BLM Environmental Assessment #BLM-DOI-CONO40-2012-0028
Chapter 1- Proposed Action
Bargath's Kokopelli Phase II Pipeline &
Williams' Spruce Creek to Beaver Creek Water Pipeline

INTRODUCTION

Purpose and Need

Gas well drilling, development and production in the Parachute and Rifle regions of Colorado produce a significant volume of natural gas. Existing pipelines and other gathering facilities are unable to adequately gather and transport the quantities of natural gas produced presently and in the future. The proposed Bargath LLC (Bargath) Kokopelli Pipeline, a midstream company operating under Williams Field Services, would gather Williams Production RMT Company LLC (Williams) natural gas developed from the Kokopelli Field and move it to processing facilities in Parachute, Colorado.

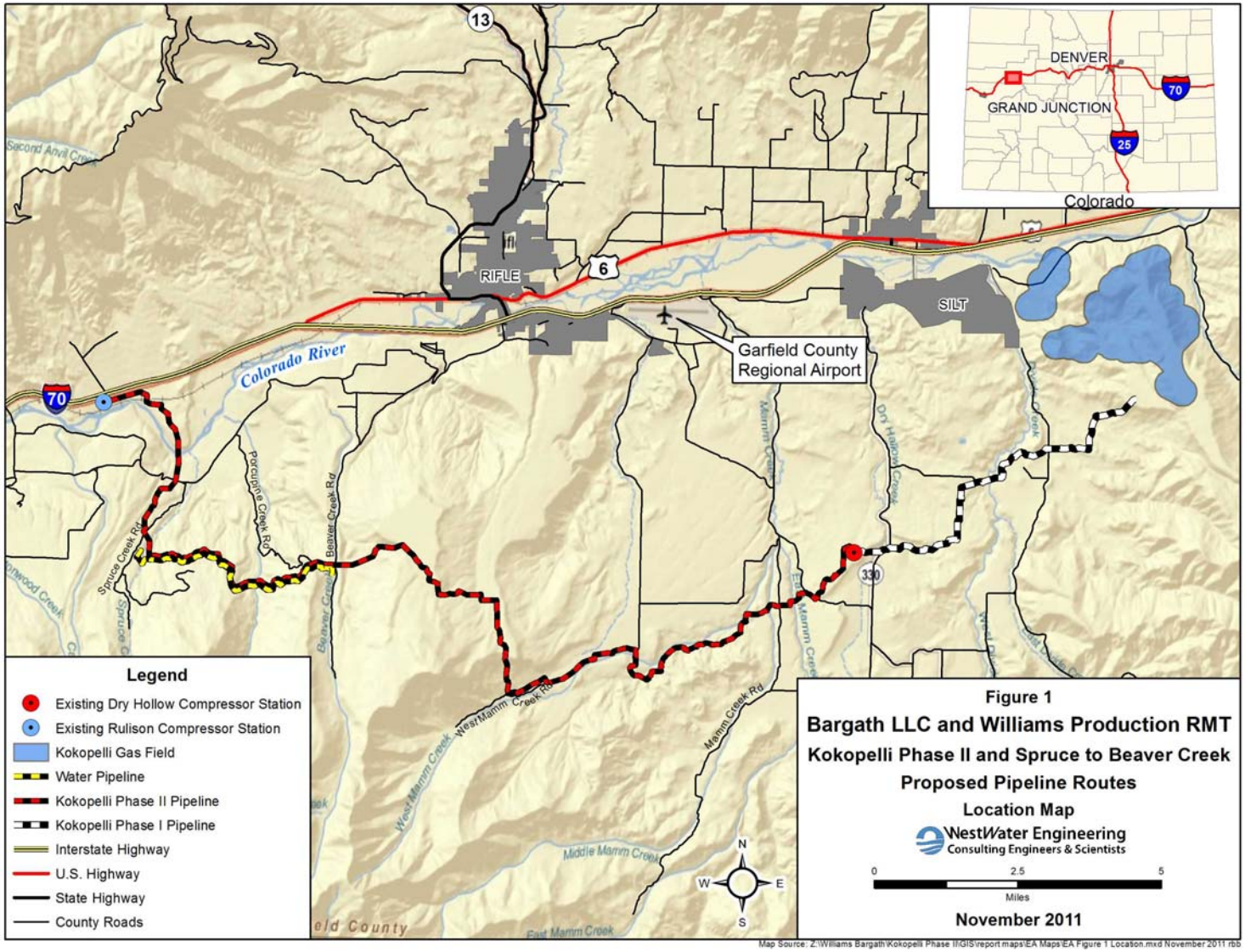
The Kokopelli Phase II 16-inch natural gas pipeline would connect the recently completed terminus of the Kokopelli Phase I pipeline segment to the existing 16-inch gas gathering line at the Rulison Compressor Station (Figure 1). The earlier Kokopelli Phase I pipeline was approved by Bureau of Land Management (BLM) Right-of-way (ROW) grant (#COC74709) in March 2011 and the initial pipeline phase was constructed during summer 2011. Kokopelli Phase I (initially analyzed by BLM in the Kokopelli Master Development Plan EA #DOI-BLM-CO-NO40-2008-016), featured a high pressure 16-inch natural gas pipeline running from Williams' Kokopelli Field west to the new Dry Hollow Compressor Station (NE¼ of Section 9, T7S R92W). The Kokopelli Phase II pipeline would proceed west-northwesterly from the Dry Hollow Compressor for approximately 22.3 miles and end at the northwest corner of the existing Rulison Compressor Station area (NE¼ of Section 29, T6S R94W). The Phase II pipeline would connect to the existing high pressure 16-inch Bargath Gathering Pipeline System which begins at the Rulison Compressor Station area and delivers natural gas to the Parachute processing plant.

Williams Production RMT Company LLC (Williams), a subsidiary exploration and development company operating under Williams Field Services, submitted a ROW application to BLM in October 2011 for water pipeline connections serving Williams' gas fields in the Spruce Creek, Beaver Creek and Flatiron Mesa areas. The two proposed 6-inch water pipelines would provide water delivery and collection capabilities to the Spruce Creek and Beaver Creek fields and drastically reduce water truck traffic on Garfield County, BLM and private roads. At BLM's request, the water pipelines would be installed concurrently in the Kokopelli II gas pipeline trench creating a shared pipeline segment between the Spruce Creek and Beaver Creek fields (Figure 2).

The Kokopelli II gas pipeline would generally be located south of Rifle, Garfield County, Colorado, and cross a series of private, BLM and National Forest System (NFS) land parcels (Figure 2).

Authorizing Actions and Relationship to Statutes and Regulations

Application for the Bargath's Kokopelli II gas pipeline project was made under the Mineral Leasing Act of 1920 (MLA), as amended. The MLA (Sec. 28 (a)) authorizes Federal agencies to grant rights-of-way (ROWs) for pipeline purposes for the transportation of oil, natural gas, synthetic liquid or gaseous fuels, or any refined product produced. The MLA (Sec. 28 (e)) further gives Federal agencies authority to allow temporary uses of Federal lands for construction, operation, and maintenance of pipelines. The U.S. Department of Interior, BLM and U.S. Department of Agriculture, Forest Service (USFS)


DENVER
GRAND JUNCTION
70
25
Colorado
13
6
RIFLE
SILT
Garfield County
Regional Airport
Colorado River
70
330
Spruce Creek Rd
Porcupine Creek Rd
Beaver Creek Rd
West Mamm Creek
Mamm Creek Rd
Middle Mamm Creek
East Mamm Creek
Legend
Existing Dry Hollow Compressor Station
Existing Rulison Compressor Station
Kokopelli Gas Field
Water Pipeline
Kokopelli Phase II Pipeline
Kokopelli Phase I Pipeline
Interstate Highway
U.S. Highway
State Highway
County Roads
N
W
E
S
Figure 1
Bargath LLC and Williams Production RMT
Kokopelli Phase II and Spruce to Beaver Creek
Proposed Pipeline Routes
Location Map
WestWater Engineering
Consulting Engineers & Scientists
0
2.5
5
Miles
November 2011
Map Source: Z:\Williams Bargath\Kokopelli Phase II\GIS\report maps\EA Maps\EA Figure 1 Location.mxd November 2011 rbb

