

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 INTRODUCTION

This chapter evaluates the environmental consequences that may result from implementation of the Proposed Action. The purpose of this chapter is to analyze and disclose potential impacts of the Proposed Action on the human environment. A total of two alternatives (Preferred and No Action) will be analyzed to determine their affect on the human environment. Additional discussion on detailed and specific mitigation measures will also be outlined in this chapter. This discussion will target mitigation being proposed for complex issues, such as avoiding impacts to the Oregon Trail. The chapter also addresses cumulative impacts that may result from past, present, and reasonably foreseeable future activities within the PPPA. This discussion will target only those resources that may be impacted in the future by this Proposed Action and other activities that have occurred or may occur in the future.

An environmental consequence or impact is defined as a change or modification in the existing environmental conditions resulting from implementation of the Proposed Action. The term impact and effect will be synonymous when used in this chapter. Direct impacts result directly from the Proposed Action and generally occur at the time and place of the activity. For example, the action of pipeline installation results in surface disturbance and clearing of vegetation.

Indirect impacts are also caused by the action, but occur some distance or later in time from the action. An example of an indirect impact would be a heavy precipitation event causing erosion and sediment release on a recently constructed pipeline ROW days or weeks after it has been cleared. If this sediment reaches a stream, the impact on water quality is considered an indirect impact.

The short-term and long-term aspects of an impact are also discussed in this chapter. Short-term impacts normally occur during the construction phase of the project and may continue for a period of up to five years. Long-term impacts will be identified when they continue beyond five years after the completion of the project. Five years is considered the benchmark for successful reclamation of an area following surface disturbance.

4.2 AIR QUALITY

4.2.1 Alternative 1 – Proposed Action

Some temporary effects on air quality will likely occur in the immediate vicinity of the project construction activities, caused by particulate matter and exhaust from vehicles and construction equipment. These effects will be local in scale, and will be dispersed by prevailing winds. Temporary increases in dust will also occur during the construction phase of the project. The increase in dust will be the result of increased vehicle use of unimproved roads and two-tracks. This anticipated effect on air quality will occur for short periods of time within parts of the PPPA where construction activities are occurring. Increases in dust may be visible to visitors, and could cause some minor irritation to people if they are traveling through a segment of the PPPA where

construction activities are occurring. This type of impact will be small in scale, and should impact few visitors due to the remote location of the PPPA.

The project will not result in new emission sources for this geographic location in WY (Carbon and Natrona Counties). Installation of the block valves represent the only above ground facility required for this project. These facilities do not release any emissions to the air.

4.2.2 No Action Alternative

Under the No Action Alternative, the pipeline will not be installed. Therefore, no construction related impacts to air quality will occur.

4.3 GEOLOGY/PALEONTOLOGY

4.3.1 Alternative 1 – Proposed Action

Installation of the pipeline will result in the disturbance of 1,012 acres of existing topography in the PPPA. The installation of the pipeline could directly expose, damage, or destroy significant fossil resources. However, most of the pipeline will be installed at a depth of 3 to 6 feet, a shallow depth that should prevent impacts to sensitive formations containing fossils. If fossil resources are uncovered during construction, the mitigation measures discussed in Chapter 2 will protect these resources from damage.

No major landslides or other geologic hazards have been mapped within the PPPA. Following standard construction procedures should prevent activation of landslides, mudslides, debris flows, or slumps. Seismic activity is low in the area, so the potential risk for an earthquake to damage the pipeline is considered minimal.

4.3.2 No Action Alternative

Under the No Action Alternative, the pipeline will not be installed and no potential impacts to geologic or paleontological resources will occur.

4.4 SOILS

4.4.1 Alternative 1 – Proposed Action

Pipeline construction activities such as clearing and grading along the ROW, trenching, backfilling, and regrading the ROW following construction may affect soils and revegetation potential along the pipeline ROW by:

- Removing existing vegetation cover;
- Redistributing or removing all or part of the topsoil profile, especially mixing this profile with higher salinity subsoils;
- Compacting soils;
- Decreasing topsoil productivity;
- Exposing soil to accelerated wind and water erosion;

- Potentially covering adjacent soils and drainages with sediments; and
- Exposing soil to weed invasion.

Project activities will occur for approximately 3 to 4 months and reduction of soil productivity will occur within and immediately adjacent to the proposed construction easement associated with the pipeline ROW. Soil productivity will be impacted due to:

- Reduced soil microbial activity and soil fertility;
- Interruption of soil nutrient and organic matter from vegetation;
- Impaired water infiltration from soil compaction; and
- Top soil loss.

The effects of these activities on soil productivity have been evaluated based on their duration and intensity. As described in Section 3.5 and displayed in **Figure 3-1**, the majority of soils present in the PPPA are highly susceptible to water erosion, and areas with sandy textures, which includes vegetated dunes, are extremely susceptible to wind erosion. In addition, soils in the southern portion of the PPPA are also moderately to strongly alkaline.

The majority of effects on soil productivity will occur in the short-term (five years or less) affecting approximately 1,012 acres across the 103 mile ROW that has been previously disturbed. In addition, approximately 0.012 acres or 522.7 square feet of soils will be permanently impacted by expanding 11 existing block valves by approximately 20 feet. These block valves are located across the 103 mile pipeline ROW.

Impacts beyond five years will be dependent on the success of mitigation and reclamation efforts. The intensity of these effects will vary according to the location of disturbance, use of mitigation measures, and reclamation success once construction is complete. Areas with high salinity, vegetated dunes, steep slopes, and low moisture availability will be difficult to successfully reclaim and impacts may occur beyond five years despite the relatively short duration of construction. These areas will require additional efforts to achieve adequate reclamation.

