

APPENDIX D

**STORM WATER POLLUTION PREVENTION PLAN
EL PASO GLOBAL NETWORKS
CALIFORNIA TELECOMMUNICATION SYSTEM PROJECT**

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ABBREVIATIONS AND ACRONYMS

ACOE	Army Corps of Engineers
AQCD	Air Quality Control District
BLM	Bureau of Land Management
CEQA	California Environmental Quality Act
CPCN	Certificate of Public Convenience and Necessity
CPUC	California Public Utilities Commission
EA	Environmental Assessment
EI	Environmental Inspector
EPEC	El Paso Energy Corporation
EPGN	El Paso Global Networks
FOG	Fiber Optic Ground
HDPE	High Density Polyethylene
NEPA	National Environmental Policy Act
NRCS	Natural Resource Conservation Service
OP-AMP	Optical-Amplification
PEA	Proponent's Environmental Assessment
PLS	Pure Live Seed
ROW	Right-of-Way
SPCC	Spill Prevention, Containment & Countermeasures
SWPPP	Stormwater Pollution Prevention Plan

El Paso Global Networks Company (EPGN), a subsidiary of El Paso Energy Corporation (El Paso), has been developing a nationwide network of fiber optic telecommunication facilities and as identified the need for an extension of its system into the western region of the United States. El Paso owns and operates a nationwide natural gas transmission system comprising a significant number of miles of pipeline, extending from the west coast to the east coast, and from the Gulf coast to New England. EPGN is proposing the installation of fiber optic telecommunication facilities adjacent to some of these pipelines and within the rights-of-way (ROW) they occupy, which are operated and maintained by El Paso Natural Gas Pipeline Company, a subsidiary of El Paso Energy Corporation (referred to in this document as El Paso Natural Gas Pipeline Company). The overall objective is to facilitate the installation and operations of these telecommunication facilities along these rights-of-way, while at the same time ensure the reliability, safety, and integrity of the existing pipeline facilities.

EPGN is currently developing an approximately 972-mile long fiber optic installation project traversing the States of California, Arizona, New Mexico, and Texas for the transmission of voice and data services. The new telecommunications system (hereafter referred to as the system) will connect the cities of El Paso, Texas, to Phoenix, Arizona, and Phoenix, Arizona, to Los Angeles, California.

Approximately 346 miles of the system will be located within the State of California and subject to the jurisdiction of the California Public Utilities Commission (CPUC). The CPUC must grant a Certificate of Public Convenience and Necessity (CPCN) in order for EPGN to provide services to the public as a facilities-based, non-dominant interexchange carrier.

The CPUC's decision to grant or deny a CPCN triggers compliance with the California Environmental Quality Act (CEQA) and requires an environmental analysis of the potential impacts associated with the proposed project. EPGN has elected to prepare a Proponent's Environmental Assessment (PEA) to be included in the CPCN application submitted to the CPUC. The PEA evaluates potential impacts associated with the cable conduit system (referred to as on right-of-way [on-ROW]) and ancillary facilities (referred to as off-ROW) for the project segments within the State of California. This Stormwater Pollution Prevention Plan (SWPPP) has been prepared as part of the PEA. The purpose is to provide an example of a SWPPP likely to be prepared for the project. The project will help meet increased demands for telecommunication needs by installing a fiber optic conduit system, capable of holding up to eight fiber optic cables, from El Paso to Los Angeles and will be available to provide service to communities that currently do not have access to fiber optics and related services.

Construction techniques for installing telecommunication facilities are highly dependent upon the various environmental conditions. In all situations, equipment will be used which adequately installs the facilities while minimizing the disturbance to the affected environment. EPGN's objective is to minimize the potential for erosion and sedimentation during the construction phase of the project, and to effectively restore the ROW and other disturbed areas. EPGN will meet these objectives by employing the erosion and sediment control measures contained in this section. These erosion and sediment control measures will serve as minimum standards during construction. In general, the measures are designed to minimize stormwater runoff, erosion and sedimentation by:

- minimizing the quantity and duration of soil exposure;
- protecting critical areas during construction by reducing the velocity of and redirecting runoff;
- installing and maintaining erosion and sediment control measures during construction;
- restoring the ROW back to preconstruction conditions as soon as possible following final grading; and
- inspecting the ROW and maintaining erosion and sediment controls as necessary until final stabilization is achieved.

The Environmental Inspectors (EIs) are responsible for ensuring that contractors implement and maintain erosion and sediment control measures during construction.