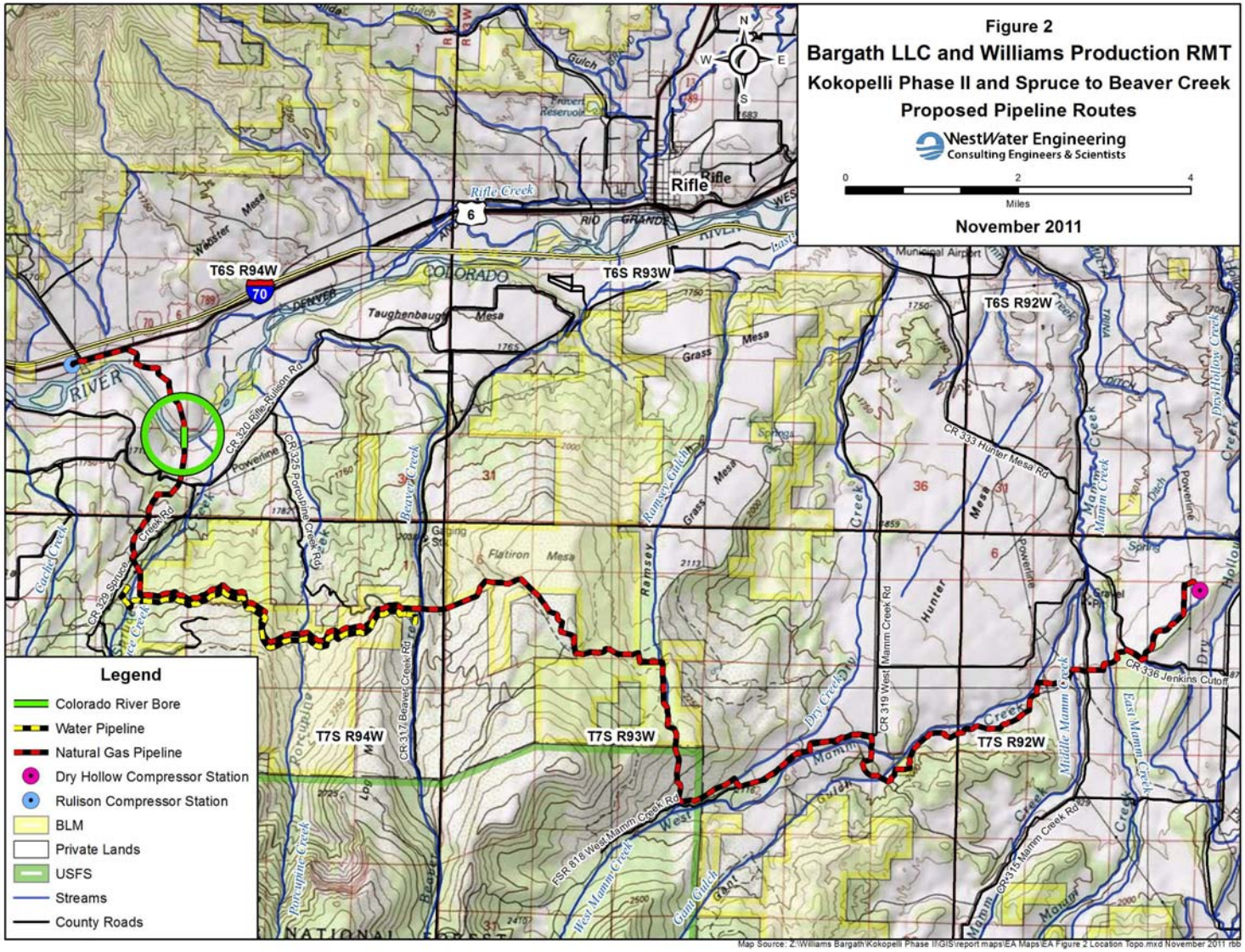


Figure 2
Bargath LLC and Williams Production RMT
Kokopelli Phase II and Spruce to Beaver Creek
Proposed Pipeline Routes
WestWater Engineering
Consulting Engineers & Scientists
0
2
4
Miles
November 2011
Legend
Colorado River Bore
Water Pipeline
Natural Gas Pipeline
Dry Hollow Compressor Station
Rulison Compressor Station
BLM
Private Lands
USFS
Streams
County Roads
T6S R94W
T6S R93W
T6S R92W
T7S R94W
T7S R93W
T7S R92W
Rifle
Rifle Creek
COLORADO RIVER
Taughenbaugh Mesa
Flatiron Mesa
Grass Mesa
Ramsey Gulch
Beaver Creek
Porcupine Creek
Dry Creek
Mamm Creek
Middle Mamm Creek
East Mamm Creek
West Mamm Creek
Grant Gulch
Dry Hollow Creek
CR 320 Rifle-Rulison Rd
CR 325 Porcupine Creek Rd
CR 317 Beaver Creek Rd
CR 319 West Mamm Creek Rd
CR 333 Hunter Mesa Rd
CR 336 Jenkins Cutoff
CR 315 Mamm Creek Rd
FSR 818 West Mamm Creek Rd
Powerline
Municipal Airport
Map Source: Z:\Williams Bargath\Kokopelli Phase II\GIS\report maps\EA Maps\EA Figure 2 Location Topo.mxd November 2011 rbb

implementing regulations for this portion of the MLA are found at 43 CFR 2800/2880 and 36 CFR 251.

The MLA directs the agencies to require the applicant to submit a plan of construction, operation, and rehabilitation for ROWs. Bargath's submission of a Plan of Development (POD) satisfies this requirement. In addition, the MLA at Sec. 28 (h)(2) gives Federal agencies the authority to impose stipulations on pipeline projects for the following:

(A) Requirements for restoration, revegetation, and curtailment of erosion of the surface of the land.
(B) Requirements to insure that activities in connection with the ROW or permit would not violate applicable air and water quality standards or related facility siting standards established by or pursuant to law.
(C) Requirements designed to control or prevent:
- Damage to the environment (including damage to fish and wildlife habitat)
- Damage to public or private property
- Hazards to public health and safety

(D) Requirements to protect the interests of individuals living in the general area of the ROW or permit who rely on the fish, wildlife, and biotic resources of the area for subsistence purposes. Such regulations shall be applicable to every right-of-way granted.

The Kokopelli Phase II project traverses several Federal land management jurisdictional boundaries and therefore falls under provisions listed in Sec. 28 (c) (2) of MLA: "[W]here the surface of the Federal lands involved is administered by two or more Federal agencies, the Secretary (of Interior) is authorized, after consultation with the agencies involved, to grant or renew rights-of-way or permits through the Federal lands involved." Thus, although this project would cross a combination of public lands managed by the BLM, Colorado River Valley Field Office, or the USFS White River National Forest (WRNF), Rifle Ranger District, a single ROW grant with an adjacent Temporary Use Permit, to accommodate extra construction space where appropriate, would be issued for the entire project by the BLM.

The proposed Williams' water pipelines, which would be installed concurrently with the Kokopelli II gas pipeline in the same shared pipeline trench between Spruce Creek and Beaver Creek, would be authorized with a BLM ROW granted pursuant to Title V of the Federal Land Policy and Management Act (FLPMA) of October 21, 1976 (90 Stat. 2776; 43 U.S.C. 1761). The issuance of the water line ROW would be a discretionary action subject to terms of the current BLM land use plan. Being installed only on BLM and private lands, the Williams' water lines would be approved with BLM and Garfield County permitting; no review or permitting would be needed by the USFS.