Following construction, disturbed areas will be reclaimed to BLM standards and regrading will be used to blend the disturbed area into the surrounding topography. Regraded areas and redistributed soil will be scarified to alleviate compaction and prepare for the soil for seeding. Measures to control erosion, runoff, and sedimentation during construction are described in Chapter 2.

4.4.2 No Action Alternative

Under the No Action Alternative, no impacts to soil will occur from installation of the pipeline.

4.5 RANGE RESOURCES

4.5.1 Alternative 1 – Proposed Action

The pipeline ROW crosses lands that are located within 16 grazing allotments. The primary impact to range resources will be the short-term loss of available forage from the installation of the pipeline. Successful reclamation of the pipeline ROW should replace this loss of forage, as seed mixtures prescribed following construction should reestablish an adequate amount of grasses and forbs within the first few years.

Increased construction traffic along the unimproved roads and two-tracks may increase the chance of vehicle/livestock collisions. However, this traffic increase will be temporary, occurring only during the installation of the pipeline. Additionally, the construction activities will be taking place outside of the calving/lambing seasons, which will lessen the chance of vehicle collisions with livestock.

Construction activities associated with the installation of the pipeline will increase the chance of damage to cattle guards, fences, and gates. Sinclair will be responsible for establishing procedures to ensure construction contractors immediately report damages to these facilities.

Dust from construction activities will occur, and will be highly dependent on weather conditions and the volume of vehicle traffic. If conditions encourage dust during construction, it could settle on vegetation resulting in lower use by livestock. Increased dust will be temporary and localized, and primarily occur during the construction period. However, some dust may persist until vegetation is successfully established (up to five years following reseeding).

Due to the large size of the allotments within the PPPA, and the anticipated short-term loss of herbaceous vegetation, the loss of AUMs resulting from installation of the pipeline was not calculated for the project.

4.5.2 No Action Alternative

Under the No Action Alternative, no impacts to range resources will occur from installation of the pipeline.

4.6 WILDLIFE AND FISHERIES

4.6.1 Alternative 1 – Proposed Action

The proposed development will disturb approximately 868.5 acres of general wildlife habitat during construction (approximately 3 to 4 months). Approximately 735.0 acres of long-term disturbance (greater than five years) will occur in vegetation communities dominated by shrubs (Wyoming big sagebrush, saltbush, vegetated dunes/silver sagebrush, and desert shrub communities). However, due to the linear extent of the project, this acreage represents an extremely small percentage of available wildlife habitats on a regional scale.

In addition to construction activities along the pipeline ROW, a total of four temporary work areas will be used outside the pipeline ROW to store pipe. The use of these temporary work areas was analyzed in terms of potential impacts to wildlife species. In addition, approximately 0.012 acres or 522.7 square feet will be permanently impacted by expanding 11 existing block valves by approximately 20 feet. These block valves are located across the 103 mile pipeline ROW.

The duration of impacts to wildlife habitats will depend, in part, on the success of mitigation and reclamation efforts. Additionally, another important factor is the time needed for natural succession to return revegetated areas to predisturbance conditions.

Species that are sensitive to indirect human disturbance (noise and visual disturbance) will be impacted most during the duration of construction. However, these impacts will be localized along the pipeline ROW.

General Wildlife

The direct project disturbance of wildlife habitat in the PPPA will slightly reduce habitat availability for a variety of common small mammals, birds, and their predators. Construction will result in some direct mortality to small mammals and the displacement of songbirds from construction activity along the pipeline ROW. In addition, a slight increase in mortality from increased vehicle use of existing roads in the PPPA is expected. Quantification of these losses is not possible; however, the impact is likely to be low with the greatest loss occurring during construction when up to 200 workers could be accessing the pipeline ROW. Due to the relatively high reproduction potential of these species, and the linear nature of the project, small mammal and songbird populations will likely rebound following reclamation.

Big Game

Impacts to big game species will primarily result from increased disturbance during construction. Construction activities associated with pipeline installation can reduce use of surrounding habitat by big game. The PPPA supports pronghorn throughout the year. Approximately 172.4 acres of pronghorn crucial winter/yearlong range will be disturbed under the Proposed Action. Activities associated with the construction will likely temporarily displace pronghorn. However, once construction is complete antelope will likely return to predisturbance activity patterns, while other animals may move to other areas outside the disturbance area. Reeve (1984) found that pronghorn acclimated to increased traffic volumes and machinery as long as the traffic and machines moved in a predictable manner.

Approximately 4.0 acres of mule deer crucial winter/yearlong range will be disturbed under the Proposed Action. Activities associated with construction of the project will temporarily displace mule deer, however, once construction is complete some of the mule deer will likely habituate and return to pre-disturbance activity patterns.

Approximately 1.0 acre of crucial winter/yearlong range, 22.0 acres of winter/yearlong range and 6.2 acres of spring/summer/fall range for elk will be disturbed under the Proposed Action (primarily near the Ferris Mountains). The PPPA lacks suitable habitat

to support any substantial number of elk and construction activities associated with the Proposed Action will likely have little impact on this species.

According to management directives in the RMP (RFO, CFO, and LFO), crucial big game winter ranges will be closed from November 15 to April 30; this closure will reduce disturbance to wintering big game (primarily antelope), which are the most abundant big game species within the PPPA.

Greater Sage-Grouse

Under the Proposed Action, 490.0 acres of Wyoming big sagebrush, the primary vegetation cover type, will be impacted during construction. Greater sage-grouse may also avoid areas associated with construction along the pipeline ROW, and may also be impacted by noise disturbance associated with human activity, traffic, and construction activity. Resource specific mitigation measures for greater sage-grouse identified in Chapter 2 will reduce the impacts to leks and nesting areas.

