

**United States Department of the Interior  
Bureau of Land Management**

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**Finding of No Significant Impact  
Environmental Assessment  
DOI-BLM-UT-G021-2011-0008-EA**

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**July 2011**

**Adobe Wash Reservoir and Adobe Pipeline**

**Location:** *Northwest of Orangeville and Castle Dale,  
Emery County, Utah*

**Applicant/Address:** *Cottonwood Creek Consolidated Irrigation Company  
61 East 100 North  
Castle Dale, UT 84513*

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U.S. Department of the Interior  
Bureau of Land Management  
Price Field Office  
125 South 600 West  
Price, Utah 84501  
Phone: 435-636-3610  
FAX: 435-636-3657



# FINDING OF NO SIGNIFICANT IMPACT

## Environmental Assessment

*DOI-BLM-UT-G021-2011-0008-EA*

### *Adobe Wash Reservoir and Adobe Pipeline*

Based on the analysis of potential environmental impacts contained in the attached environmental assessment, and considering the significance criteria in 40 CFR 1508.27, I have determined that the construction, operation, and maintenance of a pipeline and reservoir in the Adobe Wash area of Emery County, Utah will not have a significant effect on the human environment. An environmental impact statement is therefore not required.

*Patricia A. Clabough*  
Authorized Officer

*7-25-2011*  
Date

**United States Department of the Interior  
Bureau of Land Management**

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**Decision Record  
Environmental Assessment  
DOI-BLM-UT-G021-2011-0008-EA**

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**DECISION RECORD**  
**Environmental Assessment**  
**DOI-BLM-UT-G021-2011-0008-EA**  
***Adobe Wash Reservoir and Adobe Pipeline***

It is my decision to authorize a Federal Land Policy and Management Act (FLPMA) Title V right-of-way (ROW) to Cottonwood Creek Consolidated Irrigation Company for 30 years with the right of renewal. This ROW authorizes the construction, operation, and maintenance of a pipeline and reservoir in the Adobe Wash area of Emery County, Utah.

XTO's existing gas and water pipelines that are located in the area of the reservoir will require a reroute which will be authorized by amending their ROW for the reroute.

The following table shows the project components in total, including pipelines, reservoir, access routes, staging areas, and borrow areas that comprise the Project Area, which occupies a total of approximately 181 acres including 72.1 acres on Bureau of Land Management (BLM) Managed lands.

Project Component	Description	ROW Acres Private Land	ROW Acres Public Land*	Total Component Acres
Adobe Pipeline	15,300 feet x 50 feet	15.8	1.8	17.6
Adobe Wash Reservoir & Dam		10.0	65.0	75.0
(Adobe Wash Dam	Footprint is within ROW requested on line above	4.1	2.3	6.4)
Existing XTO Pipeline Realignment	4,640 feet x 50 feet	0	5.3	5.3
Reservoir to PacifiCorp/CWCWCP pipelines	1,000 feet x 50 feet	1.2	0	1.2
Access Roads		0.5	0	0.5
Staging Areas		1.5	0	1.5
Borrow Areas		80.0	0	80.0
Total Acres		109.0	72.1	181.1

Location of Proposed Action:

**Reservoir**

T. 18 S., R. 7 E., Salt Lake Meridian, Emery County, Utah  
Section 24: SW $\frac{1}{4}$ SW $\frac{1}{4}$ ;  
Section 25: N $\frac{1}{2}$ NW $\frac{1}{4}$ , SE $\frac{1}{4}$ NW $\frac{1}{4}$ ;  
Section 26: Lot 1.

**Pipeline**

T. 18 S., R. 7 E., Salt Lake Meridian, Emery County, Utah  
Section 15: SW $\frac{1}{4}$ NE $\frac{1}{4}$ ;  
Section 24: SW $\frac{1}{4}$ SW $\frac{1}{4}$ .

**PLAN CONFORMANCE AND CONSISTENCY:**

The proposed action has been reviewed and determined to be in conformance with the terms and conditions of the Resource Management Plan (RMP) as required by 43 CFR 1610.5. This is shown on page 123 of the plan, LAR-29 reads as follows: "Additional ROWs could be granted consistent with RMP goals and objectives."

Lands and Realty Goals and Objectives on Page 115 state:

- Make public lands available through ROWs or leases for such purposes as transportation routes, utilities, transmission lines, and communication sites, in coordination with other resource goals.
- Maintain availability of public lands to meet the habitation, cultivation, trade, mineral development, recreation, and manufacturing needs of external customers and the general public.
- Make public lands available to meet the needs for smaller ROWs (e.g., roads or pipelines for oil fields).

Land Use Plan Name: Price Field Office Resource Management Plan

Date Approved/Amended: October 31, 2008

It has also been determined by review of the RMP, that the Proposed Action would not conflict with other decisions throughout the Price Field Office RMP.

**Alternatives Considered:** In order to meet the Purpose and Need of the Project an alternative would need to provide dependable, manageable, and efficient transport of water, satisfy all existing water demands and rights, and be financially feasible. Further, it would need to enhance the reliability of the basin-wide pressure irrigation system and work in conjunction with the CWCWCP (Reclamation 1993). Loss of water from evaporation, transpiration, and infiltration would need to be reduced. An alternative that requires pumping of the water rather than a gravity-feed system would be too costly to operate; this limits the topographic routes for delivery systems as well as the location for the reservoir. Consequently, only the Proposed Action and the No Action Alternative were developed and analyzed.

Under the No Action Alternative the Proposed Action would not be built and water management practices could not be replaced by more modern and efficient irrigation water conveyance systems. The Purpose and Need of the Project would not be met.

**Rationale for Decision:** Based on a review of the project described above and field office staff recommendations attached, I have determined that the project is in conformance with the land use plan and is categorically excluded from further environmental analysis. It is my decision to approve the action as proposed, with the following stipulations and the terms and conditions in the grant document:

- The Project will comply with all applicable federal and state laws and local zoning ordinances. Best Management Practices approved by the BLM will be utilized to minimize the potential for soil erosion and the introduction of non-native, invasive plant species on public lands. The Project will comply with BLM's Stipulations for Surface Disturbing Activities and the Green River District Reclamation Guidelines.

### **Cultural Resources**

- Known NRHP-eligible cultural resources, other than the canal itself, will be avoided by pipeline and dam construction. Temporary fencing will be erected during construction activities and/or an archaeological monitor will be present for any activities in the vicinity of NRHP-eligible sites, as directed by the BLM.

### **Threatened or Endangered Plants/BLM Sensitive Species**

- Special attention will be paid to minimize surface disturbance in occupied habitat; occupied habitat that could be disturbed through access roads, dam construction, or fence line construction will be identified. Where appropriate, the applicant will flag or install temporary fence around the areas of occupied habitat to ensure that disturbance will be avoided or minimized to the extent practicable (examples – no blading of the fence line, route access roads away from the habitat). The fence line will be installed similar to the proposed drawing, except where it is possible to route the fence either to protect more plants or to reduce the impact of the fence line on the populations. The actual route on the ground will be determined in coordination with the BLM at the time of construction.
- After filling of the reservoir and construction of the fence, the applicant will complete one monitoring report detailing the population status and condition within and near the project area compared to the condition of the populations in 2011.
- For construction of the XTO pipeline re-route, XTO will work with a BLM biologist to mark the occupied habitat prior to initiating construction activities. The applicant will flag or temporarily fence the areas of occupied habitat that are within the area of disturbance for the pipeline and/or near access routes for the pipeline re-route. Where possible, surface disturbance will be avoided or minimized in the identified area (examples - minor adjustment to the pipeline route to avoid dense clusters, route access roads away from the occupied habitat, avoid pushing the spoils piles onto occupied habitat).
- A migratory bird clearance survey could be conducted in early summer 2011 prior to initiation of dam construction activity and the XTO pipeline replacement activity. Additional surveys will be conducted if needed, in the appropriate time period prior to Adobe pipeline construction activity in the following year.
- Appropriate follow-up measures will be taken to assess impacts to raptors or migratory birds, and to reduce such impacts to less than significant. All other mitigating measures have been included in the description of the Proposed Action and list of stipulations.

**Protest/Appeal Language:** This decision may be appealed to the Interior Board of Land Appeals, Office of the Secretary, in accordance with the regulations contained in 43 CFR, Part 4 and the enclosed Form 1842-001. If an appeal is taken, your notice of appeal must be filed in the office of the Authorized Officer at 125 South 600 West, Price, Utah 84501, within 30 days from receipt of this decision. The appellant has the burden of showing that the decision appealed from is in error.

If you wish to file a petition (request) pursuant to regulation 43 CFR 2801.10 or 2881.10 for a stay (suspension) of the effectiveness of this decision during the time that your appeal is being reviewed by the Board, the petition for a stay must accompany your notice of appeal. A petition for a stay is required to show sufficient justification based on the standards listed below. Copies of the notice of appeal and petition for a stay must also be submitted to each party named in this decision and to the Interior Board of Land Appeals and to the appropriate Office of the Solicitor (see 43 CFR 4.413) at the same time the original documents are filed with this office. If you request a stay, you have the burden of proof to demonstrate that a stay should be granted.

Standards for Obtaining a Stay

Except as otherwise provided by law or other pertinent regulation, a petition for a stay of a decision pending appeal shall show sufficient justification based on the following standards:

- (1) The relative harm to the parties if the stay is granted or denied,
- (2) The likelihood of the appellant's success on the merits,
- (3) The likelihood of immediate and irreparable harm if the stay is not granted, and
- (4) Whether the public interest favors granting the stay.

Patricia A. Claiborne  
Authorized Officer

7-25-2011  
Date

**United States Department of the Interior  
Bureau of Land Management**

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**Adobe Wash Reservoir and Adobe Pipeline  
DOI-BLM-UT-G021-2011-0008-EA**

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# **Adobe Wash Reservoir and Adobe Pipeline**

## **DOI-BLM-UT-G021-2011-0008-EA**

### **1.0 PURPOSE & NEED**

#### **1.1 Introduction**

This Environmental Assessment (EA) has been prepared to disclose and analyze the environmental consequences of the Adobe Wash Reservoir and Adobe Pipeline Project as proposed by Cottonwood Creek Consolidated Irrigation Company (CCCIC). The CCCIC submitted Right-of-Way (ROW) applications to the Bureau of Land Management (BLM), Price Field Office (PFO) to support the construction of a dam to create the Adobe Wash Reservoir and installation of the Adobe Pipeline (the Project); both would cross BLM-administered lands in addition to private lands. This Project is part of a multi-step process to improve the water conveyance infrastructure and water use under jurisdiction of the CCCIC. The Adobe Pipeline would replace a portion of the existing earthen Clipper Western Canal. Future efforts would include additional replacement of canals (Clipper Western Canal, Western Canal, Clipper Canal, and Blue Cut Ditch) and associated feeder ditch with pipelines, downstream of the proposed Adobe Wash Reservoir. The benefits to updating this water use and conveyance system were identified and analyzed by the Utah Board of Water Resources (UBWR 2010). Support and funding for the Project would be provided by several entities and programs including the UBWR, the Colorado River Salinity Control Program, the Bureau of Reclamation (Reclamation), the Natural Resources Conservation Service (NRCS), PacifiCorp, and the CCCIC.

An EA is a site-specific analysis of potential impacts that could result with the implementation of a proposed action or alternatives to the proposed action. The EA assists the BLM in project planning and ensuring compliance with the National Environmental Policy Act (NEPA), and in making a determination as to whether any “significant” impacts could result from the analyzed actions. “Significance” is defined by NEPA and is found in regulation 40 CFR 1508.27. An EA provides evidence for determining whether to prepare an Environmental Impact Statement (EIS) or a statement of “Finding of No Significant Impact” (FONSI). If the decision maker determines that this project has “significant” impacts following the analysis in the EA, then an EIS would be prepared for the project. If not, a Decision Record may be signed for the EA approving the selected alternative, whether the proposed action or another alternative. A Decision Record (DR), including a FONSI statement, documents the reasons why implementation of the selected alternative would not result in “significant” environmental impacts (effects) beyond those already addressed in the PFO Resource Management Plan (RMP) (BLM 2008).

The Project would include:

- Construction of a 60-foot high dam in Adobe Wash in 2011;
- Installation of nearly 3 miles of pipeline in 2012 (the Adobe Pipeline) to replace the northernmost segment of the Clipper Western Canal;
- CCCIC support per agreement with XTO Energy (XTO) for XTO's construction of 0.88 miles (4,640 feet) of natural gas pipeline and 0.88 miles (4,640 feet) of water pipeline (XTO Re-Alignment) to replace the pipeline sections within the Reservoir footprint in 2011;
- Removal or abandonment of a 0.64 mile (3,370 feet) section of XTO natural gas pipeline present within the Reservoir footprint and abandonment in place of associated water pipeline (3,370 feet) in 2011;
- Construction of approximately 1 mile of 6 foot-high chainlink fencing to surround the Adobe Wash Reservoir in 2012;
- Inundation of a maximum of 75 acres of land with irrigation water in 2013 or later, once the Adobe Pipeline and dam are complete;
- Installation of 1,000 feet of pipeline to connect the Adobe Wash Reservoir with the existing PacifiCorp pipeline and the Clipper Western Canal Water Conservation Project (CWCWCP) pipeline system.

## **1.2 Background**

In the arid west, there is not enough seasonal rainfall to sustain crops through the summer months, therefore an irrigation system is the means to supply the needed water. A lack of water storage to capture spring runoff for late season irrigation is a common problem. Irrigation systems are generally comprised of a combination of canals, ditches, pipelines, and a water source. The basic types of irrigation are flood and sprinkler. Flood irrigation, the oldest form of irrigation, consists of releasing water over the surface of the land to flood the fields. The efficiency of flood irrigation in Utah generally ranges between 35 to 55 percent (Utah Division of Water Resources (UDWR 2010)). Irrigation inefficiencies are a result of too much water, too little water, and evaporation and seepage during conveyance. Sprinkler irrigation utilizes pipe and sprinkler heads to distribute water to the fields. These systems are generally more efficient than flood irrigation as the quantity of water applied is controlled and evaporation and seepage are greatly reduced by conveyance through pipes. Agricultural sprinkler systems in Utah are generally 60 percent efficient (UDWR 2010).

The existing CCCIC irrigation system includes earthen (i.e., unlined) canals (Clipper Western, Blue Cut, Mammoth, etc.) that divert and convey water from Cottonwood Creek to laterals that feed off-farm and on-farm ditches for flood irrigation. Over the

years, maintenance of the irrigation system has included minor improvements, such as new headgates and diversion structures. Generally, the only maintenance on earthen canals is to keep the flow paths open by removal of sediment deposits and vegetation within the channel and control vegetation growth on the canal embankments (Reclamation 1993).

The irrigation system currently under jurisdiction of the CCCIC was initially constructed in the 1880s by pioneer settlers. Several canals were constructed to divert water from Cottonwood Creek including the Blue Cut, Clipper, Great Western (aka Western), Mammoth, and several smaller ditches (Geary 1996). Each of these canals was constructed and operated by a separate company which soon culminated in water rights disputes. The eventual outcome of these water rights disputes was a plan for consolidation of the systems; the CCCIC was organized in April 1903 by the stockholders of all the major canals except the Blue Cut, who eventually joined in July of 1937 (Geary 1996).

The Emery County Project that was completed in 1966 included the construction of Joes Valley Dam, the earth-lined (with sections of asphalt membrane lining) Cottonwood Creek-Huntington Canal, Huntington North Dam and Dikes, and Swasey Diversion Dam. When Utah Power and Light constructed Huntington and then Hunter power plants in the 1970s, it was Joes Valley Reservoir water shares obtained through the CCCIC, as well as water rights to Cottonwood Creek and Huntington Creek that allowed this development to move forward.

With the passage of the Colorado River Salinity Control Act in 1974, irrigation system improvements were proposed to combat irrigation run-off and canal seepage, to which was attributed 60 percent of the salt loading to the Colorado River from the Price and San Rafael systems (Simmonds 2000).

A feasibility study to reduce salinity in the Price and San Rafael Rivers Unit was authorized by Title II of the Colorado River Salinity Control Act. Under the Reclamation Planning Report/Final EIS for the Price-San Rafael Rivers Unit, Utah (Reclamation 1993), the Reclamation analyzed the benefits to improving irrigation efficiency balanced against the consideration of protecting irrigation-induced wetland, riparian vegetation, and aquatic habitat. The preferred resource protection plan included the installation of sprinkler irrigation systems, improved surface irrigation and irrigation water management, and the elimination of water from all open conveyance systems in the Price-San Rafael Rivers Unit project area during the winter (non-irrigation) season (Reclamation 1993). In the mid-1990s, the Reclamation began the conversion of historic, unlined canals to buried pipe for water conveyance to reduce salt loads to the Colorado River via the Price and San Rafael systems. The CWCWCP is part of this conversion. Water would be supplied to the CWCWCP from the Adobe Wash Reservoir.

The Price-San Rafael Rivers Unit basin-wide Reclamation project was divided into various components (described as phases in the EIS) for funding purposes. The portion of the basin-wide project that has been funded by the Reclamation at this time includes the CWCWCP; the overall system layout for this project was authorized under the noted EIS (Reclamation 1993). The Reclamation authorization included an additional requirement (which has been satisfied) for cultural surveys on all segments of the irrigation system prior to implementation of the water conveyance improvements.

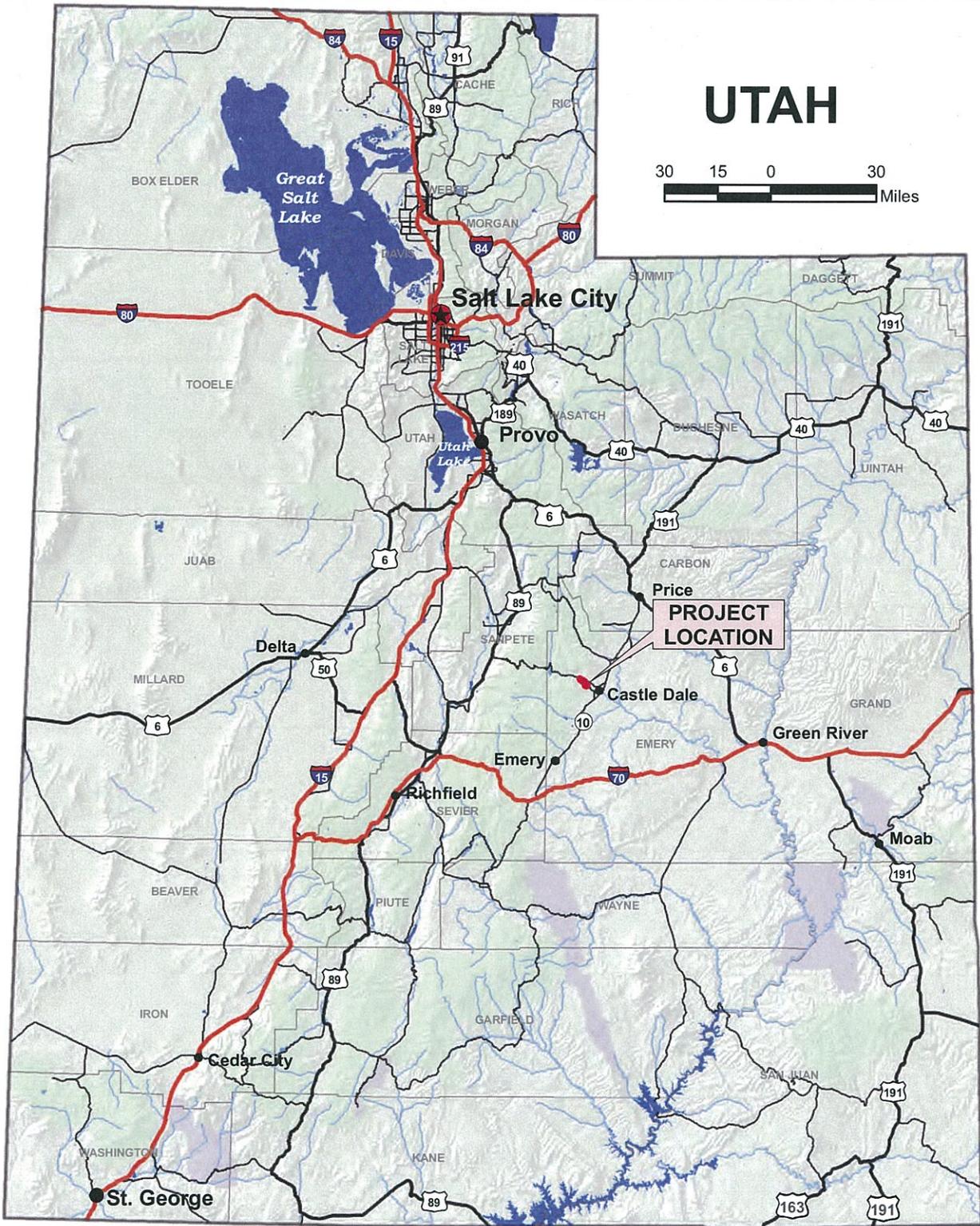
The Adobe Wash Reservoir would store water conveyed by the Adobe Pipeline from Cottonwood Creek, which would then be conveyed from the Reservoir to the CWCWCP pipeline system. The Adobe Wash Reservoir and Adobe Pipeline are essential components of a larger system and have funding appropriated; these components require BLM ROWs, thus an EA is being prepared by the BLM to encompass the Adobe Wash Reservoir and Pipeline as well as the connection into PacifiCorp's pipeline and the CWCWCP.

The CCCIC (Proponent) proposes to construct, operate, and maintain a pipeline and reservoir in the Adobe Wash area of Emery County, Utah (**Figure 1**). Both facilities would require ROWs across BLM-administered land, although the majority of the project would be on private land. The Adobe Pipeline and Reservoir would serve CCCIC irrigation interests (approximately 80 percent), the Hunter Power Plant (approximately 70 percent) via the PacifiCorp pipeline, and provide secondary irrigation water to in the communities of Orangeville and Castle Dale. The Project, in conjunction with future irrigation system improvements (Blue Cut, Mammoth, etc.) authorized (but not presently funded) under the Planning Report/Final EIS for the Price-San Rafael Rivers Unit, Utah EIS (Reclamation 1993), would continue to further the objectives of the Colorado River Salinity Control Act.

The Clipper Western Canal currently benefits 2,660 acres and 80 landowners (See **Figure 2**). Under future funding and approvals, the Adobe Wash Reservoir and associated pipeline systems including the Clipper Western, Blue Cut, and Upper Mammoth would function as part of a basin-wide pressure irrigation system for 5,863 acres. The system will ultimately have the capability of supplying irrigation for up to a maximum of 7,000 acres in the future. All of these irrigation systems, other than the Adobe Wash Reservoir and Pipeline were analyzed under the Reclamation EIS.

The proposed system, utilizing a pipeline connection constructed from the Adobe Wash Reservoir to the existing PacifiCorp pipeline, would allow PacifiCorp to obtain cooling water for its Hunter Power Plant year-round. This would provide an alternative to the current draw of 20 cfs of water from Millsite Reservoir during the winter months. Water would continue to be drawn from Millsite Reservoir as needed, however PacifiCorp would have the option of drawing water from the Adobe Reservoir.

# UTAH



## Legend

National Forests

National Parks

Interstate Freeway

### Major Highways (Regional)

3

U.S. Highway



## COTTONWOOD CREEK CONSOLIDATED IRRIGATION COMPANY ADOBE RESERVOIR AND PIPELINE EA

### FIGURE 1 PROJECT LOCATION

DRAWN BY	CP	DATE DRAWN	03/24/2011
SCALE	1:2,750,000		

### **1.3 Need for the Proposed Action**

The BLM has received ROW applications submitted by the CCCIC for the purpose of occupying BLM-administered lands to construct, operate, and maintain a pipeline and reservoir in the Adobe Wash area of Emery County, and to complete the CWCWCP. The CCCIC has proposed the pipelines and reservoir to provide a dependable and manageable source of water to sustain agricultural and energy production, maintain natural resources, and allow for continued development of the local communities and economy. This Project is needed as part of a larger irrigation system upgrade to improve the delivery, conservation, and use of water by constructing a modernized system that would serve the needs of its clients for the foreseeable future while reducing salt loads to the Colorado River.

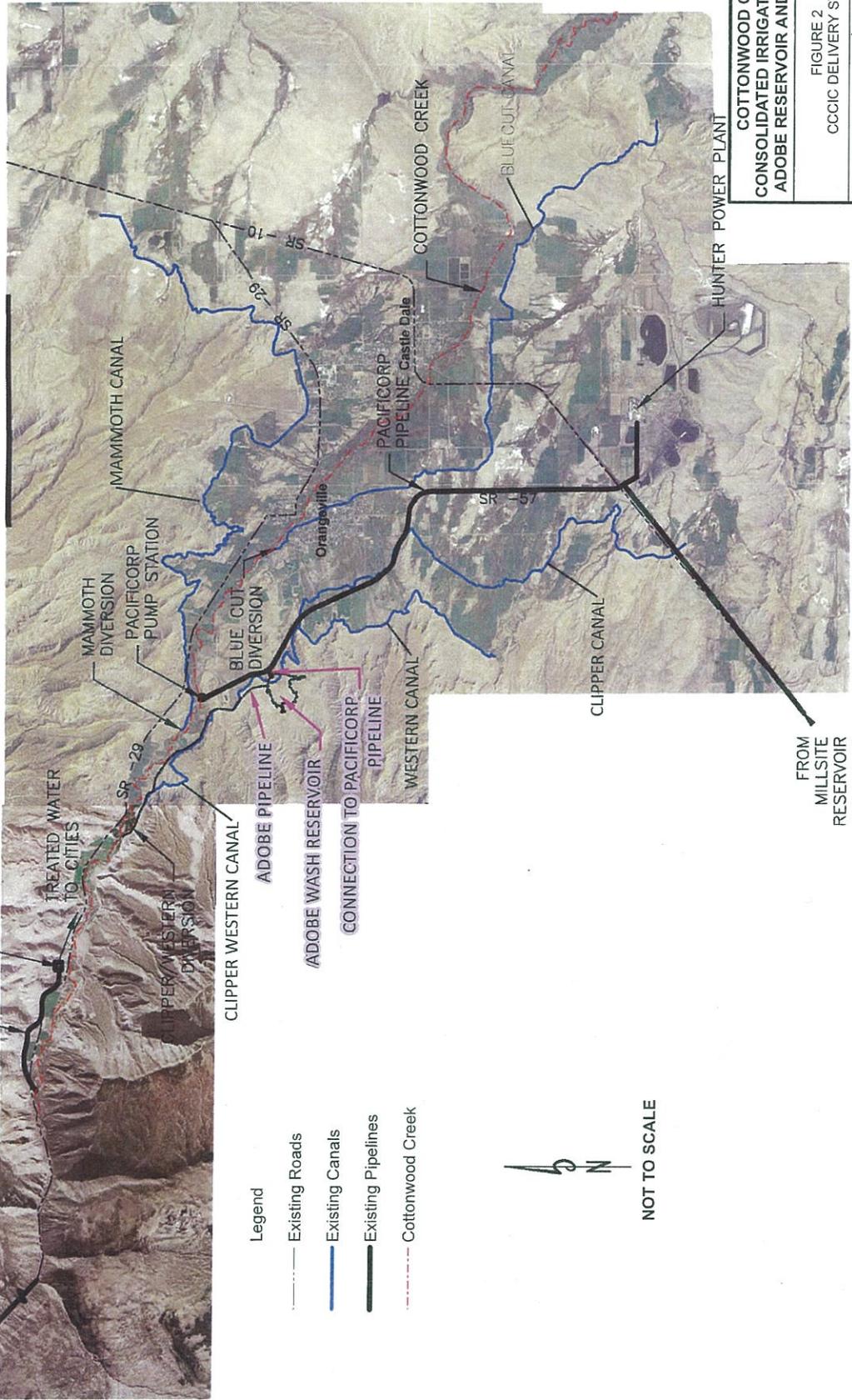
The Adobe pipeline is needed to supply water from Cottonwood Creek and Joes Valley Reservoir to the proposed Adobe Wash Reservoir. It would replace the upper segment of the earthen Clipper Western Canal, reducing water losses to evaporation and infiltration. In order to be gravity fed, the pipeline route is dictated by topography; thus the pipeline route crosses public land, as does the existing canal system.

The Adobe Wash Reservoir would provide water storage for a more consistent and dependable irrigation supply; the CWCWCP pipeline would transport water from the Adobe Wash Reservoir to the Clipper Western portion of the irrigation system. The increased water surface elevation of the reservoir is necessary to provide enough pressure for sprinkler irrigation, which is substantially more efficient than flood irrigation. Like the proposed pipeline, the location of the embankment (dam) and reservoir are dictated by topography, and portions of the embankment and the reservoir, as well as the interconnection pipelines into the CWPWCP pipeline system and the PacifiCorp pipeline would be on BLM-administered lands.

