ROCA HONDA RESOURCES, LLC
RECLAMATION PLAN
FOR
ROCA HONDA MINE

REVISION 1

AUGUST 2011

Submitted To:

New Mexico Mining and Minerals Division
&
U.S. Forest Service (Cibola National Forest)

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Acronyms

BDR	Baseline Data Report
BMP	Best Management Practice
CFR	Code of Federal Regulations
cy	cubic yard(s)
ft	feet
H	horizontal
NMAC	New Mexico Administrative Code
NMDGF	New Mexico Department of Game and Fish
NMED	New Mexico Environment Department
NM MMD	New Mexico Mining and Minerals Division
OSE	Office of State Engineer
PMLU	Post Mining Land Use
POO	Plan of Operations
RHR	Roca Honda Resources, LLC
SLO	State Land Office
SWPPP	Stormwater Pollution Prevention Plan
USFS	United States Forest Service
V	vertical

Reclamation Plan NMAC 19.10.6.602 D.(15)

A detailed description of the proposed mining operation and reclamation plan, including:

This Reclamation Plan, prepared in accordance with the New Mexico Administrative Code (NMAC) 19.10.6.602 D.(15) regulations for new non-coal mining operations, provides a description of reclamation of the Roca Honda Resources, LLC (RHR) proposed underground uranium mine in McKinley County, New Mexico. This Plan is organized in conformance with the regulatory requirements outlined in NMAC Section 19.10.6.602 D.(15) and 19.10.6.603 as appropriate to achieve reclamation of the mine to the post-mining land use of grazing. This Plan is also prepared to meet the United States Forest Service (USFS) requirements for submittal of a Plan of Operations (POO) and a Reclamation Plan for operation of a mine on Forest Service lands.

This Reclamation Plan describes how the surface areas disturbed by actions associated with RHR's mining operations will be reclaimed to achieve grazing post-mine land use and how it will be reclaimed to meet Section 69-36-7(H)4 of the New Mexico Mining Act and the performance and reclamation standards of NMAC 19.10.6.603. The Plan contains the required general sequence to be followed in reclaiming the surface areas disturbed by the Roca Honda mining operations, maps of the reclaimed contours, and a schedule of reclamation activities.

1.0 Introduction

On October 23, 2009 RHR submitted an application for a new mine permit to the New Mexico Mining and Minerals Division (NM MMD) for its proposed Roca Honda underground uranium mine. The application included a Reclamation Plan. RHR committed in its October 2009 submittal to prepare a detailed Reclamation Plan (Plan) to address NMAC 19.10.6.605 F, and 19.10.12. This revised Reclamation Plan provides the detail committed to by RHR.

RHR's proposed underground mine site is located approximately 3 miles northwest of the community of San Mateo, New Mexico, at the southern boundary of McKinley County just north of the Cibola county line. Accessible from New Mexico State Highway 605, it is approximately 22 road miles northeast of Grants, New Mexico. Figure 1-1 is a map showing the location of the site and access from Grants.

The Roca Honda mine permit area boundary encompasses all of Sections 9, 10, and 16, Township 13 North, Range 8 West, in McKinley County, New Mexico (see Figure 1-1). It consists of 63 unpatented, contiguous mining claims on Sections 9 and 10 located on 1,280 acres of land administered by the USFS and a general mining lease (New Mexico General Mining Lease number HG-0036-002) on Section 16 (640 acres), owned by the state of New Mexico. In an effort to minimize duplication while fulfilling State and Federal requirements, this Reclamation Plan has been prepared to meet New Mexico NMAC requirements and 36 Code of Federal Regulations (CFR) 228A requirements.

The proposed permit area for the Roca Honda mine includes approximately 1,920 acres based on 640 acres for each of Sections 16, 9, and 10 and all access roads, haul roads, utility corridors and water pipeline corridors that extend beyond Sections 16, 9, and 10. The total disturbed acreage in Sections 16, 9, and 10 is approximately 6 acres in Section 9, 70 acres in Section 10, and 92 acres in Section 16 for a total of approximately 168 acres. The disturbed acreage for access roads, haul roads, utility corridors, dewatering pipeline and water reuse pipeline corridors that constitute new disturbances is approximately 30 acres.

