

APPENDIX I
DRAFT CONSTRUCTION STORMWATER POLLUTION PREVENTION PLAN

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DRAFT

CONSTRUCTION STORMWATER POLLUTION PREVENTION PLAN
EAST DRAINAGE INTERIM REMOVAL ACTION PLAN
NORTHEAST CHURCH ROCK MINE

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1.0 INTRODUCTION

1.1 PURPOSE

This draft Construction Stormwater Pollution Prevention Plan (Construction SWPPP) describes control practices that are designed to mitigate stormwater pollution associated with "construction activities"¹. This draft Construction SWPPP has been prepared for the East Drainage Time Critical Removal Action (TCRA) for the Northeast Church Rock Mine Site, as per the Environmental Protection Agency's (EPA) Administrative Order on Consent (AOC), CERCLA Docket No. 2012-02, dated [REDACTED] (EPA, 2012). As provided by section 121(e) of CERCLA, permits will not be required for the East Drainage Removal Action. This Construction SWPPP has been prepared to comply with the substantive requirements of the U.S. Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) 2012 Construction General Permit (CGP) for discharge from construction activities to waters of the United States. The East Drainage Area is within the area referred to as Step-out Area No. 2 in the Scope of Work (SOW) included in the AOC, and is located on the east side of Red Water Pond Rd. northeast of the Northeast Church Rock Mine site, McKinley County, New Mexico, as shown on Figure 1, *Erosion Control Locations*. The RA area is bordered by the East Drainage channel to the south, Red Water Pond Rd. to the west, and the unnamed arroyo no. 2 to the north and east (see Figure 1).

1.2 SITE BACKGROUND

The areas of concern for this RA were part of an investigation conducted by EPA Region 9 in 2011, which found elevated Ra-226 concentrations present in soils east of Red Water Pond Rd., both in the East Drainage channel between Red Water Pond Rd. and unnamed arroyo no. 2, as well as the flats area to the north of this section of the channel. The results of this investigation were documented in the *Supplemental Removal Site Evaluation Report, East Drainage Area* (MWH, 2011).

The East Drainage SRSE was initially limited to the East Drainage channel itself. However, during the gamma radiation survey of the north bank of the channel, it was observed that the flats area north of the channel appeared to be impacted as well as the channel itself. An evaluation of recent aerial photographs substantiates this interpretation. Therefore, the East Drainage SRSE was extended to the north into the flats area bounded by Red Water Pond Rd., unnamed arroyo no. 2 and the East Drainage channel. The results of the SRSE confirmed that the flats area contained elevated levels of Ra-226 in shallow soils. The 2011 SRSE also discovered impacted soil along Red Water Pond Rd. and in a drainage feature from the road near the QuivRA Mine.

¹ The use of "storm water associated with construction activity" in this permit refers to construction activity disturbing at least five acres, or construction activity disturbing less than five acres which is part of a larger common plan of development or sale with the potential to disturb cumulatively five or more acres (see 40 CFR 122.26 (b) (14)).

2.0 SITE EVALUATION, ASSESSMENT, AND PLANNING

2.1 SCOPE OF WORK

The primary objectives of the RA are as follows.

- Conduct any additional baseline surveying and sampling necessary to assess current site conditions prior to soil removal and placement on the mine site.
- Remove contamination by excavating soil within the RA area based on historical sampling and gamma scan results and the new information provided by additional baseline sampling.
- Conduct confirmation scanning, sampling and analysis.
- Continue excavations until confirmation scanning, sampling, and analysis confirms that the release criterion has been achieved consistent with MARSSIM.
- Transport excavated material to the NECR mine site and cover it with six inches of clean soil.
- Restore site to pre-removal conditions including backfilling excavations greater than one-foot deep as necessary, re-grading, amending surface soils on the Navajo reservation, and reseeded with native species of excavation areas. Implement structural and non-structural best management practices for erosion and storm water control until the area achieves final stabilization.
- Provide site security to restrict access 24 hours/day to the Eastern Drainage Removal Area during field operations and drive by vacated homes twice per day and notify US EPA and law enforcement authorities of any irregularities or suspicious activity.
- Remove and transport commingled ²²⁶Ra and diesel fuel in impacted soil area north of NECR-1 pad to the NECR mine and cover with six inches of clean soil.
- Install and operate an active bio-venting system and perform monitored natural attenuation to reduce total petroleum hydrocarbon concentrations in the subsurface on lands within the Navajo Reservation
- Conduct confirmation sampling and analysis.
- Restore site to pre-removal conditions.

The RA will be limited to those areas with exceedances of the RA Action Level within the East Drainage Area, as shown in Figure 1. Area-specific construction plans are described in the following subsections.

2.1.1 East Drainage Channel

The SRSE results indicated that soils in excess of the RA Action Level are present to approximately 2.5 feet bgs at the downstream end of the East Drainage channel to approximately 7 feet bgs near Red Water Pond Rd. (bgs referring to the bottom of the existing arroyo channel).

The RA of the East Drainage channel will consist of excavating soils within the confines of the channel until the RA Action Level is reached consistent with MARSSIM (approximately 2.5 to 7 feet bgs). The excavation will extend laterally out to the edges of the existing channel banks. In the upstream-downstream directions, excavation will extend from the upstream end of the East Drainage channel east of Red Water Pond Rd. to where the channel meets unnamed arroyo no. 2. The excavated soils will then be hauled out of the East Drainage channel and stockpiled at the Soil Consolidation Area and stabilized.

Following excavation of soil from the East Drainage, clean soil will be placed in low reaches of the East Drainage channel, and other reaches will be smoothed as needed to re-establish approximate pre-existing grade. Reclamation activities will avoid the existing banks of the arroyo to the extent feasible; however, it may be necessary in some areas to cut the banks back from the excavation to enhance stability of the slopes. Any slumping or caving of the side slopes that inadvertently occurs during excavation will be repaired to restore the topography so it remains similar to current conditions. Erosion and sedimentation controls to prevent transport of impacted soils into the East Drainage channel will be in place during and after construction, as discussed in detail in Section 3.

2.1.2 East Drainage Flats Area

The area east of Red Water Pond Rd., north of the East Drainage channel, and west of unnamed arroyo no 2 is referred to as the East Drainage flats area. Surface soils within this area that contain Ra-226 in excess of the RA Action Level will be excavated consistent with MARSSIM and transported to the Soil Consolidation Area (see Section 2.1.4). Based on the results of the *East Drainage SRSE* (MWH, 2011), the RA Action Level is expected to be reached between 0.5 to 2 feet below ground surface (bgs), except in the East Drainage, where it is as deep as 7 feet bgs, as described in the *RA Construction Work Plan, East Drainage* (MWH, 2012). The soils will be excavated and loaded into trucks, transported to NECR, stockpiled at the Soil Consolidation Area, covered, and vegetated. A portion of the area around the home site will be included in the RA.