This Project would be a portion of a larger irrigation system upgrade. It is estimated that irrigation water delivery efficiency for the open canal irrigation system is 31 percent (35 percent on-farm and 88 percent conveyance); in other words, only about a third of the water delivered by the current system is utilized by growing crops, as the remainder runs off the field, deep percolates below the root zone, leaks from ditches, or is consumed by non-crop plants. Completion of this Project and the future irrigation system improvements (additional piping and sprinkler systems) would increase efficiency from 31 percent to 65 percent (65 percent on-farm and 100 percent conveyance) (UBWR 2010). There would be no change in water rights.

JOES VALLEY RESERVOIR

PEACOCK POND  
WATER TREATMENT PLANT



Legend

- Existing Roads
- Existing Canals
- Existing Pipelines
- - - Cottonwood Creek



NOT TO SCALE

Drawing supplied by Johansen & Tuttle

COTTONWOOD CREEK  
CONSOLIDATED IRRIGATION COMPANY  
ADOBE RESERVOIR AND PIPELINE EA

FIGURE 2  
CCCC DELIVERY SYSTEM

DRAWN BY	CP	DATE	03/29/2011
SCALE			1:12,000

#### **1.4 Purpose(s) of the Proposed Action**

BLM is considering approval of requests from the CCCIC for ROWs across BLM-administered lands so the CCCIC may construct, maintain, and operate the Adobe Wash Pipeline and Reservoir; these would require separate ROW authorizations. BLM is also considering approval of a Sundry Notice from XTO to relocate segments of a natural gas pipeline and associated water pipeline, within the existing XTO lease area (UTU-67532), away from the Adobe Wash Reservoir footprint. In addition, BLM is considering a ROW authorization for a segment of CWCWCP pipeline that would cross BLM-administered lands in the southern part of that project, which was analyzed as part of the Colorado River Salinity Control Program EIS for the Price – San Rafael Rivers Unit, Utah (Reclamation 1993). BLM will consider approval of the proposed ROWs in a manner that avoids or reduces impact on other resources and activities as identified through internal and public scoping, best meets the purpose and need, and prevents unnecessary or undue degradation of the public lands.

The Proposed Action would comply with the Federal Land Policy and Management Act (FLPMA). Notably, the FLPMA under Sec. 501 [43 U.S.C. 1761] authorizes the Secretary of the Interior “to grant, issue, or renew rights-or-way over, upon, under, or through such lands for–

1. reservoirs, canals, ditches, flumes, laterals, pipes, pipelines, tunnels, and other facilities and systems for the impoundment, storage, transportation, or distribution of water” (BLM 2001).

The Proposed Action would also comply with the terms of the Mineral Leasing Act (MLA) outlined in 43 CFR Part 2880, which apply to pipelines for conveyance of oil and gas. Under these regulations, it is BLM's objective to grant ROWs “to any qualified individual, business, or government entity and to direct and control the use of rights-of-way on public lands in a manner that:

- (a) Protects the natural resources associated with Federal lands and adjacent lands, whether private or administered by a government entity;
- (b) Prevents unnecessary or undue degradation to public lands;
- (c) Promotes the use of rights-of-way in common considering engineering and technological compatibility, national security, and land use plans; and
- (d) Coordinates, to the fullest extent possible, all BLM actions under the regulations in this part with state and local governments, interested individuals, and appropriate quasi-public entities.”

The BLM will decide whether or not to grant the following approvals and if so under what terms and conditions:

- Adobe Pipeline ROW
- Adobe Reservoir ROW
- UP&L Interconnection Pipeline ROW
- Sundry Notice for Relocation of XTO Pipeline On-lease

### **1.5 Conformance with BLM Land Use Plan(s)**

Enabling the replacement of flood irrigation with sprinkler irrigation over as many as 7,000 acres, the Proposed Action is in conformance with the following PFO RMP goals and objectives:

#### Goals

- Prevent excessive soil erosion.
- Maintain or restore the chemical, physical, and biological integrity of the area's soil and waters.

#### Objectives

- Manage resources to improve streams listed as water quality limited and prevent listing of additional streams under the Clean Water Act, Section 303(d).
- Manage resources to reduce salinity loading where possible in accomplishing the goals and objectives outlined in the Colorado River Basin Salinity Control Act.
- Implement management actions to ensure that sufficient quantity, quality, and timing of water is present to support human and economic uses of water on public lands, including livestock grazing, recreation, forestry, and mineral development.

#### Management Decisions

- WAT-3. Implement appropriate best management practices such as those found in the Utah Nonpoint Source Management Plan and other reference documents for protection of soil, water, and riparian resources.

The PFO RMP specifies the following, under the heading "Lands and Realty":

#### Goals

- Make public lands available through ROWs or leases for such purposes as transportation routes, utilities, transmission lines, and communication sites, in coordination with other resource goals.

## Objectives

- Maintain availability of public lands to meet the habitation, cultivation, trade, mineral development, recreation, and manufacturing needs of external customers and the general public.
- Make public lands available to meet the needs for smaller ROWs (e.g., roads or pipelines for oil fields).

### **1.6 Relationship to Statutes, Regulations, Agencies or other Plans**

In addition to FLPMA, mentioned above, the following statutes, regulations, agencies, and other plans may pertain to the proposed action:

- Mineral Leasing Act (MLA), for authorizing the reroute of the XTO gas pipeline;
- Federal Fish and Wildlife Coordination Act, administered by the U.S. Fish and Wildlife Service (USFWS), for reservoirs with a surface area greater than ten acres;
- Reclamation and NRCS, which will fund various portions of the overall project (i.e., NRCS for on-farm sprinkler systems and Reclamation for the Clipper Western Canal);
- Emery County Water Conservancy District (EWCD);
- Utah Division of Wildlife Resources (DWR) for potential wildlife and fisheries impacts;
- Utah Division of Water Rights (UDWRi) and the State Engineer for modifications to water rights, such as the diversion structures;
- Air Quality Rule R307-205-5 for potential fugitive dust associated with disturbances greater than ¼ acre, regulated by the Utah Division of Air Quality;
- The Proposed Action is in conformance with the Emery County General Plan (Emery County 1999), which advocates for more efficient use of available water resources through storage reservoirs, more efficient irrigation systems, and reduced conveyance water losses;
- The Price-San Rafael Rivers Unit, Utah, Planning Report/Final Environmental Impact Statement, Colorado River Water Quality Improvement Program/Colorado River Salinity Control Program (Reclamation 1993) is incorporated by reference.

### **1.7 Identification of Issues**

A pre-scoping meeting was held at the BLM PFO on October 6, 2010. The meeting was attended by BLM staff, the CCCIC, XTO (a current ROW holder in the Project Area), and JBR Environmental Consultants, Inc. (JBR), the third-party contractor preparing the EA. The two principal outcomes of the meeting were: 1) the need to confer with the Reclamation to determine their role as lead or co-lead agency; and 2) the need for the

CCCIC and XTO Energy to resolve issues related to XTO's ROW and existing pipeline, which are located within the area where the CCCIC proposes to construct and operate the Adobe pipeline and reservoir.

Scoping letters were sent to: Utah State Engineer – UDWRi; Emery County Commission; City of Castle Dale; City of Orangeville; XTO; and six potentially affected livestock operators.

A scoping meeting was held on January 25, 2011 at the BLM PFO. Attendees included BLM staff, the CCCIC, DWR, Reclamation, EWCD, Orangeville City, UDWRi, Utah Association of Conservation Districts, PacifiCorp, Johansen and Tuttle Engineering, XTO, and JBR.

In addition, a letter was received from USFWS expressing concerns related to water withdrawal effects to fish in-stream and adjacent wildlife habitat (i.e. riparian, wetlands), and recommending surveys for special status plant species. A letter from the Public Lands Policy Coordination Office (PLPCO) indicated the need to comply with air quality regulations for fugitive dust for project disturbance greater than ¼ acre.

The BLM Interdisciplinary Team (ID Team) completed a checklist (**Appendix A**) which identifies the issues and concerns expressed by resource specialists. It is the foundation for the Identification of Issues as well as Issues Considered but Eliminated from Further Analysis as presented in **Section 1.8**.

#### **1.7.1 Cultural and Historical Resources**

- National Register of Historic Places (NRHP)-eligible cultural resource sites could be impacted by the proposed Project.

#### **1.7.2 Livestock Grazing and Rangeland Health Standards**

- Loss of surface water source to livestock.
- Loss of acreage for grazing at reservoir and fenced area surrounding the reservoir.
- Loss of Animal Unit Months (AUMs).

#### **1.7.3 Migratory Birds**

- The open water of the proposed reservoir could provide habitat for migrating waterfowl and shorebirds, and also limited nesting habitat for these same species.

#### **1.7.4 Soils**

- Implementation of the proposed action could cause soil mixing, soil compaction, and modification of the soil resource.

### **1.7.5 Vegetation including Threatened, Endangered, or Sensitive (TES) Species, Invasive Species, and Wetlands/Riparian Zones**

- No riparian areas are known on BLM-administered lands in the Project Area; wetland or riparian habitat created along existing canals may be affected by the project; when the canals are no longer used to convey water, the associated wetland or riparian habitat would decline.
- Any soil disturbing activity has the potential to increase or spread invasive/noxious weed species.
- Implementation of the proposed action may affect habitat or individuals of *Sclerocactus wrightiae*, a federally endangered cactus.
- Implementation of the proposed action may affect habitat or individuals of *Cryptantha creutzfeldtii* a BLM Sensitive Species.
- Implementation of the proposed action may result in a loss of vegetation.

### **1.7.6 Water Resources including Hydrologic Conditions**

- There could be a local decrease in depth to groundwater due to increased infiltration over a period of time.

### **1.7.7 Wildlife and Fish including TES Species**

- Operation of the reservoir could change the flows in the river downstream of the diversion structure; there could be impacts to bluehead suckers, a BLM Sensitive Species. No other sensitive animal species are known to be present.
- Operation of the reservoir could change the flows in the river downstream of the diversion structure; there could be impacts to fish habitat or mitigation areas.

## **1.8 Issues Considered but Eliminated from Further Analysis**

Through development of the ID Team Checklist (**Appendix A**), the BLM determined that several resources and supplemental authorities are not present in the area potentially affected by the Proposed Action or they would not be affected to a degree that detailed analysis is required. The justification for elimination is provided in Appendix A.

## **1.9 Summary**

This chapter has presented the purpose and need of the proposed project, as well as the relevant issues, i.e., those elements of the human environment that could be affected by the implementation of the proposed project. In order to meet the purpose and need of the proposed project in a way that resolves the issues, the BLM has considered the Proposed Action, as well as a No Action alternative, which are presented in Chapter 2. Current baseline conditions for potentially affected resources and issues identified in Section 1.7 are presented in Chapter 3. Critical elements of the human environment (BLM H-1790-1, Appendix 5) subject to the requirements specified

in statute, regulation, or executive order are also considered in Chapter 3. The potential environmental impacts or consequences resulting from the implementation of each alternative are then analyzed in Chapter 4 for each of the identified issues. Additional information on the scoping process is in Chapter 5, Consultation and Coordination.

## **2.0 DESCRIPTION OF ALTERNATIVES, INCLUDING PROPOSED ACTION**

### **2.1 Introduction**

In order to meet the Purpose and Need of the Project an alternative would need to provide dependable, manageable, and efficient transport of water, satisfy all existing water demands and rights, and be financially feasible. Further, it would need to enhance the reliability of the basin-wide pressure irrigation system and work in conjunction with the CWCWCP (Reclamation 1993). Loss of water from evaporation, transpiration, and infiltration would need to be reduced. An alternative that requires pumping of the water rather than a gravity-feed system would be too costly to operate; this limits the topographic routes for delivery systems as well as the location for the reservoir. Consequently, only the Proposed Action and the No Action Alternative were developed and analyzed.

### **2.2 Alternative A – Proposed Action**

As described in **Sections 1.2** through **1.4**, the CCCIC proposes to construct, operate, and maintain a pipeline and reservoir in the Adobe Wash area of Emery County, Utah. For the purpose of describing the Proposed Action, the pipeline and reservoir will be presented in **Sections 2.2.1** and **2.2.2**, respectively. Operations and maintenance of the system are presented in **Section 2.2.3**.

Because there is an existing 6-inch gas pipeline ROW (i.e., the XTO pipeline) located in the area of the proposed reservoir, the Proposed Action would require a reroute of that gas pipeline and its associated water pipeline. An amended ROW for that reroute is included in the Proposed Action (**Section 2.2.4**).

**Table 2-1** summarizes the ROWs needed for the different components of the Proposed Action.

**Table 2-1 Adobe Wash Reservoir and Pipeline ROWs**

Project Component	Description	ROW Acres Private Land	ROW Acres Public Land*	Total Component Acres
Adobe Pipeline	15,300 feet x 50 feet	15.8	1.8	17.6
Adobe Wash Reservoir & Dam		10.0	65.0	75.0
(Adobe Wash Dam	Footprint is within ROW requested on line above	4.1	2.3	6.4)
Existing XTO Pipeline Realignment	4,640 feet x 50 feet	0	5.3	5.3
Reservoir to PacifiCorp/CWCWCP pipelines	1,000 feet x 50 feet	1.2	0	1.2
Access Roads		0.5	0	0.5
Staging Areas		1.5	0	1.5
Borrow Areas		80.0	0	80.0
Total Acres		109.0	72.1	181.1

\*BLM-administered lands

As noted in **Table 2-1**, the project components in total, including pipelines, reservoir, access routes, staging areas, and borrow areas comprise the Project Area, which occupies a total of approximately 181 acres.

### 2.2.1 Adobe Pipeline

As shown on **Figure 3**, the proposed pipeline would begin at the diversion structure on Cottonwood Creek that supplies the Clipper Western Canal; it would follow the general alignment of the existing earthen canal to the entrance of the reservoir, approximately 3 miles. It would begin in Township 18 South (T. 18 S.), Range 7 East (R. 7 E.), section 15 (NW¼ NE¼) and discharge to the proposed reservoir in T. 18 S., R. 7 E., section 24, SLB&M. In order to be gravity fed, the pipeline route is dictated by topography, which crosses public land, as does the existing canal system.

Overall the pipeline would be 15,300 feet in length (2.89 miles) with a diameter of 66 inches (5 feet 6 inches). The pipe material would be high density polyethylene (HDPE) with a pressure rating of 100 pounds-per-square-inch (PSI). The design capacity of the pipeline would be 140 cubic feet per second (cfs) which is greater than the current capacity of the canal at 60-70 cfs. This design capacity would provide for the proposed project and both PacifiCorp pipelines as well as future system upgrades when additional canals utilize the system. As proposed, there would be no increase in capacity or change in water rights.



The CCCIC has requested a 50-foot wide ROW from the BLM (25 feet on each side of the centerline) in order to provide room for the trench excavation, the excavated material, and access along the trench for pipe laying and backfill equipment. The depth of the trench would be about 10 feet. Of the 15,300 feet of total length, 1,580 feet would be across BLM-administered land, which would make the total area of the ROW 1.8 acres (**Table 2-1**). No additional public land would be needed for construction staging, since these areas would be on private lands. Traffic control would not be needed during construction. The existing access road through private property would be improved to support semi trucks hauling pipe. Other dirt access roads along the Adobe pipeline are in good condition; minor blading or widening may be needed.

The pipeline would be laid alongside the existing Clipper Western Canal alignment where possible and within the canal where necessary. The diversion works may require new gates in order to accommodate the 140 cfs design flow; the measuring and control structure would also require modification. The pipe entrance would require an inlet structure. A traveling screen would be part of the control structure along with a trash rack and fence at the pipe inlet. The pipe exit would require wing walls and a splash pad where it would enter the reservoir. These structures would be constructed on private land. The pipe would be bedded in fine material and backfilled with material excavated from the trench.

The construction period would be from October to April in order to install the pipe during the non-irrigation season. Topsoil would be stockpiled for use in reclamation. After the pipe is placed, all excavated material would be used to backfill the pipeline and to blend the excavation into the natural topographic contours. There would be no waste material from construction. After grade is reestablished, disturbed areas would be reseeded. The existing canal would be abandoned in place when the pipeline goes into operation, likely in 2013.

Once complete, the pipeline would convey up to 150 cubic feet per second (cfs) to the Adobe Wash Reservoir for distribution to irrigate approximately 2,660 acres along the CWCWCP system and eventually 5,863 acres when other irrigation canal systems are converted to pipeline. It would eliminate use of the Clipper Western Canal from the diversion to the reservoir, a distance of about 3 miles.

Operation and maintenance would be performed by the CCCIC in conjunction with EWCD who currently operates the gates at Joes Valley Reservoir. Operation of the diversion would be electronically controlled. The control structure would be operated year-round from the EWCD office, under current contracts and operating criteria. The Parshall Flume would measure the pre-determined amount of water into the pipeline, with the excess being turned out for the downstream users. The Adobe Wash Reservoir Level Sensor would notify the office of EWCD when the water level is low. Joes Valley Reservoir would then respond with more water, which would be diverted into Adobe

Wash Reservoir until the high level sensor limit is reached. Maintenance would be as needed. The pipeline and head structures would be inspected annually.

The irrigation system would be needed indefinitely; therefore the CCCIC is seeking a 30-year renewable lease. If termination does occur, existing federal policies and procedures would be followed.

### **2.2.2 Adobe Wash Reservoir**

The proposed Adobe Wash Reservoir would be created by the construction of a 60-foot high embankment dam and, once inundated with water, would have a surface area at high pool of approximately 75 acres and a capacity of about 900 acre-feet. The topography of the Project Area dictates where the dam and the resulting basin for the reservoir would need to be located. The proposed site was chosen to provide adequate pressure for the future system improvements and for access from the diversion. The proposed pipeline, as described in **Section 2.2.1** above, would allow the reservoir to be located off-stream. The requested ROW for the reservoir is located in T. 18 S., R. 7 E., S $\frac{1}{2}$  SW $\frac{1}{4}$  section 24; N $\frac{1}{2}$  NW $\frac{1}{4}$  section 25; and NE $\frac{1}{4}$  NE $\frac{1}{4}$  section 26, SLB&M. Approximately  $\frac{2}{3}$  of the dam and  $\frac{1}{8}$  of the reservoir would be on private land; the remaining portions would be on BLM-administered land (**Table 2-1**). The reservoir would provide water to the canal system downstream of the Project Area. The reservoir would also provide secondary water to the communities of Castle Dale and Orangeville. The Hunter Power Plant would utilize the pipeline and the reservoir to supply cooling water to the plant. The owner of the power plant, PacifiCorp, would continue to use their existing water rights, but the point of diversion would change under the Project. Instead of the water being diverted at the PacifiCorp pump station, located downstream of the current Western Clipper Canal diversion, it would be diverted to the Adobe Pipeline via the Clipper Western diversion. By making this change the power company would reduce or eliminate the cost of pumping water to the power plant. PacifiCorp will maintain the option to divert water from Millsite Reservoir, depending upon Hunter Power Plant needs. The reservoir would be maintained at about the same level year-round to provide winter water to the power plant and for early spring irrigation use.

#### *Reservoir*

A 5,980 – 5,990-foot, above mean sea level (AMSL) elevation of the water surface, behind the embankment, would be the minimum required to provide adequate pressure for sprinkler irrigation. No grading would be required for the reservoir basin; the area behind the dam would simply be inundated with water. The reservoir would be fenced to keep out recreationists, wildlife, and livestock. Approximately 5,200 feet of fencing would be installed surrounding the reservoir.

### *Embankment Dam*

The embankment dam would be earthfill with a maximum height of 60 feet high and a top width of 15 feet. Construction would be initiated as soon as possible following agency approvals. The embankment crest would be at 5,995 feet, AMSL in elevation. The side slopes would be 3h:1v on the upstream side and 2h:1v on the downstream side. The embankment would have a central zone of clay with subsequent zones of sand, gravel, sandy gravel, and an exterior zone of silt, sand, and gravel mixture. About two-thirds of the length of the dam would be constructed on private land. The remainder of the dam would be constructed on BLM-administered land; the water impoundment area created by the dam would cover about 65 acres of BLM-administered land at high pool.

The embankment would be constructed using borrow material from two different sources, both of which are on private land. Off-site borrow sources would be required in order to get the appropriate materials for dam construction; these materials are not available at the reservoir site. One source would provide the clay and the other the gravel (**Figure 2**). Access to the reservoir site would be on private land utilizing the existing XTO access road.

The foundation of the embankment would be exposed and some dental treatment could be expected. The embankment would be placed and compacted using large hauling equipment and compaction equipment. Any disturbance beyond the toe stakes would be on the upstream side which would be inundated with water. During the construction, a temporary pipeline for the existing canal would be necessary; the temporary pipeline would be on private land. The outlet works would be on private land and would consist of a 36-inch diameter pipe.

Some material generated during the foundation preparation may not be suitable for embankment construction. This material would be blended into the completed structure or placed on private land. Other waste material would be hauled from the reservoir site and deposited in a regulated landfill operation.

### *Operations and Maintenance*

Operation and Management would be under the jurisdiction of the CCCIC. An operating plan would be approved by the users and UDWRi. The CCCIC holds rights to 200 cfs of direct flow from Cottonwood Creek. The CCCIC has issued 33,000 shares of stock to about 450 shareholders (shares vary annually but average to about one acre-foot/share); and holds project water rights to 4,900 acre-feet from Joes Valley Reservoir. PacifiCorp owns 8,554 shares of Cottonwood Creek water plus separate contracts with the Bureau of Reclamation for project water from Joes Valley Reservoir (UBWR 2010).

Irrigation rights are used seasonally between mid-April and mid-October. Water for the Hunter Power Plant would be released from Joes Valley Dam year round into the Adobe Wash Reservoir. Some primary water would also be stored for early spring use for the irrigation system. Normal flow during the irrigation season would be diverted into the regulating reservoir (Adobe Wash Reservoir) for distribution. This would be a year-round regulating facility.

The timing and volume of withdrawals from Cottonwood Creek and Joes Valley Reservoir are restricted by the terms of the water rights and by the contracts with Reclamation. They cannot be changed without approval. There would be no change in the total amount of water diverted from Cottonwood Creek.

Maintenance would be provided by the CCCIC. Yearly inspections would be accomplished on the embankment, the outlet works, and the spillway. Needed repairs would be made to ensure the safety of the facility.

The CCCIC would operate and maintain the Adobe Wash Reservoir. CCCIC water rights allow diversions from Cottonwood Creek to begin April 1 of each year and to end October 31 of each year. Industry (PacifiCorp) has federal water contracts which allow diversions year round to supply the Hunter Power Plant. The water for these contracts is currently, and would continue to be, held in Joes Valley Reservoir.

Water diverted to Adobe Wash Reservoir would supply the demand of both agriculture and industry. Adobe Wash and Joes Valley reservoirs would operate in concert. Joes Valley would serve as the storage facility and Adobe Wash as the regulation facility. As demand increases, water would be released from storage, as demand decreases, less water would be released. Adobe Wash would operate as a distribution server, keeping a constant water level to provide proper pressures to the proposed irrigation system (including the CWCWCP). It is anticipated that the Adobe Wash Reservoir water levels at their lowest point would be between 5,960 and 5,970 feet, AMSL. During the winter (generally between December 15 - February 1), water would be released from Joes Valley periodically in large quantities or batches, rather than a lesser steady stream, to overcome the freeze-back condition which occurs in the canyon during winter months.

The State Engineer examined the proposed Adobe Wash Reservoir and its operations on January 6, 2011, and determined that the reservoir would operate as a regulating reservoir. As a regulating reservoir, the State Engineer requires no change application for the diversion of water during any portion of the full calendar year for either CCCIC water diverted under its water rights and contracts, or federal project water diverted for PacifiCorp under federal water contracts used to supply the Hunter Power Plant. Since PacifiCorp has another source of water from the Ferron Creek drainage, its use of the Adobe Wash Reservoir would vary according to PacifiCorp's needs at the Hunter Power Plant.

### *Project Closure*

This facility would be used indefinitely. If termination does occur, existing federal policies and procedures would be followed. The inundated area would be reseeded and other reclamation procedures per the Green River Reclamation Guidelines would be implemented on public lands.

### *Fencing*

The reservoir, dam, and outlet facilities would be fenced to exclude people and livestock (**Figure 4**) for safety and liability reasons. Because the level of the reservoir would fluctuate, there would be muddy conditions that could potentially trap large wildlife and livestock. Further, the reservoir would generally be unsupervised and could present a safety hazard to the public; therefore, fencing would be the prudent solution. The fence would consist of a net (or woven) 4-inch by 4-inch mesh. However, at the drainages a four-strand wire fence with a height no greater than 42-inches would be used. The wires could be smooth or top and bottom wires would be smooth with the interior two wires barbed; spacing of at least 12 inches between the two top wires and 18 inches between the bottom wire and the ground would be required. These short segments of wire four-strand wire fence would not be connected to the woven wire fence, so that if water in the drainages were to tear out these segments, the net wire fence would remain intact. The fence would encompass the entire reservoir area totaling about 5,200 feet of fence. No trespassing signs would be posted on the fence to discourage public access.

### **2.2.3 Irrigation Distribution Lines**

A 1,000-foot long pipeline extending from the Adobe Wash Reservoir into the existing Pacificorp pipeline would be needed. The CCCIC has requested a 50-foot wide ROW from the BLM (25 feet on each side of the centerline) in order to provide room for the trench excavation, the excavated material, and access along the trench for pipe laying and backfill equipment. This pipeline would be connected to the Adobe Wash Reservoir in T.18 S., R. 7 E., NW¼ section 25. The connector pipeline would be 36-inches in diameter for the initial 600 feet where it would then split and directly connect to the CWCWCP on the south and continue another 400 feet east, utilizing 24-inch diameter pipe, into the Pacificorp pipeline. The depth of the trench would be about 10 feet. Construction techniques and timing of construction would be similar to those described in **Section 2.2.1**. This pipeline would be maintained and operated by the CCCIC.

As noted above, the Reclamation basin-wide project (Reclamation 1993) was divided into various components for funding purposes. The CWCWCP is one of these components and includes conversion of the Clipper Western open canal/ditch system into pipeline; this project has been previously authorized.

The CWCWCP has been authorized by the Reclamation. However, one 1,370-foot segment of this irrigation distribution system crosses BLM-administered lands and requires a BLM ROW authorization. The BLM segment is located in T. 19 S., R. 8 E., section 17 (S½ NE¼ SW¼). This segment of distribution line would require an 8-inch diameter pipe that would be placed in and along the existing ditch footprint. A 50-foot wide ROW would be needed to provide room for trench excavation, the excavated material, and access along the trench for pipe laying and backfill equipment. The depth of the trench would be approximately 10 feet. This pipeline would be maintained and operated by the CCCIC.

#### **2.2.4 XTO Pipeline Reroute**

XTO currently has an Oil and Gas production lease (UTU-67532) which includes two 6-inch pipelines, one gas, one water, within the Project Area. Both 6-inch pipelines are contained in the same trench. This gas pipeline is the primary transport line for XTO's Orangeville CBM Field, and requires surface accessibility for maintenance and repair. A natural gas pipeline would be buoyant under water, which creates a risk that the pipeline would rise to the surface creating a potential hazard. The pipeline, which was not designed to be in saturated conditions, may also rust or corrode, creating a risk of breach or rupture. Thus, the Proposed Action would require rerouting these two pipelines. Reroute of the pipelines would be authorized under the existing lease; a Sundry Notice has been submitted for this activity. The project, as proposed, would require a shut-down in production of the entire Orangeville CBM Field while the new route is spliced in.

The natural gas pipeline would be constructed, by XTO, on blocks at ground surface, then placed into a trench approximately 5 feet deep and buried along with the water line. This construction would follow procedures specified by the BLM as well as other applicable guidelines, including API 1104, "Welding of Pipelines and Related Facilities." The pipeline would be constructed of new fusion bond coated X42 grade 6-inch pipe with a 0.280" wall thickness, which would have an anticipated operating pressure of 700 psig. Prior to operating the pipeline, a hydrostatic pressure test would be conducted to verify the integrity of the pipeline and to establish the pipeline maximum allowable operating pressure (MAOP) of 1440 psi. The pipeline would be tested to 150 percent of MAOP or (2160 psig) for an 8 hour period of time. Connecting welds would be X-Ray tested. Hydrostatic testing would require approximately 170 bbls of fresh water. Water would be provided from Nielson Construction Fresh Water Load Out in Huntington, Utah. Following the hydrostatic test of the 6-inch steel pipeline, the test water would then be transferred into the 6-inch poly pipeline for hydrostatic testing of that line.