The major surface facilities for the proposed Roca Honda mine are planned to be located in Section 16. The remaining facilities, surface features, and associated permit area are located in Sections 9 and 10. Figure 1-2 shows the general facility footprints and associated disturbed area of the proposed mine project. Figure 1-2 is a 1 inch to 2000 feet scale and serves as the index map for the three Figures 1-2A, 1-2B and 1-2C. Figures 1-2A, 1-2B and 1-2C provide a more detailed view of the surface area disturbed by the mine project on a scale of 1 inch to 200 feet per the NMAC requirements. RHR has provided a set of large working drawings to MMD and USFS at the 1 inch to 200 feet figures for ease of review. This document contains 11 by 17 inch figures at a 1 inch to 700 feet scale bound into the Plan. The package of large drawings is available on request.

The Plan calls for removal of all surface facilities, recontouring, and reclamation to a post-mining land use of grazing. However, there may be good reasons for and occasions to reconsider the final disposition of some of the surface improvements made by RHR to the property. As such, RHR will reserve alternative disposition of some improvements such as roads, ponds, buildings, etc., based on the wishes of the landowner and/or lessee at the time of reclamation.

This detailed Plan addresses the NMAC requirements of 19.10.6.602 D.(15) (f) through (k) and 19.10.6.603 A through H. Each section of the Plan has a reference to the NMAC requirement for ease of review. The Plan also addresses USFS requirements presented in 36 CFR 228.4, Plan of Operations, and the Forest Service Manual 2840, Reclamation Policy. The Plan also addresses NMAC 19.10.6.605 F. This detailed Plan has been developed to meet the specifics of the design of the site facilities.