The excavated areas will be regraded and backfilled, as necessary, to return the ground surface to approximate the original topographic configuration. All RA areas will then be amended with sterile manure and revegetated. Erosion and sedimentation controls to address potential transport of impacted soils onto the reservation, and to maintain stability of the excavated areas, will be in place during and after construction.

2.1.3 Head Cut Erosion Gully

To the north of the East Drainage channel is a large erosional gully extending into the East Drainage area from unnamed arroyo no. 2 (see Figure 1). The results of the East Drainage SRSE indicated that impacts to surface soils are present, but no impacts below the surface are present. The RA will therefore include excavating soils until the RA action level is reached (up to one foot bgs) throughout the gully to the intersection with unnamed arroyo no. 2. Following excavation, the gully will be graded to promote uniform drainage.

2.1.4 Area North of NECR-1

Soils with commingled Ra-226 above the RA Action Level and TPH will be excavated from an Area North of NECR-1 on the Navajo Reservation. This area is within the limits of the excavation that was conducted during the 2009 IRA *Completion Report* (MWH, 2010), but was left in place due to the presence of shallow soils containing TPH, and covered with clean soil. Shallow soils (less than two ft bgs) within this area containing TPH greater than 500 mg/kg and soil commingled with TPH and

Ra-226 above the Action Level will be excavated. Ra-226 concentrations will be determined in the field using direct gamma radiation surveys correlated to Ra-226 concentrations based on site-specific conditions, as described in the Construction Work Plan. The presence of TPH will be screened using field observations, as well as the use of a photo-ionization detector (PID) to screen the soils for volatile compounds.

2.1.5 Soil Consolidation Area

The Soil Consolidation Area will be located on the south side of the existing NECR-1 pile, and will be used to temporarily store excavated material from the flats area and East Drainage onto the existing pile. The top surface will be regraded, tied into the existing pile, covered with six inches of clean soil, and revegetated. The side-slopes of Soil Consolidation Area (i.e., the northern and western slopes of the pile) will be regraded to no steeper than 3:1 (horizontal to vertical) for erosional and slope stability considerations. The top surface of the pile will be minimally graded to slope downward and convey surface drainage into the central channel on the NECR-1 pile.

TPH and commingled TPH and Ra-226 soil will be placed on the existing commingled TPH/Ra-226 stockpile located on the NECR mine site, immediately east of Pond 3. The top surface will be regraded, tied into the existing pile, covered with six inches of clean soil, and revegetated. The side-slopes will be regraded to no steeper than 3:1 (horizontal to vertical) for erosional and slope stability considerations. The top surface of the pile will be minimally graded to slope downward and convey surface drainage into Pond 3.

Additional erosion and sedimentation controls to address potential transport of impacted soils onto the reservation from the Soil Consolidation Area will be utilized during and after construction.

The soil that will be used for cover will come from the 2009 IRA borrow pit, or Borrow Areas 1 and 2 at the Church Rock Mill Site. Information on the borrow sources is provided in Section 2.5 and Appendix C of the *IRA Construction Work Plan*.

2.2 TYPES OF SOIL DISTURBING ACTIVITIES

In general, soil disturbing activities will include clearing and grubbing, excavation/removal of surface soils, deep sediment removal from drainages, regrade and cover, installation of erosion and sediment control structures, removal of road material, reconstruction of roads, and revegetation.

2.3 RUNOFF COEFFICIENT

The hydrologic calculations used to estimate the runoff coefficient for the area within the project limits were performed utilizing the HEC-HMS computer modeling program developed by the Army Corps of Engineers and Soil Conservation Service (SCS) input variables. The average runoff SCS curve number for the undisturbed native soils and regraded areas within the project limits are estimated to be 80.

2.4 CLIMATE, SOILS, AND VEGETATION

The average daily temperature in Gallup, 16 miles south of the Site, ranges between 29 degrees Fahrenheit in January and 68 degrees Fahrenheit in July. Gallup receives an average of 0.8 inches of precipitation in January and 2 inches in August, with a total annual average precipitation of 11 inches. Daily extremes reach as high as 100 degrees Fahrenheit in summer and as low as -34 degrees Fahrenheit in winter.

Potential evaporation in New Mexico is much greater than average precipitation. The annual net pan evaporation is approximately 54 inches. Wind speeds over the state are usually moderate, although relatively strong winds often accompany occasional frontal activity during late winter and spring months. Blowing dust and soil erosion is a problem during dry spells. Based on data (1992-2002) from the Gallup airport, winds predominate from the west to southwest 11 months out of the year.

The native soils within the flats area consist of well-drained silty sands and inorganic silts and clays, characteristic of a semi-arid pinyon-juniper region. Coarser, well graded alluvial deposits containing gravel and cobbles are found along the East Drainage.

2.5 RECEIVING WATERS

Current drainage channels drain downgradient from the NECR Trailer Park area through two culverts, the second of which crosses under Red Water pond Rd. (Southern Culvert), along the East Drainage channel and into unnamed arroyo no. 2. A second, smaller drainage begins in the Home Sites Area (Step-out Area No. 1) east through a culvert that crosses beneath Red Water Pond Rd. (Northern Culvert), continuing east across the East Drainage Area and into unnamed arroyo no. 2. Flow in these drainages is ephemeral and occurs only after major precipitation events or during snowmelt.

As part of the prior IRA, the NECR-1 slope was covered and revegetated and constructed to convey surface runoff into Pond 3. The side slopes of the NECR-1 were also regarded, covered and revegetated and drain to the Unnamed Arroyo No. 1.

2.6 SITE FEATURES AND SENSITIVE AREAS TO BE PROTECTED

Features such as wetlands, natural vegetation, or highly erodible soils that are to be preserved, have not been identified within the East Drainage Area.

2.7 THREATENED AND ENDANGERED SPECIES

The 2012 CGP requires the assessment of potential effects of applicable stormwater discharges, discharge-related activities, and allowable non-stormwater discharges on listed species and their critical habitat and determine under which of the eligibility criterion the East Drainage Area and surrounding area qualifies. Eligibility under the Endangered Species Act (ESA) was determined by following the procedures in the CGP. The site meets ESA Eligibility criterion E of the permit.

2.7.1 Assessing Effects of Discharge

“Action Area” is defined in Appendix A of the 2012 CGP as all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action (see 50 CFR 402). For the purposes of this permit and for application of the Endangered Species Act requirements, the following areas are included in the definition of action area:

- The areas on the construction site where stormwater discharges originate and flow toward the point of discharge into the receiving waters (including areas where excavation, site development, or other ground disturbance activities occur) and the immediate vicinity. (Example: Where bald eagles nest in a tree that is on or bordering a construction site and could be disturbed by the construction activity or where grading causes stormwater to flow into a small wetland or other habitat that is on the site that contains listed species.)