Raptors

The potential impacts of the Proposed Action on raptors are: (1) nest abandonment and/or reproductive failure caused by project related disturbance, and (2) small, temporary reductions in prey populations.

The greatest potential impact to raptors from project activities is human disturbance during the nesting season (February 1 to July 31) that might result in reproductive failure. To minimize this potential, disturbance will not be allowed during the critical nesting season near active raptor nests. Seasonal timing restrictions within a “buffer zone” around nests to avoid disturbance to nesting raptors should reduce impact from construction activities. The BLM will require the relocation of any planned above ground facilities if they fall within 1,200 feet of a ferruginous hawk nest and 825 feet of any other hawk species nest. Exceptions may be granted by the BLM if they determine the activity has no impact to nesting activities. Raptors nests not occupied during field surveys conducted in 2006 may be occupied in the future and surveys will be conducted prior to construction to determine the status of nests within the PPPA.

Fish

Impacts to fish species (primarily smaller minnows) or other warm water species will potentially result from construction related impacts at perennial stream crossings, which could increase sedimentation, turbidity, and streambank erosion. Currently, Sinclair is proposing to directionally bore all perennial streams within the PPPA. However, the directional bore process will not eliminate all potential impacts. In certain locations construction equipment will be transported by building a temporary crossing structure across the waterway and will result in damage to stream banks and riparian vegetation. In these cases, Sinclair will be required to return the banks to their original condition and reclaim disturbed areas with an appropriate seed mixture. Additional best management practices listed in Chapter 2 will be required in these areas to prevent erosion and sediment from reaching waterways.

4.6.1.1 Threatened, Endangered Species – Wildlife

Wildlife Species

According to USFWS guidelines, prairie dog colonies greater than 200 acres in size represent potential habitat for black-footed ferrets. However, the two colonies mapped in the PPPA were not part of a colony greater than 200 acres. Therefore, no black-footed ferret surveys were required.

Bald eagles use of the PPPA is likely incidental due to the small amount of open water and riparian habitat. The Proposed Action is not expected to impact bald eagles.

4.6.1.2 Sensitive Wildlife Species

Mammals

Six sensitive mammal species may potentially be found on or near the PPPA. These include: Wyoming pocket gopher, white-tailed prairie dog, swift fox, fringed myotis, long-eared myotis, and Townsend’s big-eared bat. Of these species, only the white-tailed prairie dog will be impacted by the pipeline construction activities.

The BLM does attempt to move all surface disturbing activities outside of prairie dog towns, since prairie dogs are on the Wyoming BLM Sensitive Species List. However, white-tailed prairie dog colonies located within the PPPA will be disturbed given the current proposed construction easement for the project.

Birds

The following bird species were detected during field surveys conducted within the analysis area during the summer of 2006: ferruginous hawk, golden eagle, greater sage-grouse, loggerhead shrike, long-billed curlew, and western burrowing owl. Construction may temporarily displace these species from areas near the pipeline ROW.

Additional impacts to the remaining sensitive bird species known or suspected to occur within the PPPA will be small based on the linear nature of the project. However, construction activities may also temporarily displace these species. Seasonal restrictions on construction within a “buffer zone” around golden eagle and ferruginous hawk nests should reduce impacts to their nesting activities.

Potential mountain plover habitat does occur within the PPPA (see **Figure 3-5**). The exact location of mountain plover nests may change annually, however, mountain plovers usually return to the same general area year-to-year. For this reason, surveys for mountain plovers will be conducted within areas of potential habitat prior to construction. Impacts to mountain plovers will be avoided by not allowing construction activities in occupied nesting habitat from April 10 to July 10 if they are detected during surveys.

Amphibians and Reptiles

Occupied leopard frog habitat will be directionally bored to minimize impacts to this species. The bore rigs will be set up outside occupied habitat and construction equipment will be driven around these areas to avoid impacts to this sensitive species.

Fish Species

No sensitive fish species occur within the PPPA.

4.6.2 No Action Alternative

Under the No Action Alternative, no impacts to wildlife and fish resources will occur from installation of the pipeline.

4.7 WATER RESOURCES

4.7.1 Alternative 1 – Proposed Action

Water resources will be impacted during pipeline construction by removal of vegetation, soil compaction, and soil exposure to wind and water erosion. These direct impacts will potentially increase surface run-off, erosion, and contribute to sediment loading in PPPA waterways.

Approximately 60 percent of the soils being impacted along the pipeline ROW are susceptible to water and wind erosion. A total of 447.0 acres are considered highly erodible if exposed to water and 152.0 acres are considered prone to wind erosion. The primary concern with these soils is the release of sediment into waterways during large precipitation events, especially where the ROW crosses perennial waterways. Best management practices as described in Chapter 2 and the Terms and Conditions of the Grant will be used to capture run-off from bare soils during and after construction activities. These structural best management practices generally include physical processes such as silt fences and hay bales to temporarily control sediment. Silt fence is generally the best structural method to utilize around perennial waterways and will be installed around the perimeter of spoil piles associated with bored holes or open trenched areas to prevent the transport of sediment to receiving waters. Successful reclamation of the pipeline ROW will be required to prevent long-term soil related impacts from occurring to water resources.

The aspect and gradient of the ROW also creates erosion issues. This project has two areas, Sand Creek Canyon and Ryan Hill, which present challenges with regard to preventing erosion after construction. In these areas and other areas with steeper slopes, best management practices will be required to capture run-off and to create conditions that will allow reclamation to be successful. Silt fence shall not be placed in a location where the slope exceeds five percent. In addition, best management practices such as fiber rolls or appropriate measures such as erosion control blankets will be used in areas of steep slopes (greater than five percent) to reduce erosion, trap sediment, and reestablish vegetation.