The water pipeline would also be constructed on ground surface, then placed into a trench approximately 5 feet deep and buried along with the proposed natural gas, steel pipeline. It would be constructed of SDR 7 poly pipe and would have a hydrostatic leak

detection test performed utilizing approximately 100 psig of pressure. Approximately 170 bbls of water for the hydrostatic test would be transferred into the 6-inch poly pipe from the 6-inch steel pipeline following the hydrostatic test of the 6-inch steel pipeline. Following the hydrostatic testing of both pipelines, the water would be hauled to XTO's saltwater disposal and used as dust suppression at the facility or injected into the disposal well.

Surface, composite pipeline marker stakes would be placed along the route to indicate the position of the buried pipelines. The pipeline would be a permanent facility lasting the lifespan of the associated drilling and production project in the area. The reclamation of the abandoned and the new pipelines would be completed by CCCIC.

Approximately 3,400 feet of gas and water pipeline would be abandoned or removed, with the amended route shifted to the west outside of the reservoir footprint. The amended gas and water pipeline route would be 4,640 feet in length (**Figure 4**). Access to the pipeline reroute would be via existing roads and the Adobe pipeline ROW (**Figure 3**).

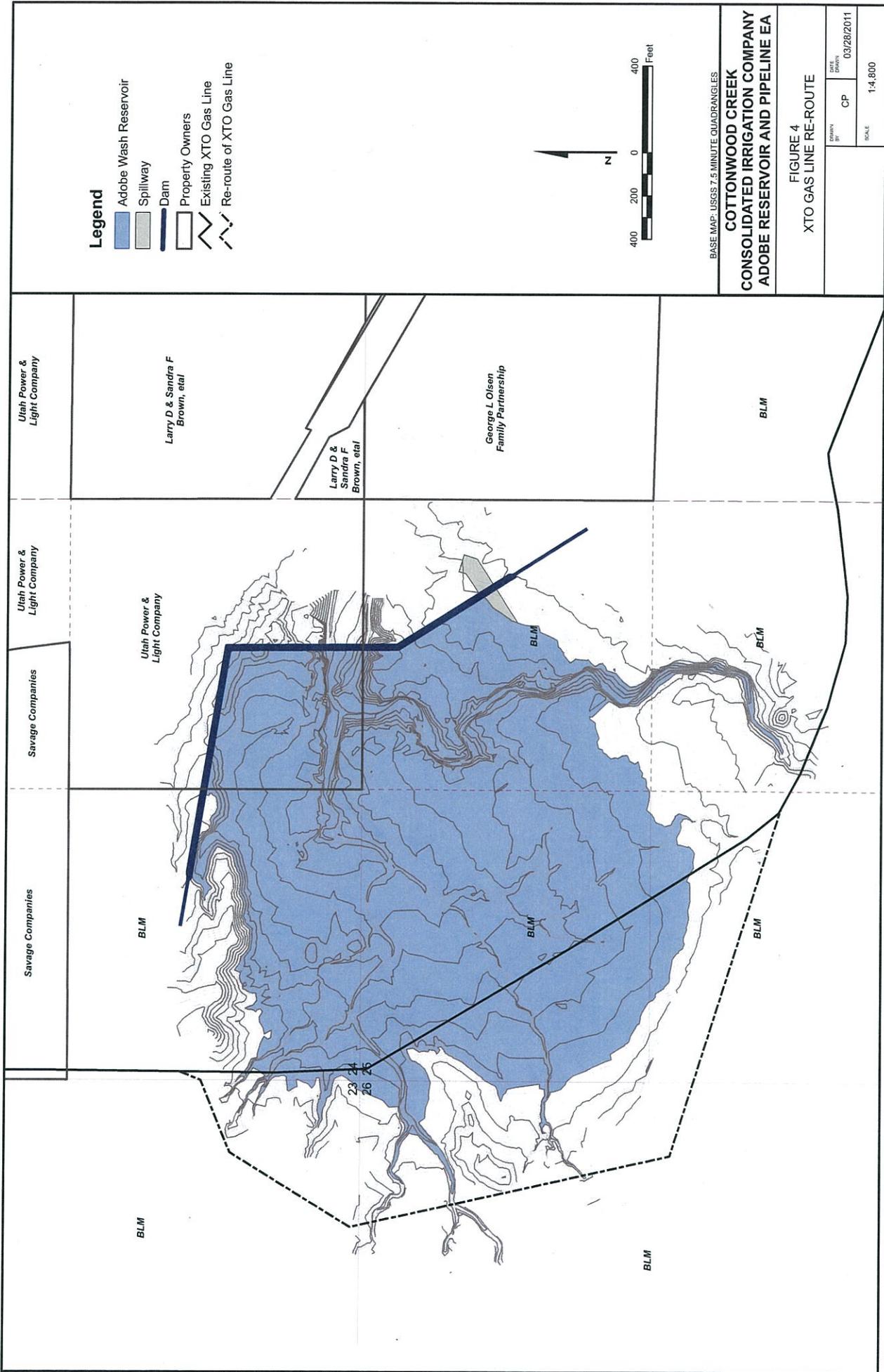
A contract to move these lines has been signed by CCCIC and XTO and is on file at the BLM PFO. Construction of the XTO reroute would be concurrent with dam construction.

### **2.2.5 Environmental Protection Measures and Stipulations**

The Project would comply with all applicable federal and state laws and local zoning ordinances. BMPs approved by the BLM would be utilized to minimize the potential for soil erosion and the introduction of non-native, invasive plant species on public lands. The Project would comply with BLM's Stipulations for Surface Disturbing Activities (BLM 2008, Appendix R-3) and the Green River District Reclamation Guidelines (BLM 2011) as noted below. Both are provided in **Appendix B**. In addition, the following project design features and construction protocols would be in effect during the Project.

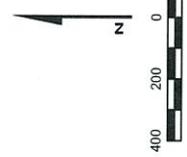
#### **Cultural Resources**

Known NRHP-eligible cultural resources, other than the canal itself, would be avoided by pipeline and dam construction. Temporary fencing would be erected during construction activities and/or an archaeological monitor would be present for any activities in the vicinity of NRHP-eligible sites, as directed by the BLM.



**Legend**

- Adobe Wash Reservoir
- Spillway
- Dam
- Property Owners
- Existing XTO Gas Line
- Re-route of XTO Gas Line



BASE MAP: USGS 7.5 MINUTE QUADRANGLES

**COTTONWOOD CREEK  
CONSOLIDATED IRRIGATION COMPANY  
ADobe RESERVOIR AND PIPELINE EA**

FIGURE 4  
XTO GAS LINE RE-ROUTE

DATE 03/28/2011	BY CP
SCALE 1:4,800	

Utah Power & Light Company

Utah Power & Light Company

Savage Companies

Savage Companies

Larry D & Sandra F Brown, et al

Utah Power & Light Company

George L Olson Family Partnership

Larry D & Sandra F Brown, et al

BLM

BLM

BLM

BLM

BLM

BLM

BLM

23 24  
26 25

Although not anticipated, if previously undocumented cultural or historic objects are discovered during construction activities, the BLM would be notified and work in the area would halt until documentation and evaluation by a professionally trained and BLM approved archeologist could be conducted, and consultation with the Utah SHPO has taken Place.

### **Non-native Invasive Species and Noxious Weeds**

Non-native, invasive plants and noxious weeds would be controlled in accordance with BLM guidelines and ROW stipulations. A weed control plan would be developed for both construction and operations periods to ensure that the project does not facilitate the spread of noxious or invasive non-native vegetation. During construction all heavy equipment would be cleaned off-site before entering the Project Area to ensure that seeds from undesirable species are not brought on to the site by that means.

### **Public Safety**

Haulage along public highways would be in accordance with permit parameters. Proper signing and barricades would be used to ensure public safety. The reservoir, dam, and outlet facilities would be fenced (**Figure 4**) for safety and liability reasons. Fencing would be maintained by the CCCIC. The pipeline company has limitations on the extent of public presence in areas near their natural gas pipeline system. Due to design factors already in place for the nearby XTO pipeline, public activity must be restricted at the reservoir. Consequently the reservoir would not be available to the public for recreation or other purposes.

A Spill Prevention and Contingency Plan would address potential equipment leakage of hydraulic oil and fuel spills during construction. Clean-up of these petroleum spills would be accomplished by removing the contaminated soils and depositing them in a regulated landfill operation.

### **Reclamation**

Reclamation of all ROWs associated with the Project Area would be the responsibility of the CCCIC. Re-vegetation would be required on public lands. The Green River District Reclamation Guidelines (**Appendix B**) would be followed on public land and a seed mix of native species and/or approved non-native species would be developed and approved in conjunction with BLM specialists. The CCCIC has chosen to re-seed construction related disturbances on private lands as well.

Restoration and reclamation of disturbed public lands would be in accordance with the standards specified by the BLM. All trash, waste, and fuel/oil spills would be cleaned up and removed from the Project Area and disposed of at an approved disposal site.

### **2.3 Alternative B – No Action**

Under the No Action Alternative the Proposed Action would not be built and water management practices could not be replaced by more modern and efficient irrigation water conveyance systems. The Purpose and Need of the Project would not be met. Analysis of the No Action alternative in this EA provides a baseline for analysis of potential impacts that could occur under the Proposed Action.

### **2.4 Alternatives Considered, but Eliminated from Further Analysis**

A conveyance system utilizing a pump system to convey water, rather than a gravity-fed system, was considered but eliminated due to the cost, complexity, and increased maintenance of such a system.

One area to the north of the proposed reservoir was considered as a potential reservoir location, however that area would only hold a few hundred acre feet of water; therefore neither the capacity nor the pressure that would be supplied were large enough for the gravity-fed system. Due to the constraints of using a gravity-fed system, no other pipeline routes or reservoir locations were considered since these were dictated by topography.

## **3.0 AFFECTED ENVIRONMENT**

### **3.1 Introduction**

This chapter presents the potentially affected existing environment (i.e., the physical, biological, social, and economic values and resources) of the impact area as identified in the ID Team Analysis Record Checklist found in **Appendix A**. The checklist indicates which resources of concern are either not present in the Project Area or would not be impacted to a degree that requires detailed analysis. Resources which could be impacted to a level requiring further analysis are described in Chapter 3 and impacts on these resources are analyzed in Chapter 4. This chapter provides the baseline for comparison of impacts/consequences described in Chapter 4.

### **3.2 General Setting**

The Project Area is situated along the western margin of Castle Valley, in the Basin and Range-Colorado Plateau Transition physiographic province (Stokes 1986). Castle Valley is comprised of a series of broad, shallow canyons and flat-topped mesas. To the east/southeast of Castle Valley is the San Rafael Swell. To the west/northwest is the Wasatch Plateau and Manti-La Sal National Forest, including East Rim and Mahogany Point (8,542 feet AMSL). This semi-arid land is within the Upper Sonoran Lifezone, the primary vegetation communities of which are Salt Desert Shrub, Riparian, Pinyon Juniper Woodlands, and Low Sagebrush.

The elevation in the Project Area ranges from 5,950 feet AMSL at the reservoir to 6,100 feet, AMSL at the diversion with Cottonwood Creek. The primary water source in the area is Cottonwood Creek. Precipitation in the region averages about 8 inches per year with average temperatures of 63.6 degrees Fahrenheit (°F) for a high and 31.6 °F for a low (Climate Charts.com 2010).

The region was settled in the late 19<sup>th</sup> century by Mormon pioneers. Historical uses of the area include agricultural and ranching activities. Modern developments and uses of the Project Area include roads, utility lines, and continued agriculture and livestock grazing. The communities of Orangeville and Castle Dale are located to the southeast.

### **3.3 Cultural and Historic Resources**

Cultural resources are defined as any definite location of past human activity identifiable through field survey, historical documentation, and/or oral evidence. Cultural resources include archaeological or architectural sites, structures, or places, and places of traditional cultural or religious importance to specified groups whether or not represented by physical remains. Cultural resources have many values and provide data regarding past technologies, settlement patterns, subsistence strategies, and many other aspects of history.

The National Historic Preservation Act (NHPA) of 1966, as amended, and its implementing regulations (36 CFR 60 and 800) require that federal agencies take into account the effects of their undertakings on cultural resources that are listed or eligible for listing to the NRHP; eligible or listed resources are identified as “historic properties.”

### **3.3.1 Context**

The following prehistoric and historic context is from Van Schmus (2010):

Human occupation in the study area spans the last 10,000-12,000 years. Cultural remains representing the Paleoindian, Archaic, Formative, Late Prehistoric, and Historic stages have been identified in the study area. The earliest known archaeological remains in central Utah are attributable to the Paleoindian stage, which emphasized the exploitation of megafauna and floral resources during the period of transition from the Pleistocene to the Holocene. Based on projectile point typologies and subsistence strategies, the Paleoindian stage is commonly divided into three cultural complexes termed the Llano (ca. 11,500-11,000 B.P.), the Folsom (ca. 11,000-10,000 B.P.) and the Plano (ca. 10,000-7500 B.P.). Folsom points are among the commonly found Paleoindian projectile points on the Colorado Plateau, and a few isolated points, some associated with lithic debitage, have been found in Emery County (Copeland and Fike 1988; Schroedl 1991).

The termination of the Pleistocene enacted major changes in the environment in central Utah. Overall, the climate became warmer and drier, causing expansion of xeric vegetation zones and a retreat of plant communities requiring cool and moist conditions at higher elevations. The Archaic stage (7800-500 B.P.) is represented by subsistence practices more labor-intensive than those adapted by Paleoindians. Large herd animals were less intensively exploited, replaced by a greater emphasis upon smaller, more dispersed fauna, in addition to plant resource processing. Schroedl (1976) has defined four Archaic stage phases for the northern Colorado Plateau. The earliest is the Black Knoll phase (ca. 8300-6200 B.P.), characterized by Pinto projectile points and a contrast in subsistence practices between high and low elevations in which large ungulates are hunted in the uplands, while wild plant gathering is emphasized at lower elevations (Schroedl 1976:61-62). The Castle Valley phase (ca. 6200-4500 B.P.) is characterized by a lower aboriginal population on the Colorado Plateau, possibly attributed to a two-stage drought (Black and Metcalf 1986:10). It was during this time period that a variety of projectile point styles were employed, including Rocker, Hawken, and Sudden Sidenotched points, as well as Humboldt and McKean points. Slab-lined fire pits and the increasing reliance upon grasses and forbs as foodstuffs are also aspects of this phase (Schroedl 1976:63-64). The Green River phase (ca. 4500-3300 B.P.) is marked by the occurrence of Gypsum and San Rafael Side-notched projectile point types and split-twig figurines (Schroedl 1976). In this phase, hunting (especially for mountain sheep) becomes important and amaranths are a preferred plant resource

(Black and Metcalf 1986:11). The Dirty Devil phase (ca.3000-1500 B.P.) marks the transition into the Formative stage and is characterized by increased sedentism, by the introduction of corn and bow and arrow, and by Gypsum projectile points (Schroedl 1976).

The Formative stage (A.D. 700 to 1200) is characterized by reliance on domesticated plants (most notably corn), substantial habitation structures often organized into hamlets or villages, production of pottery, and the use of the bow and arrow. The study area is within the occupation zone of the San Rafael Fremont variant, as defined by Marwitt (1970). Sites in this area are characterized as small isolated hamlets or single dwelling units, usually found on small ridges overlooking perennial water sources and arable land (Schroedl and Hogan 1975). Three San Rafael Fremont phases have been proposed for the study area based on chronology, settlement patterns, subsistence strategies, and material culture (Black and Metcalf 1986; Greubel 1996). These include the Confluence Phase, the Muddy Creek Phase, and the Bull Creek Phase. Investigations along Muddy Creek have demonstrated a well-dated early manifestation of the Fremont culture, designated as the Confluence Phase. The Confluence Phase defines a preceramic, semi-sedentary, horticultural adaptative culture, beginning around A.D. 200 (Greubel 1996:516). Important aspects of this phase include the presence of a well-developed pattern of semi-sedentism, pithouse architecture, maize horticulture, large bell-shaped storage pits, use of the bow and arrow, and the presence of community or special function structures.

The Muddy Creek phase (A.D.700 to1000) is characterized by increased sedentism and greater reliance upon horticulture (Black and Metcalf 1986). In Castle Valley, the cultural materials associated with this phase are dominated by Emery Gray Ware, some decorated by appliqué and incisions, and Rose Springs Series and Uinta Side-notched arrow points (Holmer and Weder 1980). The Bull Creek phase (A.D. 1000 to 1200) is characterized by larger habitations composed of pit houses and surface masonry structures usually used for storage of cultigens (Black and Metcalf 1986). Diagnostic artifacts of this phase include Bull Creek and Nawthis Side-notched projectile points, decorated Fremont ceramics including Ivie Creek Black-on-White, and higher frequencies of Anasazi trade wares. Black and Metcalf (1986:157) suggest that Fremont populations aggregated during this phase most likely in response to the salubrious climatic conditions (post-A.D. 950). These favorable climatic conditions may have also enhanced the productivity of maize fields as evidenced by the increase of storage facilities in the area. Sometime following A.D. 1200, the Fremont appear to have abandoned east-central Utah, a change attributed to both environmental and subsistence-related reasons (Lindsay 1986).

Following the Fremont abandonment/migration of the area, a largely nomadic hunting and gathering lifeway resumed. This occupation is attributed to the Numic-speaking

peoples, a diverse group that was present throughout much of Utah upon the arrival of Europeans. Archaeological evidence suggests that the Numic-speaking Ute appeared in east-central Utah at approximately A.D. 1100 or shortly thereafter, migrating from the southwestern Great Basin (Madsen 1975). Numic sites in the area predating contact are recognized by distinctive Desert Side-notched, tri-notched, and Cottonwood Triangular projectile points, a fairly crude pottery, distinctive rock art, and occasional wickiups (Jennings 1978). The Utes were primarily hunters and gatherers who practiced very limited horticulture (Smith 1974). With the adoption of horses by some groups in the mid-seventeenth century, skin-covered tipis were used. Accounts of early travelers indicate that there were Utes in the study area. The San Pitch band, headquartered in the Sanpete and Sevier Valleys, probably also made extensive use of western Emery County, as they continued to do on a seasonal basis well into the historic era (Geary 1996:22).

The earliest recorded visit by Europeans to Utah was the Dominguez-Escalante expedition, which moved through the areas north and west of Castle Valley in 1776-1777. Throughout the first half of the nineteenth century, explorers, surveyors and trappers moved in small parties through the valley, up and down the Old Spanish Trail. The main branch of the Spanish Trail veered northwest from Green River and wound through the San Rafael Swell via Cottonwood Creek and Buckhorn Flat, emerging into Castle Valley near the Red Seeps east of Castle Dale (Finken 1977). Early Anglo-American visitors to the area included Jedediah S. Smith (1826), Kit Carson (1848), Orville C. Pratt (1848), and E.F. Beale (1853). The area was first surveyed in 1873 by Augustus D. Ferron, who signed a contract with the federal government to conduct a survey of irrigable lands in Castle Valley to convey the settlement potential near major drainages to future settlers currently residing along the Wasatch Front (Geary 1996:44).

Most notable of the earliest settlers was Orange Seely, who, in 1875, moved 1,500 head of sheep and 1,400 head of cattle through Upper Joe's Valley and down along Cottonwood Creek (Geary 1996:51). In order to bring their supply wagons to the valley, the Seely party carved out the first road through the canyon. Among the party were Seely's younger brother Justus Wellington Jr., John S. Jorgensen, Aaron Oman, August Nielson, Jacob Jensen, and Tim Fullmer (Geary 1996:52). In 1877, based upon Seely's reconnaissance of the area, Mormon Church leader Brigham Young called for permanent settlement of the area (McElprang 1992). The call was given to 75 men under the leadership of Christian Larsen, former bishop of Spring City, to establish a colony in Castle Valley which resulted in very few responses. However, in 1877, settlers did arrive to homestead the area along Cottonwood Creek and brought with them herds of sheep and cattle from the Sanpete area (Emery County Historical Society 1981:80). Settlers such as the Curtises, Jensens and Millers began establishing homesteads along Cottonwood Creek engaged in herding sheep and cattle, and trapping (Emery County Historical Society 1981:66). In 1879, the first sawmill was installed on

Cottonwood Creek by Samuel Jewkes and his sons, and in 1882 the family built a water-powered grist mill (Emery County Historical Society 1981:68). The Mormon colonies in Castle Valley were established as agrarian settlements. For the first few years the emphasis was on subsistence crops to feed the settlers and their domestic livestock. Cultivated acreage in the county increased from 84 farms and 1,618 acres in 1880, to 266 farms with 13,247 acres in 1890, and 458 farms with 25,918 acres in 1900 (Geary 1996:130). In 1880, the Utah Territory Legislature created Emery County with Castle Dale designated as the county seat (Emery County Historical Society 1981:29).

In a pattern typical of Castle Valley communities, most families in Castle Dale established homes in town after they had proved up on their homesteads (Geary 1996:95). Orangeville was originally known as Upper Castle Dale, and later named Orangeville in honor of Orange Seely. By the census of 1895, Emery County boasted 4,390 residents, 533 of whom lived in Castle Dale, and 672 of whom were listed as residents of Orangeville (Emery County Historical Society 1981). The primary concern of these early settlers was developing irrigation systems for agricultural pursuits. The small irrigation ditches usually required cooperative labor and served several families. The high-line canals needed to bring water to the benchlands were constructed by organized companies involving up to several dozen landowners. The first irrigation ditches in the Cottonwood Creek system were the Jeffs Ditch (circa 1882) and the West Town Ditch (1883) which brought domestic and irrigation water to Castle Dale and Orangeville (Geary 1996:95). Water rights from these ditches were later transferred to the highline Mammoth Canal, and the smaller canals were abandoned (Geary 1996:95). In 1878, the Clipper Canal - the first highline diversion - began to transport water to the Orangeville townsite. It was dug by John K. Reid, Samuel Jewkes Samuel R. Jewkes, Alma Jewkes, Hyrum Wells, and Andrew Anderson (Seely 1981:81). This canal came out on the south side of Cottonwood Creek, a short distance above the Curtis ditch. The Great Western Canal (1884) was built by a group of Orangeville settlers originating on the south side of Cottonwood Creek. The route of this canal was rugged; in some areas the builders had to hang the canal on the face of a blue slate ledge (Seely 1981:86-87). This canal was awarded a second class right of 8.333 cfs by the Johnson decree; a third class right was also awarded, due to the great expense and laborious task involved in its construction (Seely 1981:86). In later years, the water rights in the Clipper ditch were transferred upstream into this canal, and it is now called the Clipper Western Canal. Built transport water to the benchlands north of Castle Dale for irrigating fields, the Mammoth Canal (1884) is the largest canal in the Cottonwood Creek system (Geary 1996:95). The Mammoth Canal is diverted from Cottonwood Creek about a mile above Grimes Wash and ends at Fivemile Wash. The canal was originally surveyed by Henning Olson Ungerman who used a spirit level fastened to a two-by-four mounted on legs (Seely 1981:84). At around 1902, the water rights from the Starr (Curtis) ditch, the

Planer ditch, the Jeffs ditch, and possibly the Wilberg ditch were transferred into this canal (Seely 1981:84).

### **3.3.2 Specific Project Area Conditions**

Three project-specific cultural resource inventories were conducted (Roberts 2007; Van Schmus 2010; Olin 2011). These inventories resulted in the recordation of the Clipper Western Canal (42EM2433), a small segment of the Blue Cut Ditch (42EM2714), a small historic structure and associated debris (42EM4259), a historic corral (42EM4347), and three prehistoric sites (42EM2712, 42EM4257, and 42EM4258). None of the sites is present within the proposed reservoir area, but are within or adjacent to the pipeline area.

The Clipper Western Canal (42EM2344) was constructed in the 1880s by pioneer settlers to divert water from the Cottonwood Creek to agricultural fields on the benchlands and valley. It is associated with the agricultural development of central Utah and represents distinctive characteristics of late nineteenth century canal construction; therefore it is eligible for the National Register of Historic Places (NRHP) under Criteria A and C respectively.

Site 42EM2712 is a prehistoric open camp of Fremont affiliation originally recorded in 2001. Upon revisit to the site, few artifacts were noted and the site appears to have been impacted by pipeline installation and natural erosion. The site no longer retains integrity and is recommended not eligible to the NRHP because it lacks the potential to provide significant information regarding the prehistory of the area (Criterion D).

The Blue Cut Ditch (42EM2714) was constructed in 1877 to irrigate the agricultural fields in and around Castle Dale and Orangeville. It was originally recorded in 2001 and again documented extensively in 2010. Only a small segment, about 450 feet, of the ditch is located in the Project Area and includes a metal culvert set vertically in the ditch with a metal box and gauge for measuring flow. The site is eligible for the NRHP under Criterion A for its association with the agricultural development of Castle Valley.

The site 42EM4257 is a prehistoric site that contains a good quantity and diversity of artifacts with possible meaningful spatial organization. The alluvial deposition indicated potential for buried cultural deposits. Site 42EM4257 is recommended eligible to the NRHP under Criterion D, because it is likely to address such prehistoric research topics as cultural affiliation, spatial organization, land use patterns, and subsistence strategies.

Site 42EM4258 is a prehistoric lithic scatter of unknown aboriginal cultural affiliation with a limited quantity of artifacts. The site lacks spatial patterning, features, and temporally diagnostic artifacts. The site is located on eroded colluvial deposition suggesting minimal potential for buried cultural deposits. Site 42EM4258 is recommended not eligible to the NRHP because it lacks the potential to provide significant information regarding the prehistory of the area (Criterion D).

The site 42EM4259 is a collapsed single-room structure and associated historic debris. The site is not associated with any event(s) that made a significant contribution to history (Criterion A), nor is it associated with a significant person in our past (Criterion B). The structure does not embody a distinctive type, period or method of construction, or represent the work of a master (Criterion C). Lastly, the site is unlikely to yield information important in history of the region (Criterion D). Site 42EM4259 is therefore recommended not eligible to the NRHP.

Site 42EM4347 is a small historic corral that is partially collapsed. No artifacts were found in association with the corral feature. It retains limited structural integrity, is not associated with a historic property, nor significant events or persons, does not embody a significant type, period, or method of construction, and is unlikely to contribute further data important to understanding the history of the area; therefore, it is recommended ineligible for the NRHP.

### **3.4 Livestock Grazing**

The BLM manages livestock grazing with the following goal in mind:

Manage the public lands to promote healthy sustainable rangeland ecosystems that provide livestock forage production and allow the development of necessary livestock management facilities for the orderly use of the livestock industry (BLM 2008).

Livestock grazing is one of the primary land uses in the vicinity of the Project. The Project Area overlaps three cattle grazing allotments under jurisdiction of the BLM PFO; these include the Don Cox, West Grimes, and West Orangeville allotments. The permittees utilize the allotments on a schedule to graze their livestock according to their permits. Permittees are charged a fee, within that allotment boundary. Allotments are managed with the goal of maintaining vegetation productivity and proper ecologic functions. The project area includes BLM administered land along with State of Utah managed land and privately owned lands. Livestock use levels are measured in AUMs. An AUM is the amount of forage it takes to support one cow/calf pair, one bull, five sheep, or one horse for one month. Different lands produce different qualities of forage. However, for the purposes of analysis, it will be assumed that each acre of an allotment produces an equal amount of forage.

The Don Cox allotment includes 500 acres of BLM administered lands providing 71 AUMs. It also includes 160 acres of private land inholdings. Assuming each acre produces an equal amount of forage, 7 acres provides 1 AUM of forage. This allotment has one permittee and is utilized in winter from November 1st to January 30th. The allotment has a boundary fence but no pasture fences; therefore it is considered open range within the allotment. The permittee currently hauls water to the allotment.

The West Grimes allotment includes 4,440 acres of BLM-administered land with 490 AUMs and 530 acres of State land with 0 AUMs. In this allotment, 9.1 acres provides 1 AUM on BLM-administered lands. The West Grimes allotment has three permittees who utilize it in spring from April 1st to June 10th. This allotment has a boundary fence and a drift fence. There are no range improvements associated with the allotment; the permittees have intermittent water in one draw and they haul water.

The West Orangeville allotment includes 5,530 acres of BLM-administered land and 1,750 acres of State land inholdings, providing 288 AUMs for BLM and 127 AUMs for State. Assuming each acre of land produces an equal amount of forage, 19.2 acres produce 1 AUM of forage on BLM-administered lands and 13.8 acres produce 1 AUM of forage on the State lands. The West Orangeville allotment has six permittees, of which four permittees utilize it in spring from April 20th to June 10th and three permittees utilize it in winter from November 16th to December 31st. There is one reservoir on this allotment but it has not functioned for some time (Bauer 2011). Permittees currently haul water to the allotment. The allotment has boundary fences but no pasture fences; it considered open range within the allotment.