A list of Federal permits, approvals, and authorizing actions necessary to construct, operate, maintain, and abandon the proposed pipeline is provided in Table 1.

Table 1. Federally Required Permits, Approvals, and Authorizing Actions

Agency	***Action for Permit or Consultation***	***Applicability***
Bureau of Land Management	Prepare EA	NEPA compliance; Project oversight on BLM-managed lands.
	Issue ROW grant and Temporary Use Permit for Bargath Kokopelli II gas pipeline. Issue ROW grant for Williams' water pipelines.	Pipeline construction, operation and maintenance on Federal lands
	Approves cultural resource permits	Inventory, excavate, and/or remove cultural or historic resources

Table 1. Federally Required Permits, Approvals, and Authorizing Actions		
Agency	***Action for Permit or Consultation***	***Applicability***
U.S. Forest Service	Assists with EA review	NEPA compliance; Project oversight on USFS-managed lands.
	Issues Road Use permit for construction of Kokopelli II Gas pipeline	Commercial use of Forest Service Road – Operation and maintenance of FR818
U.S. Army Corps of Engineers	Issues Nationwide Permit 12 Pre-construction Notification	Work in waters of the U.S.
U.S. Fish and Wildlife Service	Completes ESA Section 7 consultation	Informal consultation process for threatened and endangered species

Decisions to be Made Based on this Environmental Assessment

Pursuant to the National Environmental Policy Act of 1969 (NEPA), the outcome of this Environmental Assessment (EA) is a Decision Record documenting that the Proposed Action would either significantly affect or not significantly affect the human environment. In the case of the former, the lead agency prepares a Finding of No Significant Impact (FONSI); in the case of the latter, the lead agency prepares an Environmental Impact Statement (EIS). The responsible official will decide on an alternative based on the analysis contained in this EA. This analysis considers the environmental consequences of the Proposed Action as submitted by Bargath and Williams, as well as a variety of mitigation measures to be determined by BLM and USFS and attached to the BLM ROW Grants and Temporary Use Permit as protective stipulations.

If the Proposed Action is not approved, the result is denial by BLM of Bargath's and/or Williams' applications—i.e., the No Action alternative. Other alternatives were considered but not analyzed in detail due to their impracticability or infeasibility.

The Decision Record associated with this EA does not itself constitute approval of the Proposed Action but instead provides a basis for BLM to issue the ROW Grants and Temporary Use Permit, which in turn authorize the commencement of ground-disturbing activities on Federal lands. A Road Use Permit across Forest Road 818 would be issued by the USFS to allow Bargath and its subcontractors to use and maintain the existing road to provide construction access to the Kokopelli II alignment across Section 21, T7S R93W.

PROPOSED ACTION

The Proposed Action would include two separate pipeline proposals: (1) Bargath's proposed Kokopelli Phase II Pipeline would be a high pressure natural gas pipeline transportation system constructed of 16-inch diameter steel pipe and (2) Williams' Spruce Creek to Beaver Creek water pipeline would connect existing gas fields with water delivery and water collection lines constructed of two 6-inch diameter Flexsteel pipes.

DESCRIPTION of BARGATH'S KOKOPELLI PHASE II GAS PIPELINE

The product carried by the 16-inch steel gas pipeline system would be field grade semi-wet natural gas. Bargath, a wholly-owned subsidiary of Williams Field Services, would operate the Kokopelli pipeline project. Natural gas discharged from the Dry Hollow compressor station would be transported by the Kokopelli II pipeline to existing Bargath gathering pipeline systems present in the Sharrard Park and

Anvil Points area of the Colorado River Valley near Rulison, CO (Figure 2). From this point, existing pipeline systems would move the gathered field gas to Williams' gas processing and conditioning facilities (Parachute Creek Gas Plants) for treatment and quality improvement and eventual delivery to natural gas customers. Additional delivery and receipt points may be installed along the new pipeline to accommodate future connections to other gas transporters and producers. A unique portion of the Bargath pipeline proposal would include boring under the Colorado River in Sections 28 and 33, T6S R93W. The river bore would involve private lands at either terminus; core testing of this river bore section was conducted with favorable results in summer 2011.

The pipeline ROW would be constructed across private and Federal lands including BLM and NFS lands. The project is situated entirely within Garfield County, Colorado, and would require permits and approvals from BLM, USFS and the appropriate departments of Garfield County. Construction would begin upon the receipt of the necessary agency approvals and permits. The estimated duration of construction for this project is one hundred fifty (150) calendar days.

Pipeline Right-of-Way Length and Widths

To install and operate the Kokopelli Phase II pipeline on BLM and NFS lands, Bargath would seek approval for a ROW grant across approximately 44,864 feet (8.5 miles) of Federal land. Of the total 22.3 miles of proposed pipeline, approximately 39,934 feet (7.6 miles) would be installed on BLM-managed lands and 4,930 feet (0.9 miles) on USFS-managed lands. The remaining 73,074 feet (13.8 miles) would be on private property.

The surface disturbance proposed for the 16-inch gas pipeline would involve a 50-foot-wide permanent ROW and an adjacent 25-foot-wide temporary use area to provide adequate construction area. The construction ROW would be situated 25 feet on one side (spoil side) and 50 feet on the other side (working side) of the pipeline centerline. The temporary construction area would vary left to right and right to left depending upon the pipeline's proximity to existing parallel pipelines, other encroachments, and terrain factors encountered along the pipeline route. An estimate of surface disturbance for the Kokopelli Phase II gas pipeline is presented in Table 2, which is found following the description of the Williams' water line proposal later in this narrative of the Proposed Action.

The Kokopelli II pipeline would create 238.7 acres of new short-term disturbance with 84 acres occurring on BLM, 9.5 acres on USFS and 145.1 acres on private land. All of the surface disturbance outlined in this EA would be short-term since pipeline corridors would be reclaimed and seeded with desirable species and vegetation establishment would occur over a 3-5 year period.

For construction execution, certain extra work space and staging areas are required for the work. These are typically parallel areas adjoining the pipeline construction area of finite but variable length and uniform width (25 feet, 50 feet or 75 feet). These are identified and employed to serve the following uses:

- Project beginning and ending staging areas.
- Intermediate project staging areas at points of major project access or designated "skip-sections" or "work reversal" areas.
- Sharp bend widening areas. These are needed to allow turning and movement of trucks, vehicles and equipment within designated areas and not disturbing outside the planned construction corridor.
- Roadway crossing extra work space.
- Bore pit set up and staging areas.
- Drainage crossing extra work space.
- Multiple foreign utility crossing extra work space.

- Steep side hill widening. Where steep side slopes are present, two-level grading of the pipeline work corridor is required to provide a safe and convenient work area. This grading work when performed requires additional corridor widening to provide the extra needed space.
- Steep hill ascent and descent staging areas. For each steep hill location, such staging areas are required at both the top and bottom of the hill.
- Other special use and situation areas where required pipeline construction work cannot be safely and efficiently performed in the typical standard construction work width.

Pipeline Alignment

The pipeline alignment would be constructed adjacent to existing pipelines and/or roads where possible. Access for construction equipment and personnel would be entirely from existing public roads, existing field access roads, and along the pipeline disturbance corridor. Staging areas have been designated at the beginning and ending of the pipeline and a variable number of intermediate project staging areas would be used at points of major project access or designated "skip-sections" or "work reversal" areas.

A portion of the proposed Kokopelli II pipeline alignment would follow a previously-approved, but unconstructed Energy Transfer Corporation (ETC) pipeline ROW across BLM land in Sections 6, 7, 8, 9 and 16 (T7S R93W) and Sections 11 and 12 (T7S R94W) and across NFS land in Section 21 (T7S R93W). Determination has been made that the first company to construct along this proposed route (ETC or Bargath) would have the first right to occupy the optimal pipeline alignment in relation to existing roads and pipelines.