The pipeline ROW crosses approximately nine perennial streams, 27 intermittent / ephemeral drainages, three artificial paths, and 11 canals/ditches in the North Platte River Basin and associated sub-watersheds. In addition, the pipeline ROW crosses 21 intermittent / ephemeral drainages in the Great Divide Closed Basin (see **Table 3-8** in Chapter 3 for an inventory of stream crossings within the PPPA). **Table 4-1** identifies stream features that will be directionally bored. Drainage features (excluding canals/ditches) not identified in **Table 4-1** will be open trenched to install the pipeline. Approximately 7 canals/ditches located within Natrona County will also be directionally bored. As identified in **Table 4-1**, all perennial streams and several intermittent stream crossings will be directionally bored to prevent impacts to channel morphology. The directional bores will average between 10 to 15 feet below the stream channel to minimize effect from potential scour. These bore sites will be set back from the stream bank at a sufficient distance to prevent impacts to wetlands occurring in connection with waterways. Many of these waterways are classified as waters of the U.S. (waterways occurring outside the Great Divide Basin) and will require a USACE Section 404 permit. This permitting process will require Sinclair to disclose all impacts to these waterways associated with installation of the pipeline.

Directional boring will eliminate some of the impacts, but it is anticipated that transporting construction equipment across waterways by building a temporary crossing structure in certain locations will result in damage to stream banks and vegetation. In these cases, Sinclair will be required to return the banks to their original condition and reclaim the vegetation with an appropriate seed mixture. Additional best management practices such as silt fence or hay bales will be required in these areas to prevent sediment from reaching waterways.

Hydrostatic Testing

Another water resource impact associated with pipeline installation is the use of hydrostatic test water to test the integrity of the new pipeline. Use and discharge of this water will need to be completed and disposed of in a manner that does not affect streams, soils, and surface water quality. Moreover, all waters shall be discharged in a manner to prevent erosion, scouring, or damage to stream banks, stream beds, ditches, or other waters of the State at the point of discharge. Sinclair will discharge all hydrostatic test water onto upland sites.

The discharge of hydrostatic test water will require a NPDES general permit for temporary discharge from the WDEQ/WQD. Before disposal, the water will be tested to ensure it meets all of the State of Wyoming quality standards outlined in the general permit for temporary discharge. Hydrostatic test water from the pipeline will be exposed to virgin material (the new 16-inch pipeline). However, this water will still require testing for the following parameters: Flow (gpm), Total Suspended Solids (mg/L), pH (s.u.), oil and grease, and Total Residual Chlorine (mg/L). The effluent limitation, frequency, and sample type for each parameter listed is detailed in the general permit for temporary discharge. Test procedures for the analysis of pollutants, collection of samples, sample containers, sample preservation, and holding times shall conform to regulations published pursuant to 40 CFR, Part 136. Sinclair shall notify the permitting authority of the

discharge by submitting a Notice of Termination. In addition, Sinclair shall provide telephone notification to WDEQ/WQD at least 24 hours prior to any testing discharge.

**Table 4-1
Inventory of Perennial and Intermittent Streams
to be Directionally Bored within PPPA**

| Perennial and Intermittent Streams to be Directionally Bored from North (Casper) to South(Sinclair) along the Pipeline ROW |
|---|
| Poison Spider Creek - Perennial |
| Muncell Pond - south of Poison Spider Creek |
| Iron Creek - Intermittent |
| Poison Spring Creek - Spring fed/Intermittent |
| Willow Creek - Intermittent |
| Unnamed drainage north of Fish Creek (with northern leopard frog population)- Intermittent |
| Fish Creek - Perennial (1 of 2) |
| Fish Creek - Perennial (2 of 2) |
| Horse Creek - Perennial |
| Sweetwater River - Perennial Sweetwater Arm of Pathfinder Reservoir (currently not inundated) but flowing in a channel |
| Sand Creek - Perennial Three crossings within Sand Creek Canyon and two unnamed perennial tributaries to Sand Creek within the canyon will be bored |
| Turkey Creek (Sand Creek Canyon)- Perennial |

4.7.1.1 Groundwater

In general, ground disturbance during construction (primarily trenching) is anticipated to be between 3 to 6 feet of the existing surface. As a result, impacts to deeper confined and unconfined aquifers will not occur as part of the Proposed Action. Potential impacts to groundwater will primarily occur in areas adjacent to streams that tend to have a seasonally high water table. Construction activities that impact shallow alluvial aquifers will most likely result in increased turbidity or slight fluctuations in groundwater levels. These impacts will be localized and short-term. No groundwater sources will be used in conjunction with the project.

4.7.2 No Action Alternative

Under this alternative, no new pipeline capacity will be installed in the ROW and no impacts to water resources or shallow ground water will occur.

4.8 VEGETATION, WETLANDS, AND INVASIVE WEEDS

4.8.1 Alternative 1 – Proposed Action

Construction of the pipeline will result in the loss of native vegetation in terms of cover and species composition. Direct impacts to existing native shrub/grassland communities in the PPPA resulting from project implementation include a short-term reduction of herbaceous vegetation and a long-term loss of shrub cover.