This section includes erosion and sediment control techniques that apply to all areas of construction, expands on the impact minimization associated with clearing, grading, ditching, lowering-in/backfilling and restoration phases, and discusses the use of construction safety precautions.

1.1 STANDARD CONSTRUCTION METHODS

Techniques and equipment that will be employed under different terrain conditions (using the most practicable and least damaging alternative) are as follows:

Cable Plow Method

Direct burial cable plow technology installs conduit with a track-mounted cable plow which creates a temporary “rip” in the ground. This is the quickest method of cable installation along linear ROW, and also causes minimal disturbance to the ground surface and subsurface. The plow equipment does not result in the removal, dredging, or casting of soil. The cable plow generally consists of a track-mounted bulldozer or rubber tire tractor, which carries spools of HDPE conduit on the front and has a plow on the back. Conduits are fed to the back side of the v-shaped plow blade to the bottom of the blade. The blade laterally separates the soil to the desired depth and lays the conduits as the plow is advance forward. Once the plow disturbs the ground, the soil

seizes and settles naturally over the conduits and is compressed with rollers even with the surrounding ground surface. Temporary ground disturbance by the plow will be approximately 4 inches wide. Soil is not removed as a part of this process and there is no discharge or side-casting of soil. No fill materials are used during or following the plow process.

In certain situations where the ground surface is soft or yielding, temporary planking or mats may be used to distribute the equipment load on the ground surface. In some cases, low ground pressure plow equipment may be used in lieu of planking or mats. In some cases, a separate bulldozer in front of the plow may be used to drag a single, 4-foot long steel tine that simulates the plow. This process loosens the soil, dislodges small and medium buried rocks and is commonly termed “pre-rip”.

Directional Boring

Directional boring is a minimally invasive technology for installing underground conduits where disruption to the surface is not practical, such as road crossings, major drainages, rail crossings, extensive wetland crossings, and utility corridors. In directional boring, a surface-operated drilling device is angled into the ground from the surface and directed to its destination using a radio-controlled mole that contains a cutter head. Personnel directing the drilling on the ground control the depth and direction of excavation. A plastic or steel conduit is left in the ground through which the cable is later installed. Should the drilling device encounter rock or other debris (and depending on the extent of the obstruction), the cutter head can be backed up and steered around the obstruction or a rock drill head can be attached to drill through the rock. Boring fluid, a component of this technology, is a bentonite clay slurry that is inert and non-hazardous. Flow controls will be implemented during directional boring operations to control the amount of fluid introduced to the drill hole. The fluid is returned to a recycling chamber where the fragments are collected and disposed of in a lined container at an approved landfill. The remaining bentonite slurry is used in other drill locations. All practicable measures will be employed to ensure that no excess boring fluid is discharged to a stream or wetland area. See chapter 2.4 – Construction Process for further information.

Open Trench Excavation

A backhoe, excavator, trencher, or similar heavy equipment will perform open trench construction. A backhoe or excavator involves utilizing a bucket that excavates a trench approximately 12 inches wide. A trencher will produce a smooth trench, approximately 12 inches wide. It is used in areas where soil and geologic conditions preclude the use of a cable plow. Equipment may vary but will include a tracked backhoe, a rubber tire backhoe or chain trenchers. The conduits are placed in the trench, and as the backhoe excavates ahead, side-cast material is back-filled into the trench. Saw-cutting of paved areas will occur before trenching operations begin in developed areas.

Bedrock Construction

For locations known to have bedrock outcroppings or bedrock close to the ground surface, a rock-saw or hydro-hammer is used to cut the rock trench into which the conduits are installed. In other areas, the soils are such that individual rocks of a large enough size are present to prevent cable plowing. The rock-saw may be used in these situations to create the trench for cable installation. If blasting is required, a qualified blasting contractor will be used, and the work will comply with applicable federal, state, and local regulations. Bedrock construction is not anticipated along the project ROW.

Aboveground Poles and Cable

Where prohibitive economic and/or environmental conditions based upon terrain warrant, above-ground poles and fiber optic ground (FOG) wire or stand mounted duct with cable installed or lashed cable will be considered as an alternative option. Additionally, connections to bridges or box culverts via bridge attachments may also be considered as a least disruptive or intrusive method of installation.