Vegetation types found in the three allotments range from saltbush shrubland, big sagebrush shrubland, greasewood flat, pinyon-juniper, and foothill and lower montane riparian woodland and shrubland (**Section 3.7**).

### **3.5 Soils**

Using the NRCS web soil survey of Emery Area, Utah, Parts of Emery, Carbon, Grand, and Sevier Counties County, UT (Soil Series UT623), 14 soil units or soil associations have been identified in the Project Area (NRCS 2007). Generally, soils range from sandy loams to clay loams with gravel components in areas. There is a known gravel resource in the area identified by the CCCIC as the gravel source area for the Project (40 acres in T. 18 S., R. 7 E., NE ¼ section 23); there is also a known clay concentration in the area identified as a source of clay for the core of the dam (40 acres in T. 19 S., R. 8 E., E ½ section 5).

Details of each soil or soil association is listed and discussed below (**Table 3-1**). The name of the soil or soil association is listed with the NRCS map unit numbers as described in the Soil Survey.

**Table 3-1 Soils in the Project Area**

Map Unit Symbol	Map Unit Name	Description
224	Mivida, fine sandy loam	This soil unit is found from 5,000 to 6,600 feet amsl on structural benches. The soil is characterized as fine sandy loam. This association is found in areas with 2 to 6 percent slopes with a drainage class of well drained.
BMD	Strych very stony fine sandy loam	This soil unit is found from 5,300 to 7,100 feet amsl on fan remnants. The soil is characterized as very cobbly fine sandy loam. This association is found in areas with 3 to 30 percent slopes with a drainage class of well drained.
CBF2	Chipeta-Badland complex	This soil unit is found from 4,000 to 6,800 feet amsl on hills. The soil is characterized as silty clay. This association is found in areas with 3 to 45 percent slopes with a drainage class of well drained.
COD2	Greybull-Utaline-Persayo complex	This soil unit is found from 4,000 to 6,400 feet amsl on pediments. The soil is characterized as gravelly clay loam to gravelly sandy loam. This association is found in areas with 8 to 45 percent slopes with a drainage class of well drained.
CPE2	Chipeta-Persayo-Killpack complex	This soil unit is found from 4,000 to 6,400 feet amsl on hills. The soil is characterized as silty clay loam to gravelly clay loam. This association is found in areas with 3 to 20 percent slopes with a drainage class of well drained.
GLC	Quitcupah-Colorow-Pherson complex	This soil unit is found from 4,800 to 6,500 feet amsl on stream terraces. The soil is characterized as fine sandy loam to gravelly fine sandy loam. This association is found in areas with 2 to 5 percent slopes with a drainage class of well drained to moderately well drained.
Hs	Hunting loam, moderately saline	This soil unit is found from 4,000 to 6,500 feet amsl on alluvial flats. The soil is characterized as silt and clay loam. This association is found in areas with 1 to 3 percent slopes with a drainage class of somewhat poorly drained.
KAC	Persayo-Greybull complex	This soil unit is found from 4,100 to 6,400 feet amsl on hills. The soil is characterized as gravelly loam to clay loam. This association is found in areas with 3 to 12 percent slopes with a drainage class of well drained.
KIB	Killpack clay loam	This soil unit is found from 4,000 to 6,400 feet amsl on hills. The soil is characterized as clay loam. This association is found in areas with 1 to 3 percent slopes with a drainage class of well drained.
Lb	Libbings-Saseeps complex	This soil unit is found from 4,000 to 6,500 feet amsl on hills. The soil is characterized as silty clay loam and clay loam. This association is found in areas with 0 to 3 percent slopes with a drainage class of poorly drained.
NFE	Lazear-Gerst-Pacon complex	This soil unit is found from 5,200 to 7,200 feet amsl on structural benches and hills. The soil is generally characterized as gravelly loam. This association is found in areas with 3 to 35 percent slopes with a drainage class of well drained.
NGG2	Gerst-Strych-Badland complex	This soil unit is found from 5,100 to 8,050 feet amsl on hills. The soil is generally characterized as very stony loam to cobbly fine sandy loam with the badland component of clay. This association is found in areas with 30 to 80 percent slopes with a drainage class of well drained.

Map Unit Symbol	Map Unit Name	Description
NME2	Gerst-Lazear-Badland complex	This soil unit is found from 5,200 to 7,200 feet amsl on hills. The soil is generally characterized as cobbly clay loam to sandy clay loam with the badland component of clay. This association is found in areas with 8 to 80 percent slopes with a drainage class of well drained.
PCE2	Persayo-Chipeta association	This soil unit is found from 4,000 to 6,400 feet amsl on hills. The soil is characterized as loam to clay loam. This association is found in areas with 3 to 20 percent slopes with a drainage class of well drained.
PdB	Mivida gravelly fine sandy loam	This soil unit is found from 5,000 to 9,550 feet amsl on fan remnants. The soil is characterized as gravelly fine sandy loam. This association is found in areas with 1 to 5 percent slopes with a drainage class of well drained.
PeB	Penner loam	This soil unit is found from 5,250 to 6,400 feet amsl on alluvial fans. The soil is characterized as very fine sandy loam. This association is found in areas with 1 to 3 percent slopes with a drainage class of well drained.
RIB	Ravola loam	This soil unit is found from 4,000 to 6,500 feet amsl on alluvial flats and stream terraces. The soil is characterized as loam. This association is found in areas with 1 to 3 percent slopes with a drainage class of well drained.

### 3.6 Vegetation including TES and BLM Sensitive Species, Invasive Species/ Noxious Weeds, and Wetlands/Riparian Zones

#### 3.6.1 General Vegetation

The Project Area contains several different vegetation communities described in the U.S. Geological Survey's (USGS) ReGAP database. The main vegetation communities present within the Project Area are briefly described below. Common species identified in the field during a reconnaissance survey in November 2010 are included in the descriptions as well. Photos from the November 2010 survey are included in **Appendix D**. The survey included areas around the outside of the reservoir footprint, which would be affected to re-route the existing XTO pipeline. It also included the northern gravel-borrow area. Both of these areas were similar to the remainder of the Project Area. Due to timing of field surveys in 2010, the clay borrow area could not be accessed to review habitat. The clay borrow area was reviewed during April 2011 and found to be an area of cropland/hay and generally degraded rangeland with trampled soils between sagebrush and greasewood shrubs. The grass component was low at this site.

#### **Inter-mountain Basins Mat Saltbush Shrubland (S045) and Intermountain Basins Mixed Salt Desert Scrub (S065)**

These two ecological systems – mat saltbush shrubland and mixed salt desert scrub- are the most common in the Project Area, and tend to interfinger. They occur on the slopes above the valley floor of Cottonwood Creek and on slopes and plains south of where the Project Area leaves this drainage.

The mat saltbush shrubland occurs on gentle slopes and rolling plains on Mancos Shale. Substrates are shallow, typically saline and alkaline, fine-textured soils developed from shale or alluvium and may be associated with shale badlands. Infiltration rate is typically low. This landscape supports dwarf-shrublands composed of relatively pure stands of mat saltbush (*Atriplex corrugata*) and Gardner saltbush (*Atriplex gardneri*) (Braddy 2005). These two species, plus shadscale (*Atriplex confertifolia*), were the dominant species found within the Project Area in this community. Vegetation cover was ocularly estimated at approximately 5 to 10 percent.

Mixed salt desert scrublands are found where soils are slightly deeper, coarser, and somewhat more moderated in terms of pH, sodium or other salts. As is typical of this landscape, substrates are generally saline and calcareous, alkaline, and fine to coarse textured (Braddy 2005). Major species found in the Project Area included shadscale, four-winged saltbush (*Atriplex canescens*), rubber rabbitbrush (*Chrysothamnus nauseosus*) and yellow rabbitbrush (*Chrysothamnus viscidiflorus*), and scattered greasewood (*Sarcobatus vermiculatus*). Vegetation cover was ocularly estimated at approximately 10 to 20 percent.

#### **Inter-mountain Basins Big Sagebrush Shrubland (S054)**

This common ecological system is found throughout much of the western U.S. on rolling plains; however, it is fairly limited within the Project Area. Soils in this vegetation community tend to be deep, well-drained, and not saline (Braddy 2005). In the Project Area, this community is found between the canal and the riparian type area within the Cottonwood Creek drainage. It is dominated by big sagebrush (*Artemisia tridentata*). Other common species found included rubber and yellow rabbitbrush, snakeweed (*Gutierrezia sarothrae*), bluebunch wheatgrass (*Pseudoroegneria spicata*), Great Basin wildrye, and cheatgrass (*Bromus tectorum*). This community includes areas of greasewood and other Chenopods at its lower limits, and scattered junipers at its upper limits. This community interfingers with the foothill and lower montane riparian woodland and shrubland community (described below) when it extends further out of the Project Area into the Cottonwood Creek valley floor. Vegetation cover in Inter-mountain Basins Big Sagebrush Shrubland within the Project Area was ocularly estimated at approximately 40 percent.

#### **Inter-mountain Basins Greasewood Flat (S096)**

Greasewood flats typically occur on stream terraces. Sites typically have saline soils, a shallow water table, and flood intermittently but remain dry for most of the growing season. While it can sometimes grow in dense monocultural stands, this system usually occurs as a mosaic of multiple communities that may be co-dominated by four-winged saltbush, and/or shadscale and winterfat (Braddy 2005). In the Project Area, this community type was located in somewhat saline areas, or small draws coming off the escarpment in the reservoir footprint area. Also found here were bluebunch wheatgrass, Great Basin wildrye, and cheatgrass (*Bromus tectorum*). Vegetation cover was ocularly estimated at approximately 40 percent.

### **Colorado Plateau Pinyon-Juniper Shrubland (S052) and Colorado Plateau Pinyon-Juniper Woodland (S039)**

These two similar ecological systems are found on mesa tops and steep side slopes. Substrates are shallow and rocky and may be loose or massive. Shaley soils are common (Braddy 2005). Loose soils typically occur on sidehills, while massive soils occur on mesa tops, drainage bottoms, and slickrock areas. Within the Project Area this vegetation community was found on steep, north-facing escarpment slopes, mostly above the existing canal including the gravel borrow site, and on areas with rocky ledges or shallow soils in and around the reservoir site and XTO pipeline re-route area. Pinyon pine (*Pinus edulis*), and Utah juniper (*Juniperus osteosperma*) dominate, but mountain mahogany (*Cercocarpus montanus*), shadscale, littleleaf mock orange (*Philadelphus microphyllus*), bitterbrush (*Purshia tridentata*), and four-winged saltbush were also found. The total vegetation cover varied based on soil type, depth, and aspect. Generally, vegetation was sparse, with total plant cover being about 20 percent.

### **Great Basin Foothill and Lower Montane Riparian Woodland and Shrubland (S118)**

This system occurs in drainages of mountain ranges of the Great Basin and along the eastern slope of the Sierra Nevada within a broad elevation range from about 4,000 feet to over 7,000 feet. This system often occurs as a mosaic of multiple communities that are tree-dominated with a diverse shrub component. The variety of plant associations connected to this system reflects elevation, stream gradient, floodplain width, and flooding events (Braddy 2005). Within the Project Area, this ecological community was found within the Cottonwood Creek drainage flood plain, and adjacent to leaky areas of the canal, although these latter areas are too small to be noted on the ReGAP map used to identify vegetation communities. Common plant species included narrowleaf cottonwood (*Populus angustifolia*), tamarisk (*Tamarix ramosissima*), willow (likely *Salix exigua*), chokecherry (*Prunus virginiana*), and virgin's bower (*Clematis Columbiana*). Common grasses included Great Basin wildrye (*Leymus cinereus*), common reed (*Phragmites australis*) and red top (*Agrostis gigantea*).

#### **3.6.2 Invasive Species/Noxious Weeds**

The Utah Noxious Weed Act (U.C. 4-17, enacted 1981 et. seq.) currently includes 27 species. These species are divided into three classes, A, B, and C. Class A weeds have a relatively low population size and are of highest priority; they are not widespread and therefore are controllable. Class B weeds have a moderate population in the state but are still considered controllable in most areas. Class C weeds are found extensively in Utah and are thought to be beyond control. Efforts for Class C weeds focus on containment of smaller infestations (Utah Weed Control Association (UWCA 2011)). During the November reconnaissance surveys of the pipeline route from its northern end to the reservoir site, and within the proposed reservoir site itself, three listed noxious weeds and three invasive weeds were observed. These are listed in **Table 3-2**.

**Table 3-2 Noxious weeds identified within the Project Area**

Common Name	Scientific Name	Status	Location
Musk thistle	<i>Carduus nutans</i>	Class B Weeds	Disturbed riparian
Russian thistle	<i>Salsola tragus</i>	Invasive weed	Disturbed roadways
Russian olive	<i>Elaeagnus angustifolia</i>	Invasive weed	Canal route
Saltcedar	<i>Tamarix ramosissima</i>	Class C Weeds	Canal route
Halogeton (saltlover)	<i>Halogeton glomeratus</i>	Invasive weed	Disturbed upland fields

The project area is not pristine; the existing canal banks have been disturbed numerous times over the years and contain a mix of native and weedy/noxious species. Russian thistle and halogeton occur commonly in disturbed sites throughout the Project Area. These species have invaded in patchy areas along most existing roads that are within the Project Area, as well as an oil/gas pipeline and road located in T. 18 S., R. 7 E., section 23.

Common reed (*Phragmites australis*) a tall warm-season grass is growing in numerous places along the canal within the Cottonwood Creek drainage area. There are two subspecies of the *Phragmites* plant, a slow-growing North American native plant, and a European invasive wetland subspecies that tends to displace native vegetation. Russian olive (*Elaeagnus angustifolia*), and Tamarisk (*Tamarix ramosissima*), also considered invasive, were noted intermittently along the canal route.

Noxious or invasive weeds often establish in disturbed areas because niches are left open and they can establish quickly. Weeds may establish via seeds, stolons, and rhizomes; they can be transported due to wind, animals, water, humans, and motorized equipment. The project area is in a harsh environment, which is dominated by various salt desert shrubs. It is possible that other noxious and/or invasive species are growing in the Project Area. However, weed growth had ceased in November, many non-wood species had died back, and no other weeds were observed during the 2010 reconnaissance survey.

### 3.6.3 TES and BLM Sensitive Species

Of the seven plant species listed as Threatened or Endangered in Emery County by the USFWS, habitat needs suggest that three could possibly exist within the Project Area. Of the 17 BLM-listed sensitive species, two could possibly exist in the Project Area, but are not likely to occur. One, the Creutzfeldt-flower is known to occur in the area. The listed species, their habitat, and the likelihood of encountering them, are listed in **Table 3-3** below. Field observations of the Project Area from the north end and including the reservoir site were conducted in November 2010. Suitable habitat for TES species were identified at that time, although plant observations were not made due to the time of the year. Follow up surveys are being conducted as noted below.

## Threatened or Endangered Plants

Suitable habitat for the Wright fishhook cactus (*Sclerocactus wrightiae* - Endangered(E)) was noted within the reservoir footprint and along the pipeline route north of the reservoir. *Sclerocactus* are known to occupy the project area. Without flowers, the plants are difficult to identify to species.

Detailed plant surveys were conducted in April 2011 over a representative portion of the Project Area which provides habitat for the TES plants that potentially occur in the area. Surveys were conducted by a team of two to three biologists running transects approximately 30 feet apart at over 58 acres including the northern portion of the reservoir footprint and a 300-foot buffer area. Occurrences of *Sclerocactus* and *Cryptantha creutzfeldtii* were recorded. Single plants were gps-marked as points. Polygons were created around groupings of the BLM sensitive *Cryptantha*. A total of 143 single *Sclerocactus* were recorded; many were concentrated in a particular area to the northwest of the reservoir footprint and 25 plants were recorded within the reservoir footprint. At the time of surveys, the cactus was not flowering, so species determination was not possible. These *Sclerocactus* onsite were later reviewed by the BLM and found to be the common *S. parviflorus*.

Potential habitat for Last chance townsendia (Threatened - T) exists in the southern portion of the reservoir site in an area of pinyon-juniper shrubland. This area is in section 25, T. 18 S., R. 7 E. Clearance surveys were conducted during April -May 2011. Although many Townsend's daisy plants were found onsite, these were all pink to white-flowering species which are common in the area. A single yellow-flowered *Townsendia* (possibly *T. aprica*) was noted during April 2011 surveys.

The San Rafael cactus (*Pediocactus despainii*) may also occur in the project area. This small cactus is endemic to central Utah in Emery and Wayne counties, and occurs in open pinyon-juniper communities on limestone gravels at around 6,000 feet elevation. As it seasonally retreats to soil level or below, this plant was not found during April 2011 surveys.

## BLM Sensitive Plants

Creutzfeldt-flower (*Cryptantha creutzfeldtii*) is listed by the BLM as a BLM sensitive species. The BLM 6840 Manual states that in compliance with existing laws, including the BLM multiple use mission as specified in the FLPMA, the BLM shall designate Bureau sensitive species and implement measures to conserve these species and their habitats, including ESA proposed critical habitat, to promote their conservation and reduce the likelihood and need for such species to be listed pursuant to the ESA.

*C. creutzfeldtii* is a narrowly endemic plant species that occurs on Mancos Shale habitats along the bases of the Wasatch Plateau and the Book Cliffs as they flank Castle Valley to the west and north, in Carbon, Emery, and Sevier Counties. It is found in shadscale and mat *Atriplex* communities between 5,250 and 6,500 feet elevation. This species is very edaphic/clay restricted, so throughout its range, the spatial distribution of *C. creutzfeldtii* is patchy. Few intensive surveys for this species have been completed, and all suitable habitat has not been surveyed. However, it is known to occur on BLM and National Forest Service managed lands and private lands; within

three miles of the Project area, there are four other known populations of *C. creutzfeldtii*. Known threats to the species include disturbance through oil and gas development, ATV use, and livestock grazing.

Surveys completed in 1997 found approximately 2,000 individuals within the small valley that includes the proposed reservoir project area. In April and June of 2011, intensive surveys for *C. creutzfeldtii* covered suitable habitat within and adjacent to the Project Area. Out of the 223 acres intensively surveyed, *C. creutzfeldtii* plants occupied a total of 26.8 acres. The majority of plants were found in dense clusters that formed polygon features, with a few scattered individuals found throughout (refer to **Figure 5** for details). The 2011 surveys found approximately 19,000 plants within the surveyed area, with approximately 3,200 plants on 7.8 acres occurring within the projected disturbance of the reservoir, pipeline re-route and roads.

### Survey Methods

Detailed plant surveys were conducted in April and June 2011 over the entire Project Area that provides habitat for the sensitive plants that potentially occur in the area. The surveys in April were conducted by a team of two to three biologists running transects approximately 30 feet apart over 58 acres including the northern portion of the reservoir footprint and a 300-foot buffer area. Occurrences of *Sclerocactus* sp. and *C. creutzfeldtii* were recorded. Single plants were mapped as points. Polygons were created around dense clusters of the BLM sensitive *C. creutzfeldtii*. A total of 143 single *Sclerocactus* sp. were recorded. At the time of surveys, the cactus was not flowering, so species determination was not made at that time. On May 31<sup>st</sup> and June 6<sup>th</sup> 2011, a BLM biologist completed site visits and determined that the cactus was not *Sclerocactus wrightiae*, but *S. parviflorus* due to the filament color and other distinguishing characteristics. The survey in June 2011 was completed by wandering transects until the dense clusters were located. Once the clusters were located, the boundary of the cluster was walked. No other listed or non-listed sensitive plant species were observed during the surveys, or are known to occur within the project area.

**Table 3-3 TES Species listed as being present in Emery County or within the PFO Jurisdiction of the BLM**

Common Name	Scientific Name	Status <sup>1</sup>	Habitat	Likelihood of Occurrence
<b>Threatened and Endangered Species for Emery County</b>				
Barneby reed-mustard	<i>Scoenocrambe barnebyi</i>	E	Mixed shadscale, <i>Eriogonum - Ephedra</i> communities on the Chinle Formation at 4,800 to 6,500 ft. elev. <sup>3</sup>	No
Jones Cycledenia	<i>Cycladenia jonesii var humilis</i>	T	Gypsiferous saline soils of the Chinle, Cutler, and Summerville Formations in <i>Eriogonum-Ephedra</i> , cool desert shrub, and juniper communities between 4,400 and 6,000 ft. elev. <sup>3</sup>	No

Common Name	Scientific Name	Status <sup>1</sup>	Habitat	Likelihood of Occurrence
Last Chance Townsendia	<i>Townsendia aprica</i>	T	Pinyon-juniper (P-J) and salt desert shrub vegetation on barren, silty, clayey, or gravelly clay soils of the Mancos Fm at 5,561-7,349 ft. elev. <sup>2</sup>	Possible
San Rafael cactus	<i>Pediocactus despainii</i>	E	Hills, benches, flats of open, semi-arid grasslands with scattered P-J forest. <sup>2</sup>	Possible
Winkler cactus	<i>Pediocactus winkleri</i>	T	Alkaline, fine-texture soils primarily of the Dakota Fm. In salt desert shrub communities at 4,760 – 5,250 ft. elev. <sup>2</sup>	No
Wright fishhook cactus	<i>Sclerocactus wrightiae</i>	E	Barren, alkaline soils of clay to sandy silt to fine sand littered with sandstone or basalt gravels, cobbles or boulders. Generally there is little/no gypsum. Soil crusts usually present. Shrubs, perennial herbs, and bunchgrasses are widely scattered. Elevation 4,790 – 6,120 ft. elev. <sup>2</sup>	Possible
Sensitive Species				
Basalt milkvetch	<i>Astragalus subcinereus</i> var. <i>balticus</i>	S1, 0	P-J and ponderosa pine communities on igneous gravels between 4,500 and 8,000 ft. elev. <sup>3</sup>	No
Coal-cliffs sweetvetch	<i>Hedysarum occidentale</i> var. <i>conone</i>	S2, 0	Mountain brush, sagebrush, and lower spruce-fir-aspen communities. <sup>2</sup>	No
Creeping rush-pea	<i>Caesalpinia repens</i>	S2, 0	Sandy deserts with Ephedra, Indian ricegrass, and other sand-loving plants on red soils. Found at 4,700 to 5,500 ft. elev. <sup>3</sup>	No
Entrada Rushpink	<i>Lygodesmia grandiflora</i> var. <i>entrada</i>	S?, ?	Mixed desert shrub and juniper communities between 4,400 and 4,800 ft. elev on sandy soils of the Entrada formation	No
Flat Top buckwheat	<i>Eriogonum corymbosum</i> var. <i>smithii</i>	S1, 0	Grows on Entrada Fm and stabilized seleniferous dunes. Found with Indian ricegrass, desert shrub, and rabbitbrush communities at 4,500 to 6,000 ft. <sup>3</sup>	No
Horse Canyon stickleaf	<i>Mentzelia multicaulis</i> var. <i>librina</i>	S1, 0	Sagebrush, rabbitbrush and P-J communities at 6,200 ft. on Mancos Shale and Price River Fms. <sup>2</sup>	No
Huntington rabbitbrush	<i>Chrysothamnus nauseosus</i> var. <i>psilocarpus</i>	S1, 0	No information found	No
Creutzfeldt-flower	<i>Cryptantha creutzfeldtii</i>		Mancos Shale Formation, 5,250 – 6,500 feet elevation, shadscale and mat Atriplex communities.	Occurs
Johnston cryanth	<i>Cryptantha johnstonii</i>	S1S2, 0	Carmel Fm: barren, sandy clay soil on low, rolling hills and sparsely vegetated mixed desert shrub and P-J community at 5,900-6,400 ft. elev. <sup>2</sup>	No
Jones' cryptantha	<i>Cryptantha jonesiana</i>	S2S3, 0	Mixed desert shrub and P-J communities on barren clay slopes of the Summerville and Moenkopi fms. <sup>2</sup>	No

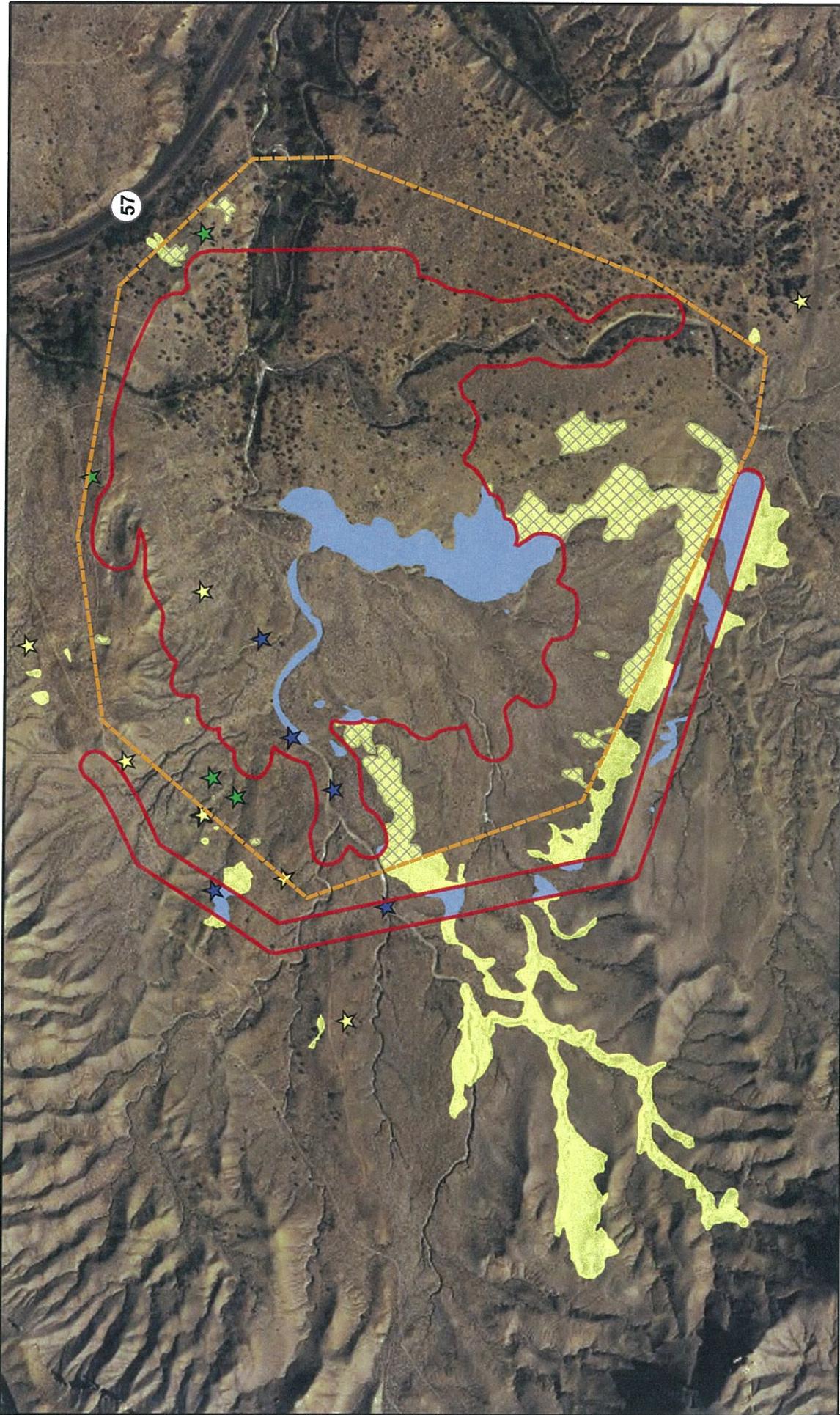
Common Name	Scientific Name	Status <sup>1</sup>	Habitat	Likelihood of Occurrence
Graham penstemon	<i>Penstemon grahamii</i>	S2, C	Gravelly clay soils on semi-barren knolls of white calcareous shale of the Green R. Fm. Near Parachute Ck and Evacuation Ck. – Associated with oil shale. <sup>2</sup>	No
Jones indigo-bush	<i>Psoralea polydenius</i> var. <i>jonesii</i>	S1S2, 0	Salt desert shrub communities on Mancos Shale – Bluegate and Tununk members; and overlying terraces, pediments, alluvial gravels at 4,167 to 4,921 ft. <sup>2</sup>	Possible; not likely
Mussentuchit gilia	<i>Aliciella tenuis</i> (syn: <i>Gilia tenuis</i> )	S1, 0	Sandstone outcrops and steep, detrital slopes with mountain brush, juniper, and cushion plants <sup>2</sup>	No
Peabody Milkvetch	<i>Astragalus pubentissimus</i> var. <i>peabodianus</i>	S2, 0	Entrenched channels on the south and west flanks of the Tavaputs Plateau in P-J and mixed desert shrub communities between 4,300 and 5,800 ft. elev. <sup>3</sup>	No
Psoralea globemallow	<i>Sphaeralcea psoraloides</i>	S2, 0	Gently sloping but harsh salt desert shrub communities and P-J. Soils are clayey, silty, sandy or gravelly, semibarren, and alkaline. Common on Mancos shale (Tununk member), Buckhorn, Curtis, Entrada siltstones. <sup>2</sup>	Possible; not likely
Shultz stickleaf	<i>Mentzelia shultziorum</i>	S1, 0	Mixed desert shrub communities on the Moenkopi and Paradox Fms. At 4,200-6,000 ft. elev. <sup>2</sup>	No
Trotter oreoxis	<i>Oreoxis trotteri</i>	S1, 0	In crevices, sandy pockets, and shaded areas of the Moab Tongue and Slickrock members of the Entrada Fm. Usually in open on N. aspect. Mixed P-J and desert shrub at 4,450-5,160 ft. elev. <sup>2</sup>	No
Utah spurge	<i>Euphorbia nephradenia</i>	S2, 0	Tropic shale Fm: dark clay hills, blow and stabilized dunes, desert shrub communities 3800 to 4,800 ft. elev. <sup>2</sup>	No

Sources: USFWS 2011a, BLM 2010

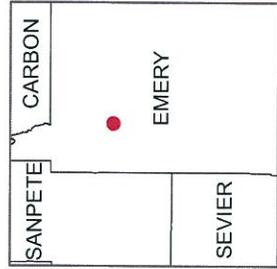
<sup>1</sup> Rank – S = State rank – 1 through 5 possible: The lower number is more imperiled; 0, E, T, C = Federal rank under Endangered Species Act (ESA) – No listing, Endangered, Threatened, or Candidate

<sup>2</sup> Information from NatureServe. 2011. NatureServe Explorer: An Online Encyclopedia of Life. Available at <http://www.natureserve.org/explorer/index.htm>

<sup>3</sup> Information from Utah Rare Plant Guide: Utah Native Plant Society. 2003-2011 [cited {your access date}]. Utah rare plant guide. [Internet]. A.J. Frates editor/coordinator. Salt Lake City, UT: Utah Native Plant Society. Available from: <http://www.utahrareplants.org>.