The Wyoming big sagebrush, saltbush, vegetated dune, desert shrub, and mixed-grass prairie will be the primary plant community types disturbed during construction. In general, the duration and effect on these vegetation communities will depend on adequate reclamation techniques and time required for natural succession to return disturbed areas to pre-disturbance conditions (for both herbaceous grass species and shrubs). In addition, the success of mitigation (seeding) will be influenced by climatic and soil conditions. Areas of steeper topography, high alkaline soils, or low moisture availability will create difficult conditions to adequately establish vegetation. Seed mixes composed of salt tolerant species will be used in areas with higher salt content. Due to the long recovery rates to reestablish shrub cover in dry, xeric sites, revegetation along the proposed pipeline ROW will primarily result in the establishment of herbaceous grass species. Herbaceous grasses will replace vegetation communities currently dominated by Wyoming big sagebrush, saltbush, and desert shrub until sufficient time has passed to reestablish shrub species.

The total acreage of vegetation impacts (both short- and long-term) within the PPPA are identified in **Table 4-2**. It should be noted that total disturbance associated with the Proposed Action will be approximately 1,012 acres. However, some disturbance will occur in areas that have been heavily disturbed by previous pipeline activities. In these areas, impacts to vegetation were not included in **Table 4-2**. In addition, approximately 0.012 acres or 522.7 square feet of vegetation will be permanently impacted by expanding 11 existing block valves by approximately 20 feet. These block valves are located across the 103 mile pipeline ROW.

**Table 4-2
Vegetation Impacts**

| Vegetation Community | Impacted Acres | Type of Impact ¹ |
|------------------------|----------------|-----------------------------|
| Mountain Big Sagebrush | 490.0 | Long-Term |
| Saltbush | 101.2 | Long-Term |
| Vegetated Dunes | 56.3 | Long-Term |
| Grassland Riparian | 49.0 | Short-Term |
| Irrigated Crops | 43.5 | Short-Term |
| Mixed-Grass Prairie | 41.0 | Short-Term |
| Greasewood | 32.5 | Long-Term |
| Desert Shrub | 31.0 | Long-Term |
| Mountain Big Sagebrush | 24.0 | Long-Term |
| Total | 868.5 | - |

¹Short-term impacts normally occur during the construction phase of the project and may continue for a period of up to five years. Long-term impacts continue beyond five years after completion of the project.

Surface disturbance could affect vegetation directly and indirectly by removal of existing vegetation and by introducing weed species. Weedy species often thrive on disturbed sites and out-compete more desirable native plant species. The PPPA is known to be vulnerable to invasion of weed species. However, the current level of weed establishment is low. The potential for weeds to occur will increase with construction along the pipeline ROW. Utilizing proper BLM approved seeding mixtures will help mitigate the potential for weed invasion on disturbed sites. Additionally, monitoring of disturbed sites

will be required to identify any weed invasion. Additional measures to prevent the spread of weeds are discussed in Chapter 2.

4.8.1.1 Federally Listed and Sensitive Plant Species

Construction of the pipeline is not expected to directly affect federally listed plant species. One of the 11 BLM sensitive plant species (the many-stemmed spider-flower) has been documented within the PPPA and approximately 2.7 acres of occupied habitat will be disturbed during construction of the pipeline. Techniques to minimize impacts to the many-stemmed spider-flower are discussed in Chapter 2. Impacts from construction will have a small impact on the overall seedbank for the many-stemmed spider-flower because the Steamboat Lakes population is estimated at approximately 500,000 to 1,000,000 individuals spread across 200 acres (Fertig 2000).

The spread of weed species into areas occupied by sensitive plants is a concern. The current extent of weed establishment within Steamboat Lakes is extremely low (no weeds were observed in occupied spider-flower habitat). However, this area will be susceptible to weed establishment following disturbance. Appropriate measures to prevent the establishment of weed species within this area are discussed in Chapter 2. Additionally, onsite monitoring by a biologist during and after construction will also ensure mitigation techniques are being followed and will allow for early detection of any weed species within occupied habitat.

4.8.1.2 Wetlands

A total of 11.4 acres of wetlands have been delineated within the PPPA. The majority of wetlands will be directionally bored to avoid direct impacts. However, larger alkaline wetlands located within Steamboat Lakes and Arkansas Flats will likely be trenched. The directional bore process will eliminate some of the impacts to wetland resources, but it is anticipated that construction equipment will be transported across wetlands or waterways by building a temporary crossing structure or using mats in certain locations. This will result in damage to stream banks, riparian grassland vegetation, and wetlands. In these cases, Sinclair will be required to return the banks to their original condition and reclaim these areas with an appropriate wetland seed mixture.

Impacts to wetland resources or grassland riparian communities within the PPPA are considered short-term (less than five years) and with adequate moisture available due to seasonally saturated or inundated soils, vegetation should be established relatively quickly when compared to drier upland sites.

4.8.2 No Action Alternative

Under this alternative, no new pipeline capacity will be installed in the ROW and no impacts to vegetation or wetlands will occur.

4.9 SPECIAL MANAGEMENT AREAS – AREAS OF CRITICAL ENVIRONMENTAL CONCERN

4.9.1 Alternative 1 – Proposed Action

Approximately 5.5 miles of the pipeline ROW crosses a proposed ACEC for the federally endangered blowout penstemon. Approximately 50.2 acres within this proposed ACEC boundary will be disturbed during construction. Vegetation within this area is primarily composed of active and vegetated dunes. No impacts to the blowout penstemon are anticipated based on presence/absence surveys conducted in June 2006. In addition, dune habitat crossed by the pipeline within the proposed ACEC boundary is considered marginal for this species (see Section 3.9.7.1).

4.9.2 No Action Alternative

Under this alternative, no new pipeline capacity will be installed within the proposed ACEC boundary. This will ensure that no impacts will occur to active and vegetated dunes.

4.10 VISUAL RESOURCES

4.10.1 Alternative 1 – Proposed Action

Portions of the proposed ROW are clearly impacted from the previous installation of pipelines. In these areas, the pipeline ROW contrasts with the existing vegetation and topography in the PPPA. However, other portions of the ROW have varying degrees of vegetative cover that often blend with the vegetation adjacent to the ROW. In these areas, the existing ROW is not noticed by the casual observer.

