundwater and Soil Cleanup Fact Sheet*. Region 10, June 2019. Available online at: https://www.epa.gov/superfund/moses-lake-wellfield (last accessed December 13, 2019.
EPA 2020a	U.S. Environmental Protection Agency (EPA). 2020. *Sources of Greenhouse Gas Emissions*. Available online at: https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions (last accessed October 14, 2020).
EPA 2020b	U.S. Environmental Protection Agency (EPA). 2020. *Sources of Greenhouse Gas Emissions – Agriculture Sector Emissions.* Available online at: https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions#land-use-and-forestry (last accessed October 14, 2020).
EPA 2020c	U.S. Environmental Protection Agency (EPA). 2020. *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2018*. EPA 430-R-20-002. Available online at: https://www.epa.gov/sites/production/files/2020-04/documents/us-ghg-inventory-2020-main-text.pdf (last accessed November 23, 2020).
EPA 2021	U.S. Environmental Protection Agency (EPA). 2021. *Current Implemntatio of Waters of the United States.* Available online at:

Text Citation	Bibliographic Reference
	https://www.epa.gov/wotus/current-implementation-waters-united-states (last accessed November 16, 2021).
ESD 2020	Washington State Employment Security Department (ESD). 2020. *Grant County Profile*. December 2020. Website accessed July 22, 2021. https://esd.wa.gov/labormarketinfo/county-profiles/benton
Federal Interagency Committee for Wetland Delineation 1989	Federal Interagency Committee for Wetland Delineation. 1989. *Federal Manual for Identifying and Delineating Jurisdictional Wetlands*. U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, and U.S.D.A. Soil Conservation Service, Washington, D.C. Cooperative technical publication. 76 pp. plus appendices.
Federal Register 1977	Federal Register. 1977. Executive Order No. 11990, *Protection of Wetlands*. 42 F.R. 26961 May 24, 1977. Available online at: https://www.epa.gov/cwa-404/protection-wetlands-executive-order-11990 (last accessed October 26, 2020).
Federal Register 1994	Federal Register. 1994. *Government-to-Government Relations With Native American Tribal Governments*. 59 F.R. 85 May 4, 1994. Available online at: https://www.govinfo.gov/content/pkg/FR-1994-05-04/html/94-10877.htm (last accessed September 10, 2021).
Federal Register 2020	Federal Register. 2020. *Clean Water Act Section 401 Certification Rule*. July 13, 2020. Available online at: https://www.epa.gov/sites/default/files/2020-07/documents/clean_water_act_section_401_certification_rule.pdf (last accessed July 27, 2021).
GAO 1997	U.S. General Accounting Office (GAO). 1997. GAO/T-RCED-97-150. *Bureau of Reclamation, Reclamation Law and the Allocation of Construction Costs for Federal Water Projects*. Testimony before the Subcommittee on Water and Power Resources, Committee on Resources, House of Representatives. Available online at: https://www.gao.gov/assets/t-rced-97-150.pdf#:~:text=In%201939%2C%20the%20Congress%20fundamentally%20changed%20the%20nature,municipal%20and%20industrial%20water%20supply%2C%20hydroelectric%20power%20generation%2C (last accessed August 30, 2021).
Germaine and Hays 2007	Germaine, S., and D. Hays. 2007. *Distribution and Post-Breeding Environmental Relationships of Northern Leopard Frogs (Rana pipiens) in Grant County, Washington*. Draft Report. Washington Department of Fish and Wildlife, Olympia, Washington.
Neibergs and Brady 2013	Neibergs, S. and M. Brady. 2013. *2011 Economic Contribution Analysis of WA Dairy Farms and Dairy Processing: An Input-Output Analysis*. School of Economic Sciences Washington State University Extension. May 2013.
PPP 2020	Paycheck Protection Program Loan Information. 2020. Federal Paycheck Protection Program. Available online at: https://www.federalpay.org/paycheck-