EPGN is in the process of conducting pre-construction surveys and will tailor the SWPPP to the specific needs of the project. Information on soils is being obtained from soil surveys and soil cores taken during wetland surveys. Wetlands were identified by vegetation type and the boundaries are delineated using the currently authorized Army Corps of Engineers (ACOE) method. EPGN will work with appropriate agencies and landowners to prevent the spread of noxious weeds and pests.

1.2 CLEARING

The following are standard procedures to follow if clearing of the ROW is required prior to construction:

- ROW boundaries (e.g., workspace limits) will be clearly delineated and the EI will ensure that no clearing occurs beyond these boundaries.
- Trees to be saved shall be marked (flagging, snow fencing, etc.) before clearing begins.
- Stemmed vegetation such as brush, shrubs and trees shall be removed at or near the ground level, leaving the root systems intact.
- All existing fences needing to be removed for access shall be maintained by the use of a temporary fence section (gap). Prior to being cut, the fence will be properly braced and similar material used to construct the gap. At no time will an opening be left unattended. The gap will be replaced after cleanup with a permanent fence of the same or similar material and condition.
- When pruning is necessary to clear the ROW, pruning cuts shall be made as follows:
 - a. cuts should be smooth;
 - b. branch collars shall not be cut (i.e., cuts should be made immediately in front of the branch collar);
 - c. large, heavy branches shall be precut on the underside to prevent splitting or peeling of bark; and
 - d. climbing spurs shall not be used.
- Trees shall be felled into the ROW.
- Trees which have fallen into waterbodies or beyond the ROW shall be removed immediately.

- Trees located outside of the ROW will not be cut to obtain timber for use along the ROW.

Trees and Brush Disposal

Trees and brush shall be disposed of in one or more of the following ways depending on landowners' requests, local restrictions, applicable permit stipulations, and/or as designated by the EI:

- Brush Piles
 - a. Brush will be piled at the edge of the ROW to provide filter strips or wildlife habitat.
 - b. Wildlife brush piles shall be a maximum of 12 feet wide and compacted to 4 feet high with breaks at a minimum of 100 to 200 feet.
 - c. All brush will be removed from environmentally sensitive areas.
- Chipping
 - a. Chips can be left on the ROW, with EI approval, if it does not inhibit revegetation.
 - b. Chips will not be left in environmentally sensitive areas or agricultural lands or stockpiled in such a manner that they may be transported into an environmentally sensitive area or agricultural land.
- At landowner's request, cleared materials may be buried.
- Burning is allowed if permitted by the local Air Quality Control District (AQCD).
- Off Site Disposal
 - a. Shall be done when brush piles, chipping, burning, or burying are not requested or permitted.
 - b. Disposal shall be at an approved landfill or other site that is traditionally used for disposal of construction debris.
 - c. No material will be stacked outside of the ROW boundaries.

1.2.2 Grading

When existing topography and/or terrain does not permit crews and equipment to operate safely and does not provide access or an efficient work area, grading shall be required. The following general construction methods will be employed during grading:

Removal of Tree Stumps

- In upland areas, stumps can be removed across the entire width of the construction ROW.

- If requested by the land management agency, stumps shall be removed only in the trenchline; except where construction constraints or safety concerns require their removal from under a workpad or on a sidehill.

Disposal of Tree Stumps

Tree stumps shall be disposed of by one of the following methods, pending approval of the landowner, the EI and in accordance with permit and regulatory requirements:

- They may be buried along the ROW (except in environmentally sensitive areas and agricultural lands).
- Stumps may be removed from the site and disposed of in an approved landfill or other site that traditionally accepts construction debris.
- Stumps may be chipped in upland areas.
- Grindings will be removed from the wetlands to the maximum extent practicable.

Rock Disposal

Excess Rock, including blast rock shall be used or disposed of by one or more of the following ways:

- Buried to the original rock horizon on the construction ROW or in approved construction work areas or to a level agreed to by the landowner per the landowner agreements. (Excess rock shall be removed from at least the top 12 inches of soil to the extent practicable in agricultural areas, hayfields, pastures, residential areas, and other areas at the landowner's request.)
- Windrow in uplands per landowner agreement and applicable permits or removed if it exceeds that of the surrounding terrain.
- Hauled to disturbed property per landowner agreement. As part of the agreement, the landowner will accept responsibility for the rock, and not place it in a wetland area.
- Removed and disposed at an approved site which is traditionally used for rock debris disposal.