BASE MAP: NAIP IMAGERY (USDA 2009)



- ▭ Proposed Adobe Wash Reservoir and Pipeline Re-route Footprint
- ▭ Cryptantha Creutzfeldtii Population Outside Disturbance
- ▭ Cryptantha Creutzfeldtii Population Within Disturbance
- ▧ Cryptantha Creutzfeldtii Population Within Fence
- ★ Cryptantha Creutzfeldtii Single Plant Outside Disturbance
- ★ Cryptantha Creutzfeldtii Single Plant Within Disturbance
- ★ Cryptantha Creutzfeldtii Single Plant Within Fence



**COTTONWOOD CREEK  
CONSOLIDATED IRRIGATION COMPANY  
ADOBE RESERVOIR AND PIPELINE EA**

**FIGURE 5  
BLM SENSITIVE PLANT SURVEY RESULTS**

DRAWN BY	S Topham	DATE DRAWN	06/21/2011
SCALE		1 in = 580 feet	

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### **3.6.4 Wetlands/Riparian Zones**

The National Wetlands Inventory Map (USFWS 2011b) does not list any wetlands or riparian areas within the Project Area. There are, however, several small areas that the project crosses that exhibit wetland and/or riparian characteristics, namely hydrophyllic vegetation and running water or moist soil. The north end of the Project Area (Section 15, T. 18 S., R. 7 E.) is adjacent to the riparian zone of Cottonwood Creek. Riparian vegetation is also found in the drainage that cuts through the reservoir footprint, near Highway 57. Both these areas contain narrow-leaf cottonwoods, clematis, a variety of willows, common reedgrass, redtop, inland saltgrass (*Distichlis spicata*) and other plants associated with riparian or wetland habitats.

Three intermittent drainages (as marked on the USGS 7.5 minute quad maps, Castle Dale and Red Point) are crossed by the Project Area. The southernmost drainage had patchy flow during the November field trip and supported trees and grass as noted above. The center drainage is a mostly barren arroyo that cuts through sparsely vegetated pinyon-juniper woodland. The northernmost drainage supports a small, raised, seep area covered by inland saltgrass. Other small drainages are evident in this area; all appear to be fed largely by the canal, as the bulk of thick, grassy vegetation begins on the downstream side (east) of the canal in each drainage. These areas show signs of salt deposition, but support limited species diversity. No open water was noted in these drainageways.

The Project Area is directly adjacent to the flood plain of Cottonwood Creek in the N½ NE¼ section 23 and S½ SE¼ section 14, T. 18 S., R. 7 E. This area contains ponds and low-lying, partially inundated marshy areas. These are outside of the Project Area and would not be affected by the Project.

### **3.7 Water Resources including Hydrologic Conditions**

The Project Area is located within the San Rafael River Basin, which is part of the Colorado River System. Specifically, the project involves stream flows that are collected in Joes Valley Reservoir, released to Straight Canyon, and subsequently conveyed into Cottonwood Creek. It also involves stream flows that are produced in upper Cottonwood Creek upstream of its confluence with Straight Canyon. Cottonwood Creek is one of the primary tributaries to the San Rafael River.

Several miles west of the Project Area, Joes Valley Reservoir collects flow from several high-elevation streams that drain the uppermost eastern slopes of the Wasatch Plateau. Water released from the dam joins Cottonwood Creek about five miles downstream and east of the reservoir. The reservoir is operated by the EWCD. They provide water storage for CCCIC (which diverts a portion of Cottonwood Creek stream flows into several unlined canals), PacifiCorp (who owns shares in CCCIC as well as additional separate water rights to Joes Valley water), and the municipalities of Orangeville and Castle Dale. CCCIC's canals supply numerous feeders, laterals, and on-farm ditches that are used to flood-irrigate pastureland and hay crops. Pipeline diversions from Cottonwood Creek supply municipal water to a nearby treatment plant and cooling water to PacifiCorp's Hunter Power Plant.

The furthest upstream of the canals, known as the Clipper Western, is included in the Project Area. It diverts water from Cottonwood Creek approximately 2.5 miles downstream of the Straight Canyon/Cottonwood Creek confluence. The diverted water generally continues along the contour of the flanks of the Wasatch Plateau, heading southeast and away from Cottonwood Creek. It crosses several ephemeral washes before it splits into two separate canals (the Clipper and the Western) approximately 3.5 miles from its intake. As with all of the canals in the area, the Clipper Western Canal is unlined and leaks.

EWCD continuously monitors flows in Cottonwood Creek below Joes Valley Reservoir (outlet flows) and at the head of the Clipper Western Canal, among other sites in the network (EWCD 2011). Although it has been monitored for several years, Cottonwood Creek flow data are available on the EWCD website only for the time period between mid-April 2010 and the present (before that time, gage height is reported; a rating curve would be needed to convert this height to a flow rate). **Table 3-4** provides a summary of the data obtained at these two sites. Based upon these data, it appears that the Clipper Western Canal withdrawal rates are similar from year to year, with little annual variation. However, both Cottonwood Creek flows and canal flows vary seasonally. In 2010, Cottonwood Creek's maximum daily flow occurred in mid-June and the lowest flow rates occurred in late fall and winter. The Clipper Western Canal generally receives its highest flows in June, and flows are much higher between mid-April and mid-September (the irrigation season) than during the rest of the year.

**Table 3-4 Stream Flow Data (cfs)**

Location	Time Period	Average Daily Flow	Maximum Daily Flow	Minimum Daily Flow
Cottonwood Creek below Joes Valley Reservoir*	April 14,2010 to Feb. 10, 2011	104	309	11
Head of Clipper Western Canal*	April 14,2010 to Feb. 10, 2011	16	70	0
Head of Clipper Western Canal*	Jan. 1, 2006 to Feb. 10, 2011	17	77	0

\*Source: EWCD 2011.

Further downstream, Cottonwood Creek is also monitored by EWCD; data from 1990 to 2001 were summarized and reported in the West Colorado Watershed Management Unit's TMDL report (MFG, Inc. 2004). Average monthly flows ranged from a low of 0.8 cfs in August 1994 to a high of 565 cfs in June 1996. Over the entire 12-year period of record, average monthly flow was approximately 34 cfs. Although the two data sets represent differing periods of record, it is reasonable to assume that flows generally decrease between the upstream site and the downstream site due to the above-mentioned pipeline and canal withdrawals.

Natural alluvial aquifers of any great extent are lacking in the Project Area vicinity (UDWR 1976). However, there may be some shallow, discontinuous areas of alluvial groundwater in and near the Project Area. For example, alluvium associated with Cottonwood Creek as it exits the canyon and flows across Castle Valley likely contains

shallow groundwater associated with stream flows. In fact, CCCIC owns a water well on the north side of Cottonwood Creek just downstream from the Clipper Western Canal diversion; this well is approximately 60 feet deep (UDWRi 2011); though there is no well log available, based upon its depth it is likely completed in the alluvial materials. Shallow groundwater is also likely present in the area due to long term leakage from CCCIC's unlined canals and to long term flood irrigation down gradient of those canals. XTO has some active water disposal wells in the vicinity and one such well (API- 43-015-30272) located very close to, and down-gradient of, the Clipper Western Canal apparently intercepted shallow groundwater at about 46 feet (Utah Division of Oil, Gas and Mining [UDOGM 2011]). A likely source of this water was the canal. Leaking canal water, irrigation return flows, and deep percolation of irrigation water likely all comprise an artificial groundwater source that likely migrates toward Cottonwood Creek and serves as a source of saline gains in flow.

The shallowest bedrock aquifer in this area is associated with the Ferron Sandstone Member of the Mancos Shale. While of local importance in the southernmost part of Castle Valley, it does not appear to be a water source in the Project Area vicinity. The elevation of the top of the Ferron Sandstone Member in the vicinity of the proposed reservoir is likely approximately 4,000 feet, dipping to the northwest (Lines et. al. 1981). Generally in Castle Valley, the complete thickness of the Ferron is saturated (Lines et. al. 1981), which suggests that depth to a bedrock aquifer is approximately 2,000 feet below the reservoir. The aforementioned XTO water disposal well encountered the Ferron Sandstone at about 2,450 feet below ground surface (UDOGM 2011). There are no known water wells completed in any bedrock aquifers within the Project Area or in Castle Valley within a few miles of the project (UDWRi 2011).

As with much of the West Colorado River Basin, the Cottonwood Creek area's water quality varies both seasonally and spatially. Of particular note is the total dissolved solids (TDS) concentration (i.e. salinity). In the upper parts of the watershed, which drain to Joes Valley Reservoir and the headwaters of Cottonwood Creek, continuing for some distance downstream, TDS concentrations are generally very low. However, progressing further downstream, TDS concentration markedly increases due to: (1) contact with natural geologic formations that are predominantly of shales of marine origin and natural sources of soluble salts; and (2) irrigation practices wherein leaky canals, over-application of water, and flood irrigation practices contribute shallow groundwater containing leached salts to certain stream reaches. For example, MFG, Inc. (2004) reported that upper Cottonwood Creek, upstream of the Clipper Western Diversion, had a mean TDS concentration of 249 milligrams per liter (mg/L), while during that same time period, lower Cottonwood Creek (downstream of irrigated areas and within the aforementioned marine shales) had a mean TDS concentration of 2,325 mg/L.

### 3.8 Wildlife and Fish including BLM Sensitive Species, Migratory Birds

#### 3.8.1 Wildlife and Fish including BLM Sensitive Species

The Project Area contains suitable habitat for mule deer (*Odocoileus hemionus*). The Cottonwood Creek drainage is within spring/fall mule deer habitat, while the reservoir is within winter mule deer habitat. Deer tracks and scat, and signs of browse on shrubs were noted during a November 2010 field survey. The entire Project Area is within winter range for Rocky Mountain elk (*Cervus canadensis*). However, no signs of elk (scat, tracks) were noted during November field surveys. There is no crucial deer or elk habitat in the Project Area, and no sage grouse or moose habitat. According to the Utah Conservation Data Center (UCDC, 2010), bald eagles and white-tailed prairie dogs have been observed within the area of the USGS Castle Dale quadrangle in 2007 and 2008, respectively. Bobcat (*Lynx rufus*) tracks were observed within the proposed reservoir footprint during the November field survey.

The open canals currently provide a water source for wildlife. Canal seepage has resulted in riparian-like habitats in some areas, on the downstream side of the canal, which may also attract wildlife.

Fish habitat is also present in the Project Area. As noted above in **Section 3.7**, the project involves stream flows that are collected in Joes Valley Reservoir, released to Straight Canyon, and subsequently conveyed into Cottonwood Creek, which is one of the primary tributaries to the San Rafael River. Cutthroat trout, splake, and tiger trout are among the fish caught in Joes Valley Reservoir; in Straight Canyon Creek and Cottonwood Creek, brown trout are the likely catch.

The bluehead sucker is a sensitive fish species that is native to parts of Utah, Idaho, Arizona, New Mexico, and Wyoming. This species occurs in the upper Colorado River system, the Snake River system, and the Lake Bonneville basin. In Utah, bluehead suckers have been reduced in numbers and distribution due to flow alteration, habitat loss/alteration, and the introduction of nonnative fishes. Consequently, the bluehead sucker is included on the *Utah Sensitive Species List*. The bluehead sucker is a benthic (bottom dwelling) species with a mouth modified to scrape algae (the primary food of the bluehead sucker) from the surface of rocks. According to the UDWR, the bluehead sucker is present in Millsite Reservoir. It may also be present in downstream areas of Cottonwood Creek. A March 2004 report documenting 2003 electrofishing surveys of a 528-foot reach of Cottonwood Creek just below the diversion near the Highway 57 crossing noted that the reach contained 'age-1+ and age-0 bluehead sucker, mosquitofish, mottled sculpin, and speckled dace'. The report also noted that 'the presence of age-1+ and age-0 bluehead sucker, a mainstream mountain fish that tends to occur farther upstream than either flannelmouth sucker or roundtail chub. This fish is of concern due to noted flow alteration as would occur in Cottonwood Creek, since it is a primary tributary to the San Rafael River.

Flows in Cottonwood Creek vary seasonally, and generally decrease through the Project Area due to pipeline and canal withdrawals. Average monthly flows ranged from a low of 0.8 cfs in August 1994 to a high of 565 cfs in June 1996. The Utah DWR website fishing report for Straight Canyon Creek (UDWR 2011) notes the following:

'Straight Canyon Creek is also known as Cottonwood Creek and flows out of Joes Valley Reservoir. Fishing can be hazardous in the spring when large volumes of water are released from the reservoir — anglers should exercise caution.'

### **3.8.2 Migratory Birds and Raptors**

Migratory birds may utilize the scattered junipers and shrublands within the Project Area. Ground-nesting birds may occupy shrublands as well. November surveys occurred too late for most migratory bird sightings. During the November reconnaissance surveys only ravens (*Corvus corax*) were observed. Cliffs within ½ mile of the Project Area may provide suitable nesting habitat for various raptors. Two raptor nests that had not been used in at least a year were found near the junction of Adobe Wash and State Route 57 in cottonwood trees. No raptor nests were noted in the cottonwood gallery in the NE¼ Section 23, T. 18 S., R. 7 E., nor in the small canyons within the reservoir footprint. No whitewash stains were noted on the small cliff areas along the pipeline route within Cottonwood Wash. There are cliffs within ½ mile and located to the northwest, west, and southwest of the reservoir area that could harbor nests: low clouds during the November overview surveys precluded observations of these cliffs. Under direction of the Price office of DWR, the Utah Natural Heritage Program was contacted for raptor records in the Project Area. According to these records, the closest recorded raptor nest location is at least one mile from the Project Area. Three raptor nests, all golden eagle nests, are known from the Natural Heritage Program database; the nests are from one to nearly four miles from the Project Area, one to the north-northeast, one to the northwest, and one to the south-southeast of the Adobe Reservoir site.

## 4.0 ENVIRONMENTAL IMPACTS

### 4.1 Introduction

This section describes the potential environmental effects of Alternative A - Proposed Action and Alternative B – No Action Alternative on the physical, biological, and other resources in the Project Area described above in Chapter 3. In consideration of environmental protection measures and mitigating measures included in the Proposed Action, the remaining environmental consequences described below are unavoidable.

### 4.2 Direct/Indirect Impacts

#### 4.2.1 Alternative A – Proposed Action

##### 4.2.1.1 Cultural and Historic Resources

Some portions of the Clipper Western Canal (site 42EM2433) would be physically affected by the Proposed Action. However, the Proposed Action would not alter the characteristics of the property that qualify it as eligible to the NRHP under Criterion A. Portions of the canal would be physically altered by the trenching for and placement of pipeline within the existing canal. Also, the associated features of the canal along this segment (i.e. diversion structure, headgates, etc.) could be destroyed or removed. However, the canal and its associated features within the Project Area were documented in detail in anticipation of potential impacts; data contributing to the characteristics that qualify the canal as eligible for the NRHP under Criterion C has been exhausted along this portion of the site. Abandoned portions of the ditch would not be reclaimed.

The Blue Cut Ditch (42EM2714) would be outside the area of direct impacts, therefore there would be no adverse effects to it.

The prehistoric NRHP-eligible site (42EM4257) would be outside the area of direct impacts, therefore there would be no adverse effects to it. In order to ensure avoidance, as directed by the BLM, temporary fencing would be erected and/or monitoring of the site during construction would be conducted.

There would be no adverse effects to the other four sites (42EM2712, 42EM4258, 42EM4259, and 42EM4347) as they are not eligible for the NRHP.

Environmental protection measures, as discussed in **Section 2.2.5**, would minimize potential for indirect impacts to the other NRHP-eligible site outside the area of direct effect.

**Table 4-1 Proposed Action Effects to Cultural Resource Sites**

Site Number	Site Type	NRHP Evaluation	Land Status	Impacted by Proposed Action
42EM2433	Clipper Western Canal	Eligible under Criteria A and C	BLM and Private	No Adverse Effects
42EM2712	Prehistoric	Not Eligible	Private	No Adverse Effects
42EM2714	Blue Cut Ditch	Eligible under Criterion A	Private	No Adverse Effects
42EM4257	Prehistoric	Eligible under Criterion D	BLM	No Adverse Effects
42EM4258	Prehistoric	Not Eligible	BLM	No Adverse Effects
42EM4259	Historic Structure	Not Eligible	Private	No Adverse Effects
42EM4347	Historic Corral	Not Eligible	Private	No Adverse Effects

#### 4.2.1.2 Livestock Grazing

The proposed action would involve the short-term loss of vegetation along the pipeline(s) totaling about 24.1 acres. Impacts to livestock forage related to pipeline installation would be short term. After construction, the disturbed areas would be reclaimed with the goal of providing rangeland vegetation and forage again. The small size of the disturbances relative to undisturbed lands would make these disturbances negligible in comparison to the total amount of surrounding, similar rangelands.

Within the West Grimes allotment, less than 3 acres would be temporarily disturbed by pipeline construction, which would result in the short-term loss of less than 1 AUM or less than 1 percent of available forage. However, the area would be reclaimed and reseeded immediately after construction. The allotment is used during spring (April 1st to June 10th); currently, water is present in the open canal for at least part of that season. The conversion of the open canal to a pipeline could impact water available to livestock if they are using the canal as a water source.

Gravel for dam construction would require up to 40 acres of disturbance within the Don Cox allotment for the gravel borrow area. There would be no impacts to BLM authorized AUMs in the Don Cox allotment, as all project disturbances (i.e., pipeline, gravel borrow area) would be on the private land inholdings. However, conversion of the open canal to a pipeline could impact water available to livestock if they are using the canal as a water source. The Don Cox allotment is used in the winter when water in the canal is limited if present at all. Impacts to livestock in this allotment would be long-term and negligible.

The majority of the reservoir would be located within the West Orangeville allotment. The 75-acre reservoir footprint would be seasonally inundated with water; forage in this area would no longer be available. About 65 acres of the reservoir would be on BLM-administered land so, at 19.2 acres per AUM, this would result in a loss of about 3.4 AUMs or 1.18 percent of available forage. In addition, 5.3 acres of the West Orangeville allotment would be temporarily disturbed for the XTO pipeline reroute; this would result in the temporary loss of less than 1 AUM. The short-term loss of less than 1 AUM and long-term loss of 3.4 AUMs would be a negligible impact. The reservoir would be fenced and therefore not available as a water source for livestock.

### 4.2.1.3 Soils

The Proposed Action would result in temporary disturbance of approximately 181 acres of existing soils as a result of clearing and installation of the pipelines and construction of the dam embankment. Most of the soils within the reservoir area would not be disturbed, rather simply inundated with water; some soil on the up gradient side of the dam would be disturbed and compacted due to the heavy equipment working to construct the embankment. Soils could be disturbed to a depth of up to 10 feet as a result of pipeline installation via trenching. In addition, approximately 80 acres would be disturbed at the borrow areas. The removal or disturbance of soil would result in a permanent modification to the soil structure. Although clearing of vegetation would be kept to a minimum, erosion of soils may occur in areas along the pipeline and dam embankment. Implementation of environmental protection measures, as identified in **Section 2.2.5**, and BLM stipulations, as identified in Stipulations for Surface Disturbing Activities (BLM 2008), would minimize loss of soil from erosion due to wind and water. Dam safety requirements, monitoring and repairs would minimize erosion from the dam embankment. Impacts would be long-term and minimal on public lands, but could be long term and minimal to minor on private lands along the pipeline route.

### 4.2.1.4 Vegetation including TES and BLM Sensitive Species, Invasive Species, and Wetlands/Riparian Zones

#### General Vegetation

The vegetation communities in the Project Area are widespread in Castle Valley and throughout the Colorado Plateau; they are not unique. Approximately 106 acres of mainly mat saltbush shrubland and mixed salt desert scrub vegetation would be disturbed temporarily during construction activities for the dam and pipelines. A small portion of this disturbance would occur in pinyon-juniper shrubland or woodland communities for the XTO pipeline reroute. In the reservoir footprint, 75 acres of mat saltbush shrubland and mixed salt desert scrub vegetation as well as some pinyon-juniper shrubland would be lost for the long term (for the life of the project) due to inundation, once the Adobe dam and pipeline are complete. Areas of vegetation removed during pipeline construction for XTO and Adobe would be re-seeded with native, adapted species within one year of the completion of the project. Reclamation on public lands would be consistent with the measures outlined in **Appendix B**, which would minimize the long term vegetation impacts of the Project outside the reservoir footprint. Overall, there would be long term, minor impacts to the vegetation communities of the Project Area.

#### Threatened or Endangered Plants

The *Sclerocactus* found in the Project Area is the common species, *S. parviflorus*. No individuals of the Endangered Wright fishhook cactus (*S. wrightiae*) were identified during reviews of the plant during flowering periods. There would be no impacts to the endangered cactus.

#### BLM Sensitive Species

Due to the limited distribution of *C. creutzfeldtii*, the removal of several population clusters could limit genetic diversity and/or increase the isolation of other known

populations, and/or contribute to the need to list the species under the ESA. BLM policy requirements for actions authorized by the BLM is that the actions, in compliance with existing laws including the BLM multiple use mission, shall further the conservation of federally listed and other special status species and shall not contribute to the need to list any special status species under provisions of the ESA.

Implementation of the proposed action is expected to inundate up to about 70 acres at high water. Based on the 2011 surveys results, this action would eliminate up to 3,200 individuals of *C. creutzfeldtii* and 7.8 acres of occupied habitat. The removal of 3,200 individual plants would constitute approximately 7 percent of the known population on BLM administered lands and approximately 5 percent of the total known population including BLM, Forest Service and private lands. The removal of approximately 5% of the known population could contribute to the need to list the species through the ESA listing of the species.

However, with the mitigation measures described in **Section 4.2.1.7**, approximately 5 percent of the known population is expected to be protected from future disturbances. With the current inventory data, if the mitigation measures were implemented, approximately 3,738 individuals would remain above the high-water line, be protected during construction with a temporary enclosure fence, and then protected permanently by routing the permanent reservoir fence around the population to include the population cluster within the reservoir area. This protection would reduce the threats of trampling by livestock and disturbance through OHV activities and oil and gas development that currently affect the population cluster.

In addition, within three miles of the Project area, there are four other known populations of *C. creutzfeldtii*; therefore, isolation of the remaining populations at Adobe Wash area would be minimal. Also, based on specific edaphic requirements this species could occur, and is expected to occur, in many areas within the Price Field Office that have not been intensively surveyed. Due to the patchy spatial distribution of the species, most populations are found by chance, thus it is likely that the current known population numbers are low compared to the actual occurrence of this species. In this case, the original survey results reported approximately 2,000 individuals in the valley compared to the approximately 19,000 individuals from the 2011 intensive surveys, almost a tenfold increase.

Based upon the large populations found adjacent to the footprint of the reservoir as well as on National Forest lands, the likelihood of additional populations on unsurveyed suitable habitat in the area, and the mitigation measures, the implementation of this project would likely not lead to the need for listing or increased protection measures for this plant.

## **Invasive Species**

Noxious or invasive weeds may establish in disturbed areas in the Project Area. Because of the harsh environment and variability of precipitation, it is particularly difficult to re-establish plants in this environment. However, reclamation can be successful if the time between disturbance and reclamation is short – less than one to two years; fresh, high quality, certified noxious weed-free seed is used, and precipitation is average or above average.

Based upon implemented BMPs (**Section 2.2.5**) and successful reclamation measures, there may be a slight but negligible decrease in invasive species cover in the general area due to an increase in seeded, native species. The overall impacts to invasive species would be negligible.

## **Wetlands and Riparian Zones**

No mapped wetlands or riparian zones have been identified within the Project Area. Areas within the Project Area that have wetland or riparian characteristics are small, isolated, and appear to have formed as a result of leaks in the canal. These areas along the canal would likely remain as long as water is flowing in the canal, but would decline once the water is diverted entirely to the pipeline system.

Care would be taken to avoid activity near riparian or wetland type habitats in the portion of the Project Area that is near Cottonwood Creek in the S½ section 14, T. 18 S., R. 7 E. Construction BMPs would minimize effects onsite (within the Project Area), thus any possible offsite effects would be negligible.

### **4.2.1.5 Water Resources including Hydrologic Conditions**

Although there would be no change in the overall annual volume of water that could be withdrawn from Joes Valley Reservoir, there would be some changes in the timing and rate of withdrawal. First, withdrawals for irrigation use would still be within the timing (mid-April to mid-October, as reported in Chapter 2) and quantity requirements tied to applicable water rights. However, because the Adobe Wash Reservoir would allow for a certain amount of storage, deliveries out of Joes Valley Reservoir would be expected to be more constant than they currently are, instead of being driven by the immediate needs (but variable demands) of individual shareholders. Rather than making frequent adjustments to flow rate, CCIC would receive a more constant and uniform delivery rate from Joes Valley Reservoir; the water needed for immediate application would be supplied from Adobe Wash Reservoir and any excess would simply be stored for future use.

Second, PacifiCorp withdrawals from Joes Valley would be better able to continue year-round than they currently are. During mid-winter under the current condition, PacifiCorp obtains Ferron Creek water piped from Millsite Reservoir. After Adobe Wash Reservoir is complete, winter water needs would be supplied from Joes Valley earlier in the year and stored in Adobe Wash Reservoir until needed. This means that during certain times, more flow than immediately needed by PacifiCorp would be released from Joes Valley; water for immediate use would be supplied from the Adobe Wash Reservoir and the excess would be stored for winter use. The ability to obtain water from Joes Valley for its entire annual operations would mean that PacifiCorp would no longer need to use

Ferron Creek water. As a result, on an annual basis, they would likely withdraw more water from Joes Valley than they currently do, and divert less from Millsite Reservoir, depending upon the needs of Hunter Power Plant. However, their total withdrawal volume on an annual basis would not exceed that currently allowed by its water rights.

Post-project, the combined irrigation and power plant deliveries from Joes Valley Reservoir to the Clipper Western Canal would result in some flow rate changes within Straight Canyon (approximately 5 miles of stream) and within the reach of Cottonwood Creek (approximately 2.5 miles) between its confluence with Straight Canyon and the Clipper Western diversion. These changes are not easily quantified with the available information, but the capacity of the new diversion would be 150 cfs. Based upon the information for Cottonwood Creek given in **Table 3-5** in **Section 3.8**, post-project stream flows in these two reaches (approximately 7.5 miles combined) upstream of the Clipper Western diversion would be expected to be within the range of flows that they currently experience with seasonal and annual variability.