The installation of the pipeline will result in the disturbance of 1,012 acres. This disturbance will result in creating a 103 mile pipeline ROW without vegetative cover. The result will be a pipeline ROW that will contrast with the existing landscape for several years. The number of years this contrast will be visible depends on the success of the reclamation effort. Initial reclamation efforts will use targeted seed mixes (See Applicant Committed Mitigation Measures in Chapter 2) that are compatible with vegetation communities mapped in the PPPA. If this effort is successful, the ROW contrast will most likely still be noticeable, but should blend some with the adjacent vegetation.

Above ground ancillary facilities associated with the project consist of block valves and line markers. Block valves located along the existing ROW are currently painted white, a color that contrasts with the existing vegetation. During the installation of the pipeline, an additional block valve will be added at each site and painted a color that blends with the existing landscape. The colors chosen will be shale green and/or brown, and dependent on the vegetation community present in an area. Only the new block valve will be painted this landscape friendly color. The other block valves present at the site will be painted at a later date.

Utility ROW in Class II areas are not expected to dominate the landscape by becoming the primary focus of and holding the viewers attention from roads. Proper reclamation of the pipeline ROW and painting block valves to blend with the existing topography should be sufficient mitigation to allow this project to meet VRM Class II requirements.

4.10.2 No Action Alternative

Under this alternative, no new pipeline capacity will be installed in the ROW. This will ensure that no visual impacts will occur.

4.11 RECREATION

4.11.1 Alternative 1 – Proposed Action

Short-term impacts to recreational use in localized areas of the PPPA will likely occur during construction activities. Hunters, photographers, and wildlife viewers will be displaced or will not want to use two-tracks and unimproved roads in the vicinity of the pipeline ROW during construction activities. This displacement will be localized, as the construction activities occur on segments of the ROW. Due to the remote location of the PPPA, visitation to the area is considered to be low, with the exception of the fall hunting season. It is during the hunting season that most of the conflict between the construction activities and recreational use will occur. Any displacement of hunting activity will be localized and based on where the construction activity is occurring.

After installation of the pipeline, no long-term impact to recreational use is expected in the PPPA. Successful reclamation of the pipeline ROW will return the vegetation conditions to those preferred by big game and other wildlife species.

4.11.2 No Action Alternative

Under this alternative, no new pipeline capacity will be installed in the ROW. The recreation experience will remain as it currently exists in the PPPA.

4.12 CULTURAL AND HISTORICAL RESOURCES

4.12.1 Alternative 1 – Proposed Action

A Class III cultural resource inventory has been conducted for the proposed pipeline ROW. The Class III inventory is an intensive field survey designed to locate and record all cultural resource sites within a specified area. The survey conducted for this project included a 150 foot area for the length of the proposed pipeline. As a result of this survey, 10 eligible sites were identified that will be impacted by the project. Specific mitigation measures have been developed to prevent significant impacts to these documented cultural resources in the PPPA. Significant impacts to cultural resources will occur if the pipeline construction activities resulted in adverse effects to properties listed or determined eligible for listing on the NRHP.

The Oregon Trail is located within and adjacent to the PPPA. As part of the historic assessment of the Oregon Trail within the PPPA, several crucial project elements were

discussed in relation to the viewshed analysis. Most importantly is the fact that the proposed pipeline will be placed in an area of previous disturbance, creating as little new disturbance as possible. The proposed pipeline is also a subsurface facility with all impacts at ground level or below, a fact that becomes important when viewing the close proximity of the trail to the pipeline ROW. Another important factor is the construction disturbance will be temporary; and recontouring and revegetation will ensure that no new impacts to the viewshed will occur.

Overall, the route of the Oregon Trail west of Casper, WY has been significantly impacted by various alignments of County Road 319 (the Oregon Trail Road), the existing Sinclair pipeline ROW, and years of agricultural, industrial, and residential development. In addition to these viewshed factors, the trail has been overlain by upgrades to the county road and partially impacted by the existing pipeline ROW for much of its length. These factors have led to the conclusion that the proposed project will create no significant visual intrusion to the viewshed of the Oregon Trail (Western Archeological Services, Inc. 2007).

4.12.1.1 Oregon Trail Mitigation

Four Oregon Trail mitigation areas were identified where the proposed project will physically impact the trail. These mitigation measures were developed through collaboration between SHPO, BLM, and Sinclair to avoid impacts in these areas. With development of these mitigation areas, no significant impacts are anticipated to the Oregon Trail. The four areas are discussed below along with the recommendations.

Mitigation Area 1

Mitigation Area 1 is located in Sections 31 and 32, T31N, R84W, and consists of a constricted area due to visible trail segments, county road, and risers. In this area, it is recommended that the proposed pipeline stay within previous disturbance by placing it between the two existing pipelines within the existing pipeline ROW, starting at the intersection of the existing power line and pipeline ROW, and extending east until the road crossing at the top of the hill. This area will be flagged prior to construction.

Mitigation Area 2

Mitigation Area 2 is located in Section 23, T31N, R84W, and consists of an area where the visible trail is half ruts and half old county road. In this area, it is recommended that the proposed pipeline construction stay within the previous disturbance. The spoil piles should be kept away from the northwest side of the pipeline ROW to avoid any soil sliding down the hill onto the trail. No surface blading should occur along the proposed pipeline for 100 feet on either side of the trail crossing. This area will be flagged prior to construction.