Ancillary Facilities

Major ancillary facilities to be installed at the ends and along the pipeline would include pig launcher assemblies, valve assemblies, compressor station connections, and assemblies for periodic removal of accumulated water and condensate liquids. Other miscellaneous items to be installed include line markers, cathodic protection wire leads and cathodic protection current rectifier stations or sacrificial anodes. None of the major ancillary facilities would be located on Federal lands.

Construction Access

Access for construction equipment and personnel would be entirely from existing public roads, existing field access roads, and along the pipeline disturbance corridor. Public roads involved include Interstate 70 and its associated frontage roads, U.S. Highway #6 and Garfield County Roads #246, #315, #319, #317, #325, #329, and #320. Bargath would enter into operating agreements with the landowners or operators for existing field access roads to be used for construction and operations. Where needed, Bargath would apply for and acquire temporary use permits for project field access roads located on Federal lands. Bargath's POD and Location Maps, show the public roads and the field access roads to be used for project construction. A Road Use Permit across Forest Road 818 would be issued by the USFS to allow Bargath and its subcontractors to use and maintain the existing road to provide construction access to the Kokopelli II alignment across Section 21, T7S R93W.

Clearing and Grading

Vegetation would be cleared and the construction corridor graded to provide for safe and efficient operation of construction equipment and to provide space for temporary storage of spoil material and salvaged topsoil. In general, the width of the corridor clearings would be kept to a practical minimum to avoid undue disturbance. However, in areas with high visual sensitivity and with the direction of the

Authorized Officer, additional trees could be removed alongside the planned disturbance corridor during the tree clearing operations to create a feathered appearance and reduce the visual contrast of the pipeline corridor. Tree and brush clearing would be limited to mowing with hydro-axe equipment, trimming and/or crushing to avoid disturbance of root systems. All brush and other materials that are cleared would be windrowed along the corridor. Where necessary, all brush and other debris cleared would be disposed of in accordance with instructions from the jurisdictional agency or landowner and all applicable laws and regulations. Topsoil removed during the clearing and grading operations would be segregated from subsoils. At a minimum, the first 6 inches of surface soil would typically be separated. These topsoils would be preserved for subsequent restoration activities on the corridor.

Three approaches to topsoil removal are provided in the project POD. These include: 1) full disturbance corridor topsoil removal; 2) trench and spoil area only topsoil removal and 3) blade width only topsoil removal. The method of topsoil removal to be utilized on the project may vary from location to location. This would depend upon landowner desires, government agency stipulations, conditions encountered on the ground during construction, advisement of any soil and reclamation specialist employed or involved on the work, and the preferences and requirements of the contractor in regard to his adopted plan for successful clearing, grading, restoration, reseeding and reclamation of the project.

Grading of the construction area would be performed in order to create a suitable work surface for construction vehicles and heavy equipment. On flat to mildly or moderately sloping terrain, a uniform work surface would be graded across the entire disturbance corridor. A bi-level work surface may be necessary in more sloped areas. Side hill cuts would be kept to a minimum to ensure resource protection and a safe, stable surface for heavy equipment use.

When required by controlling agency or the landowner, construction activities would not be conducted during conditions when the soil on the corridor or access roads are too wet to adequately support construction equipment. In such instances and where construction equipment creates excessively deep ruts, construction activities would be discontinued until soil conditions improve.

All survey monuments located within the disturbance corridor would be protected during construction activities. Survey monuments include, but are not limited to, General Land Office and BLM Cadastral survey corners, reference corners, witness points, U.S. Coastal and Geodetic Survey benchmarks and triangulation stations, military control monuments, and recognizable civil survey monuments. In the event of obliteration or disturbance of any of the above, the incident would be duly reported. Where such monuments are obliterated during construction, the services of a registered land surveyor would be employed to restore the monuments in accordance with established procedures. Each such survey would be duly recorded with the appropriate county and other jurisdictional agencies.

Trenching

Typical pipe cover, trench width, depth and similar dimensions are detailed in the Facility Design Factors of the POD. In all instances, pipeline burial depths would be in conformance with the requirements of 49 CFR 192 Pipeline Safety Regulations. In general the standard depth of the pipeline trench for this project would be 4 feet as measured from the top of the buried pipe. Occasionally, the trench would be excavated to depths greater than the general values specified. Such instances include where the trench would be excavated to pass beneath railroads, roads, streams, drainages and other obstructions.

As a minimum, the trench would be excavated to a depth to allow a clearance of 24 inches between the project pipeline and other pipelines or underground facilities. Machine excavation would not be performed closer than 5 feet from any existing pipeline, communications cable or other such buried

facility encountered in the corridor. Existing pipeline locations would be marked in the field and 48-hour prior notification given to the pipeline or other underground utility operator.

Construction methods employed to excavate a trench would vary depending on soils, terrain, and related factors. Self-propelled trenching machines would be used where possible. Conventional mechanical backhoes would be used on steep slope areas, unstable soils, high water table, and where deep or wide trenches are required. Where rock or rock formations are encountered, tractor-mounted mechanical rippers or rock trenching equipment may be used to facilitate excavation. In areas where rippers or trenchers are not practical or sufficient, blasting may be employed. Strict safety precautions would be taken when blasting. Backhoes would then be used to clean the trench after ripping or blasting.

Unless otherwise required and agreed upon, pipeline crossings of non-surfaced, gravel, lightly traveled, and rural roads would be made using open trench "cut and cover" methods with mechanical ditching machine or backhoe. Installation at these locations, including cleanup and restoration of road surfaces, would usually be completed within one day. Provisions would be made to detour or control passage of traffic during the construction.

Livestock Control and Management

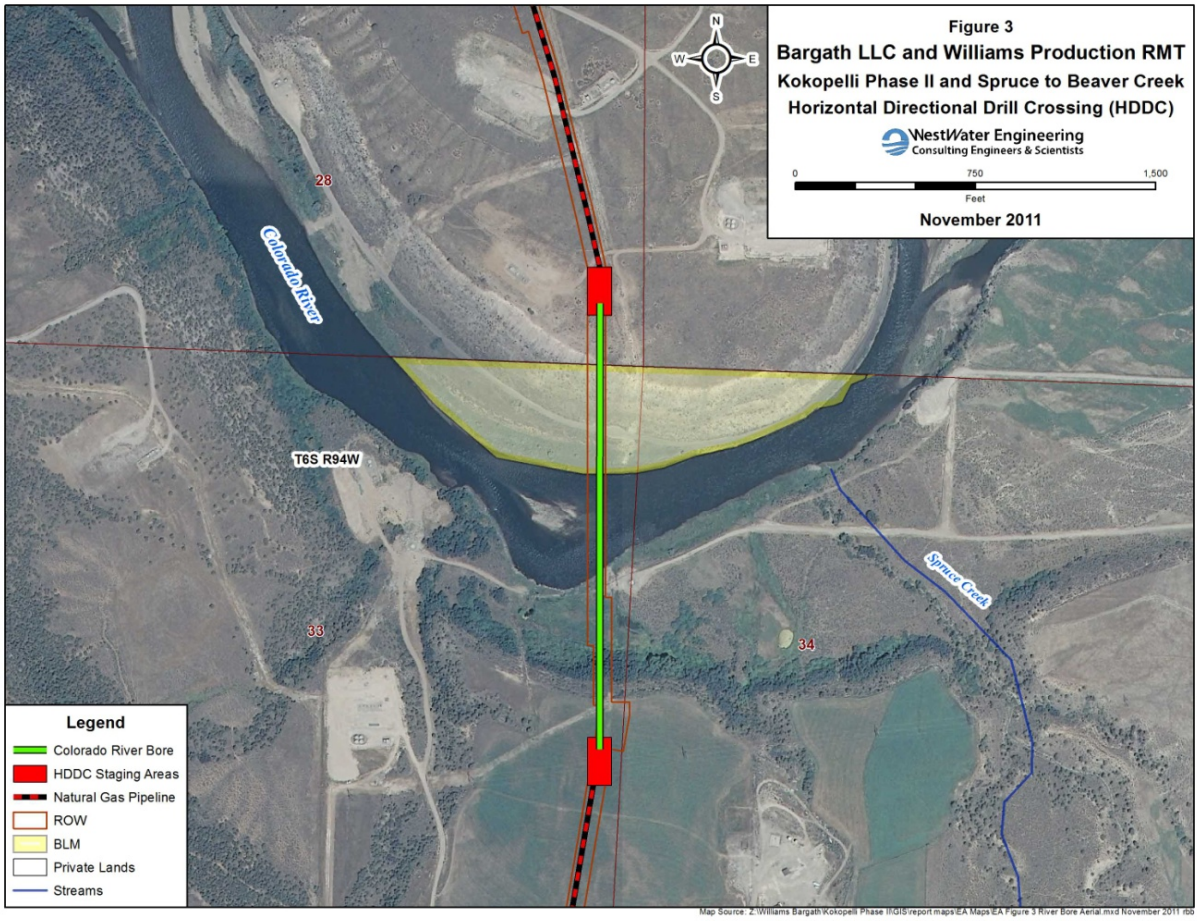
Prior to construction, concerns and issues of landowners, lessees and controlling agencies in regard to pipeline construction would be solicited and addressed to maintain adequate control of domestic livestock. Stipulations, requirements and reasonable requests developed from such inquires would be incorporated into planning prior to construction.