Water Bars/Terraces (Slope Breakers)

- Water bars/terraces shall be installed diagonally across the ROW (approximately 2 - 8% slope) on slopes, except in cultivated areas and lawns.
- Soil will be slightly excavated and compacted to form a temporary channel with an adjacent downslope berm or ridge of compacted soil.
- The degree of slope, soil characteristics, runoff area and location of suitable outlets determines the number and shape of water bars required. The minimum guidelines for water bar spacing unless written recommendations are obtained from the Natural Resource Conservation Service (NRCS) are:

Slope %	Spacing
5 - 15	300 feet apart
>15 - 30	200 feet apart
> 30	100 feet apart

- The bar/terrace shall permit traffic to move over it safely without easily destroying it.
- Water bars/terraces shall be maintained and repaired at the end of each day.
- Water bars/terraces shall divert water to a well-vegetated area. If unavailable, erosion control barriers shall be installed just off of the construction ROW at the outlet of the water bar.
- Silt fence, hay/straw bales, or sandbags may be used in place of water bars/terraces per the EI.

Temporary Erosion Control Barriers

Hay/straw bales and silt fences are interchangeable, except where noted below. Temporary erosion control barriers are required immediately after the initial disturbance of the soil, as described below.

- At the outlet of a water bar when vegetation is not adequate to control erosion.
- Along banks of waterbodies between the graded ROW and waterbody after clearing.
- Downslope of any stockpiled soil in the vicinity of waterbodies and wetlands.
- At sideslope and downslope boundaries of the construction area where run-off is not otherwise directed by a water bar/terrace.
- Maintained throughout construction and remain in place until permanent restoration has been judged successful, upon which they will be removed (hay bales may be left in place).
- In the ROW at boundaries between waterbodies (including wetlands) and adjacent disturbed upland areas.
- As necessary to prevent siltation of ponds, wetlands, or other waterbodies adjacent to/downslope of the ROW.
- At the edge of the construction ROW as needed to contain spoil and sediment.
- To be inspected on a daily basis in areas of active construction or equipment operation, on a weekly basis in areas with no construction or equipment operation.

Silt Fence Installation and Maintenance

- Silt fences shall be installed per manufacturer's directions.

- Accumulated sediment shall be removed and the fence inspected to ensure it remains imbedded.
- A sufficient stockpile of silt fence shall be maintained on site for emergency use.

Hay/Straw Bale Installation and Maintenance

- Shall be anchored in place with two stakes.
- Bindings on bales shall be horizontal.
- Bales shall be repaired if damaged or if water is channeling underneath bales.
- Damaged bales shall be replaced with new bales as deemed necessary by the EI.
- A sufficient supply of bales shall be maintained on site for emergency use.
- Bales with baling wire shall not be used.

1.2.3 Ditching

EPGN will utilize the cable plow or directional bore method of installing the fiber optic system to the extent possible, which would minimize the need to use the open ditch methodology. However, when open ditching is required, EPGN and its contractors will abide by the following guidelines:

Underground Utilities

- Shall be located in coordination with the contractor, El Paso Global Networks (EPGN), utility companies and landowners and carefully exposed by the contractor.
- Appropriate authorities (such as the USA Digs/Dig Safe systems) must be notified.

1.2.4 Backfilling

When utilizing installation methodologies other than open trenching, backfilling is not applicable. However, in those applications where open trenching is required, the following guidelines will be followed:

Trench Dewatering

- Hose intakes will be elevated off of the ditch bottom.
- Dewater locations will be approved by the EI.
- Discharges:
 - a. greater than 100 feet from a wetland or stream bank will be directed into a well vegetated area; or
 - b. less than 100 feet from a wetland or stream bank or not directed into a well vegetated area will be directed to a filter bag and/or erosion control barriers.

Under no circumstances will trench water or other forms of turbid water be directly discharged onto exposed soil or into any wetland or waterbody.

Padding

- Topsoil will not be used as padding.

Trench Breakers

- Permanently installed in the ditch prior to backfilling.
- Consists of approved materials.
- Topsoil shall not be used.
- Installed as required on slopes, the base of slopes, adjacent to waterbodies and/or wetlands and in agricultural fields and residential areas to control channeling along the pipeline.
- Installed at the same spacing as permanent water bars unless otherwise determined by the EI or other qualified professional.

Backfilling

- Backfill material and methods will be approved by the EI or other assigned inspector.
- Heavy equipment may be used to compact the backfilled ditch to minimize settling, or a crown of soil will be put over the pipeline to compensate for future soil settling. Openings shall be left in the crown to allow for lateral surface drainage.
- Excess or unsuitable material shall be disposed of in accordance with applicable regulations.