Downstream of the existing Clipper Western diversion, flows in the approximately 2¼-mile reach of Cottonwood Creek to the existing PacifiCorp pipeline diversion would be reduced by approximately 20 cfs because water would instead be delivered to the Adobe Wash Reservoir. This flow rate represents a varying percentage of the total flow in Cottonwood Creek: during spring runoff, likely a small percentage; at other times, potentially the majority.

The existing losses in irrigation water delivery (due to canal seepage and evaporation) would no longer occur. Further, water losses (due deep percolation) caused by flood-irrigation and over application on fields would be greatly reduced. Some, but not all, of these losses were analyzed by the Bureau of Reclamation (Reclamation) and the Natural Resources Conservation Service (NRCS) in the Price-San Rafael Salinity EIS (Reclamation and NRCS 1993). However, some new seepage and evaporative losses would occur due to the expanse of open water associated with the Adobe Wash Reservoir. The net result of reducing losses from some sources but adding new losses is not known.

Even if there were to be a net “savings” of water, there would not likely be a reduction in the amount of water delivered for irrigation use. Nor would these savings be likely to result in increased downstream flows in either lower Cottonwood Creek or the San Rafael River. Instead, the “saved” water would likely be used to fulfill allowable water deliveries to shareholders, either allowing them to irrigate longer in the season or bring fallow land back into production (Reclamation and NRCS 1993).

However, for other reasons there could be reduced flow in lower Cottonwood Creek or the San Rafael River. Currently, a portion of the above-mentioned losses in surface water (due to canal seepage and deep percolation) represent a gain to the shallow groundwater system. This in turn represents a gain in stream flows as this water is intercepted by streams. Once salinity-related irrigation improvements are implemented, there is typically a net depletion in stream flows but a net improvement in water quality (Reclamation and NRCS 1993). This can be generally expected for this project. However, the stream depletions and water quality improvements due to reductions in canal seepage and deep percolation could be at least partially offset by water that

infiltrates into soils underlying the reservoir and eventually drains via subsurface toward and into Cottonwood Creek.

In addition, the Project would contribute to the objectives related to the Colorado River Basin Salinity Control Act efforts. Once the entire irrigation system is replaced with a pressurized sprinkler irrigation system, it would greatly reduce the mobilization and transport of dissolved solids (salts) that result from canal/ditch seepage and deep percolation from fields. These salts, estimated to be several tens of thousands of tons annually, would no longer be transported to the Colorado River where considerable damages accumulate and impact users of the water in the Lower Colorado River Basin. Once both phases are completed, they would reduce the salt load in the Colorado River by an estimated 28,629 tons per year (UBWR 2010).

The proposed project would not be likely to have any effects on the deep aquifer associated with the Ferron Sandstone member of the Mancos Shale Formation.

During construction, there would be some potential for increased erosion and sediment loading to Cottonwood Creek. However, the proposed construction techniques, water management, and other best management practices (BMPs) would minimize this potential.

#### **4.2.1.6 Wildlife and Fish including BLM Sensitive Species, Migratory Birds**

##### **Wildlife and Fish including BLM Sensitive Species**

Construction activities may be disturbing to wildlife due to noise or the presence of machines and humans during construction, particularly in Adobe Wash which provides the most valuable wildlife habitat within the reservoir footprint. There are several thousand acres of similar, intact habitat adjoining the Project Area.

The Project Area, including the reservoir site, includes several gravel and two-track roads, indicating that wildlife in the Project Area already have some contact with humans and machinery. Although the project is within winter range for deer and elk, these range areas are quite extensive. The roughly 181 acres of short-term and 75 acres of long-term disturbance for the entire project is a small fraction of the total habitat area. Impacts to wildlife would be negligible as extensive habitat is available for wildlife dispersed during project construction.

Approximately three miles of canal would be lost for wildlife watering when the pipeline is completed. Water would still be available within roughly one mile of the pipeline route in the Cottonwood Creek. Impacts to wildlife from the loss of open canals would be minor as over time wildlife would utilize other nearby water sources.

Fish habitat or fisheries in Straight Canyon and Cottonwood Creek would not be directly impacted by the Project. As noted above in **Section 4.8**, there would be some flow rate changes within Straight Canyon (approximately 5 miles of stream) and within the reach of Cottonwood Creek (approximately 2.5 miles) between its confluence with Straight Canyon and the Clipper Western diversion. However, post-project stream flows in these two reaches would be expected to be within the range of flows that they currently experience with seasonal and annual variability, thus the impacts to fish are expected to be minimal and long term.

In the 2¼-mile reach of Cottonwood Creek downstream of the diversion to the Clipper Western canal, stream flows would be reduced by approximately 20 cfs because this water would instead be delivered to the Adobe Wash Reservoir. This flow rate represents a varying percentage of the total flow in Cottonwood Creek; during spring runoff, likely a small percentage; at other times, potentially the majority. Since the fish in this stream typically experience a wide range in stream flows due largely to irrigation diversions and other water uses, it is expected that the 20 cfs flow reduction would have a minor long term impact on the fish. As far as changes in flow in this stretch of Cottonwood Creek impacting the bluehead sucker downstream in the San Rafael River, this effect is likely to be minor and long term

### **Migratory Birds**

The construction of Adobe dam could adversely affect migratory birds during nesting if project construction occurs in nesting habitat when birds are looking for nest sites, building nests, incubating eggs, or raising young; generally this is between April 1 and July 30, depending on the species. Effects could include nest and/or egg destruction, or loss of suitable nesting habitat due to vegetation removal. The construction of Adobe pipeline as planned (October to April) would not impact migratory birds.

Although the reservoir would be fenced to prevent human and animal access, waterfowl would be able to fly into, and rest on, the reservoir. Waterfowl would be protected from depredation by larger predators while on the reservoir. The reservoir is large enough (75 acres) that surrounding fences should not hinder bird take-off and flight. Although the reservoir would provide a positive habitat feature for resting birds, it would not provide waterfowl nesting habitat.

### **Raptors**

No raptor nests would be physically disturbed by construction activities. There would be no impacts to the golden eagle nests in the Natural Heritage database, as these three nests are located at least one mile from the Project Area. There is a chance that the two raptor or raven nests noted during November field surveys could be re-occupied and potentially disturbed by activity in the Project Area; however, nests to the east of the Project Area would be established within ½ mile of Highway 57 or Highway 29, and therefore would be normally subject to noise from vehicles on these roads. These nest sites would be less likely to suffer from additional traffic-related noise and activity, since the birds would be used to a background level of traffic activity. The potential exists for raptor nests to exist in cliffs located from ½ to 1 mile west of the Adobe dam site. The effects of construction could include nest abandonment if construction activity/noise during the active nesting season was within ½ mile of an established and occupied raptor nest. However, ongoing (spring 2011) irrigation pipeline construction for the CWCWCP directly to the south of the Adobe Reservoir site has provided a construction activity background for this area, such that any raptors which have nested within ½ to 1 mile of the CWCWCP construction activity would likely be unaffected by additional similar construction activity in the area. The impacts to raptor nesting would be minor and short term from implementation of the Project.

#### **4.2.1.7 Mitigation Measures**

Special attention will be paid to minimize surface disturbance in occupied habitat; occupied habitat that could be disturbed through access roads, dam construction, or fence line construction would be identified. Where appropriate, the applicant will flag or install temporary fence around the areas of occupied habitat to ensure that disturbance would be avoided or minimized to the extent practicable (examples – no balding of the fence line, route access roads away from the habitat). The fence line will be installed similar to the proposed drawing, except where it is possible to route the fence either to protect more plants or to reduce the impact of the fence line on the populations. The actual route on the ground will be determined in coordination with the BLM at the time of construction.

After filling of the reservoir and construction of the fence, the applicant will complete one monitoring report detailing the population status and condition within and near the project area compared to the condition of the populations in 2011.

For construction of the XTO pipeline re-route, XTO will work with a BLM biologist to mark the occupied habitat prior to initiating construction activities. The applicant will flag or temporarily fence the areas of occupied habitat that are within the area of disturbance for the pipeline and/or near access routes for the pipeline re-route. Where possible, surface disturbance will be avoided or minimized in the identified area (examples - minor adjustment to the pipeline route to avoid dense clusters, route access roads away from the occupied habitat, avoid pushing the spoils piles onto occupied habitat).

A migratory bird clearance survey could be conducted in early summer 2011 prior to initiation of dam construction activity and the XTO pipeline replacement activity. Additional surveys could be conducted if needed, in the appropriate period prior to Adobe pipeline construction activity in the following year.

Appropriate followup measures would be taken to assess impacts to raptors or migratory birds, and to reduce such impacts to less than significant. All other mitigating measures have been included in the description of the Proposed Action and list of stipulations (**Section 2.2.5**), and these have been taken into account in the impact analysis.

No additional mitigation measures are proposed.

#### **4.2.1.8 Monitoring and/or Compliance**

Monitoring and compliance stipulations that would be attached to the ROW approvals as part of Alternative A - Proposed Action) are presented in **Section 2.2.5**.

#### **4.2.2 Alternative B – No Action**

Under the No Action Alternative, there would be no direct, indirect, or cumulative impacts from the Proposed Action.

##### **4.2.2.1 Cultural and Historic Resources**

Under the No Action Alternative, there would be no Project-related impacts to NRHP-eligible cultural resource sites. Potential for impacts from livestock grazing and other land uses, such as continued maintenance of the existing canal, would continue.

#### **4.2.2.2 Livestock Grazing and Rangeland Health Standards**

Under the No Action Alternative, there would be no changes in forage available for livestock grazing. The canal could serve as a water source for livestock during irrigation season. However, water would still need to be hauled in to the allotments.

#### **4.2.2.3 Soils**

There would be no impacts to soils from pipeline installation under the No Action Alternative. The open canal irrigation system would continue to be subject to erosion and sedimentation.

#### **4.2.2.4 Vegetation including BLM Sensitive Species, Invasive Species, and Wetlands/Riparian Zones**

Under the No Action Alternative, there would be no changes to vegetation, BLM sensitive plant species, or wetlands/riparian zones as a result of project activities. Invasive species and noxious weeds encroachment would continue at current trends.

#### **4.2.2.5 Water Resources including Hydrologic Conditions**

There would be no impacts to water resources under the No Action Alternative.

#### **4.2.2.6 Wildlife and Fish including BLM Sensitive Species, Migratory Birds**

Under the No Action Alternative, there would be no impacts to wildlife and fish, BLM sensitive species, or migratory birds as a result of project activities. Without the reservoir, the positive benefit of a waterfowl rest stop would not be provided at this location.

### **4.3 Cumulative Impacts Analysis**

“Cumulative impacts” are those impacts resulting from the incremental impact of an action when added to other past, present, or reasonably foreseeable actions regardless of what agency or person undertakes such other actions. Cumulative impacts could only occur for those resources that are 1) affected by the Proposed Action and 2) affected by other actions whose impacts occur within the same area and timeframe.

The resources analyzed above in **Section 4.2.1** that have the potential to be adversely impacted by the Proposed Action include cultural resources; geology/minerals/energy production; lands/access; livestock grazing; soils; vegetation including invasive species/noxious weeds; water resources; and wildlife and fish including sensitive species and migratory birds. For these resources, all other than soils, migratory birds and TES plants have been determined to have negligible to minimal impacts, as a result of the Project and thus would also be expected to have negligible to minimal cumulative impacts. The cumulative impacts area (CIA) is typically a resource-based area. For this EA, CIAs are defined for soils, migratory birds, and TES plants as follows:

The CIA for soils includes a ¼ mile buffer around the Project Area.

The CIA for migratory birds (including raptors) includes a one mile buffer around the Project Area.

The CIA for TES plants is 300 feet surrounding the edge of disturbance in the Project Area.

The purpose of this cumulative impacts analysis is to describe the interaction among the effects of the Proposed Action and the various past, present, and reasonable foreseeable future actions.

#### 4.3.1 Past and Present Actions

Past or ongoing actions that affect the same components of the environment as the proposed action are:

- **Private Land Actions.** Private lands have been developed with residential dwellings, agricultural fields, and industrial, municipal/community, and commercial facilities.
- **Livestock Grazing.** This is and has for many years been a primary land use on the public lands in the area.
- **Irrigation Canals and Ditches.** The Clipper Western Canal, as well as the Blue Cut, Mammoth, Huntington, and other smaller ditches were constructed as early as the 1880s and have been utilized to convey water to agricultural fields since that time. Joes Valley Reservoir is located northwest of the Project Area and provides water, via Cottonwood Creek, to the current irrigation system.
- **Recreation including Camping, Off-Highway Vehicle (OHV) use, and Hunting.** Though dispersed, these past and present activities use the existing roads and travel ways, as well as off-road travel.
- **Power Lines, Energy Infrastructure, and Other Utilities.** There are overhead powerlines that run through the area, and a 6-inch natural gas pipeline that runs through the Project Area. Hunter Power Plant is located southeast of the Project Area, south of Castle Dale. Joes Valley Reservoir located northwest of the Project Area provides municipal water for the communities of Orangeville and Castle Dale, as well as water to the Hunter Power Plant.

#### 4.3.2 Reasonably Foreseeable Action Scenario (RFAS)

The following RFAS identifies reasonably foreseeable future actions that would cumulatively affect the same resources in the cumulative impact area as the Proposed Action and alternatives. Any future federal action within the CIAs would be subject to NEPA and the full array of federal laws that address environmental protection. As required by law, resources would be protected or appropriately mitigated.

- **Private Land Actions.** Private lands could be modified or developed within the cumulative impact assessment areas. Residential development, development of industrial, municipal/community, and commercial facilities, and ongoing agricultural activities would continue.
- **Livestock Grazing.** Livestock grazing in the West Grimes, Don Cox, and West Orangeville allotments and ranching activities on private lands would be expected to continue.

- **Irrigation Systems.** Irrigation of crops and fields would continue, either utilizing the current flood irrigation system or pressurized sprinkler irrigation system, as is available. The CWCWCP which has been authorized will over several years convert the open canal/ditch flood irrigation system to a pressurized pipeline/sprinkler irrigation system.
- **Recreation including Camping, Off-Highway Vehicle (OHV) use, and Hunting.** Dispersed recreation activities would continue and likely would increase.
- **Power Lines, Energy Infrastructure, and Other Utilities.** Continued use of existing utilities and associated facilities would occur. Improvements, maintenance, and upgrades would be likely.

### 4.3.3 Cumulative Impacts

#### Soils

The cumulative disturbance to soils in the CIA has the potential to contribute to soil loss due to erosion. The long-term disturbance associated with the Proposed Action would total about 75 acres. Use of BMPs and standard BLM stipulations for surface disturbing activities during construction activities, and prompt reclamation, assures that temporary soil disturbance would be short-term and minor. Similar measures would be implemented for other types of federal undertakings and would also limit soil impacts. When combined with other past, present, and reasonably foreseeable future disturbance, cumulative impacts to soils would be negligible to minor.

#### TES Plants

The cumulative effects to TES plants are expected to be minor, based upon mitigation measures proposed.

#### Migratory Birds

The cumulative impacts to migratory birds are expected to be minor. Migratory birds would be likely to adapt to the continued agricultural, livestock, and other activity in the CIA. Any development projects would necessitate migratory bird surveys and resulting mitigation as necessary, thus overall impacts are expected to be minor.

## 5.0 CONSULTATION AND COORDINATION

### 5.1 Introduction

The issue identification section of Chapter 1 identifies those issues analyzed in detail in Chapter 4. **Appendix A** provides the rationale for issues that were considered but not analyzed further. The issues were identified through the public and agency involvement process described in **Sections 5.2** and **5.3** below.

### 5.2 Persons, Groups, and Agencies Consulted

**Table 5-1 Persons, Agencies, and Organizations Consulted for this EA**

Name	Purpose & Authorities for Consultation or Coordination	Findings & Conclusions
U.S. Fish & Wildlife Service (US FWS)	Information on Consultation, under Section 7 of the Endangered Species Act (16 USC 1531)	Spring surveys are required for Wrights fishhook cactus.
Utah State Engineer – Water Rights		Consultation letter sent September 14, 2010.
Utah State Historic Preservation Office (SHPO)	Consultation for undertakings, as required by the National Historic Preservation Act (NHPA) (16 USC 470)	SHPO has concurred that the project would have No Adverse Effect on NRHP-eligible historic properties.
Paiute Tribe of Utah (PITU) Kanosh Band of Paiute Tribe Confederated Tribes of the Goshute Reservation Skull Valley Goshute Tribe Uintah Ouray Ute Tribe	Consultation as required by the American Indian Religious Freedom Act of 1978 (42 USC 1531) and NHPA (16 USC 1531)	Consultation letters were sent providing information on the project and inviting the tribes to comment and identify any concerns. The Paiute Tribe responded with a letter, received February 22, 2011, objecting to any disturbance of prehistoric sites that may contain buried cultural deposits.
Emery County	Coordination with Emery County Planning and Zoning	
Emery County Commission		Consultation letter sent September 14, 2010.
City of Castle Dale		Consultation letter sent September 14, 2010.
City of Orangeville		Consultation letter sent September 14, 2010. City representatives participated in January 25, 2011 meeting.
XTO Energy Inc.	Relocation of natural gas pipeline (and associated water pipeline) within reservoir footprint	Consultation letter sent September 14, 2010. XTO representatives participated in both project meetings. Agreement between Cottonwood Creek Consolidated CCCIC and XTO Energy Inc. signed on March 2, 2011.

Name	Purpose & Authorities for Consultation or Coordination	Findings & Conclusions
Livestock Operators	Project within grazing allotments	Letters were sent on September 27, 2010 providing information on the project and inviting livestock operators to comment and identify any concerns. No concerns were identified. A meeting was held in Castle Dale on April 25, 2011 to discuss fencing and watering needs.

### 5.3 Summary of Public Participation

The Adobe Wash Reservoir and Adobe Pipeline project was posted on the BLM's Environmental Notification Bulletin Board (ENBB) on January 4, 2011. In addition, letters were sent to several interested parties including the Utah State Engineer – Water Rights, the City of Castle Dale, the City of Orangeville, Emery County, XTO Energy Inc., and adjacent livestock operators.

Two scoping response letters were received. One letter was from the Utah Public Lands Policy Coordination Office regarding air quality (December 28, 2010). The other was from U.S. Fish and Wildlife (February 10, 2011) expressing concerns related to water withdrawal affects to fish in-stream and adjacent wildlife habitat (i.e. riparian, wetlands), and recommending surveys for special status plant species.

An initial introductory project meeting was held at the BLM PFO on October 6, 2010; resource issues and concerns were discussed during this meeting. The IDT resource checklist was initiated, and is provided in **Appendix A**. Several resources were dismissed from further analysis in this EA for the reasons provided in the checklist. A scoping meeting was held on January 26, 2011 at the BLM PFO.

BLM initiated Native American consultation on a government-to-government basis; scoping letters were sent to the tribes (**Table 5-1**) inviting them to comment on the project and to provide assistance in identifying properties of traditional, religious, or cultural importance that may be impacted by the proposed project. The Paiute Tribe responded with a letter, received February 22, 2011, objecting to any disturbance of prehistoric sites that may contain buried cultural deposits.

A meeting was held in Castle Dale, Utah with livestock permittees on April 25, 2011. Fencing and water sources in the area of the reservoir were discussed. It was determined that constructing a three-strand barbed wire net fence surrounding the entire reservoir to exclude livestock were sufficient to mitigate safety and water concerns in relation to livestock.

## 5.4 List of Preparers

### 5.4.1 BLM

Name	Title	Responsible for the Following Section(s) of this Document
<b>Price Field Office</b>		
Connie Leschin	Project Lead, Realty Specialist	Technical Coordination & Quality Control
Stephanie Bauer	Rangeland Mgmt Specialist	Livestock Grazing; Invasive Species/Noxious Weeds
Kyle Beagley	Interdisciplinary Natural Resource Specialist/ Physical Scientist	Geology / Mineral Resources/Energy Production
Jeffrey Brower	Hydrologist	Floodplains; Hydrologic Conditions; Wastes (Hazardous/Solid); Water Resources/Quality (drinking, surface, ground); Wetlands/Riparian Areas
Amanda Harrington	RealtyRealty Specialist	Technical Coordination & Quality Control
Mark Wimmer	NEPA Coordinator	NEPA compliance
Patrica Claybaugh	Field Manager	
Blaine Miller	Archaeologist	Cultural Resources
Dana Truman	Rangeland Management Specialist	Threatened, Endangered, and Sensitive Plants; soils; vegetation
David Waller	Wildlife Biologist	Wildlife; BLM Sensitive Species

### 5.4.2 Non-BLM Preparers

Name	Title	Responsible for the Following Section(s) of this Document
Linda Matthews	Project Manager, Biologist	Overall QA
Karla Knoop	Hydrologist	Water Resources
Jenni Prince-Mahoney	Senior NEPA Specialist, Archaeologist	Cultural Resources; Soils; Livestock Grazing
Marit Sawyer	Environmental Specialist	Vegetation; Invasive Species and Noxious Weeds; Wildlife; Sensitive Species; Migratory Birds; Wetlands & Riparian

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## 6.2 List of Acronyms Used in this EA

ACEC	Area of Critical Environmental Concern
AMSL	Above Mean Sea Level
AUM	Animal Unit Month
BLM	Bureau of Land Management
BMPs	Best Management Practices
Reclamation	Bureau of Reclamation
CBM	Coal Bed Methane
CCCIC	Cottonwood Creek Consolidated Irrigation Company
CFS	Cubic Feet per Second
CFR	Code of Federal Regulations
CIA	Cumulative Impacts Area
CWCWCP	Clipper Western Canal Water Conservation Project
DR	Decision Record
DWR	Division of Wildlife Resources
EA	Environmental Assessment
EIS	Environmental Impact Statement
ENBB	Environmental Notification Bulletin Board
ESA	Endangered Species Act
EWCD	Emery Water Conservancy District
°F	Degrees Fahrenheit
FLPMA	Federal Land Policy and Management Act
FONSI	Finding of No Significant Impact
GHG	Green House Gas
HDPE	High Density Polyethylene
ID	Interdisciplinary
mg/L	Milligrams per liter
MLA	Mineral Leasing Act
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
ORV	Off-Road Vehicle
PFO	Price Field Office
PLPCO	Public Lands Policy Coordination Office
PSI	Pounds per Square Inch

RFAS	Reasonably Foreseeable Action Scenario
RMP	Resource Management Plan
ROW	Right of Way
SARA	Superfund Amendments and Reauthorization Act
SHPO	State Historic Preservation Office
TES	Threatened, Endangered and Sensitive
TDS	Total Dissolved Solids
UBWR	Utah Board of Water Resources
UDOGM	Utah Division of Oil,
UDWR	Utah Division of Water Resources
UDWRi	Utah Division of Water Rights
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VRM	Visual Resource Management
WSA	Wilderness Study Area
XTO	XTO Energy Inc.

# Appendices

**Appendix A**  
**Interdisciplinary Team Checklist**

## INTERDISCIPLINARY TEAM CHECKLIST

**Project Title:** Adobe Wash Reservoir

**NEPA Log Number:** DOI-BLM-UT-G021-2011-0008-EA

**File/Serial Number:** UTU-88133

**Project Leader:** Connie Leschin

**DETERMINATION OF STAFF: (Choose one of the following abbreviated options for the left column)**

NP = not present in the area impacted by the proposed or alternative actions

NI = present, but not affected to a degree that detailed analysis is required

PI = present with potential for relevant impact that need to be analyzed in detail in the EA

NC = (DNAs only) actions and impacts not changed from those disclosed in the existing NEPA documents cited in Section D of the DNA form. The Rationale column may include NI and NP discussions.

Determination	Resource	Rationale for Determination*	Signature	Date
<b>RESOURCES AND ISSUES CONSIDERED (INCLUDES SUPPLEMENTAL AUTHORITIES APPENDIX 1 H-1790-1)</b>				
NI	Air Quality	Construction of this project would result in short-term temporary dust emissions. However, after construction is complete the impacts would be minimal.	Connie Leschin	12/06/10
NP	Areas of Critical Environmental Concern	There are no ACEC's within the Project Area.	Kathryn Lloyd	12/09/10
NP	BLM Natural Areas**	There are no BLM Natural Areas present within the Project Area.	Kathryn Lloyd	12/09/10
PI	BLM Sensitive Animal Species	Operation of the reservoir could change the flows in the river downstream of the diversion structure. DWR would need to determine if there would be any effect on bluehead suckers. Information needed to assist in that determination is quantities, total acre-feet, and time of the year for the withdrawals. No other known BLM sensitive animal species present, based upon Utah Natural Heritage Program shapefiles (June 2010 information).	David L. Waller	2/01/11
PI	BLM Sensitive Plant Species	Survey needs completed. There are known populations of <i>Cryptantha creutzfeldtii</i> within the project area.	Dana Truman	12/06/10
PI	Cultural Resources	Inventories have been completed. Bureau of Reclamation will be the lead for the fence and ditch. <i>This will be a PI until proposed action is developed and avoidance or mitigation is determined.</i>	Blaine Miller	12/06/10

Determination	Resource	Rationale for Determination*	Signature	Date
NI	Greenhouse Gas Emissions**	There are currently no regulatory standards for controlling GHG emissions or accepted analytical methods for evaluating project specific impacts related to GHG emissions. As a consequence, the impacts of site-specific proposals cannot be determined. Based on the nature of the action, GHG emissions are expected to be minimal.	Connie Leschin	12/06/10
NP	Environmental Justice	There are no minority or low income populations that would be adversely effected by implementation of the Proposed Action.	Connie Leschin	12/06/10
NP	Farmlands (Prime or Unique)	There are no Prime or Unique Farmlands present within the Project Area as mapped by the NRCS soil survey.	Dana Truman	12/06/10
PI	Fish and Wildlife Excluding FWS Designated Species and BLM Sensitive Species	Operation of the reservoir could change the flows in the river downstream of the diversion structure. DWR would need to determine if there would be any changes to fish habitat or mitigation areas due to the change in the diversion structure. No identified deer or elk crucial habitat, according to UDWR shapefiles, on the site of the project. A chain link fence could prevent big game access to water in the reservoir.	David L. Waller	2/01/11
NP	Floodplains	No floodplain as defined by EO 11988, FEMA, or Corps of Engineers is found on or near the Project Area	Jeffrey Brower	12/08/10
NI	Fuels/Fire Management	Implementation of the proposed action would have no significant impact on Fuels/Fire Management.	Matt Madariaga	12/06/10
NI	Geology / Mineral Resources/Energy Production	XTO Energy has a pre-existing ROW and major pipeline that exists below the proposed reservoir location. This pipeline requires surface accessibility for maintenance and repair. As this pipeline is the primary transport line for XTO's Orangeville Coal Bed Methane (CBM) field, the project as proposed, would require a pipeline reroute that would shut down production of the entire Orangeville CBM field until the reroute is completed. In March 2011 the BLM Price Field Office received a Pipeline Relocation Agreement signed by XTO and the Irrigation Company. This agreement states that both parties have coordinated efforts and reached an agreement where the pipeline will be relocated and impacts to XTO's field production will be minimal.	Kyle Beagley	12/01/10
PI	Hydrologic Conditions**	Local decrease in depth of ground water	Jeffery Brower	12/08/10
PI	Invasive Species/Noxious Weeds (EO 13112)	Any soil disturbing activities has the potential to increase or spread invasive/noxious weed species.	Stephanie Bauer	12/7/10
NI	Lands/Access	The project, as proposed, would affect a pre-existing pipeline ROW. The land use conflict will be negotiated by the CCCIC and authorized user (XTO Energy).	Connie Leschin	11/29/10
PI	Livestock Grazing	Proposed project could decrease amount of AUMs by 4. Utilization of the allotment would be limited for spring grazing use if the water is no longer available in the canal. Permittees will need to haul water in the spring to utilize the allotment and utilization in the fall will have to be based on the availability of snow or the hauling of water.	Stephanie Bauer	12/14/10
PI	Migratory Birds	The open water of the reservoir would provide habitat for migrating waterfowl and shorebirds, and also limited nesting habitat for these same species.	David L. Waller	12/01/10

Determination	Resource	Rationale for Determination*	Signature	Date
NI	Native American Religious Concerns	Native American consultation letters were sent on February 2, 2011.	Blaine Miller	12/06/10
NP	Paleontology	PFYC Category II, very low probability of vertebrate fossils.	Michael Leschin	12/06/10
NI	Rangeland Health Standards	Rangeland health standards evaluate indicators for upland soils, riparian areas, vegetation, and water quality. All indicators are addressed in other sections of this checklist.	Stephanie Bauer	12/14/10
NI	Recreation	The proposed action is in an area (Extensive Recreation Management Area) where significant recreation opportunities and problems are limited and explicit recreation management is not required. Minimal management actions related to the BLM's stewardship responsibilities are adequate in these areas. Implementation of the proposed action may decrease OHV recreation in the proposed area; however implementation of the project will have minimal impact on dispersed recreation in the ERMA.	Kathryn Lloyd	12/06/10
NI	Socio-Economics	Implementation of the Proposed Action would have no measurable social or economic impacts. Minor increase in the local service revenue could be expected from the temporary workforce involved in the project but no lasting substantial impacts are anticipated to the socioeconomic of the region.	Dana Truman	12/06/10
PI	Soils	This project could cause soil mixing, soil compaction and modification of the soil resource.	Dana Truman	12/06/10
PI	Threatened, Endangered or Candidate Plant Species	The Project Area supports suitable habitat for <i>Sclerocactus wrightiae</i> . In addition, there are known occurrences nearby. Surveys during bloom time will need to be completed through coordination with the BLM.	Dana Truman	12/06/10
NP	Threatened, Endangered or Candidate Animal Species	No effect – because, there are no known occurrences of federally listed or candidate species in the Project Area, according to BLM files and the Utah Natural Heritage Program shapefiles. There is no designated critical habitat present either. There is a potential for an effect on Colorado River listed fish species, if the total amount of water used is changed from what is presently been withdrawn.	David L. Waller	2/01/11
NP	Wastes (hazardous or solid)	No chemicals subject to SARA Title III in amounts greater than 10,000 pounds would be used. No hazardous substances as defined in 40 CFR 355 and threshold planning quantities would be used.	Jeffery Brower	12/08/10
PI	Water Resources/Quality (drinking/surface/ground)	There would be a local decrease of distance to groundwater due to increased infiltration over a period of time.	Jeffery Brower	12/08/10
PI	Wetlands/Riparian Zones	No riparian is known on the Project Area associated with BLM lands. However, the project has the potential to reduce habitat and disburse livestock and wildlife watering in ditches that can be dried up from this project.	Jeffery Brower	12/08/10
NP	Wild and Scenic Rivers	There are no designated or suitable wild and scenic river segments within the Project Area.	Kathryn Lloyd	12/09/10

Determination	Resource	Rationale for Determination*	Signature	Date
NP	Wilderness/WSA	There is no designated wilderness or wilderness study areas (WSA's) within the Project Area.	Kathryn Lloyd	12/09/10
NP	Woodland / Forestry	There are no woodland/forestry products within the Project Area.	Stephanie Bauer	12/7/10
PI	Vegetation Excluding USFW Designated Species and BLM Sensitive Species	Implementation of the project would result in the permanent loss of vegetation.	Stephanie Bauer	12/7/10
NI	Visual Resources	The Project Area is designated as VRM Class III, and IV, which allows for a moderate to high level of change to the landscape. Implementation of the proposed action would be consistent with the management objectives.	Kathryn Lloyd	12/09/10
NP	Wild Horses and Burros	Not within a Wild Horse or Burro Herd Management Area	Mike Tweddell	12/7/2010
NP	Areas with Wilderness Characteristics**	There are no Areas with Wilderness Characteristics present within the Project Area.	Kathryn Lloyd	12/09/10

**FINAL REVIEW:**

Reviewer Title	Signature	Date	Comments
Environmental Coordinator	<i>DSD [unclear]</i>	7/21/11	
Authorized Officer	<i>Patricia Clabaugh</i>	7/25/11	

**Appendix B**  
**Green River District Reclamation  
Guidelines  
and Stipulations for Surface  
Disturbing Activities**

# *Green River District Reclamation Guidelines*

The Green River District Office Guidelines applies to all surface disturbing activities upon BLM administered surface lands. These activities include all actions authorized, conducted, or funded by the BLM, and that disturb the soil resources on the public lands. This policy is intended to be compatible with other BLM program objectives.