Boring and Drilling Techniques

Kokopelli Phase II pipeline construction plans would involve boring under the Colorado River in the SE¼ of Section 28 and NE¼ of Section 33, T6S R94W outside the limits of the 100-year floodplain using horizontal directional drilling techniques with a planned 2,000-foot underground bore length. Pipeline installation at Beaver Creek and all other streams crossings would employ a cut and cover method using a temporarily flumed flow (culvert pipe), which would divert water around the construction area so as not to impede water flow. These crossing would be planned during periods of the year when stream flows are lowest, such as prior to spring runoff or in the late summer/early fall. Pipeline crossings at more heavily traveled roads, hard-surface roads, railroads, highways and similar crossings would be made by boring.

The planned Colorado River Bore would occur on private land at both ends of the horizontal directional drill. A 200-foot by 100-foot staging area would be established in an irrigated field on Williams' property on the south side of the river (NE¼ Section 33, T6S R94W) to accommodate the drilling and support equipment (Figure 3). The north side of the river would provide the outlet point for the underground bore and feature another similarly-sized staging area along with a pipe pullback area of nearly 2,200 feet. The anticipated work period to complete the river bore would be 12 weeks. The proponent would prefer to conduct the river boring work during March and April, 2012 pending approval by Colorado Parks and Wildlife (CPW). If CPW would not grant the permitting exception to allow the springtime work, due to big game timing limitations, Bargath would complete the Colorado River bore after June 1, 2012.

In August 2011, BLM issued a temporary use permit (COC75020 (B)) to Bargath to conduct test coring and sampling of one corehole on BLM land. Four coreholes were drilled in total across the accessible length of the planned Colorado River bore. The corehole sampling was conducted in October 2011 and results of the sampling indicated that the subsoils were feasible to proceed with the planned horizontal directional drilling plans for the Colorado River bore.



View to the north across the Colorado River from the location of Geotechnical Test Bore #4. The red and white arrow indicates the approximate location of Test Bore #2, which was drilled on BLM-administered land. The core testing project evaluated the feasibility of installing a 16-inch natural gas pipeline below the Colorado River along the proposed alignment (Photo by McGrew, BLM).

Boring methods may include horizontal slip or slick boring, horizontal directional drilling or both. The horizontal slip or slick boring method requires the excavation of boring pits at both the entry and exit points of the pipe installation. The depth of the bore pits is one foot or more lower than the pipe installation. Pipe is installed on a straight horizontal and vertical grade line between the bore pit faces. The installation is accomplished by auger drilling a circular hole slightly larger than the pipe being

installed. The boring proceeds through a pilot pipe which is advanced by mechanical jacking behind the auger head. Excavated material is discharged through the rear of the pilot pipe. After the pilot pipe has been advanced to the end, the carrier pipe is welded to its far end. The pilot pipe and carrier pipe pair is then drawn back through the drill excavated hole. When the carrier pipe is in place, the pilot pipe is cut off to be used again for the next bore crossing. Slip boring refers to "dry" drilling. Slick boring refers to the use of drilling fluid or mud to lubricate the process and provide circulation of bore cuttings from behind the auger and out the back of the pilot pipe.

Horizontal directional drilling is typically performed with the entry point at the ground surface. The exit point for this method may or may not have a bore pit but typically does not. Directional drilling does require that small or moderate size mud pits be established at both ends of the drill span. Directional drilling uses a small diameter pilot drill and drill string to establish an initial hole along the bore path. Drilling mud is circulated through the head of the pilot drill and back through the drilled hole. Drilling mud lubricates and cools the drilling head, circulates cuttings out of the hole and provides hydraulic support of the hole until the carrier pipe is installed. After the pilot hole has been established, reaming heads are attached to the pilot string and passed through the hole to open it up to a diameter of about 1.5 times, or less, of the carrier pipe diameter. The hole may need to be reamed several times depending upon the size of pipe to be installed and earth conditions present. When the hole has been expanded to the required size, one end of a pull block is hooked to the pilot string and the other end is welded to the carrier pipe. The carrier pipe is then pulled back through the hole to complete the drill span. Within the limits of the carrier pipe material to be installed, the bore path is typically curved in vertical alignment and sometimes in horizontal alignment as well. For steel pipe, the rate of installed curvature is about 100 foot of radius for each inch of pipe size (i.e. R = 3,000 feet for 30-inch carrier pipe, R = 800 feet for 8-inch carrier pipe).

Pipe Installation

Pipe would be shipped directly from a manufacturer or supplier by rail and truck to offsite storage sites and then be hauled by truck to the pipeline project site. Each individual joint of pipe would be unloaded by cranes or tractors equipped with side booms and slings, and strung parallel to the trench. Sufficient pipe for road crossings would be stockpiled at staging areas near the crossing. Stringing operations would be coordinated with trenching and installation activities in order to properly manage the construction time at a particular tract of land. Gaps would be left at access points across the trench to allow crossing of the disturbance corridor. As construction proceeds, some of the pipe and stringing equipment would be temporarily stored at approved staging and extra workspace areas along the corridor.

After the joints of pipe are strung along the trench but before the joints are welded together, individual joints of the pipe would be bent to accommodate horizontal or vertical changes in direction. Such bends would be made utilizing an approved cold, smooth bending machine having a hydraulically operated shoe that makes the bend. Where the deflection of a bend exceeds the allowable design limits for field-bent pipe, shop fabricated pieces (induction or "hot bends") or trimmed segmentable forged fittings would be installed.

After the pipe joints are bent, the pipe is lined up end-to-end and clamped into position. The pipeline would then be welded in conformance with 49 CFR Part 192, Subpart E, "Welding of Steel in Pipelines" and API 1104, "Standard for Welding Pipelines and Related Facilities," latest edition. Welds would be visually inspected by a qualified inspector and would be subject to radiographic inspection in conformance with DOT requirements. A specialized contractor certified to perform radiographic inspection would be employed to perform this work. Any defects would be repaired or removed as required under the specified regulations and standards.

Project specifications would require that the pipe be externally coated with fusion bonded epoxy coating prior to delivery. After welding, field joints would be coated with either a tape wrap or shrinkable sleeve wrap. Before the pipe is lowered into the trench, the pipeline coating would be visually and electronically inspected and any detected faults or scratches would be repaired.

Backfilling

Once the pipe coating operation has been completed, the pipeline would be lowered into the trench. Side-boom tractors would be used to simultaneously lift the pipe, position it over the trench, and lower it in place. Inspection would be conducted to verify that minimum cover is provided, the trench bottom is free of rocks/debris/etc., external pipe coating is not damaged, and the pipe is properly fitted and installed into the trench. In rocky areas, padding material or a rock shield would be used to protect the pipe.