- The areas where stormwater discharges flow from the construction site to the point of discharge into receiving waters. (Example: Where stormwater flows into a ditch, swale, or gully that leads to receiving waters and where listed species (such as listed amphibians) are found in the ditch, swale, or gully.)
- The areas where stormwater from construction activities discharge into receiving waters and the areas in the immediate vicinity of the point of discharge. (Example: Where stormwater from construction activities discharges into a stream segment that is known to harbor listed aquatic species.)
- The areas where stormwater controls will be constructed and operated, including any areas where stormwater flows to and from the stormwater controls. (Example: Where a stormwater retention pond would be built.)
- The areas upstream and/or downstream from the stormwater discharge into a stream segment that may be affected by these discharges. (Example: Where sediment discharged to a receiving stream settles downstream and impacts a breeding area of a listed aquatic species.)

Compliance with this permit is obtained only if stormwater discharges, allowable non-stormwater discharges, and stormwater discharge-related activities will not adversely affect any species that are federally-listed as endangered or threatened (“listed”) under the Endangered Species Act (ESA) and will not result in the adverse modification or destruction of habitat that is federally-designated as “critical habitat” under the ESA.

To comply with this certification requirement a discharger must meet one of the six criteria (Criteria A through 6) listed in Section D.1 of the 2012 CGP. The work site must meet one or more of the those criteria for the entire term of coverage under the permit. Once compliance for all existing stormwater discharges and discharge related activities has been determined, any future activities (such as Best Management Procedures (BMPs) construction, facility expansion, changes to processes, etc.) should be preceded by an evaluation of their potential impacts on federally listed species and critical habitat.

2.7.2 Documentation of CGP Threatened & Endangered Species Compliance

Appendix D, Section D.1 of the 2012 CGP outlines the steps that must be followed to discharge stormwater. The following analysis summarizes UNC’s compliance with Appendix D requirements of the CGP.

Step 1 - Determine if Your Discharges and Discharge-Related Activities Were Already Addressed in Another Operator’s Valid Certification that Included Your Action Area.

No other construction operations have been conducted in the action area and a valid certification therefore is therefore not available.

Step 2 - Determine if Listed Threatened or Endangered Species or their Designated Critical Habitat(s) are Likely to occur in the Action Area

Check for Listed Species

The US Fish and Wildlife Service (USFWS) lists seven (7) species as threatened or endangered in McKinley County, New Mexico. The Navajo Nation Heritage Program (NNHP) division of natural resources lists an additional 2 species from Group 3 of the Navajo Nation Department of Fish and Wildlife (NNDFW) that may occur in the vicinity of the site. NNDFW definitions for the Groups are below.

- Group 1 – Those species or subspecies that no longer occur on the Navajo Nation.
- Group 2 – Any species or subspecies whose prospects of survival or recruitment are in jeopardy.
- Group 3 – Any species or subspecies whose prospects of survival or recruitment are likely to be in jeopardy in the foreseeable future.
- Group 4 – Any species or subspecies for which the NNDFW does not currently have sufficient information to support their being listed in Group 2 or Group 3 but has reason to consider them. The NNDFW will actively seek information on these species to determine if they warrant inclusion in a different group or removal from the list.

Listed species are provided in Table 2.1.

TABLE 2.1 THREATENED AND ENDANGERED SPECIES McKINLEY COUNTY, NEW MEXICO		
Species	Status	Critical Habitat
Bald Eagle (<i>Haliaeetus leucocephalus</i>)	Threatened ¹	No
Black-Footed Ferret (<i>Mustela nigripes</i>)	Endangered ¹	No
Yellow-billed Cuckoo (<i>Coccyzus americanus</i>)	Endangered ¹	No
Ferruginous Hawk (<i>Buteo regalis</i>)	Group 3	No
Golden Eagle (<i>Aquila chrysaetos</i>)	Group 3	No
Mexican Spotted Owl (<i>Strix occidentalis lucida</i>)	Threatened ²	Yes
Southwestern Willow Flycatcher (<i>Empidonax traillii extimus</i>)	Endangered ¹	No
Zuni bluehead Sucker (<i>Catostomus discobolus yarrowi</i>)	Threatened ³	No
Zuni Fleabane (<i>Erigeron rhizomatus</i>)	Threatened ¹	No
Notes: 1 – Also listed as Group 2 by NNDFW 2 – Also listed as Group 3 by NNDFW 3 – Also listed as Group 4 by NNDFW		

Check for Critical Habitat

As mapped by the US Fish and Wildlife Service, critical habitat for the Mexican Spotted Owl is not located near the Site or in the surrounding vicinity. Critical habitat units in McKinley County are located to the south and southeast of the site.

Of the seven listed species, the bald eagle (*Haliaeetus leucocephalus*), golden eagle (*Aquila chrysaetos*) and ferruginous hawk (*Buteo regalis*) have the potential to occur in proximity to the site.

The remaining species were eliminated from further evaluation due to their known ranges being well outside the site and/or their habitats being dissimilar to those occurring at the site.

The black-footed ferret (*Mustela nigripes*) was eliminated from further evaluation because they live in the burrows of prairie dogs and use prairie dogs for food. There are no prairie dog communities in proximity of the site.

The Mexican spotted owl (*Strix occidentalis lucida*) was eliminated from further consideration based on a combination of vegetation and topographic factors. Typical vegetation in spotted owl habitat usually includes high canopy closure, high-stand density, a multi-layered canopy, numerous snags, and downed woody matter; a combination that is lacking at the site. At the northern edge of their range, the Mexican spotted owls typically inhabit deep, steep-walled canyons and fractured structures of sandstone slickrock which are lacking in this area.

The southwestern willow flycatcher (*Empidonax traillii extimus*) utilizes riparian habitats, preferring dense willow, cottonwood, and tamarisk thickets and woodlands along streams and rivers. The ephemeral nature of the drainages and lack of dense vegetation would not be expected to support southwestern willow flycatchers.

Zuni fleabane (*Erigeron rhizomatus*) has been identified in McKinley County in the Cibola National Forest in areas south of Fort Wingate. The zuni fleabane grows in a zone of Chinle shale which is not present at the site.

Neither the site nor the discharges are located in designated critical habitat; critical habitat will not be considered in remaining discussion through Step 3, on listed species.

Check for Criteria "A" Eligibility

Appendix D of the 2012 CGP provides that:

If you determine that there are no federally-listed species likely to occur in your action area, you can certify that the facility meets Criteria A.

As described above, no critical habitat is located in proximity to the facility. However, because three species could potentially occur in proximity to the facility, further evaluation is provided.

Step 3: Determine if Construction Activity's Discharges or Discharge – Related Activities Are Likely to Adversely Affect Threatened or Endangered Species or Designated Critical Habitat

Bald eagles may forage within proximity to the site. Habitat in proximity to the site would be considered poor for the bald eagle due to the lack of permanent water bodies. Therefore, stormwater discharges, non-stormwater discharges, and discharge-related activities from the site are anticipated to have no effect on the bald eagle or its habitat.

Golden eagles may forage and nest within proximity to the site. Golden eagles typically nest in trees and cliff walls. Their prey can include mammals, birds, fish and reptiles with a hunting range extending to over 160 square miles. Given their preferred nesting locations and the variety of their diet and size of their hunting range, stormwater discharges allowable non-stormwater discharges and discharge-related activities are anticipated to have no effect on the golden eagle or its habitat.