A reclamation plan shall be developed for all surface disturbing activities. The level of detail for the reclamation plan shall reflect: the complexity of the project, the environmental concerns generated during project review, and the reclamation potential for the site. These plans shall also incorporate any program or regulatory specific requirements for reclamation. The reclamation plan will address short term stabilization to facilitate long term reclamation. The reclamation plan is considered complete when all the reclamation requirements described below have been addressed, the techniques needed to meet the reclamation standards are described in detail, and the BLM concurs with the reclamation plan.

Compliance with the requirements of this document will be a Surface Use Condition of Approval (COA) and approved mitigation actions for all future BLM authorizations within the jurisdiction of the Green River District Office.

## A. RECLAMATION GOAL

1. The long term goal for reclamation is to facilitate eventual ecosystem reconstruction by returning the land to a safe, stable, and proper functioning condition.
2. The short-term reclamation goal is to immediately stabilize disturbed areas and to provide the necessary conditions to achieve the long term goal.

## B. RECLAMATION OBJECTIVES

1. Establish a desired self-perpetuating diverse plant community. The objective is to attain **75% basal cover** based on similar undisturbed adjacent native vegetative community, and comprised of desired species and/or seeded species within 5 years of initial reclamation action. Species diversity should approximate the surrounding undisturbed area. For areas that are in poor range condition due to past land management practices, then the species diversity should approximate the site as described in the NRCS Ecological Site description. However if after three (3) growing seasons there is less than **30%** of the basal cover based on similar undisturbed native vegetative community, then the Authorized Officer may require additional reclamation efforts.
2. Establish slope stability and desired topographic diversity.
3. Reconstruct and stabilize altered water courses and drainage features.
4. Ensure the biological, chemical, and physical integrity of the topsoil resource during all phases of construction, operation, and reclamation. BMP's designed to minimize and

prevent erosion, compaction, and contamination of the topsoil resource should be used to maintain the topsoil resource.

5. Re-establish the visual composition and characteristics to blend with the natural surroundings.
6. Control the occurrences of noxious weeds and undesirable invasive species by utilizing principles of integrated weed management including prevention, mechanical, chemical, and biological control methods.
7. Manage all waste materials.
8. Conduct monitoring that is able to assess the attainment or failure of reclamation actions.

### C. RECLAMATION ACTIONS

*The following Reclamation Actions are intended to facilitate the achievement of the Reclamation Objectives. These actions shall be adhered to during reclamation activities. Changes/alterations to the Reclamation Actions should be detailed in the submitted reclamation plan as to why the changes/alterations are necessary and approved by the Authorized Officer.*

#### **Objective 1. Establish a desired self-perpetuating plant community.**

- Action 1a. Use of non native plant species is allowed, however, selected non native species should be selected that will not displace or offer long-term competition to the native plants.
- Action 1b. Drill Seeding is the preferred method of seed application unless site conditions preclude the use of drill seeding equipment. Drill seeds at the rate of 45 Pure Live Seeds (PLS) per linear foot. Seeds should be drilled to a depth of .25 to .50 inches. Some plant seeds should not be drilled and if incorporated the application method should fit the seed type requirements.
- Action 1c. Areas in excess of 40% slope or are excessively rocky will be broadcast seeded at 80-90 PLS and covered to a maximum of .25 inches by harrowing, drag bar, or roller.
- Action 1d. Seeding efforts must be conducted between August 15 and prior to winter freezing of the soil.
- Action 1e. All seed utilized will be tested prior to application to ensure BLM specifications for PLS, purity, noxious weeds, etc. have been met. Seed tags will be provided to the Authorized Officer prior to initiation of seeding activities.

Action 1f. As determined in cooperation with the Authorized Officer, fencing may be required to exclude livestock/big game grazing until seeded species have become established. Fencing would be constructed to BLM standards.

Action 1g. As determined in cooperation with the Authorized Officer mulching may be required. Mulch should be applied within 24 hours following completion of seeding. Mulching should consist of crimping certified weed-free straw or certified weed-free native grass hay into the soil. Hydro-mulching may be used in areas where crimping is impracticable, in areas of interim reclamation that were hydro-seeded, and in areas of temporary seeding regardless of seeding method.

**Objective 2. Ensure slope stability and topographic diversity**

Action 2a. Reconstruct the landscape to approximate the original contour and topographic diversity.

Action 2b. Identify necessary erosion controls designed to prevent sediment transport from the reclaimed areas.

**Objective 3. Reconstruct and stabilize altered water courses and drainage features.**

Action 3a. Reconstruct drainage basins to have similar features found in nearby properly functioning basins, including: basin relief ratios, valley gradients, sinuosity, and drainage densities for all reclaimed basins.

Action 3b. Reconstruct drainages to have similar hydraulic characteristics found in properly functioning drainages, including: flow depth, water surface top width, cross-section area of flow, water surface slope, mean channel velocity, desired vegetation, and channel roughness.

**Objective 4. Ensure the biological, chemical, and physical integrity of the topsoil resource during all phases of construction, operation, and reclamation. BMP's designed to minimize and prevent erosion, compaction, and contamination of the topsoil resource should be used to maintain the topsoil resource.**

Action 4a. Segregate topsoil from subsoil without mixing them, based on site specific conditions.

Action 4b. Where possible, integrate stored topsoil into existing production landscape.

Action 4c. Stabilize all stored topsoil from erosion, and seed topsoil stored beyond one growing season with an approved seed mixture.

Action 4d. Identify topsoil storage with appropriate signage, to prevent improper use of the stored topsoil.

Action 4e. Redistribute the topsoil to pre-disturbance depth.

Action 4f. Reduce soil/subsoil compaction to the anticipated root depth of the desired plant species. Compaction relief typically should be designed for 18-24 inches in depth. Compaction relief should be designed to create a cross hatch pattern, and distance between furrows should not be greater than 2 feet.

Action 4g. If the topsoil to be re spread is greater than 6” in depth, then topsoil should be applied and then compaction relief implemented. If the topsoil to be re spread is less than 6” , then compaction relief should be implemented prior to top soil application. Avoid leaving large clumps/clods, if this exists, discing may be necessary.

**Objective 5. Re-establish the visual composition and characteristics to blend with the natural surroundings.**

Action 5a. Ensure the overall location, landform, scale, shape, color, and orientation of major landscape features blends into the adjacent area and meets the needs of the planned post disturbance land use.

**Objective 6. Control the occurrences of noxious weeds and undesirable invasive species by utilizing principles of integrated weed management including prevention, mechanical, chemical, and biological control methods.**

Action 6a. Inventory and document noxious and invasive plant infestations before reclamation actions begin.

A pre disturbance noxious weed inventory shall be conducted on all surface disturbing projects to determine the presence of noxious weeds prior to beginning the project, and to determine whether treatment is needed prior to disturbance. If noxious weeds are found a report including:

- 1) A GPS location recorded in North American Datum 1983
- 2) Species
- 3) Canopy cover or number of plants
- 4) Size of infestation (estimate of square feet or acres)

Information shall be provided to the BLM Weed Coordinator prior to the disturbance occurring, and also documented in the annual reclamation report.

Action 6b. Control and manage Invasive and Noxious weed infestations using principles of integrated weed management including chemical, mechanical, and biological control methods. An approved Pesticide Use Proposal (PUP) is required for all planned herbicide applications. Herbicides must be applied by a certified applicator with a current Utah Pesticide Applicators License. A Biological Use Proposal is required for new biocontrol agents in the Field Office area.

**Objective 7. Manage all waste materials.**

Action 7a. Segregate all waste materials from the subsoil and topsoil.

Action 7b. All waste materials transported and disposed of off-site, must be placed in an authorized disposal facility in accordance with all local, State and Federal requirements.

**Objective 8. Conduct monitoring that is able to assess the attainment or failure of reclamation actions.**

Action 8a. Monitoring methodology should be an approved BLM method designed to monitor basal vegetative cover. Monitoring criteria:

- 1) Qualitative monitoring data should be collected after the 2<sup>nd</sup> growing season following reclamation actions. Quantitative data should be collected after the 3<sup>rd</sup> and 5<sup>th</sup> growing seasons, and the year that the applicant determines that reclamation meets the long term objective of 75% basal cover as compared to the reference site.
- 2) Crested wheatgrass species and forage kochia should not account for more than 30% of the total measured basal cover.
- 3) All ROW's will a monitoring transect per each NRCS ecological site that the ROW passes through that is greater than 0.75 miles.
- 4) General view photographs of the reclaimed areas should be submitted with the quantitative data. Photographs should be taken at the same photo point each time, and as close to the same time of year as previous photos were taken to reduce differences in plant growth characteristics.

Action 8b. In cooperation with the Authorized Officer, an undisturbed reference site should be selected prior to monitoring. One reference site may be used for multiple reclamation sites as long the site potentials are similar. Reference site criteria:

- 1) Reference sites shall be permanently marked, and the location recorded by Global Positioning System (GPS) North American Datum 1983.
- 2) For ROW's a reference site shall be established in each unique NRCS Ecological Site that the ROW passes through.
- 3) A photograph consisting of a general view of the marked reference site should be submitted with the Reference site data.

Action 8c. Evaluate monitoring data for compliance with the reclamation plan objectives

Action 8d. Document and report monitoring data and recommend revised reclamation strategies, if necessary. Each applicant will submit an annual reclamation report to the Authorized Officer by March 1<sup>st</sup>. The report will document compliance with all aspects of the reclamation objectives and standards.

Action 8e. Implement revised reclamation strategies as needed.

Action 8f. Repeat the process of monitoring, evaluating, documenting/reporting, and implementing, until reclamation goals are achieved, as determined by the Authorized Officer.

## GLOSSARY

***Surface Disturbing Activities*** – An action that alters the mineral soil resource, and/or surface geologic features, beyond natural site conditions and on a scale that affects other Public Land values. Examples of surface disturbing activities may include: operation of heavy equipment to construct well pads, roads, pits and reservoirs; installation of pipelines and power lines; and the conduct of several types of vegetation treatments. Surface disturbing activities may be either authorized or prohibited.

***Federal Action*** - Approval of specific projects, such as construction or management activities located in a defined geographic area. Projects include actions approved by permit or other regulatory decision as well as federal and federally assisted activities.

*National Environmental Policy Act (NEPA) [42 U.S.C. 4321 et seq.]*

***Interim Reclamation*** Interim reclamation consists of minimizing the footprint of disturbance by reclaiming all portions of the well site not needed for safe production operations. The portions of the well site not needed for operational and safety purposes will be recontoured to a final appearance that blends with the surrounding topography. Topsoil will be spread over these areas. The operator will spread the topsoil over the entire location except where an all-weather surface, access route or turnaround is needed. Production facilities should be clustered or placed offsite to maximize the opportunity for interim reclamation. Any incidental use on interim reclamation may require restoration of damage. This may require recontouring and seeding of the damaged area.

***Invasive Species*** - A species that is not native (or is alien) to the ecosystem under consideration and whose introduction causes or is likely to cause economic or environmental harm or harm to human health.

*Executive Order 13112*

***Reclamation Plan*** – A written document that addresses the reconstruction of disturbed ecosystems by returning the land to a condition approximate or equal to that which existed prior to disturbance, or to a stable and productive condition compatible with the land use plan.

***Waste materials*** – Any material that can interfere with successful reclamation, safety, and long term stability of a site (contaminated soil or water, drilling muds, solid waste).

*Adapted from various sources*

***Contamination*** - The presence of man-made chemicals or other alterations in the natural soil or water environment (pesticides, hazardous substances, petroleum, salts).

*Adapted from various sources*

# APPENDIX R-3

## STIPULATIONS FOR SURFACE DISTURBING ACTIVITIES

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### DESCRIPTION OF SURFACE STIPULATIONS

Where applicable, surface stipulations will be appended to land use authorizations, permits, and leases issued on BLM-administered lands. The measures apply to operations that require use of heavy equipment, excluding casual use activities, such as for administrative uses and maintenance. These stipulations apply to the Proposed RMP and not the other alternatives.

Three surface stipulations could be applied to land use authorizations: (1) no surface occupancy (NSO), (2) timing limitation (TL), and (3) controlled surface use (CSU).

- Areas identified as NSO will be unavailable to placement of surface facilities such as oil and gas wells, and will be avoidance areas for location of public utilities, and will be closed to new road construction.
- Areas identified for TL stipulations will be closed to surface use including construction and developmental activities during the identified timeframes. TL stipulation areas will be open to operational and maintenance activities, including associated vehicle travel, during the closed period unless otherwise specified in the stipulation.
- Areas identified as CSU will require proposals be authorized only according to the controls or constraints specified. Controls will be applicable to all surface use activities, such as oil and gas development and operation, mineral material sales, and public utility location.

These surface stipulations would also be incorporated into the environmental analyses for BLM-initiated projects.

### EXCEPTIONS, MODIFICATIONS, AND WAIVERS

The BLM Authorized Officer (AO) can except, modify, or waive surface stipulations. BLM will coordinate as necessary with the appropriate agency or entity, such as the School and Institutional Trust Lands Administration (SITLA), Utah Division of Wildlife Resources (UDWR), U.S. Fish and Wildlife Service (USFWS), and Carbon and Emery counties. A holder of a land use authorization document can be excepted from the stipulation on a one-time basis. A modification can be a change in the language or provisions of a surface stipulation, either temporarily or permanently. A waiver permanently excepts the surface stipulation.

The environmental analysis for oil and gas development (e.g., analysis for the approval of applications for permit to drill [APD]) must address proposals to except, modify, or waive a surface stipulation. To except, modify, or waive a stipulation, the environmental analysis would have to show that (1) the circumstances or relevant resource values in the area had changed following issuance of the lease, (2) less restrictive requirements could be implemented that would protect the resource of concern, and (3) operations could be conducted without causing unacceptable impacts.

Table R3-1 shows resources of concern and stipulations including exceptions, modifications, and waivers.

Table R 3-1. Stipulation T able

Type of Stipulation	Seasonal Stipulation	Areas Where Stipulations Apply	Exception, Modification, Waiver
<b>No Surface Occupancy</b>			
NSO within 1/2 mile of greater sage-grouse leks.		Sage-grouse leks	<p><b>Exception:</b> The AO may grant an exception if an environmental analysis demonstrates that the action would not impair the function or utility of the site for current or subsequent reproductive display, including daytime loafing/staging activities, and/or would not result in development of a permanent aboveground structure within 1/2 mile of a lek.</p> <p><b>Modification:</b> The AO may modify the NSO area in extent if an environmental analysis finds that a portion of the NSO area is nonessential to site utility or function, or if further analysis shows that the size or location of the lek has changed, or that the proposed action could be conditioned to not impair the function or utility of the site for current or subsequent reproductive display including daytime loafing/staging activities.</p> <p><b>Waiver:</b> A waiver may be granted if there are no active lek sites and it is determined the sites have been completely abandoned or destroyed or occur outside the initial identified area, as determined by BLM.</p>
NSO within 1/2 mile of known Mexican Spotted Owl (MSO) nests.		Known owl nest areas	<p><b>Exception:</b> The AO may grant an exception if an environmental analysis demonstrates that the action would not impair the function or utility of the site for nesting or other owl-sustaining activities.</p> <p><b>Modification:</b> The AO may modify the NSO area in extent if an environmental analysis finds that a portion of the area is nonessential to site utility or function or if natural features provide adequate visual or auditory screening.</p> <p><b>Waiver:</b> A waiver may be granted if the MSO is de-listed and the area is determined as not necessary for the survival and recovery of the MSO.</p>

Type of Stipulation	Seasonal Stipulation	Areas Where Stipulations Apply	Exception, Modification, Waiver
NSO on slopes greater than 40 percent.		Slopes greater than 40 percent	<p><b>Exception:</b> If after an environment analysis the AO determines that it would cause undue or unnecessary degradation to pursue other placement alternatives, surface occupancy in the area may be authorized. In addition, a plan from the operator and BLM's approval of the plan would be required before construction and maintenance could begin. The plan would have to include:</p> <ul style="list-style-type: none"> <li>• An erosion control strategy</li> <li>• GIS modeling</li> <li>• Proper survey and design by a certified engineer.</li> </ul> <p><b>Modification:</b> None <b>Waiver:</b> None</p>
No surface disturbance or occupancy would be maintained around natural springs to protect the water quality of the spring. The distance would be based on geophysical, riparian, and other factors necessary to protect the water quality of the springs. If these factors cannot be determined, a 660-foot buffer zone would be maintained.		Springs	<p><b>Exception:</b> An exception could be authorized if (a) there are no practical alternatives, (b) impacts could be fully mitigated, or (c) the action is designed to enhance the riparian resources.</p> <p><b>Modification:</b> None <b>Waiver:</b> None</p>
No new surface disturbance (excluding fence lines) would be required in areas equal to the 100-year floodplain or 100 meters (330 feet) on either side from the centerline, whichever is greater, along all perennial and intermittent streams, streams with perennial reaches, and riparian areas.		Intermittent/perennial streams	<p><b>Exception:</b> An exception could be authorized if (a) there are no practical alternatives, (b) impacts could be fully mitigated, or (c) the action is designed to enhance the riparian resources.</p> <p><b>Modification:</b> None <b>Waiver:</b> None</p>
NSO for cultural values within areas of critical environmental concern (ACEC) to retain the cultural character and context of the area.		ACEC with cultural R&I values	<p><b>Exception:</b> The AO may grant an oil and gas exception if it is determined that no other economical and technical feasible access is available to reach and drain the fluid mineral resources of the area. A block cultural survey must be completed and a treatment plan developed and submitted to BLM and the State Historic Preservation Office (SHPO) for their approval. The plan must contain measures to mitigate surface disturbance and reduce visual intrusion.</p> <p><b>Modification:</b> None <b>Waiver:</b> None</p>

Type of Stipulation	Seasonal Stipulation	Areas Where Stipulations Apply	Exception, Modification, Waiver
NSO within Trail Springs/Lost Springs Wash segment of the Old Spanish National Historic Trail to retain the historic character of the trail.		Trail Springs/Lost Springs Wash segment	<p><b>Exception:</b> The AO may grant an exception if an environmental analysis demonstrates that the action would not impair the historic character of the trail.</p> <p><b>Modification:</b> None</p> <p><b>Waiver:</b> None</p>
NSO within developed recreation and administrative sites not consistent with the purpose of the site, including those authorized under a Recreation and Public Purpose Act.		Developed recreation sites and administrative sites	<p><b>Exception:</b> An exception would be granted for surface disturbance that supports the recreation or administrative objectives of the site.</p> <p><b>Modification:</b> None</p> <p><b>Waiver:</b> None</p>
<b>Timing Limitations</b>			
Mule deer and elk winter range would be closed seasonally.	December 1 to April 15	Crucial winter habitat	<p><b>Exception:</b> Upon review and monitoring, the AO may grant exceptions because of climatic and/or range conditions if certain criteria are met and if activities would not cause undue stress to deer and elk populations or habitats.</p> <p><b>Modification:</b> Season may be adjusted depending on climatic and range conditions.</p> <p><b>Waiver:</b> A waiver may be granted if the winter range habitat is unsuitable for or unoccupied during winter months by deer/elk and there is no reasonable likelihood of future winter range use.</p>
Mule deer fawning and elk calving areas would be closed seasonally.	May 15 to July 5	Crucial fawning and calving areas. Located within the crucial summer habitat	<p><b>Exception:</b> Upon review and monitoring, the AO may grant exceptions because of climatic and/or range conditions if certain criteria are met and if activities would not cause undue stress to deer and elk populations or habitats.</p> <p><b>Modification:</b> Season may be adjusted depending on climatic and range conditions.</p> <p><b>Waiver:</b> A waiver may be granted if the fawning and calving habitat is unsuitable or unoccupied by deer/elk and there is no reasonable likelihood of future use.</p>

Type of Stipulation	Seasonal Stipulation	Areas Where Stipulations Apply	Exception, Modification, Waiver
Desert bighorn sheep and Rocky Mountain bighorn sheep spring/lambing range would be closed seasonally.	April 15 to June 15	Desert bighorn sheep and Rocky Mountain bighorn sheep crucial yearlong habitat	<p><b>Exception:</b> Upon review and monitoring, the AO may grant exceptions because of climatic and/or range conditions if certain criteria are met and if activities would not cause undue stress to Desert bighorn sheep and Rocky Mountain bighorn sheep populations or habitats.</p> <p><b>Modification:</b> Season may be adjusted depending on climatic and range conditions.</p> <p><b>Waiver:</b> A waiver may be granted if the habitat is determined to be unsuitable for lambing and there is no reasonable likelihood of future use as bighorn lambing grounds.</p>
Moose winter range would be closed seasonally.	December 1 to April 15	Crucial yearlong moose habitat	<p><b>Exception:</b> Upon review and monitoring, the AO may grant exceptions because of climatic and/or range conditions if certain criteria are met and if activities would not cause undue stress to moose populations or habitats.</p> <p><b>Modification:</b> Season may be adjusted depending on climatic and range conditions.</p> <p><b>Waiver:</b> A waiver may be granted if the winter range habitat is unsuitable or unoccupied during winter months by moose and there is no reasonable likelihood of future winter range use.</p>
Raptor nesting complexes and known raptor nest sites would be closed seasonally.	February 1 to July 15	Known raptor nest sites (within ½ mile of nests occupied within past 3 years) and raptor crucial cliff-nesting complex habitats	<p><b>Exception:</b> The AO may grant an exception if the raptor nest in question is deemed to be inactive by May 31 and if the proposed activity would not result in a permanent structure or facility that would cause the subject nest to become unsuitable for nesting in future years.</p> <p><b>Modification:</b> Season may be adjusted depending on climatic and range conditions. Distance may be adjusted if natural features provide adequate visual screening.</p> <p><b>Waiver:</b> This stipulation may be waived if, in cooperation with the UDWR, it is determined that the site has been permanently abandoned or unoccupied for a minimum of 3 years.</p>

Type of Stipulation	Seasonal Stipulation	Areas Where Stipulations Apply	Exception, Modification, Waiver
<p>Migratory bird nesting areas would be closed seasonally. Birds designated as BLM Special Status Species would have the highest priority.</p>	<p>April 15 to August 1</p>	<p>High-value breeding habitat</p>	<p><b>Exception:</b> Upon review and monitoring, the AO may grant exceptions because of climatic and/or habitat conditions if activities would not cause undue stress to migratory bird populations.</p> <p><b>Modification:</b> Season may be adjusted depending on climatic and range conditions. Distance may be adjusted if natural features provide adequate visual screening.</p> <p><b>Waiver:</b> None</p>
<p>Allow no surface disturbing or otherwise disruptive activities within 2 miles of a known greater sage-grouse lek.</p>	<p>March 15 to July 15</p>	<p>Sage-grouse leks and associated nesting/brood-rearing habitats</p>	<p><b>Exception:</b> The AO may grant an exception if an environmental analysis demonstrates that the action would not impair the function or utility of the habitat for nesting or early brood-rearing activities.</p> <p><b>Modification:</b> Season may be adjusted depending on climatic and habitat conditions. Disturbance could occur if the activity were proposed to occur within the buffer, but would occur in non-sagebrush habitat, i.e., the activity could be allowed if it was not in sage-grouse habitat and did not in some other way disturb nesting or brood-rearing activity.</p> <p><b>Waiver:</b> This stipulation may be waived if, in cooperation with UDWR, it is determined that the site has been permanently abandoned or unoccupied for a minimum of 5 years.</p>
<p>Sage-grouse wintering areas would be closed seasonally.</p>	<p>December 1 to March 14</p>	<p>Sage-grouse crucial winter habitat</p>	<p><b>Exception:</b> Upon review and monitoring, the AO may grant exceptions because of climatic and/or habitat conditions if certain criteria are met and if activities would not cause undue stress to wintering greater sage-grouse</p> <p><b>Modification:</b> Season may be adjusted depending on climatic and habitat conditions.</p> <p><b>Waiver:</b> This stipulation may be waived if, in cooperation with the State wildlife agency, it is determined that the site has been permanently abandoned or unoccupied for a minimum of 5 years.</p>