Backfilling would begin after the pipeline has been successfully placed in the trench and final inspection has been completed. Backfilling would be conducted using a bulldozer, rotary auger backfiller, or other suitable equipment. Backfill would generally consist of the material originally excavated. In some cases, backfill material from other areas (borrow material) may be needed. Backfill would be graded and compacted, where necessary for ground stability, by being tamped or walked in with a wheeled or track vehicle. The soils would be replaced in a sequence and density similar to pre-construction conditions. Subsoils would be backfilled first, followed by replacement of stockpiled topsoil. Once the excavation has been filled and compacted, the topsoil would typically be crowned in a berm, 12-inches-high or less, and tapered outward from the center and/or spread uniformly over the disturbed corridor. The material in the berm is intended to compensate for normal settling of backfilled materials. Any excess excavated materials or materials unfit for backfill would be properly disposed of in conformance with applicable laws or regulations, and landowner or jurisdictional agency requirements. Where possible, these surplus materials would be spread out over the disturbance corridor to avoid off-site disposal.

Where required by controlling agencies, landowners, other situations and good cause, controlled compacted backfill would be placed at road crossings and other such locations. Backfill material to be placed shall be inspected and determined suitable for use by a qualified person. The backfill shall be placed at a controlled water content range in level uniform layers not exceeding 8-inches compacted thickness. The resulting backfill density shall not be less than 90% maximum density (or higher if prescribed by permit, agency or landowner) as determined by an established AASHTO or ASTM procedure.

Pressure Testing

The entire pipeline would be tested in compliance with 49 CFR Part 192 Pipeline Safety Regulations. This would be accomplished through hydrostatic (water) or pneumatic testing, or both. Some portions of the pipeline may require pneumatic testing due to the steepness of the terrain. Prior to filling the pipeline for a pressure test, each section of the pipeline would be cleaned by passing reinforced poly pigs through the interior of the line. Incremental segments of the pipeline would then be filled with test media, pressurized, and held for the duration of the test. The length of each segment tested would depend on local topography. Typically, the tests of individual segments would be conducted in sequence and the test media would be transferred from one segment to another.

Hydrostatic test water intake and discharge would be done in conformance with all applicable local, state, and federal requirements. Performance of these operations shall avoid adverse impacts to aquatic, wildlife, and visual resources. The test water would be obtained from an existing well (pending water

appropriation permits), a municipal water source or a commercial provider. At discharge points, the release of water would be controlled to prevent erosion. Energy dissipating devices would be employed where needed. When required, discharged waters would be sampled, tested and filtered in accordance with applicable discharge permit requirements.

Upon completion of pressure testing, the pipeline segment would be dried using compressed dry air, pigs, spheres, or other accepted means. Once dried and fully ready for service, including tie-ins to terminal and online facilities, the pipeline would be purged of air and charged with natural gas. Upon obtaining sufficient gas volume and pressure, the line is typically ready for gas transmission and gathering service. The event is typically called the moment of "Substantial Completion."

Water Requirements for Construction and Testing

- Dust Abatement (extreme conditions).
  - Approximately 200 BBL/day.
  - 45 calendar days duration.
  - 9,000 BBL or 378,000 Gallons or 1.187 Acre-Ft.
- Gas Pipeline Testing – The complete pipeline would be tested to 1.1 MAOP or 1.25 MAOP minimum pressure in accordance with applicable regulations. Three pipeline test segments would be tested sequentially. The length and water volume required for each segment is as follows:
  - Test Segment #1: 5.40 Miles, 280,600 gallons or 0.853 Acre-Ft.
  - Test Segment #2: 10.7 Miles, 555,900 gallons or 1.706 Acre-Ft.
  - Test Segment #3: 5.06 Miles, 262,600 gallons or 0.806 Acre-Ft.
- Dust abatement water would not be recoverable for reuse.
- Water for gas testing may be transferred from one line segment to the next for sequential testing limiting the total volume of test water to the largest quantity in the list above. Should simultaneous or non-phased testing take place, the total test water volume might equal or slightly exceed the total of the volumes above.

Post-Construction Cleanup and Restoration

Upon completion of backfilling, construction work would commence to clean up, restore, and revegetate the disturbance corridor. Efforts would have been taken during the prior work to minimize erosion, restore the natural ground contour, account for trench settling, re-establish plant growth, and allow natural surface drainage. As agreed with the landowner or controlling agencies, all completed construction areas and temporary access roads would be returned as nearly as possible to their original condition and service. All restoration and revegetation would be completed to the satisfaction of the landowners, controlling agencies and other recognized parties.

Trash, brush, surplus material, or other debris would be cleared from construction areas and disposed of in an appropriate manner. The corridor would then be graded and restored to nearly pre-construction grades. Final restoration of disturbed areas would be accomplished by whatever means are most suited for the particular soils, terrain, vegetation and climate at a specific site. In general, waterbars would be constructed to prevent erosion of unconsolidated soils and provide drainage away from the disturbed area and into existing washes or drainages. Where appropriate, slash would be used to control erosion. Where necessary, terracing or other erosion control techniques may be employed.

Reseeding would be accomplished using seed mix or plant species approved by the landowners or controlling agencies. Seedbed preparation and seeding operations would be conducted in accordance with accepted techniques for the particular area and task. In areas with difficult reclamation problems, restoration and revegetation would be considered a special management problem and would be resolved

in coordination with the landowner and the respective authorities involved. Advice may be sought from specialty agencies or environmental consultants to fully determine the appropriate mitigation and reclamation measures needed.

Operations and Maintenance

The pipeline project would be operated and maintained in accordance with standard procedures that would ensure the integrity of the pipeline system. These operation and maintenance (O&M) procedures would be in accordance with safety standards and applicable regulations. O&M of the pipeline would be performed by Bargath and select contract service personnel. Bargath has operations offices in the project vicinity. O&M personnel would be qualified and trained to conduct their respective duties.

The pipeline would be controlled from a single gas control center located at the Bargath Parachute Creek Gas Plant near Parachute, Colorado. Initially, personnel at the gas control center and in the field would monitor and control the pipeline using manual methods. At a later time, the system would have communication and automation connections and facilities integrated with gas control, downstream processing plants, metering stations, inlet and outlet pressure regulators, upstream compressors stations, side valves and other such facilities. Ultimately, the system may be able to monitor and control all flows, pressures, flow conditions, valve open/close positions and compressor on/off states in a fully automated unattended mode.

The entire pipeline project corridor would be clearly marked with pipeline markers and at public roads and other locations specified in applicable regulations. Such markings help reduce the possibility of damage to the pipeline as a result of construction or other activities.

Upon commissioning of the project, ground patrols would be conducted periodically to inspect the pipeline corridor in order to monitor the integrity of the pipeline and the success of restorative measures. Surface travel would generally be limited to periodic valve inspections, corrosion surveys, leak surveys, pipeline maintenance, and any pipeline repairs that may be needed. The frequency of patrols would conform to the requirements of Department of Transportation (DOT) regulations.

An "Emergency Plan" would be developed in conformance with applicable DOT requirements. The plan would establish written procedures that are intended to minimize the hazards in the event of a gas pipeline emergency. It is anticipated that the plan would address topics such as administrative issues, emergency planning, assignment of responsibilities, handling and evaluating emergency calls, responding to and controlling emergency situations, news media communications, restoration of service, obtaining and reporting emergency information, employee training, liaison with public officials, general public information program, location/inventory of pipeline repair materials and equipment, and lists of emergency telephone numbers and key personnel.