Mitigation Area 3

Mitigation Area 3 is located in Sections 2, 3, 9, and 10, T31N, R83W, and consists of an area where the county road, existing pipeline ROW, power line, fence, and trail all come together. In this area, it is recommended that Sinclair use the alternate route staked in the

field on the northwest side of the county road, paralleling the existing Frontier pipeline ROW. This reroute off the existing ROW will avoid any physical impacts to the trail.

Mitigation Area 4

Mitigation Area 4 is located in Section 29, T29N, R82W, and consists of a very tight area due to the visible trail, county road, powerline, cathodic box, and existing pipeline ROW. In this area, it is recommended that the proposed pipeline be placed between the existing pipelines and stay within the existing disturbance. This area will be flagged prior to construction.

4.12.1.2 Prehistoric Site Mitigation

Four prehistoric sites were identified where the proposed project could potentially impact the sites. These mitigation measures were developed through collaboration between SHPO, BLM, and Sinclair to avoid impacts to these areas. With development of these mitigation measures, no significant impacts are anticipated to these sites. The four areas are discussed below along with the recommendations.

Site 48CR8708

It is recommended that all construction activity (blading, trenching, and reclamation) through the site be monitored for 500 feet on either side of the site boundaries. It is also recommended that a fence be erected on the western edge of the two-track road through the site to avoid inadvertent impacts to the undisturbed area.

Site 48CR310

It is recommended that all construction be confined to the existing previous disturbance. Because of the high probability for the discovery of buried materials within the previously disturbed pipeline ROW, it is recommended that a construction monitor and open trench inspection be conducted at the site. The construction monitoring should be carried out on all activities for 500 feet on either side of the site boundaries. It is also recommended that fences be erected on the north and south sides of the existing pipeline ROW for the length of the site, to avoid inadvertent impacts during construction.

Site 48CR329

It is recommended that a fence be erected along the eastern edge of the disturbed pipeline ROW to avoid inadvertent impacts to the site. The fence should be no less than 800 feet in length, from the southern site boundary 800 feet north, including the large sand dune at the northern edge of the site.

Site 48CR332

It is recommended that the area be bored to avoid further impacts to buried cultural horizons. Bore setup must be a sufficient distance from the site boundaries to avoid impacts. It is also recommended that a construction monitor be present for all activities conducted around the site. An open trench inspection should also be conducted at this site.

4.12.1.3 Other Mitigation Measures

Construction related impacts could occur to cultural resources that are buried and were not documented during the Class III survey. These sites are not identified during the survey because no surface expression is visible. To prevent impacts to the sites during construction, the BLM has stipulated that a cultural resource specialist conduct an open trench inspection to prevent damage to these cultural resources.

4.12.2 No Action Alternative

Under this alternative, the 16-inch pipeline will not be installed and no impacts will occur to existing cultural resources in the PPPA.

4.13 SOCIOECONOMICS

4.13.1 Alternative 1 – Proposed Action

Socioeconomic impacts resulting from the Proposed Action will be small to non-existent. The pipeline is being installed to increase the amount of oil reaching the Sinclair Refinery and support the current upgrades at the refinery. The increase in refinery output could help the regional economy, as more gasoline will be available for the consumers in the Western United States. This could help reduce regional gasoline shortages and ensure prices are kept lower. Overall, this project will boost refinery output for the Rocky Mountain Region.

Construction activity may give a short-term boost to the local economy during the installation of the pipeline. It is not known if the contractors hired will be from WY, but the presence of up to 200 pipeline construction workers will result in increased economic activity for communities along the pipeline ROW.

The installation of the pipeline will not result in a population boost for Carbon and Natrona Counties, as the construction activity will be relatively short in duration, and will be completed within several months. After construction is complete, the need for additional workers is eliminated and the pipeline will be maintained by Sinclair staff currently located in the Carbon and Natrona Counties.

4.13.2 No Action Alternative

Under this alternative, no pipeline installation will occur and the Sinclair Refinery will not have the volume of crude oil needed to support the refinery upgrade.

4.14 TRANSPORTATION AND ACCESS

4.14.1 Alternative 1 – Proposed Action

The Proposed Action will result in small increases in the volume of traffic on federal and state highways that provide access to the PPPA. However, increases in vehicle use will occur on unimproved roads and two-tracks used for delivering construction workers and equipment to the pipeline ROW. The increased vehicle use will not cause issues with visitors to the PPPA because it will be localized and only noticed where construction

activity is occurring. Overall, no issues with regards to traffic and vehicle use will occur as a result of the project.

No new roads will be constructed as a result of the Proposed Action. Construction access will occur along the existing unimproved roads and two-track. Therefore, no fiscal impacts resulting from the development or maintenance of roads will occur.

4.14.2 No Action Alternative

Under the No Action Alternative, no increase in vehicle use will occur on unimproved roads and two-tracks located in the PPPA.

4.15. HAZARDOUS MATERIALS

4.15.1 Alternative 1 – Proposed Action

All project related activities involving hazardous materials will be conducted in a manner that minimizes potential environmental impacts. Potential impacts associated with hazardous materials include human contact, inhalation and ingestion, and the effects of exposure, spills, or accidental fires on soils, surface and groundwater resources, vegetation, and wildlife.

The risk of human contact will be predominantly limited to the operator and construction contractors. Strict adherence to the SPCC Plan and the mitigation measures outlined in Chapter 2 will reduce the risk of human contact, spills and accidental fires, and provide protocol and employee training to deal with these events should they occur. Based on the successful implementation of these plans and procedures, no impacts associated with hazardous materials will be anticipated. Any spills of oil, gas, or any potential hazardous substance will be reported immediately to the BLM, State of Wyoming, landowner, local authorities, and other responsible parties. Additionally, spills will be mitigated immediately, as appropriate, through cleanup or removal to an approved disposal site.