Ferruginous hawks may forage and nest within proximity to the site. The hawks typically nest on elevated sites including buttes, rock outcrops, large shrubs, and transmission poles. Their prey

primarily consists of mammals including hares, rabbits and ground squirrels. Given their preferred nesting locations and diet, stormwater discharges, allowable non-stormwater discharges and discharge-related activities are anticipated to have no effect on the ferruginous hawk or its habitat.

It is determined that neither threatened or endangered species nor their critical habitats will be adversely affected by stormwater discharge and allowable non-stormwater discharge during construction activities. Therefore, steps 3 and 4 are not applicable.

Check for Criteria “A” Eligibility

Appendix D of the 2012 CGP provides that:

If you determine that there are no federally-listed species in your county or township and no critical habitat areas in your action area, the facility meets Criteria A.

As described above, no critical habitat is located in proximity to the facility. However, because federally-listed species could potentially exist in the county, further evaluation is provided.

Check for Criteria “C” Eligibility

Appendix D of the 2012 CGP provides that:

If adverse effects to listed threatened or endangered species or their critical habitat are not likely, the facility meets Criteria C.

It has been determined that neither threatened or endangered species nor their critical habitats will be adversely affected by stormwater discharge and allowable non-stormwater discharge during construction activities.

2.8 CULTURAL RESOURCES

“Historic properties” are defined in the National Historic Preservation Act (NHPA) “to include prehistoric or historic districts, sites, buildings, structures, or objects that are included in, or are eligible for inclusion in, the National Register of Historic Places” (NRHP). A discharger must meet one of the following two provisions:

- Determine that stormwater discharges and BMPs do not affect a historic property; or
- Obtain and comply with a written agreement between the discharger and the State Historic Preservation Officer (SHPO) and/or Tribal Historic Preservation Officer (THPO) that outlines measures to be taken to mitigate or prevent adverse effects to historic properties. A copy of the written agreement must be included in the SWPPP.

A cultural resource survey for the remaining project area was performed by Dinethadoo Cultural Resources Management, as presented in *RA Construction Work Plan* (MWH, 2012). It was determined that stormwater discharges and BMPs would not affect historic property within the area that has been surveyed, therefore meeting the first provision listed above.

3.0 EROSION AND SEDIMENT CONTROL BMPS

3.1 MINIMIZE DISTURBED AREAS AND PROTECT NATURAL FEATURES AND SOIL

Due to the nature of the impacts at the Site, construction activity will be confined within the areas shown in Figure 1, and impacts to surrounding natural areas will be minimal. Haulage roads will be maintained within construction areas and all construction activities will be phased in a way that best mitigates transport of sediments out of the construction areas, minimizing impact on surrounding natural areas.

3.2 PHASE CONSTRUCTION ACTIVITIES

Some of the soils within the East Drainage RA Area contain elevated concentrations of Ra-226 that could be transported and deposited off site. A detailed plan will be developed by the construction contractor that will address the measures that will be taken to prevent the recontamination of remediated areas during storm events that may occur during construction activity.

3.3 WATER MANAGEMENT AND SEDIMENT COLLECTION

Water management and sediment collection systems will be in place during construction to minimize run-on to the Site, through the Site, and runoff from the Site. Water management involves the interception of run-on and conveyance around the Site, as well as the interception and conveyance of runoff around and through disturbed areas. Management of runoff allows the operator to isolate and control water at the source and minimize the risk of erosion and possible contaminant mobilization/migration. If erosion due to an improper application of a BMP or change in condition occurs, corrective action must be taken immediately in order to minimize damage to the area and possible failure of other BMP's being used downstream. Specific BMPs to be used will be determined by the construction contractor prior to construction. The following water management BMPs may be applicable to construction activity at the Site:

- Diversion Dike/Ditch
- Interceptor Trench
- Road Sloping
- Rolling Dips
- Waterbars
- Open Top Box Culverts
- Corrugated Metal Culverts
- Drop Structures
- Stream Alteration

Sediment collection BMPs are used to control sediment and soil transport offsite. Sediment collection BMPs are commonly used in conjunction with water management and erosion control measures to minimize the amount of sediment transported from the site. All sedimentation and erosion control structures will be securely fastened into the ground surface to avoid the possibility of being displaced by wind. The following sediment collection BMPs may be applicable to construction activity at the Site:

- Straw Bale Barrier

- Silt Fence/Filter Fence
- Gravel/Rock Filter Berm
- Sediment Traps or Catch Basins
- Sediment Retention Ponds
- Check Dams

Some of these BMPs are detailed on Figure 2, *Erosion Control Details*. As with all BMPs, water management and sediment control BMPs must be considered on a site-specific basis.

3.4 PERIMETER CONTROLS AND SEDIMENT BARRIERS

Sediment controls such as silt fencing will be installed along sections of the RA Removal Area perimeter in order to reduce sediment migration from the “project area.” See Drawings 1 and 2 for the proposed locations of sediment controls and details on their construction.

3.5 RETAIN SEDIMENT ON-SITE

Areas impacted by the RA activities will be revegetated to reduce impacts to surface water by establishing a self-sustaining plant community that provides erosional stability. Regraded areas will be seeded with a mixture containing native grasses and forbs that will not depend on external inputs of water or fertilizer. Specific species, composition percentages and seeding rates will be determined by a vegetation and wildlife survey.

3.6 ESTABLISH STABILIZED CONSTRUCTION EXITS

Site controls will be implemented as described in the *RA Construction Work Plan*. All material haulage will occur within the area where construction activities are taking place, and personnel exiting this area must undergo proper decontamination procedures. The contaminated materials will not leave the construction area boundary at any point during construction activity.

3.7 ADDITIONAL BMPS

Dust control measures will be implemented to minimize the migration the off-site migration of dust generated by construction activities. A draft Dust Control Plan is included in the *RA Construction Work Plan* that will be finalized by the construction contractor. Dust shall be primarily controlled by spraying water; other measures may be taken based on the construction contractor’s plan. Areas that are inactive, have been completed or will not have construction activity for 48 hours or more, may be wheel rolled or compacted with a smooth drum roller to generate a smooth firm surface. A final pass with the water truck will likely be made over daily work areas at the end of the day in order to minimize dust generation during non-working periods.

4.0 GOOD HOUSEKEEPING BMPS

4.1 MATERIAL HANDLING AND WASTE MANAGEMENT

Solid construction wastes will be collected, stored, and disposed of using practices that minimize contact with stormwater. Proper waste containers, including dumpsters and trash receptacles, will be available on-site throughout construction. Outside of the construction activities proposed in the RA, there is little opportunity for waste, garbage and floatable debris to be on-site or impact surface water.

4.2 ESTABLISH PROPER BUILDING MATERIAL STORAGE AREAS

Materials associated with construction activities will be delivered and stored using practices that prevent these materials from polluting receiving waters. Temporary storage sheds, if utilized, will meet building and fire code requirements and will be located away from vehicle traffic. Storage instructions will be posted, and employees will be trained in proper storage and delivery procedures. Typical materials that may be stored on-site include, but are not limited to, petroleum products, pesticides, herbicides, fertilizers, detergents, and solvents.