Text Citation	Bibliographic Reference
	protection-program/dieringer-dairy-moses-lake-wa (last accessed July 12, 2021).
Reclamation 1998	Bureau of Reclamation. 1998. *Columbia Basin Scattered Tracts Resource Management Plan.* January 1998. Available at Ephrata Field Office.
Reclamation 2007	Bureau of Reclamation. 2007. *Potholes Reservoir Supplemental Feed Route Environmental Assessment and Finding of No Significant Impact*. Available online at: https://www.usbr.gov/pn/programs/ea/wash/potholes/index.html (last accessed November 6, 2020).
Reclamation 2021	Bureau of Reclamation. 2021. *Columbia Basin Project Monthly Water Supply Report*. Report detailing water supply prospects, end of July 2021. Ephrata Field Office, Ephrata, Washington.
Shannon & Wilson 2019	Shannon & Wilson. 2019. *Wetland Delineation Report, Crab Creek West Channel Conveyance Improvement Project, Moses Lake, Washington*. Shannon & Wilson, Inc., December 13, 2019.
U.S. Census Bureau 2019	U.S. Census Bureau 2019. Quickfacts Website. Available online at: https://www.census.gov/quickfacts/grantcountywashington (last accessed July 22, 2021).
USDA 2021	U.S. Department of Agriculture (USDA). 2021. Economic Research Service calculations using USDA, National Agricultural Statistics Service, "Milk cows and production by State and region data." Available online at: https://www.ers.usda.gov/data-products/dairy-data/ (last accessed September 10, 2021).
USFWS 2020	U.S. Fish and Wildlife Service (USFWS). 2020. *National Wetlands Inventory*. Available online at https://www.fws.gov/wetlands/Data/Mapper.html (last accessed October 29, 2020).
WAC 1990	Washington Administrative Code (WAC). 1990. WAC 173-200, *Water Quality Standards for Groundwaters of the State of Washington*. October 31, 1990. Available online at https://apps.leg.wa.gov/WAC/default.aspx?cite=173-200-040&pdf=true (last accessed December 13, 2019).
WAC 2019	Washington Administrative Code (WAC). 2019. WAC 173-201A, *Water Quality Standards for Surface Waters of the State of Washington*. Available online at: https://apps.leg.wa.gov/WAC/default.aspx?cite=173-200-040&pdf=true (last accessed December 13, 2019).
White Bluffs 2018	White Bluffs. 2018. White Bluffs, Consulting for Grant County. *Grant County Comprehensive Plan*. June 2018. Available online at: https://www.grantcountywa.gov/DocumentCenter/View/447/Grant-County-Comprehensive-Plan-PDF (last accessed July 22, 2021).

Text Citation	Bibliographic Reference
White Shield 2020a	White Shield, Inc. (White Shield). 2020. *Updated Phase I Environmental Site Assessment ____ Dairy Property*. U.S. Bureau of Reclamation Agreement No: R15PA00024, WSI Project No: 115-061-04. July 15, 2020.
White Shield 2020b	White Shield, Inc. (White Shield). 2020. *Initial Phase II Site Assessment Report ____ Dairy Property*. U.S. Bureau of Reclamation; GSA Contract No. GS-10F-0357U, Order No. 140R1018F0032. July 28, 2020.
White Shield 2021a	White Shield, Inc. (White Shield). 2021. *Final Phase II Site Assessment Report to Determine Soil Conditions in the Tank Areas, North & West Side of the Commodity Shed, and West Side of the Calf Shed on the ____ Dairy Property*. GSA Contract No. GS-10F-0357U, Order No. 140R1018F0032. January 13, 2021
White Shield 2021b	White Shield, Inc. (White Shield). 2021. ___Dairy Lagoon Decommissioning – Final Report. January 7, 2021
WSDA 2021	Washington State Department of Agriculture (WSDA). 2021. Dairy Nutrient Management Program. Washington dairies data credit. Available online at: https://geo.wa.gov. Washington Geospatial Open Data Portal, last accessed July 27, 2021.