4.15.2 No Action Alternative

Under this alternative, no hazardous material issues associated with the installation of a new 16-inch pipeline will occur along the existing pipeline ROW.

4.16 HEALTH AND SAFETY

4.16.1 Alternative 1 – Proposed Action

The Proposed Action will create a slightly higher level of risk to workers and visitors in the PPPA. Increased traffic on the unimproved roads and two-tracks will raise the potential for accidents between construction workers, ranchers, and visitors. Construction work in a remote location carries risk and will require Sinclair and their contractors to be concerned with adhering to safety considerations. Measures such as carrying fire suppression equipment and informing construction workers to properly extinguish cigarettes will help prevent fires. Additionally, during the hunting season most hunters will seek areas away from the construction activity.

4.16.2 No Action Alternative

Under the No Action Alternative, no construction activities will occur along the ROW and create potential health and safety issues.

4.17 NOISE

4.17.1 Alternative 1 – Proposed Action

Some small increases in noise will be associated with construction activities along the pipeline ROW. These increases will be for a short period of time and isolated, occurring primarily in construction and staging areas. Within the pipeline ROW, which is primarily located in a remote location, noise impacts will be considered non-existent. No noise issues will occur after the construction is completed along the ROW.

4.17.2 No Action Alternative

Under this alternative, no noise impacts will occur from installation of the pipeline.

4.18 CUMULATIVE IMPACTS

This section describes cumulative impacts related to the Proposed Action under consideration in this EA. The Council on Environmental Quality (CEQ) regulations for implementing NEPA defines cumulative impacts as:

“The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions and regardless of what agency (federal and non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time” (40 CFR 1508.7).

The CEQ guidance limits cumulative impact analysis to “important issues of national, regional, or local significance” (CEQ 1997). Therefore, this chapter only addresses resources that contribute to cumulative impacts in an area of influence (AOI). Depending on the resource, the AOI could be the PPPA or it could have a larger area of influence (such as Carbon or Natrona Counties).

The following resources addressed in the EA were determined not to result in or contribute to substantial cumulative impacts:

- Air Quality
- Geology/Minerals/Paleontology
- Cultural Resources
- Health and Safety
- Noise
- Range Resources
- Hazardous Waste
- Soils

- Transportation
- Water Resources

4.18.1 Actions Considered in Cumulative Impact Analysis

General categories of actions and projects that may contribute to significant cumulative impacts in the PPPA include energy production (natural gas and oil), grazing, agricultural activities (including irrigation), and utility development. **Table 4-3** identifies the past, present, and reasonably foreseeable future actions that will potentially contribute to cumulative impacts and have been considered in this analysis.

**Table 4-3
Past, Present, and Reasonably Foreseeable Future Actions**

| Land Use | Status of Action |
|-------------------------|---|
| Energy Production | Past, Present, and Reasonably Foreseeable |
| Grazing | Past, Present, and Reasonably Foreseeable |
| Agricultural Activities | Past, Present, and Reasonably Foreseeable |
| Utility Development | Past, Present, and Reasonably Foreseeable |

4.18.1.1 Cumulative Impacts

Vegetation

The AOI for vegetation is the PPPA.

The Proposed Action will add to the cumulative removal of vegetation communities in the PPPA. Due to the abundance of Wyoming big sagebrush cover types in the PPPA and throughout central WY, the loss this cover type during the installation of the Sinclair pipeline will not result in the long-term decline of this vegetation community in the region. Most of the shrub component in the proposed ROW has been disturbed to varying degrees from previous pipeline installation and ongoing maintenance activities along the ROW. Additional disturbance to this vegetative community has occurred from ongoing grazing activities along the ROW.

Disturbance to vegetated sand dunes present in the ROW will total approximately 56 acres. This sensitive vegetation community is composed of silver sagebrush, as well as grasses and forbs unique to this soil type. The loss of this shrub component within a specialized plant community will take as long as 30 to 50 years to recover from the Proposed Action. This disturbance will be localized and confined to the proposed construction footprint, as additional actions are limited in this habitat type in the PPPA. However, if other utility ROWs were constructed through this sensitive vegetative community, it could cumulatively damage the vegetation and create difficult reclamation conditions.

The establishment of weed species is a potential cumulative impact in the PPPA. Construction activities carry the threat of introducing weeds to sites that have been cleared of all native and desirable vegetation. The current population of weeds is low in the PPPA, but ongoing activities along the southern portion of the ROW have allowed the

colonization of halogeton. Construction activities associated with the installation of the pipeline will improve the conditions for establishment of weed species in the PPPA. Monitoring and treatment of weeds will be required to prevent their establishment in the PPPA.

Wildlife (Including Special Status Species)

The AOI for wildlife is the PPPA.

Construction activity associated with installation of the pipeline will cause some dispersal of wildlife that is currently using the ROW and adjacent habitat. This construction activity will be short-term, lasting only for several months, and will not be considered as a contributor to cumulative impacts to wildlife in the PPPA. After construction is complete, the use of two-tracks and unimproved roads adjacent to the ROW will return to normal.

Loss of the Wyoming big sagebrush along the ROW will be minimal, as it is a long pipeline ROW, but narrow in relation to the existing vegetative communities. Therefore, this project will not fragment large acreages of shrub based vegetative communities and cause a sharp drop in the availability of this wildlife habitat in the PPPA. However, if other large utility ROWs were planned in and near this ROW, fragmentation and loss of important shrub based habitat will cumulatively impact wildlife such as greater sage-grouse, big game, and other sagebrush obligates.

No cumulative impacts to special status species are anticipated to result from the Proposed Action.