4.3 ESTABLISH PROPER EQUIPMENT/VEHICLE FUELING AND MAINTENANCE PRACTICES

Petroleum products, lubricants, solvents, and other pollutants related to vehicle/equipment maintenance will be prevented from entering storm drain systems or receiving waters. Designated fueling areas are selected by the contractor and approved by the Resident Engineer. A fueling area may be established for the construction activities, and will be on level grade and at least 15 m (50 ft) downstream of storm drain facilities or receiving waters. Potential fueling areas will be protected by a berm or dike to prevent stormwater run-on and to prevent stormwater from leaving the fueling area.

4.4 CONTROL EQUIPMENT/VEHICLE WASHING

Wash water from vehicle and equipment cleaning will not be discharged directly from the Site because the rinse water may contain contaminated sediment that could enter storm drain systems or receiving waters. Equipment wash-off water at NECR will be collected and stabilized in order to drop sediments, tested for uranium and radium, and then will be discharged or otherwise disposed of in a controlled manner consistent with the test data.

4.5 SPILL PREVENTION AND CONTROL PLAN

The following practices will be followed for spill prevention and cleanup:

- The first step in spill response will be to immediately locate the source of the spill and minimize the quantity and duration of the spill.
- Spills will be cleaned up immediately after discovery.
- The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with a hazardous substance.

- Materials and equipment necessary for spill cleanup will be kept in the material storage area onsite. Equipment and materials may include but will not be limited to brooms, dust pans, mops, rags, gloves, goggles, kitty litter, sand, sawdust, and plastic and metal trash containers specifically for this purpose.
- Manufacturer's recommended methods for spill cleanup will be posted and site personnel will be made aware of the procedures and the location of the information and cleanup supplies.
- The Site Manager is the designated spill prevention and cleanup coordinator. He will designate at least three other site personnel who will receive spill prevention and cleanup training. These individuals will each become responsible for a particular phase of prevention and cleanup. The names of the responsible spill personnel will be posted in the material storage area and in the project office trailer onsite.
- Spills must be reported to the Resident Engineer and the Owner.
- If there is a recurrence of a spill, the spill prevention plan will be adjusted to include procedures for spill cleanup and measures to prevent a recurrence of this type of spill. A description of the spill, the date it occurred, what caused it, and the cleanup measures will also be included.
- Spills of toxic or hazardous material will be reported to the appropriate State or local government agency, if they exceed the reportable quantity as defined at 40 CFR Part 110, 40 CFR Part 117 or 40 CFR Part 302. The SWPPP must be modified within 14 calendar days of knowledge of the release to provide the date and description of the release, the circumstances leading to the release, responses employed for the release, and measures to prevent the reoccurrence of such releases.
- Investigation into the cause of a spill will begin immediately when the incident is detected, but will not delay the containment and cleanup process. Investigation will focus on analyzing various factors such as procedure violations, equipment failures, inadequate standards or procedures, improper preventative maintenance or lack of knowledge or training. The investigation will be completed with a written report to be filed with the SWPPP detailing the cause analysis and recommendations to prevent recurrence.

4.6 ALLOWABLE NON-STORMWATER DISCHARGE MANAGEMENT

Due to the nature of soil contamination at the site, allowable non-stormwater discharges will be minimal to none. The only anticipated non-stormwater runoff will be associated with vehicle decontamination. However, this non-stormwater discharge will be stabilized and discharged in a controlled manner, as described in Section 4.4.

5.0 POST CONSTRUCTION BMPS

5.1 REVEGETATION

Areas impacted by the RA activities will be revegetated to reduce impacts to surface water by establishing a self-sustaining plant community that provides erosional stability. Regraded areas will be seeded with a mixture containing native grasses and forbs that will not depend on external inputs of water or fertilizer. Specific species, composition percentages, and seeding rates will be provided by Cedar Creek Associates. The area to be revegetated following RA construction is shown in the *RA Construction Work Plan*.

6.0 INSPECTIONS

6.1 INSPECTIONS

Compliance with 2012 CGP will require periodic inspections of all BMPs during construction activities. The site falls under the category of semi-arid climate, with rainfall between 10 and 20 inches annually, as described in Part 4.B of the 2012 CGP and therefore, is required to conduct inspections on a monthly basis during construction or following any significant storm events. An *Inspection Report Form* is included in Appendix A, *Inspection Reports*, of this SWPPP. Erosion and sediment control inspection and maintenance practices are as follows:

- Control measures will be inspected at least once every seven days during construction. Built-up sediment will be removed from the silt fences when it has reached 1/3 the height of the silt fence.
- Silt fences will be inspected for depth of sediment, tears in the fabric, secure attachment to the fence posts, and to ensure that the fence posts are firmly in the ground.
- Diversion channels and cut ditches will be inspected and any breaches promptly repaired.
- Temporary and permanent seeding and planting will be inspected for bare spots, washouts and healthy growth.
- Control measures will be maintained in good working order. If a repair is necessary, it will be initiated within 24 hours of the report.

Based on the inspection results, the SWPPP will be modified as necessary to include additional or modified BMPs designed to correct problems that were identified. If existing BMPs need to be modified or additional BMPs added, implementation will be completed before the next anticipated storm event, or as soon as practicable. Modifications to this SWPPP must be recorded on the "*SWPPP Amendment Log*" in Appendix B.

6.2 DELEGATION OF AUTHORITY

The responsible individual selected for inspection will be selected by the contractor and trained in all the inspection and maintenance practices necessary for keeping the erosion and sediment controls used on-site in good working order. The designated inspectors will be knowledgeable and possess the skills to assess conditions that could impact stormwater quality and assess the effectiveness of sedimentation and erosion control measure chosen to control the quality of the sites stormwater discharges.

6.3 CORRECTIVE ACTION LOG

A "*Corrective Action Log*" is included in Appendix C. This log describes repair, replacement, and maintenance of BMPs undertaken as a result of inspections. This log includes actions taken, date completed, and personnel that completed the work.

7.0 RECORDKEEPING AND TRAINING

7.1 RECORDKEEPING

Inspection reports will be retained as part of this SWPPP for at least 3 years from the end of construction. Records of any actions taken from the inspection reports will also be retained as part of this SWPPP for at least 3 years from the date of permit expiration or termination.

A copy of the 2012 CGP along with this SWPPP will be available at the site from the date of the project initiation to the end of construction. It will be available at a central location on-site for the use of all operators and those identified as having responsibilities under the SWPPP whenever they are on the construction site.

During the course of construction, the following dates will be recorded and attached to the SWPPP:

- When major regrading activities occur.
- When construction activities temporarily or permanently cease on a portion of the site.
- When stabilization measures are initiated and completed and reasons for delay, if applicable.