Termination and Restoration

At the end of the pipeline's useful life, Bargath would obtain all necessary authorizations from appropriate landowners and government agencies to salvage or abandon the facilities. At that time, the pipeline would be depressurized and purged of all combustible materials. All above ground facilities would be separated and removed. All unsalvageable material would be disposed of at an approved public or private landfill. If the pipeline was to be abandoned in place, open ends of the remaining pipeline would be capped and sealed. The abandoned pipeline would then be filled with an inert media such as water, nitrogen or carbon dioxide at near zero gauge pressure. Alternatively, the decommissioned pipe would be extracted from the ground, cut in to joint lengths, hauled from the site for re-use on other projects or sold for salvage. The sites and corridors from which the above ground facilities and pipe were

removed would be re-graded, restored and reseeded as needed to achieve satisfactory reclamation. The abandoned pipeline corridor would revert to the landowners or controlling agencies.

DESCRIPTION of WILLIAMS' SPRUCE CREEK to BEAVER CREEK WATER PIPELINES

Williams proposes to jointly install two 6-inch diameter Flexsteel water pipelines from the existing Williams RWF 24-4 Frac Pad near Spruce Creek Road (#329) to the existing Williams RU 31-12V pad near the Beaver Creek Road (#317). During planning meetings with BLM, the request was made to have the water pipelines installed concurrently with the Kokopelli II gas pipeline along the same shared alignment segment (Figure 2). This shared pipeline trench would occur on BLM and private lands between Spruce and Beaver Creeks.

The two 6-inch pipelines would serve the water delivery and collection needs for Williams' field development in the Spruce Creek, Flatiron Mesa and Beaver Creek areas and drastically reduce water truck use on the nearby county, BLM and private access roads. The BLM would issue FLPMA ROWs to Williams for the installation, use, operation and maintenance of the two water delivery and/or collection lines across public land.

The entire water pipeline length, between the RWF 24-4 frac pad and the tank battery located at the RU 31-12V near Beaver Creek Road, would be 24,968 feet (4.7 miles) with approximately 21,653 feet (4.1 miles) occurring within and along the identified shared portion of the Kokopelli II gas pipeline (Figure 4). Approximately 20,900 feet (4.0 miles) of the proposed water lines would occur on BLM with the entire water pipeline length on BLM occurring within the Kokopelli gas pipeline corridor. There would be an additional 10 feet of new surface disturbance attributed to the inclusion of the Williams' water lines in the Kokopelli gas line trench increasing the overall shared trench disturbance width to 85 feet. Additionally, a disturbance corridor of 30 feet would be needed to install the two water lines in separate connecting trenches at either end of the project. All of the separate connecting trench work would occur on private land amounting to approximately 3,315 feet (0.6 miles) of new disturbance in addition to that identified in the Proposed Action (Table 2). The addition of the Spruce Creek to Beaver Creek water pipelines to the Kokopelli gas pipeline project would result in 7.2 acres of additional short-term disturbance.

The installation of the Flexsteel water pipelines would occur concurrently with the 16-inch gas pipeline and be conducted by the same pipeline subcontractor using the techniques and standards identified in the Proposed Action. Furthermore the construction, backfilling, and site reclamation techniques listed in the Proposed Action would apply similarly to the connection trench work planned for the water lines at their termini. The 6-inch Flexsteel lines, delivered on spools and constructed in continuous segments of 1,000 feet, would be connected with appropriate industry-specified crimped fittings. After installation and prior to any use, the water lines would be tested with air to ensure the pipelines are suitable and safe for water transport. Above-ground valves would be installed along the proposed route based on industry standards to allow Williams to isolate the operating line segments as needed for maintenance activities. A future block valve would be installed in Section 3 (T7S R94W) to provide water delivery connections for two future Williams' well pads (RWF 22-3 and RWF 33-3).

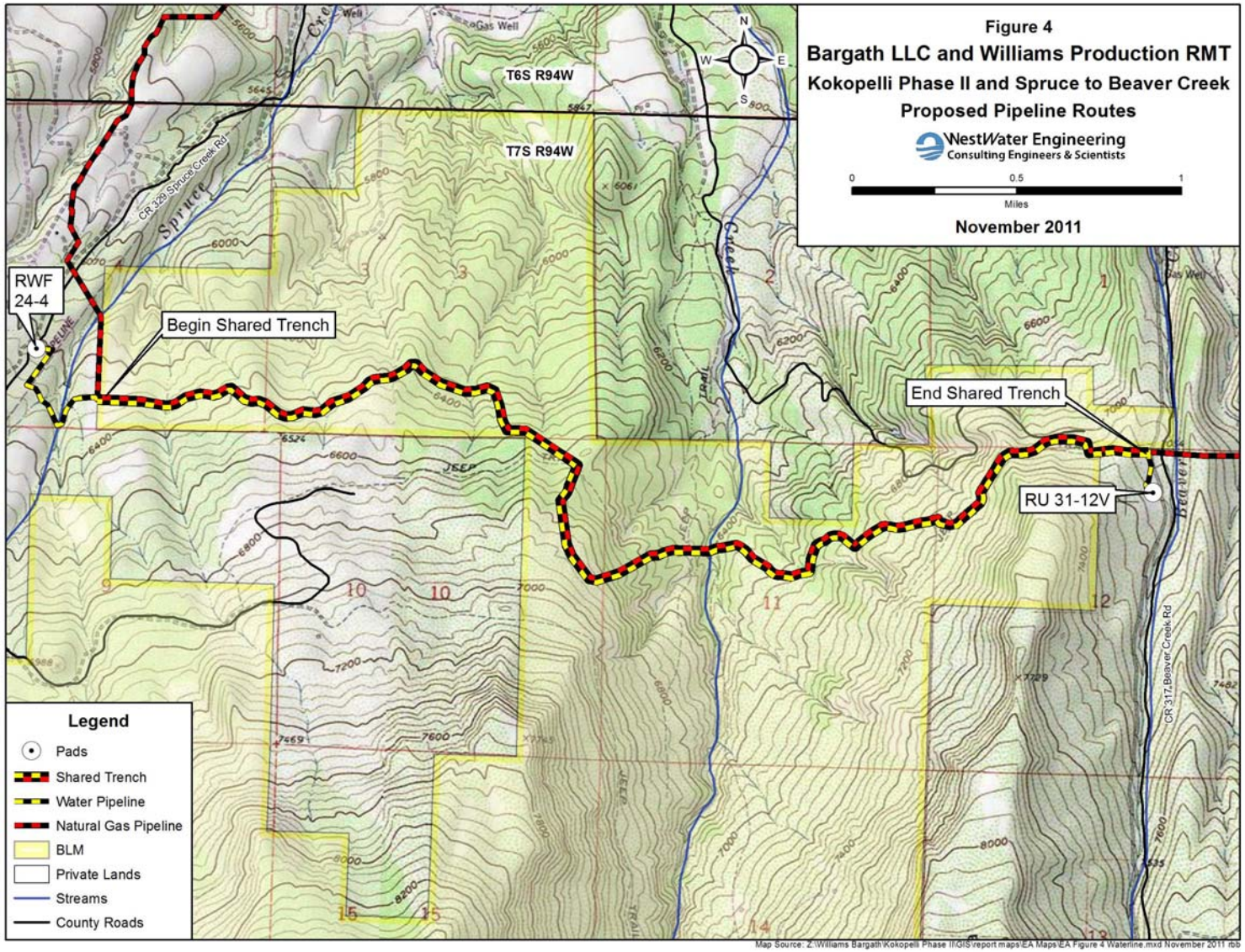


Figure 4
Bargath LLC and Williams Production RMT
Kokopelli Phase II and Spruce to Beaver Creek
Proposed Pipeline Routes
WestWater Engineering
Consulting Engineers & Scientists
0
0.5
1
Miles
November 2011
T6S R94W
T7S R94W
N
S
E
W
RWF
24-4
Begin Shared Trench
End Shared Trench
RU 31-12V
CR 329 Spruce Creek Rd
CR 317 Beaver Creek Rd
Spruce
Creek
JEEP
TRAIL
Gas Well
Legend
Pads
Shared Trench
Water Pipeline
Natural Gas Pipeline
BLM
Private Lands
Streams
County Roads
Map Source: Z:\Williams Bargath\Kokopelli Phase II\GIS\report maps\EA Maps\EA Figure 4 Waterline.mxd November 2011 rbb

SURFACE DISTURBANCE SUMMARY for the PROPOSED ACTION

Bargath's Kokopelli Phase II gas pipeline would require a 75-foot disturbance corridor along its entire alignment with certain segments being widened for temporary use areas. Along the shared gas/water pipeline trench between Spruce and Beaver Creeks, an additional 10 feet of disturbance corridor would be necessary to accommodate the Williams' water line installation in the same trench. Table 2 lists the total disturbance acreage for the permanent 50-foot right-of-way to be authorized with BLM ROW grant as well as the surface disturbance attributed to the expanded temporary use areas (minimum 25-foot width) to be authorized with BLM Temporary Use Permit (TUP). Table 2 also summarizes the disturbance area attributed to the two pipeline components of the Proposed Action.