1.2.5 Restoration And Revegetation

Restoration and revegetation of the ROW incorporates permanent erosion and sediment control measures. When EPGN utilizes the cable-plow or horizontal directional drill installation methodology, there is little if any restorative activities required following the placement of the cable/conduit. However, in areas where the ROW clearing and/or open trench installation was required, EPGN will employ the following measures in order to protect the right-of-way as well as the surrounding environment. In the event that final restoration cannot occur in a timely manner due to weather or soil conditions, temporary erosion and sediment control measures will be maintained until the weather is suitable for final cleanup and revegetation.

Temporary Erosion Control

- Stabilization measures shall be initiated as soon as practical on portions of the ROW where activities have temporarily or permanently ceased.
- Temporary plantings will be fertilized in accordance with the recommendations of the local NRCS office(s) or other soil conservation authority.

- Temporary sediment barriers will be removed when an area is successfully revegetated.

Permanent Restoration Measures

- Final grading shall be completed as soon as practicable after backfilling, weather permitting.
- Construction debris shall be removed from the ROW and the ROW shall be graded so that the soil is left in the proper condition for planting.
- Permanent water bars/terraces shall be constructed after final grading and prior to seeding.
- Permanent water bars will be constructed to replace temporary erosion control barriers at road and waterbody crossings.
- Permanent water bars/terraces will be constructed to the same specifications as temporary water bars.

Revegetation and Seeding

- The EI, in conjunction with the local NRCS, landowner, and land management agency will determine the specific revegetation requirements.
- The ROW will be seeded as soon as practicable following final grading in accordance with recommended seeding dates, weather and soil conditions permitting.
- Turf, ornamental shrubs and other landscaping materials shall be restored in accordance with landowner agreements.
- Where broadcast or hydro-seeding is to be done, the seedbed will be scarified to ensure sites for seeds to lodge and germinate.
- The seedbed will be prepared to depth of 3 to 4 inches using appropriate equipment to provide a firm, smooth seedbed, free of debris.
- Seed shall be purchased in accordance with the Pure Live Seed (PLS) specifications for seed mixes and used within 12 months of testing.
- Legume seed will be treated with a species specific inoculant per manufactures specifications.
- The seed shall be applied and covered uniformly per local soil conservation authorities recommendations, depending on seed size. A seed drill equipped with a cultipacker is preferred, but broadcast or hydro-seeding can be used at double the recommended seeding rates. Where broadcast seeding is used, the seedbed shall be firmed after seeding.
- Areas seeded after the recommended seeding date should be mulched if permitted.
- A travel lane may be left open temporarily to allow access by construction traffic if the temporary erosion control structures are installed, inspected and maintained as specified.

When access is no longer required, the travel lane must be removed and the ROW restored.

Mulching

- In locations where seeding is applied, mulch will be applied at a rate of approximately 2 tons per acre after seeding.
- If construction or restoration activity is interrupted for extended periods, mulch may be applied before seeding.
- If mulching before seeding, mulch application will be increased on all slopes within 100 feet of waterbodies and wetlands to a rate of 3 tons/acre.
- Up to 1 ton/acre of wood chips may be added to mulch if areas are top-dressed with 11 pounds/acre of available nitrogen (at least 50% slow release).
- If a blower is used, the strands of the mulching material shall be at least 8 inches long.
- Mulch shall be anchored immediately after placement on steep slopes.
- When mechanically anchoring mulch, a mulch anchoring tool or tracked equipment will be used to crimp the mulch to a depth of 2 to 3 inches.
- When anchoring with liquid mulch binders, use rates recommended by the manufacturer. Liquid mulch binders will not be used within 100 feet of wetlands or waterbodies.

Matting/Netting/Erosion Control Fabric

- Matting or netting will be applied to critical, sensitive areas (i.e., steep slopes, banks of waterbodies, bar ditches, etc), as specified by the EI.
- Matting or netting will be anchored with pegs or staples.

Monitoring

- EPGN will conduct follow-up inspections after the first growing season after seeding to determine the success of revegetation. Revegetation will be considered successful if non-nuisance vegetation is similar in density to adjacent undisturbed lands, based on representative random sampling in the field (e.g., visual survey). If vegetation cover is not successful or if there is a need for noxious weed control measures, an experienced agronomist shall be used to determine the need for additional restoration measures.