7.2 MODIFICATIONS TO THE SWPPP

Modifications will be made to the SWPPP as necessary during the course of the construction project. All modifications to the SWPPP document will be completed and filed with the original SWPPP document within 15 business days. Criteria for causing a modification to the SWPPP include, but are not limited to, the following:

- Address a change in design, construction, operation, or maintenance at the construction site which has a significant effect on the potential for discharge of pollutants that has not been previously addressed in the SWPPP.
- To comply with minimum permit requirements when notified by the EPA that the plan does not comply.
- Prevent reoccurrence of reportable quantity releases of a hazardous material or oil.

Modifications to this SWPPP must be recorded in the “*SWPPP Amendment Log*” in Appendix B.

7.3 TRAINING

MWH employees, subcontractor employees and vendors will be instructed in the specific job functions they must perform to minimize stormwater pollution during construction activities. Training will consist of introductory training for new hires, subcontractors and vendors. In addition, ongoing training will be performed through specific topic instruction in weekly safety meetings as needed. Training will be documented in safety meeting notes and “*Training Logs*” (Appendix D).

8.0 POLLUTION PLAN CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Operator with Operational Control Over Construction Plans and Specifications, to be selected by United Nuclear Corporation:

Authorized Signature

Name of Operator's Authorized Representative

Date

Operator with Control Over Day-to-Day Activities

Date

Authorized Signature

Name of Operator's Authorized Representative

Date

9.0 SUB-CONTRACTOR CERTIFICATION

I certify under penalty of law that I understand the terms and conditions of the EPA NPDES Construction General Permit (CGP) that authorizes the stormwater discharges associated with industrial activity from the construction site identified as part of this certification.

Signature	For	Responsible for
Owner Printed Name Date: _____	Subcontractor's Name, Address, and Telephone Number	List Responsibilities or attach
Copy here for other contractors		

10.0 REFERENCES

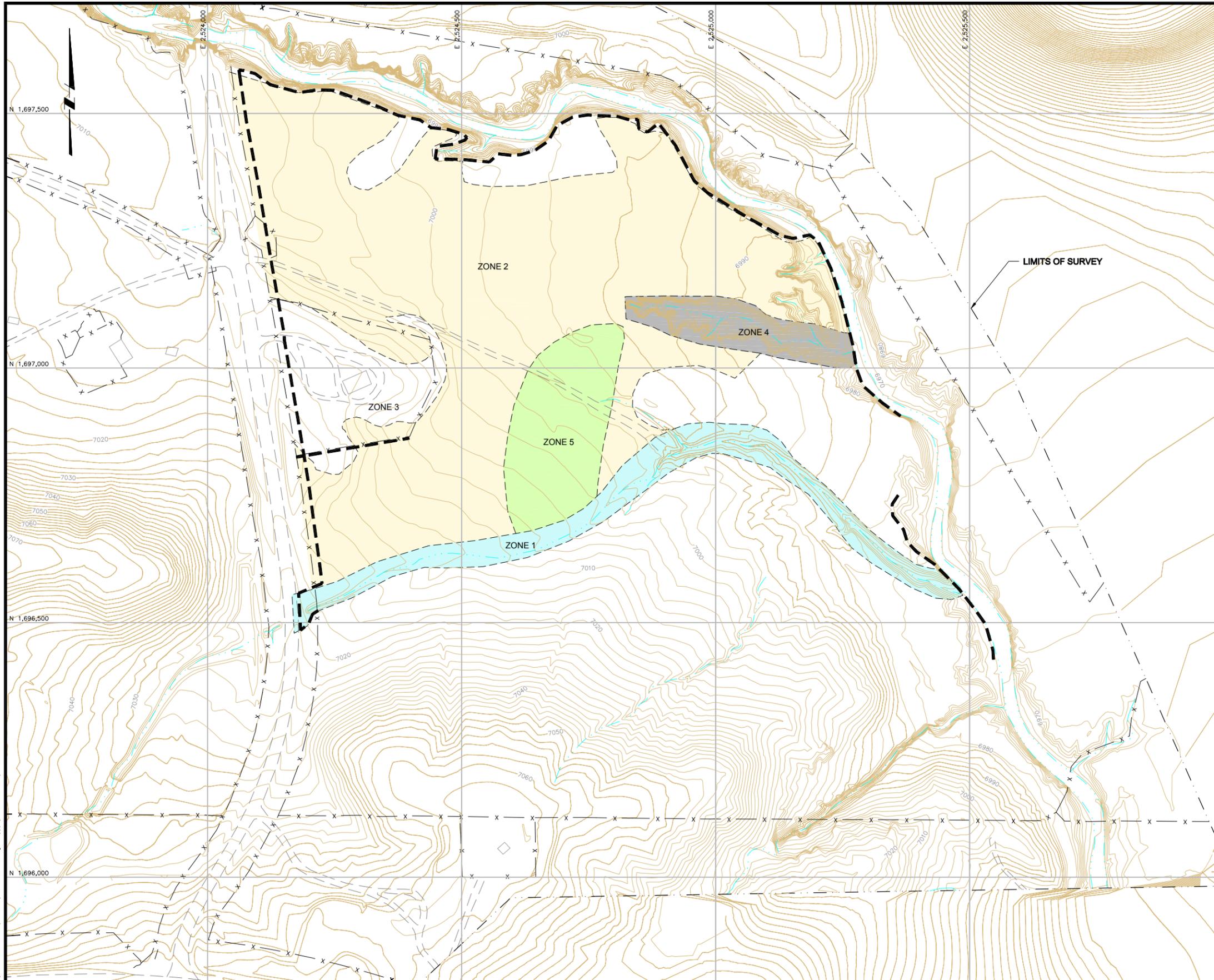
MWH, 2010. *Completion Report*, Interim Removal Action, Northeast Church Rock Mine.

MWH, 2011. *Supplemental Removal Site Evaluation Report*, East Drainage Area, Northeast Church Rock Mine Site.

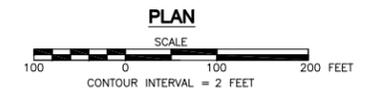
MWH, 2012. *Interim Removal Action Construction Work Plan*, East Drainage Area, Northeast Church Rock Mine Site.

USEPA. National Pollutant Discharge Elimination System. *2012 Construction General Permit*. 2012.

FIGURES



- LEGEND:**
- 7100 APPROXIMATE EXISTING GROUND SURFACE CONTOUR AND ELEVATION, FEET
 - ROAD
 - NATURAL DRAINAGE
 - LIMITS OF 2012 SURVEY
 - EXISTING FENCE
 - BUILDING
 - SCRAPE 0.5' ~ 1'
 - SCRAPE 0.5' ~ 1'. REMOVE TRASH/DEBRIS
 - SCRAPE 1' ~ 2'
 - EXCAVATE > 2'
 - POTENTIAL EROSION CONTROL (STRAW BALES, SILT FENCE)



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ISSUE	DESCRIPTION	TECH	ENG	DATE
0	ISSUED FOR AGENCY REVIEW	CF	SM	07/06/12

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DRAWING REFERENCE(S):
TOPOGRAPHIC MAPPING WAS COMPILED FROM 1:24,000 COLOR AERIAL PHOTOGRAPHY ACQUIRED IN 2007, UPDATED 2012; ADDITIONAL TOPOGRAPHY FROM USGS NED 5-FOOT CONTOURS INTERVAL FOR SAN MATEO MINE, CIBOLA COUNTY (NM) AND DOS LOMAS, MC KINLEY COUNTY (NM).