Table 2. Surface Disturbance Summary for the Proposed Action (acres)

Land Ownership	Disturbance Within Permanent Right-of-Way 1/	Disturbance Within Temporary Use Areas 2/	Totals (Acres)
Bargath Kokopelli II Natural Gas Pipeline			
BLM	45.96	38.08	**84.04**
USFS	5.58	3.95	**9.53**
Private	81.14	63.99	**145.13**
		Kokopelli II Pipeline Subtotal	**238.7**
Williams Spruce Creek to Beaver Creek Water Pipeline			
BLM	0.00	4.65	**4.65**
Private	2.51	0.00	**2.51**
		Water Pipeline Subtotal	**7.2**
Totals	**135.2**	**110.7**	**245.9**

1/ Acreage represent short-term disturbance associated with the 50-foot permanent right-of-way area to be authorized with BLM ROW grant.

2/ Acreage represents short-term disturbance associated with the additional temporary use areas (minimum 25-foot width) to be authorized with BLM Temporary Use Permit.

Design Criteria, Stipulations and Best Management Practices

Bargath and Williams have committed to follow certain mitigation measures (also known as "design criteria") as part of the proposed construction and maintenance activities. These mitigation measures/design criteria, outlined in the POD that accompanied the ROW application, would be followed during construction and operation/maintenance of the pipeline and associated facilities. The BLM and USFS stipulations would be developed in the Environmental Assessment and applied as terms and conditions of approval of the ROW grants. Industry-standard Best Management Practices (BMPs) for resource protection including wildlife habitat provisions would also be employed throughout the project.

NO ACTION ALTERNATIVE

The No Action Alternative would deny the right-of-way applications for the use of Federally-administered lands, and therefore construction of the pipelines (either Bargath's gas pipeline or Williams' water lines) would not occur on BLM or USFS land. However, the operators could install the Kokopelli II gas pipeline or the Williams water pipelines entirely across private land, although the routes would be

widely circuitous and exceedingly expensive resulting in far more surface disturbance and resource impacts than that associated with the Proposed Action identified in this Environmental Assessment. To avoid Federal land, as assumed with the No Action Alternative, a gas gathering line would need to be constructed in proximity to the Colorado River corridor where the residential population is more concentrated and resource impacts could likely be more pronounced.

In accordance with Council on Environmental Quality (CEQ) regulations, the impacts of this alternative are evaluated in this EA to provide a baseline to compare impacts associated with the Proposed Action. For impact analysis purposes, the potential impacts associated with the No Action alternative would be cost-prohibitive and most likely result in much higher resource impacts than the Proposed Action presented in this EA.

PLAN CONFORMANCE REVIEW

BLM Land Use Plan

The Proposed Action is subject to and has been reviewed for conformance with the following plans (43 CFR 1610.5, BLM 1617.3):

Name of Plan: Glenwood Springs Resource Management Plan (BLM 1984).
Dates of Relevant Amendments: November 1991 – Oil and Gas Leasing and Development – Final Supplemental Environmental Impact Statement; March 1999 – Oil and Gas Leasing & Development Final Supplemental Environmental Impact Statement.
Decision Number and Page: Record of Decision, Glenwood Springs Resource Management Plan Amendment, November 1991, page 3. Record of Decision, Glenwood Springs Resource Management Plan Amendment, March 1999, page 15.
Decision Language: "697,720 acres of BLM-administrated mineral estate within the Glenwood Springs Resource Area are open to oil and gas leasing and development, subject to lease terms and (as applicable) lease stipulations." This decision was carried forward unchanged in the 1999 RMP amendment (BLM 1999).
Discussion: The Proposed Action is in conformance with the 1991 and 1999 Oil and Gas RMP amendments because the Federal mineral estate proposed for development is open for oil and gas leasing and development.
BLM Standards for Public Land Health: In January 1997, Colorado BLM approved the Standards for Public Land Health. The five standards cover upland soils, riparian systems, plant and animal communities, threatened and endangered species, and water quality. Standards describe conditions needed to sustain public land health and relate to all uses of the public lands. The environmental analysis must address whether the Proposed Action or alternatives being analyzed would result in impacts that would maintain, improve, or deteriorate land health conditions relative to these resources. These analyses would be presented in Chapter 3 of this EA.

USFS Land Use Plan

For the portions of the project on USFS lands, the Proposed Action is also subject to and has been reviewed for conformance with the following plans:

Name of Plan: White River National Forest Land and Resource Management Plan (LRMP)("Forest Plan"), 2002 Revision, as amended (USFS 2002).
Date Approved: April 2, 2002; amended in March 2005, January 2006, and March 2006.
Discussion: The WRNF Forest Plan provides long-term, Forest-wide goals and objectives for USFS lands in the WRNF. The Forest Plan includes Management Area (MA) standards and guidelines to

define the desired conditions and identify areas where different management activities may be implemented and different types of public are allowed. The Proposed Action was designed to be consistent with all applicable WRNF Forest Plan direction (MA and Forest-wide).

The project supports the WRNF Land and Resource Management Plan (LRMP) (2002 as amended) direction that is applicable to the Proposed Action in the following sections:

- Strategy 2c.5 – Over the life of the plan, respond to requests for leasing, exploration, and development of mineral and energy resources in accordance with regulations and forest plan availability and specific lands decisions (page 1-12).
- Strategy 2c.11 – Over the life of the plan, approve special-use proposals that are consistent with desired conditions, standards, and guidelines (page 1-12).

The project area is within Management Area (MA) 5.41, Deer and Elk Winter Range. These are areas where multiple-use principles are applied to emphasize habitat management for deer and elk. They include lands classified as winter ranges and areas used during average winters. These areas consist of both forested and non-forested habitats, generally in the lower elevation fringes of the forest. Many areas are south-facing slopes where snowmelt and green-up occur earlier in the spring, and snow accumulation does not occur until late autumn. To protect wintering big game, a condition of approval prohibiting construction activities from December 1 to April 14 would be attached to the right-of-way grant.

Desired Condition: Human activities are managed so that deer and elk can effectively use the area. Activities that may be managed or restricted include burning, rangeland management, timber harvest, habitat manipulation, recreation, minerals exploration and development, and road management. Population herd objectives are established in coordination with the CPW. Herd objectives are established in cooperation with the CPW. To protect wintering big game from disturbance, winter recreation use, both motorized and non-motorized, is generally confined to designated travelways or use corridors.

Standards and guidelines from MA 5.41 that are directly related to the project for both project implementation and rehabilitation include “Vegetation management practices will be used to maintain or improve deer and elk habitat objectives” and “Discourage special uses that require access during winter and spring periods.”

The Proposed Action is consistent with these Forest-wide goals and objectives because it would use landscape compatible design of facilities, is proposed on lands available for oil and gas development, and is consistent with the MA desired conditions, standards, and guidelines.