Type of Stipulation	Seasonal Stipulation	Areas Where Stipulations Apply	Exception, Modification, Waiver
High-country watershed areas would be closed seasonally.	December 1 to April 15	Areas above 7,000 feet in elevation	<p><b>Exception:</b> Upon review and monitoring, the AO may grant exceptions because of climatic conditions if activities would not cause undue damage to soils or roads.</p> <p><b>Modification:</b> Season may be adjusted depending on climatic and vegetation conditions.</p> <p><b>Waiver:</b> Activities may be allowed as long as all surface disturbing activities are conducted before seasonal closure.</p>
<b>Controlled Surface Use</b>			
In surface disturbing proposals regarding construction on slopes of 20 percent to 40 percent, include an approved erosion control strategy and topsoil segregation/restoration plan. Such construction must be properly surveyed and designed by a certified engineer and approved by the BLM prior to project implementation, construction, or maintenance.		Slopes between 20 and 40 percent	<p><b>Exception:</b> If after an environment analysis the AO determines that it would cause undue or unnecessary degradation to pursue other placement alternatives, surface occupancy in the area may be authorized. In addition, a plan from the operator and BLM's approval of the plan would be required before construction and maintenance could begin. The plan must include:</p> <ul style="list-style-type: none"> <li>• An erosion control strategy</li> <li>• GIS modeling</li> <li>• Proper survey and design by a certified engineer.</li> </ul> <p><b>Modification:</b> Modifications also may be granted if a more detailed analysis, e.g., Order I soil survey conducted by a qualified soil scientist, finds that surface disturbance activities could occur on slopes between 20 and 40 percent while adequately protecting areas from accelerated erosion.</p> <p><b>Waiver:</b> None</p>
Within VRM II areas, surface disturbing activities would comply with BLM Manual Handbook 8431-1 to retain the existing character of the landscape.		VRM II areas	<p><b>Exception:</b> Recognized utility corridors are exempt. Temporary exceedance may be allowed during initial development phases.</p> <p><b>Modification:</b> None</p> <p><b>Waiver:</b> None</p>
Cultural resources inventories (including point, area, and linear features) would be required for all federal undertakings that could affect cultural resources or historic properties in areas of both direct and indirect impacts.		All areas	<p><b>Waiver of Inventory</b></p> <p>Although complete Class III inventories would be performed for most land use actions, a field manager could waive inventory for any part of an Area of Potential Effect when one or more of the following conditions exist:</p> <ul style="list-style-type: none"> <li>• Previous natural ground disturbance has modified the surface so extensively that the likelihood of finding cultural properties is</li> </ul>

Type of Stipulation	Seasonal Stipulation	Areas Where Stipulations Apply	Exception, Modification, Waiver
			<p>negligible. (Note: This is not the same as being able to document that any existing sites may have been affected by surface disturbance; ground disturbance must have been so extensive as to reasonably preclude the location of any such sites.)</p> <ul style="list-style-type: none"> <li>• Human activity within the last 50 years has created a new land surface to such an extent as to eradicate locatable traces of cultural properties.</li> <li>• Existing Class II or equivalent inventory data are sufficient to indicate that the specific environmental situation did not support human occupation or use to a degree that would make further inventory information useful or meaningful.</li> <li>• Previous inventories must have been conducted according to current professionally acceptable standards.</li> <li>• Records are available and accurate and document the location, methods, and results of the inventory.</li> <li>• Class II "equivalent inventory data" includes an adequate amount of acreage distributed across the same specific environmental situation that is located within the study area.</li> <li>• Inventory at the Class III level has previously been performed, and records documenting the location, methods, and results of the inventory are available. Such inventories must have been conducted according to current professionally acceptable standards.</li> <li>• Natural environmental characteristics (such as recent landslides or rock falls) are unfavorable to the presence of cultural properties.</li> <li>• The nature of the proposed action is such that no impact can be expected on significant cultural resources.</li> <li>• Conditions exist that could endanger the health or safety of personnel, such as the presence of</li> </ul>

Type of Stipulation	Seasonal Stipulation	Areas Where Stipulations Apply	Exception, Modification, Waiver
			hazardous materials, explosive ordnance, or unstable structures.
An assessment of fossil resources would be required on a case-by-case basis, mitigating as necessary before and/or during surface disturbance.		All areas	<p><b>Exception:</b> The AO may grant an exception if the area has previously been inventoried and an assessment completed.</p> <p><b>Modification:</b> None</p> <p><b>Waiver:</b> None</p>
Any surface use or occupancy within designated critical habitat would be strictly controlled through close scrutiny of any surface use plan filed to protect habitat values and the use of the area by Mexican spotted owls. Modifications to the Surface Use Plan of Operations may be required for the protection of these resources. This limitation may apply to operation and maintenance of producing wells.		Designated critical habitat	<p><b>Exception:</b> The AO may grant an exception if an environmental analysis demonstrates that the action would not impair the function or utility of the site for nesting or other owl-sustaining activities.</p> <p><b>Modification:</b> The AO may modify the CSU area in extent if an environmental analysis finds that a portion of the area is nonessential to site utility or function or if natural features provide adequate visual or auditory screening.</p> <p><b>Waiver:</b> A waiver may be granted if the species is de-listed and the critical habitat is determined as not necessary for the survival and recovery of the species.</p>

**Appendix C**  
**Scoping Letters**



**United States Department of the Interior**

**BUREAU OF LAND MANAGEMENT**

Green River District-Price Field Office

125 South 600 West

Price, Utah 84501

Phone: (435) 636-3600 Fax: (435) 636-3657

<http://www.blm.gov/ut/st/en/fo/price.html>



SEP 14 2010

IN REPLY REFER TO:  
UTU- 88133, UTU-88134  
(UTG020)

CERTIFIED MAIL- 7010 1060 0001 1119 3962  
RETURN RECEIPT REQUESTED

Surname	Date
CL	9-13-10
PH	9-13-10

City of Orangeville  
P.O. Box 677  
Orangeville, UT 84537

**NOTICE**

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The Bureau of Land Management has received an application from Cottonwood Creek Consolidated Irrigation Company for construction of a dam to create a reservoir for storage and regulation for a basin wide pressure irrigation system. The reservoir is off stream and would require a pipeline to feed it. The proposed dam would be approximately 60 feet high and the resulting reservoir would store approximately 900 Ac-ft. Said application was filed pursuant to the regulations contained in 43 CFR 2800 and involves the following-described lands:

**Reservoir (UTU-88133)**

T. 18 S., R. 7 E., Salt Lake Meridian, Emery County, Utah

Section 24: SW $\frac{1}{4}$ SW $\frac{1}{4}$ ;

Section 25: N $\frac{1}{2}$ NW $\frac{1}{4}$ , SE $\frac{1}{4}$ NW $\frac{1}{4}$ ;

Section 26: Lot 1.

**Pipeline (UTU-88134)**

T. 18 S., R. 7 E., Salt Lake Meridian, Emery County, Utah

Section 15: SW $\frac{1}{4}$ NE $\frac{1}{4}$ ;

Section 24: SW $\frac{1}{4}$ SW $\frac{1}{4}$ .

Please send your concerns, or written recommendation on the proposed use. You have fifteen (15) days of the date of this notice in which to respond. In addition, a copy of your comments must be given to the applicant who is:

Cottonwood Creek Consolidated Irrigation Company  
Attn: Craig Johansen  
P.O. Box 678  
Orangeville, UT 84537

If no response is received within the above listed timeframe, it is assumed you have no issues in regard to the proposal. If additional information is needed please contact Connie Leschin at the address above or by calling (435) 636-3610.

Sincerely,



Stephanie J. Howard  
Associate Field Manager

Enclosure:  
Map

bcc: Reading File  
Working File

UT:LLUTG02100:CLeschin:cl:9/10/10:3610



**United States Department of the Interior**  
**BUREAU OF LAND MANAGEMENT**  
 Green River District-Price Field Office  
 125 South 600 West  
 Price, Utah 84501  
 Phone: (435) 636-3600 Fax: (435) 636-3657  
<http://www.blm.gov/ut/st/en/fo/price.html>



SEP 14 2010

IN REPLY REFER TO:  
 UTU- 88133, UTU-88134  
 (UTG020)

Surname	Date
CR	9-13-10
Alt	9-13-10

CERTIFIED MAIL- 7010 1060 0001 1119 3979  
 RETURN RECEIPT REQUESTED

City of Castle Dale  
 P.O. Box 728  
 Castle Dale, UT 84513

NOTICE

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The Bureau of Land Management has received an application from Cottonwood Creek Consolidated Irrigation Company for construction of a dam to create a reservoir for storage and regulation for a basin wide pressure irrigation system. The reservoir is off stream and would require a pipeline to feed it. The proposed dam would be approximately 60 feet high and the resulting reservoir would store approximately 900 Ac-ft. Said application was filed pursuant to the regulations contained in 43 CFR 2800 and involves the following-described lands:

Reservoir (UTU-88133)

T. 18 S., R. 7 E., Salt Lake Meridian, Emery County, Utah  
 Section 24: SW $\frac{1}{4}$ SW $\frac{1}{4}$ ;  
 Section 25: N $\frac{1}{2}$ NW $\frac{1}{4}$ , SE $\frac{1}{4}$ NW $\frac{1}{4}$ ;  
 Section 26: Lot 1.

Pipeline (UTU-88134)

T. 18 S., R. 7 E., Salt Lake Meridian, Emery County, Utah  
 Section 15: SW $\frac{1}{4}$ NE $\frac{1}{4}$ ;  
 Section 24: SW $\frac{1}{4}$ SW $\frac{1}{4}$ .

Please send your concerns, or written recommendation on the proposed use. You have fifteen (15) days of the date of this notice in which to respond. In addition, a copy of your comments must be given to the applicant who is:

Cottonwood Creek Consolidated Irrigation Company  
Attn: Craig Johansen  
P.O. Box 678  
Orangeville, UT 84537

If no response is received within the above listed timeframe, it is assumed you have no issues in regard to the proposal. If additional information is needed please contact Connie Leschin at the address above or by calling (435) 636-3610.

Sincerely,

A handwritten signature in cursive script that reads "Stephanie J. Howard".

Stephanie J. Howard  
Associate Field Manager

Enclosure:  
Map

bcc: Reading File  
Working File

UT:LLUTG02100:CLeschin:cl:9/10/10:3610



## United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Green River District-Price Field Office

125 South 600 West

Price, Utah 84501

Phone: (435) 636-3600 Fax: (435) 636-3657

<http://www.blm.gov/ut/st/en/fo/price.html>



SEP 14 2010

IN REPLY REFER TO:  
UTU- 88133, UTU-88134  
(UTG020)

CERTIFIED MAIL- 7010 1060 0001 1119 3986  
RETURN RECEIPT REQUESTED

Emery County Commission  
Commissioner Kofford  
P.O. Box 629  
Castle Dale, UT 84513

Surname	Date
CL	9-13-10
AH	9-13-10

### NOTICE

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The Bureau of Land Management has received an application from Cottonwood Creek Consolidated Irrigation Company for construction of a dam to create a reservoir for storage and regulation for a basin wide pressure irrigation system. The reservoir is off stream and would require a pipeline to feed it. The proposed dam would be approximately 60 feet high and the resulting reservoir would store approximately 900 Ac-ft. Said application was filed pursuant to the regulations contained in 43 CFR 2800 and involves the following-described lands:

#### Reservoir (UTU-88133)

T. 18 S., R. 7 E., Salt Lake Meridian, Emery County, Utah

Section 24: SW $\frac{1}{4}$ SW $\frac{1}{4}$ ;

Section 25: N $\frac{1}{2}$ NW $\frac{1}{4}$ , SE $\frac{1}{4}$ NW $\frac{1}{4}$ ;

Section 26: Lot 1.

#### Pipeline (UTU-88134)

T. 18 S., R. 7 E., Salt Lake Meridian, Emery County, Utah

Section 15: SW $\frac{1}{4}$ NE $\frac{1}{4}$ ;

Section 24: SW $\frac{1}{4}$ SW $\frac{1}{4}$ .

Please send your concerns, or written recommendation on the proposed use. You have fifteen (15) days of the date of this notice in which to respond. In addition, a copy of your comments must be given to the applicant who is:

Cottonwood Creek Consolidated Irrigation Company  
Attn: Craig Johansen  
P.O. Box 678  
Orangeville, UT 84537

If no response is received within the above listed timeframe, it is assumed you have no issues in regard to the proposal. If additional information is needed please contact Connie Leschin at the address above or by calling (435) 636-3610.

Sincerely,

A handwritten signature in cursive script that reads "Stephanie J. Howard".

Stephanie J. Howard  
Associate Field Manager

Enclosure:

Map

bcc: Reading File  
Working File

UT:LLUTG02100:CLeschin:cl:9/10/10:3610



**United States Department of the Interior**

**BUREAU OF LAND MANAGEMENT**

Green River District-Price Field Office

125 South 600 West

Price, Utah 84501

Phone: (435) 636-3600 Fax: (435) 636-3657

<http://www.blm.gov/ut/st/en/fo/price.html>



SEP 14 2010

IN REPLY REFER TO:  
UTU- 88133, UTU-88134  
(UTG020)

Surname	Date
CL	9-13-10
AH	9-13-10

CERTIFIED MAIL- 7010 1060 0001 1119 3948  
RETURN RECEIPT REQUESTED

State Engineer - Water Rights  
Attn: Marc Stilson  
319 N. Carvbonville Rd.  
Price, UT 84501

**NOTICE**

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:

The Bureau of Land Management has received an application from Cottonwood Creek Consolidated Irrigation Company for construction of a dam to create a reservoir for storage and regulation for a basin wide pressure irrigation system. The reservoir is off stream and would require a pipeline to feed it. The proposed dam would be approximately 60 feet high and the resulting reservoir would store approximately 900 Ac-ft. Said application was filed pursuant to the regulations contained in 43 CFR 2800 and involves the following-described lands:

**Reservoir (UTU-88133)**

T. 18 S., R. 7 E., Salt Lake Meridian, Emery County, Utah

Section 24: SW $\frac{1}{4}$ SW $\frac{1}{4}$ ;

Section 25: N $\frac{1}{2}$ NW $\frac{1}{4}$ , SE $\frac{1}{4}$ NW $\frac{1}{4}$ ;

Section 26: Lot 1.

**Pipeline (UTU-88134)**

T. 18 S., R. 7 E., Salt Lake Meridian, Emery County, Utah

Section 15: SW $\frac{1}{4}$ NE $\frac{1}{4}$ ;

Section 24: SW $\frac{1}{4}$ SW $\frac{1}{4}$ .

Please send your concerns, or written recommendation on the proposed use. You have fifteen (15) days of the date of this notice in which to respond. In addition, a copy of your comments must be given to the applicant who is:

Cottonwood Creek Consolidated Irrigation Company  
Attn: Craig Johansen  
P.O. Box 678  
Orangeville, UT 84537

If no response is received within the above listed timeframe, it is assumed you have no issues in regard to the proposal. If additional information is needed please contact Connie Leschin at the address above or by calling (435) 636-3610.

Sincerely,



Stephanie J. Howard  
Associate Field Manager

Enclosure:  
Map

cc: Jeffrey Brower

bcc: Reading File  
Working File

UT:LLUTG02100:CLeschin:cl:9/10/10:3610



**United States Department of the Interior**

**BUREAU OF LAND MANAGEMENT**

Green River District-Price Field Office

125 South 600 West

Price, Utah 84501

Phone: (435) 636-3600 Fax: (435) 636-3657

<http://www.blm.gov/ut/st/en/fo/price.html>



SEP 14 2010

IN REPLY REFER TO:  
UTU- 88133, UTU-88134  
(UTG020)

CERTIFIED MAIL- 7010 1060 0001 1119 3955  
RETURN RECEIPT REQUESTED

Surname	Date
CR	9-13-10
AH	9-13-10

XTO Energy Inc.  
Attn: Ken Secrest  
P.O. Box 1360  
Roosevelt, UT 84066

**NOTICE**

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The Bureau of Land Management has received an application from Cottonwood Creek Consolidated Irrigation Company for construction of a dam to create a reservoir for storage and regulation for a basin wide pressure irrigation system. The reservoir is off stream and would require a pipeline to feed it. The proposed dam would be approximately 60 feet high and the resulting reservoir would store approximately 900 Ac-ft. Said application was filed pursuant to the regulations contained in 43 CFR 2800 and involves the following-described lands:

**Reservoir (UTU-88133)**

T. 18 S., R. 7 E., Salt Lake Meridian, Emery County, Utah

Section 24: SW $\frac{1}{4}$ SW $\frac{1}{4}$ ;

Section 25: N $\frac{1}{2}$ NW $\frac{1}{4}$ , SE $\frac{1}{4}$ NW $\frac{1}{4}$ ;

Section 26: Lot 1.

**Pipeline (UTU-88134)**

T. 18 S., R. 7 E., Salt Lake Meridian, Emery County, Utah

Section 15: SW $\frac{1}{4}$ NE $\frac{1}{4}$ ;

Section 24: SW $\frac{1}{4}$ SW $\frac{1}{4}$ .

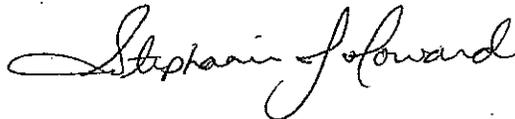
Per 43 CFR 2807.14 you, the right-of-way holder, are being informed of this pending application by copy of this notice as the proposal would be placed adjacent to or over your Oil and Gas Lease UTU-67532, right-of-ways UTU-78838 for a Power Transmission line, and UTU-74321 for a Oil and Gas Pipeline, see attached map.

Please send your concerns, or written recommendation as to how the proposed use affects the integrity of, or your ability to operate, your facilities, please send them to this office as shown above. You have fifteen (15) days of the date of this notice in which to respond. In addition, a copy of your comments must be given to the applicant who is:

Cottonwood Creek Consolidated Irrigation Company  
 Attn: Craig Johansen  
 P.O. Box 678  
 Orangeville, UT 84537

If no response is received within the above listed timeframe, it is assumed you have no issues in regard to the proposal. If additional information is needed please contact Connie Leschin at the address above or by calling (435) 636-3610.

Sincerely,



Stephanie J. Howard  
 Associate Field Manager

Enclosure:  
 Map

bcc: Reading File  
 Working File

UT:LLUTG02100:CLeschin:cl:9/10/10:3610

<b>SENDER: COMPLETE THIS SECTION</b>		<b>U.S. Postal Service™</b>	
<ul style="list-style-type: none"> <li>Complete items 1, 2, and 3. Also item 4 if Restricted Delivery is desired.</li> <li>Print your name and address on so that we can return the card to you.</li> <li>Attach this card to the back of the envelope or on the front if space permits.</li> </ul>		<b>CERTIFIED MAIL™ RECEIPT</b> (Domestic Mail Only; No Insurance Coverage Provided)	
1. Article Addressed to:		For delivery information visit our website at <a href="http://www.usps.com">www.usps.com</a>	
XTO Energy, Inc. Attn: Ken Secret P.O. Box 1360 Roosevelt, UT 84066		<b>OFFICIAL USE</b>	
2. Article Number: (Transfer from service label)		Postage	\$ 4.44
		Certified Fee	1.80
		Return Receipt Fee (Endorsement Required)	2.30
		Restricted Delivery Fee (Endorsement Required)	
		<b>Total Postage &amp; Fees</b>	<b>\$5.54</b>
		Sent To	XTO Energy, Inc.
		Street, Apt. No., or PO Box No.	Attn: Ken Secret P.O. Box 1360
		City, State, ZIP+4	Roosevelt, UT 84066
PS Form 3811 February 2004		PS Form 3800, August 2000 Domestic Return Receipt	





**United States Department of the Interior**

**BUREAU OF LAND MANAGEMENT**

Green River District-Price Field Office

125 South 600 West

Price, Utah 84501

Phone: (435) 636-3600 Fax: (435) 636-3657

<http://www.blm.gov/ut/st/en/fo/price.html>



SEP 27 2010

IN REPLY REFER TO:

UTU- 88133, UTU-88134

(UTG020)

CERTIFIED MAIL-7010 1060 0001 1119 4082

RETURN RECEIPT REQUESTED

Surname	Date
AH	9-24-10
CL	9-27-10

Natalie Gardner  
Emery Star Route  
Elmo, UT 84521

**NOTICE**

:  
:  
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The Bureau of Land Management (BLM) has received an application from Cottonwood Creek Consolidated Irrigation Company for construction of a dam to create a reservoir for storage and regulation of a basin wide pressure irrigation system. The reservoir is off stream and would require a pipeline to feed it. The proposed dam would be approximately 60 feet high and the resulting reservoir would store approximately 900 Ac-ft. Said application was filed pursuant to the regulations contained in 43 CFR 2800 and involves the following described lands:

Reservoir (UTU-88133)

T. 18 S., R. 7 E., Salt Lake Meridian, Emery County, Utah

Section 24: SW $\frac{1}{4}$ SW $\frac{1}{4}$ ;

Section 25: N $\frac{1}{2}$ NW $\frac{1}{4}$ , SE $\frac{1}{4}$ NW $\frac{1}{4}$ ;

Section 26: Lot 1.

Pipeline (UTU-88134)

T. 18 S., R. 7 E., Salt Lake Meridian, Emery County, Utah

Section 15: SW $\frac{1}{4}$ NE $\frac{1}{4}$ ;

Section 24: SW $\frac{1}{4}$ SW $\frac{1}{4}$ .

Per 43 CFR 2807.14 you, the grazing permit holder, are being informed of this pending application by copy of this notice as the proposal would be placed adjacent to or over your West Orangeville grazing permit; see attached map.

Please send your concerns or written recommendation as to how the proposed use affects the integrity of, or your ability to operate your facilities to this office as shown above. You have fifteen (15) days of the date of this notice in which to respond. In addition, a copy of your comments must be given to the applicant who is:

Cottonwood Creek Consolidated Irrigation Company  
Attn: Craig Johansen  
P.O. Box 678  
Orangeville, UT 84537

If no response is received within the above listed timeframe, it is assumed you have no issues in regard to the proposal. If additional information is needed please contact Stephanie Bauer at (435) 636-3620 or Connie Leschin at (435) 636-3610.

Sincerely,



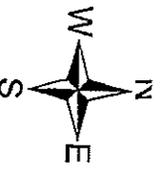
Stephanie J. Howard  
Associate Field Manager

Enclosure:  
Map

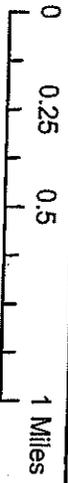
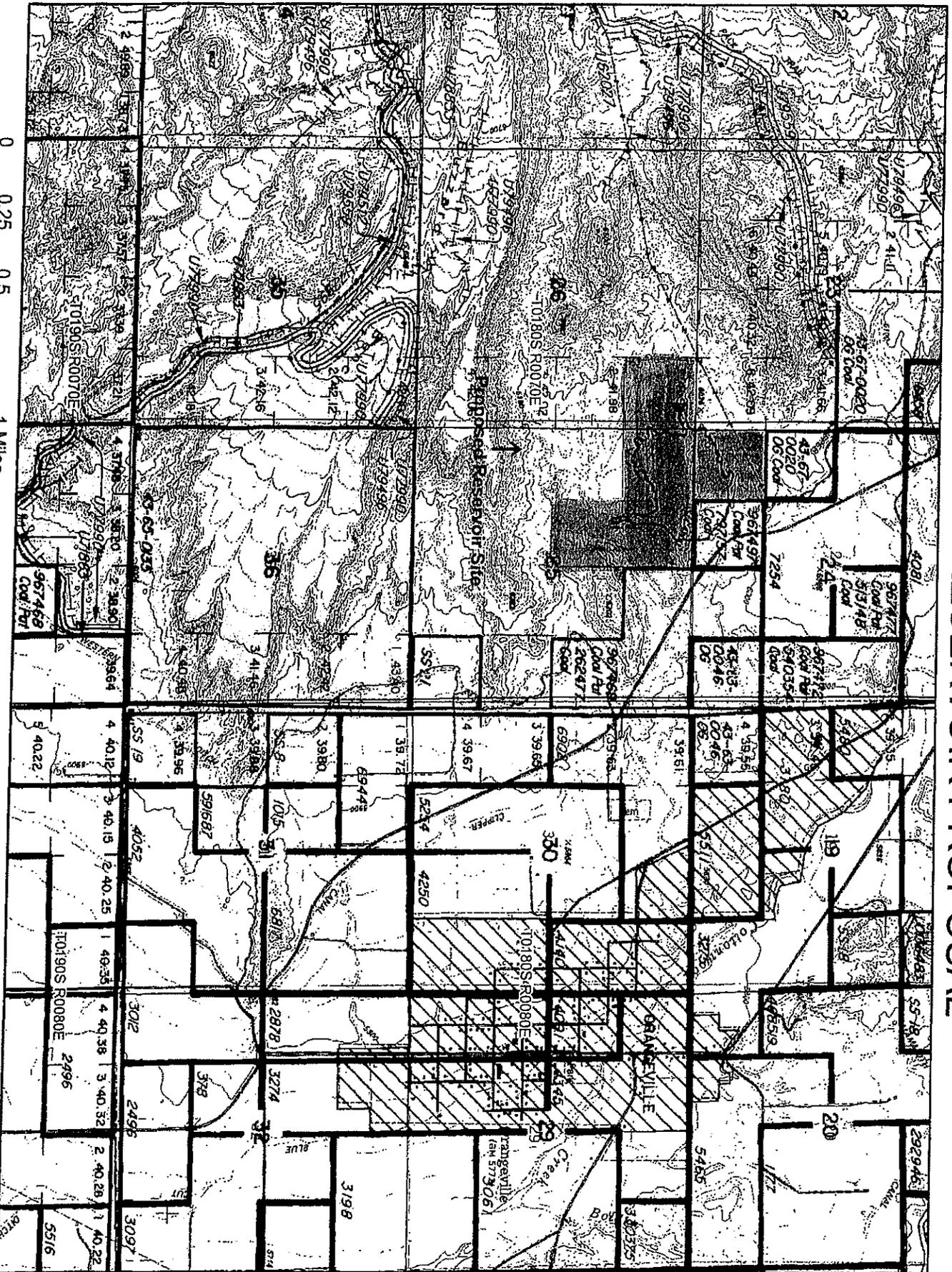
cc: Stephanie Bauer, Price Field Office

bcc: Working File  
Reading File

UT:UTG021:CLeschin:ah:9/24/10:435-636-3610



# ADOBE WASH RESERVOIR PROPOSAL



Natalie Gardner  
Emery Star Route  
Elmo, UT 84521

Ralph O. Justesen  
P.O. Box 275  
Orangeville, UT 84537

Karl S. Justesen  
P.O. Box 17  
Orangeville, UT 84537

Monroe B. & Ina Lee Magnuson  
P.O. Box 886  
Castle Dale, UT 84513

Howard Tuttle  
P.O. Box 242  
Orangeville, UT 84537

Dick K. & Anna Lee Jones  
P.O. Box 43  
Orangeville, UT 84537





# THE PAIUTE INDIAN TRIBE OF UTAH

440 North Paiute Drive • Cedar City, Utah 84721 • (435) 586-1112

RECEIVED  
FEB 22 2011  
BLM - Price, UT

Patricia A. Clabaugh  
Field Manager  
U.S. Department of Interior  
Bureau of Land Management  
125 South 600 West  
Price, Utah 84501

Dear Patricia,

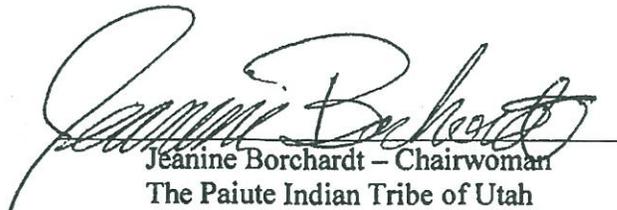
We are in receipt of your letter referencing UTU-88133, UTU-88134 2800 (UTG020) regarding the granting of a right of way to Cottonwood Creek Irrigation Company for the construction of a reservoir. Of particular concern to us is the existence of the site (42Em4257) which has the distinct possibility of containing buried cultural deposits and may be eligible for listing on the National Register of Historic Places.

We have recently been troubled by the tragic disruption of a burial site near Kanab for the Jackson Flat Reservoir project where the bodies of many of our ancestors have been dug up and disturbed.

We must object to issuing this permit and right of way for yet another reservoir which will potentially disturb ancestral burial grounds. If the reservoir site is off channel then there should be no reason it can't be located without disturbing artifacts. Please note our objections. For too long the cultural history of our people has been swept away by the hand of construction in the name of progress. The recent string of arrest and prosecutions in the Blanding area should tell you this can not continue. This project would be no less damaging than if looters were the ones doing the digging.

Please respond to this notice and let us know of your plans for the reservoir to avoid this cultural site.

Respectfully,

  
Jeanine Borchardt - Chairwoman  
The Paiute Indian Tribe of Utah

RECEIVED  
FEB 22 2011  
BLM - Price, UT

**Appendix D**  
**Photos**



Photo 1 – View from canal bank at north end of project area near the gauging station



Photo 2 – Looking west-northwest along canal route (left side of road).



Photo 3 – View northeast along proposed Adobe Pipeline route (along canal)



Photo 4 – View south of east side of proposed Adobe Reservoir area



Photo 5 – View south-southwest of proposed Adobe Reservoir area



Photo 6 – View southwest of proposed Adobe Reservoir Area



Photo 7 – View west-southwest of proposed Adobe Reservoir area



Photo 8 – View west on north side of gravel borrow area