PROJECTION:
STATE PLANE COORDINATE SYSTEM
ZONE
NEW MEXICO WEST
HORIZONTAL DATUM:
NAD83
VERTICAL DATUM:
NAVD29
UNITS:
U.S. FEET

DESIGNED BY	S MOORE	07/06/12
DRAWN BY	C FOWLER	07/06/12
CHECKED BY	T LEESON	07/06/12
APPROVED BY	T LEESON	07/06/12
PROJECT MANAGER	T LEESON	07/06/12
CLIENT APPROVAL		
CLIENT REFERENCE NO.		



PROJECT LOCATION	NORTHEAST CHURCH ROCK MINE	
PROJECT	NECR EAST DRAINAGE CONSTRUCTION SWPPP	
TITLE	EROSION CONTROL LOCATIONS	

	DRAWING	1.1	REVISION	0
	FILE NAME	1012217D011		

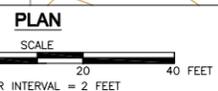


- LEGEND:**
- 7100 APPROXIMATE EXISTING GROUND SURFACE CONTOUR AND ELEVATION, FEET
 - ROAD
 - NATURAL DRAINAGE
 - LIMITS OF 2007/2012 TOPOGRAPHIC SURVEY
 - EXISTING FENCE
 - PETROLEUM INVESTIGATION EXCAVATION LIMITS
 - LIMITS OF PILE AS REGRADED IN 2009
 - POTENTIAL EROSION CONTROL LOCATIONS¹
 - BUILDING
 - AREAS WITH POTENTIAL TPH AND Ra-226 COMMINGLED SOILS
 - PT-009** AREA NAME

STATIC GAMMA MEASUREMENT LOCATIONS SHOWING EQUIVALENT Ra-226 (pCi/g) CONCENTRATION²

- <2.24
 - 2.24 ~ 3.0
 - > 3.0
- (1.5) Ra-226 (pCi/g) BASED ON GAMMA MEASUREMENTS (CPM)

- NOTES:**
1. ADDITION EROSION CONTROL MAY NOT BE REQUIRED DEPENDING ON THE LOCATION AND CONDITION OF THE SOIL BERM INSTALLED AROUND THIS AREA IN 2009.
 2. EQUIVALENT RADIUM CONCENTRATIONS CALCULATED USING 2009 IRA CORRELATION REGRESSION EQUATION: $Ra-226 = (0.013 \times \text{GAMMA}) - 4.4967$.



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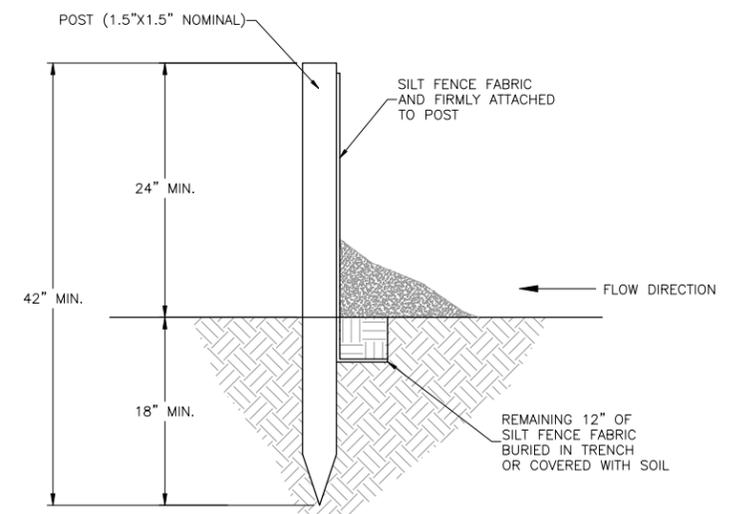
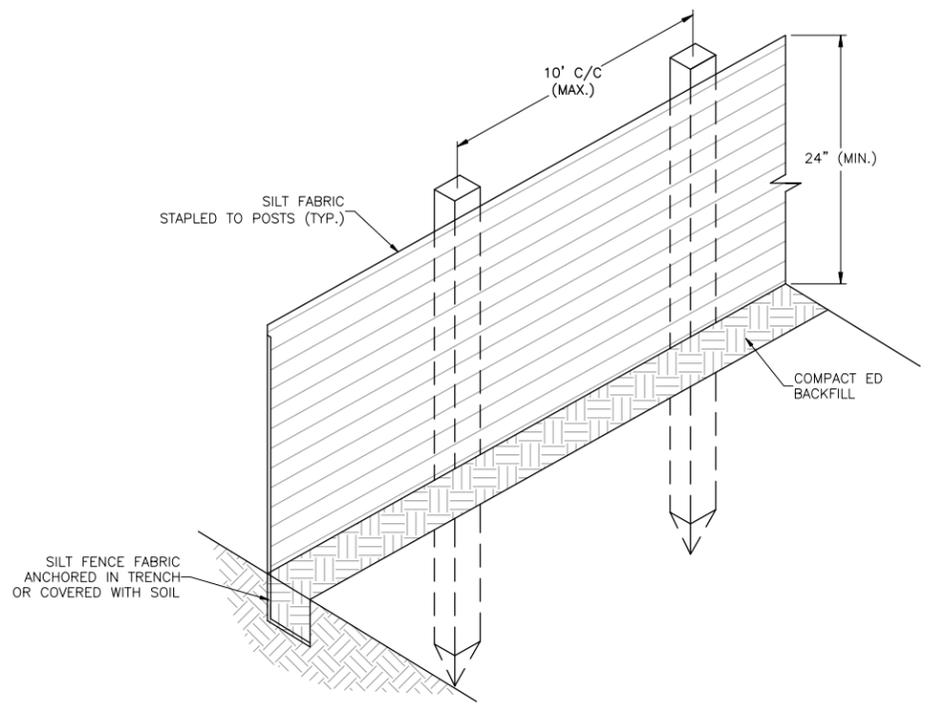
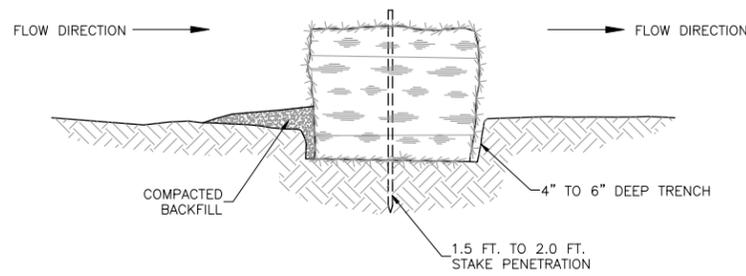
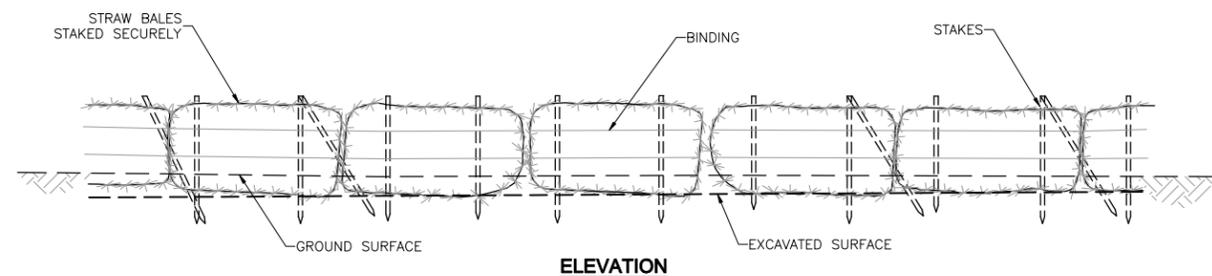
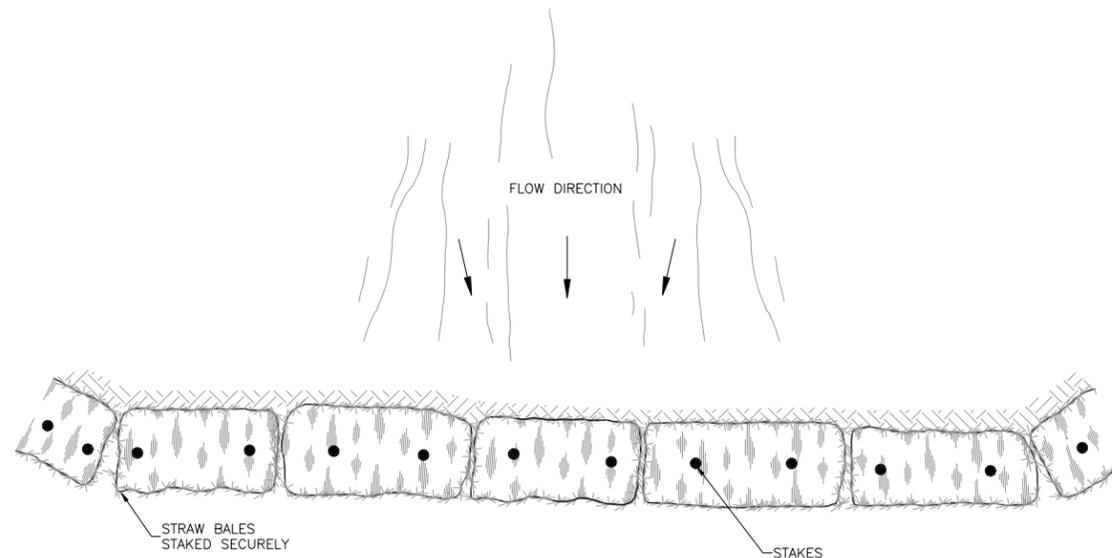
PROJECTION:
STATE PLANE COORDINATE SYSTEM
ZONE
NEW MEXICO WEST
HORIZONTAL DATUM:
NAD83
VERTICAL DATUM:
NAVD29
UNITS:
U.S. FEET

DESIGNED BY	S MOORE	07/06/12
DRAWN BY	C FOWLER	07/06/12
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PROJECT MANAGER	T LEESON	07/06/12
CLIENT APPROVAL		
CLIENT REFERENCE NO.		

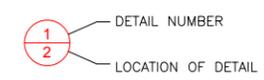


PROJECT LOCATION	NORTHEAST CHURCH ROCK MINE	
PROJECT	NECR EAST DRAINAGE CONSTRUCTION SWPPP	
TITLE	EROSION CONTROL PLAN	

	DRAWING	1.2	REVISION	0
	FILE NAME	1012217D013		



LEGEND:



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DESIGNED BY	S MOORE	07/06/12
DRAWN BY	C FOWLER	07/06/12
CHECKED BY	T LEESON	07/06/12
APPROVED BY	T LEESON	07/06/12
PROJECT MANAGER	T LEESON	07/06/12
CLIENT APPROVAL		
CLIENT REFERENCE NO.		



PROJECT LOCATION	NORTHEAST CHURCH ROCK MINE	
PROJECT	NECR EAST DRAINAGE CONSTRUCTION SWPPP	
TITLE	EROSION CONTROL DETAILS	

DRAWING	2	REVISION	0
	FILE NAME	1012217D012	

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APPENDIX A

INSPECTION REPORTS

APPENDIX A

Stormwater Construction Site Inspection Report

General Information			
Project Name			
NPDES Tracking No.		Location	
Date of Inspection		Start/End Time	
Inspector's Name(s)			
Inspector's Title(s)			
Inspector's Contact Information			
Inspector's Qualifications			
Describe present phase of construction			
Type of Inspection: <input type="checkbox"/> Regular <input type="checkbox"/> Pre-storm event <input type="checkbox"/> During storm event <input type="checkbox"/> Post-storm event			
Weather Information			
Has there been a storm event since the last inspection? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, provide: Storm Start Date & Time: Storm Duration (hrs): Approximate Amount of Precipitation (in):			
Weather at time of this inspection? <input type="checkbox"/> Clear <input type="checkbox"/> Cloudy <input type="checkbox"/> Rain <input type="checkbox"/> Sleet <input type="checkbox"/> Fog <input type="checkbox"/> Snowing <input type="checkbox"/> High Winds <input type="checkbox"/> Other: Temperature:			
Have any discharges occurred since the last inspection? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, describe:			
Are there any discharges at the time of inspection? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, describe:			

Site-specific BMPs

- *Number the structural and non-structural BMPs identified in your SWPPP on your site map and list them below (add as many BMPs as necessary). Carry a copy of the numbered site map with you during your inspections. This list will ensure that you are inspecting all required BMPs at your site.*
- *Describe corrective actions initiated, date completed, and note the person that completed the work in the Corrective Action Log.*

	BMP	BMP Installed?	BMP Maintenance Required?	Corrective Action Needed and Notes
1		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
2		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
3		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
4		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
5		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
6		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
7		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
8		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
9		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
10		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
11		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	

APPENDIX B
SWPPP AMENDMENT LOG

APPENDIX C
CORRECTIVE ACTION LOG

APPENDIX D
TRAINING LOG

APPENDIX D

SWPPP Training Log

Project Name: _____

Project Location: _____

Instructor's Name(s): _____

Instructor's Title(s): _____

Course Location: _____ Date: _____

Course Length (hours): _____

Stormwater Training Topic: *(check as appropriate)*

- Erosion Control BMPs Emergency Procedures
 Sediment Control BMPs Good Housekeeping BMPs
 Non-Stormwater BMPs

Specific Training Objective: _____

Attendee Roster: *(attach additional pages as necessary)*

No.	Name of Attendee	Company
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		