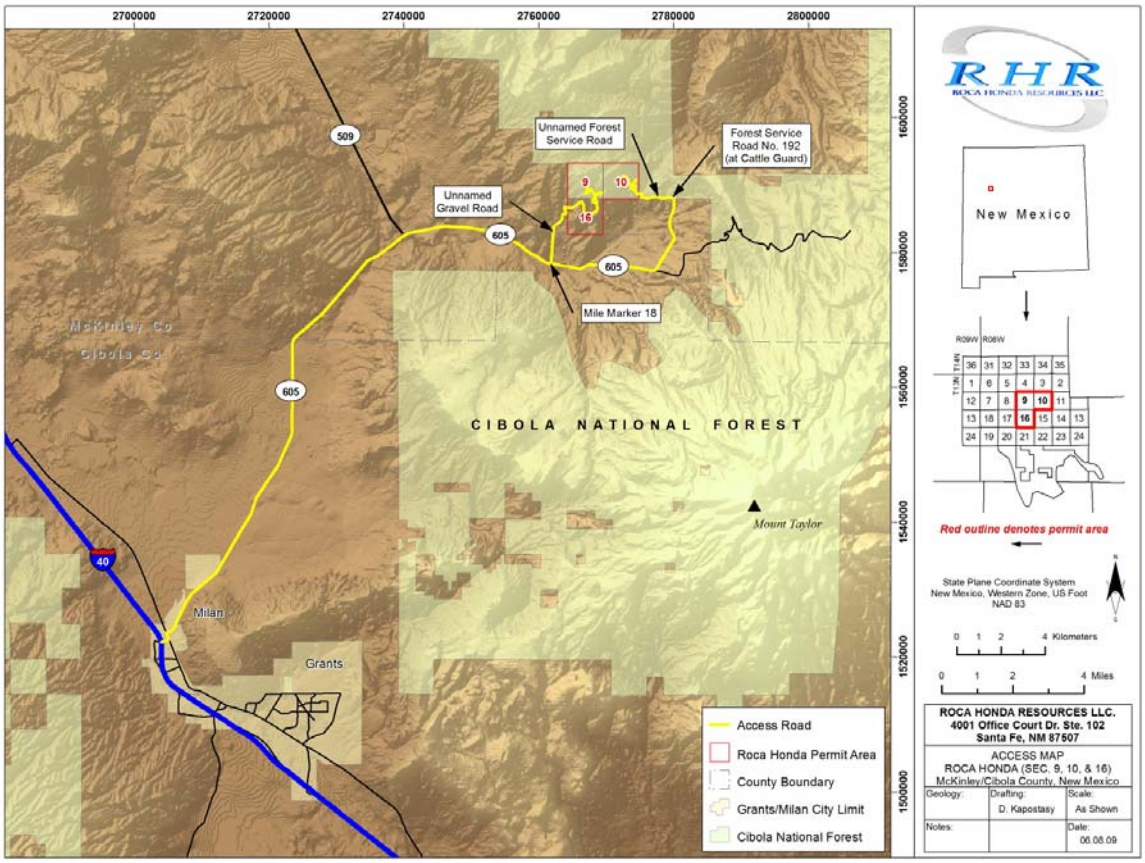


Figure 1-1. Location Map of the Roca Honda Permit Area

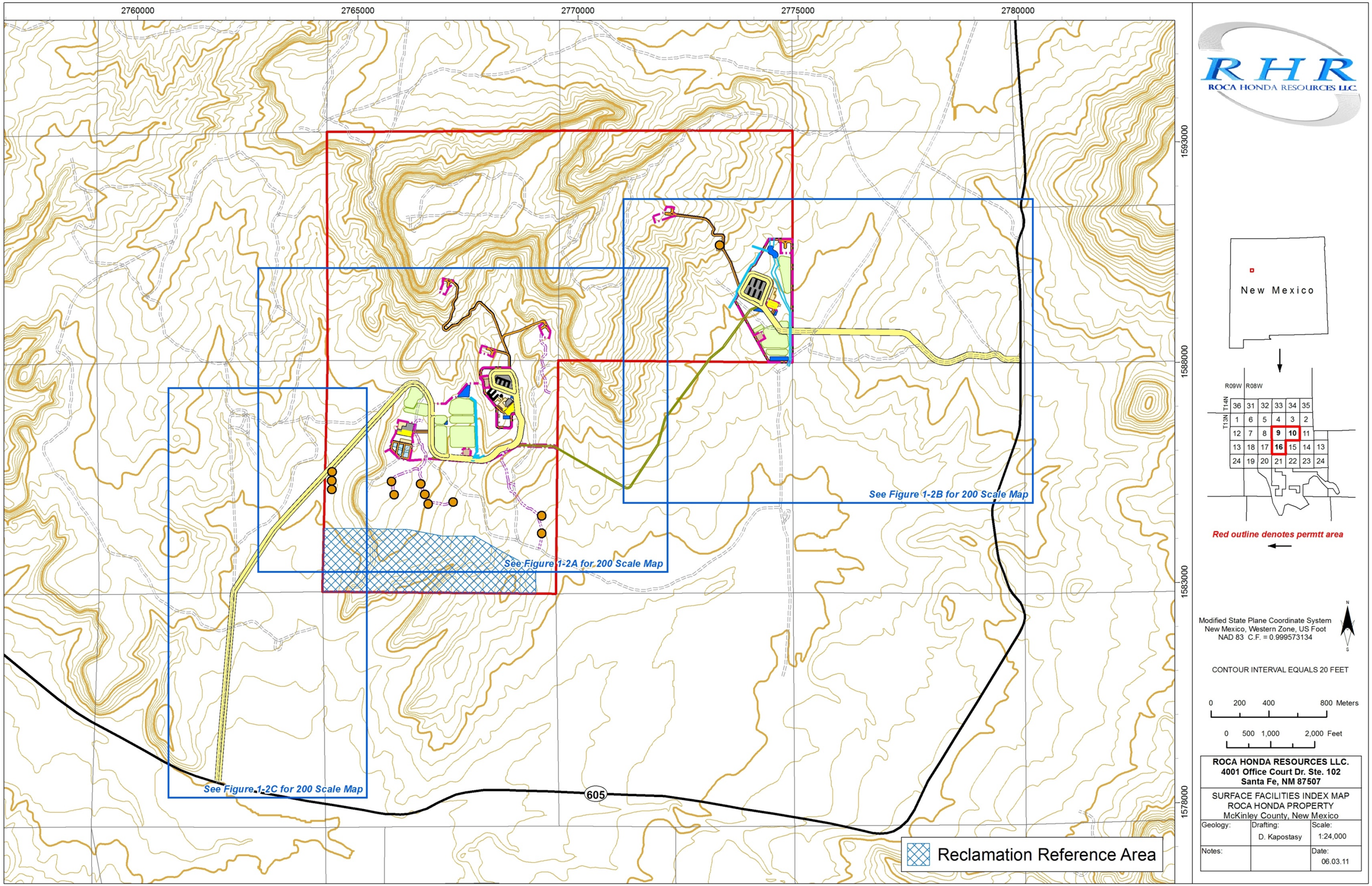


Figure 1-2. Surface Facility Index Map (1:2,000 Scale)

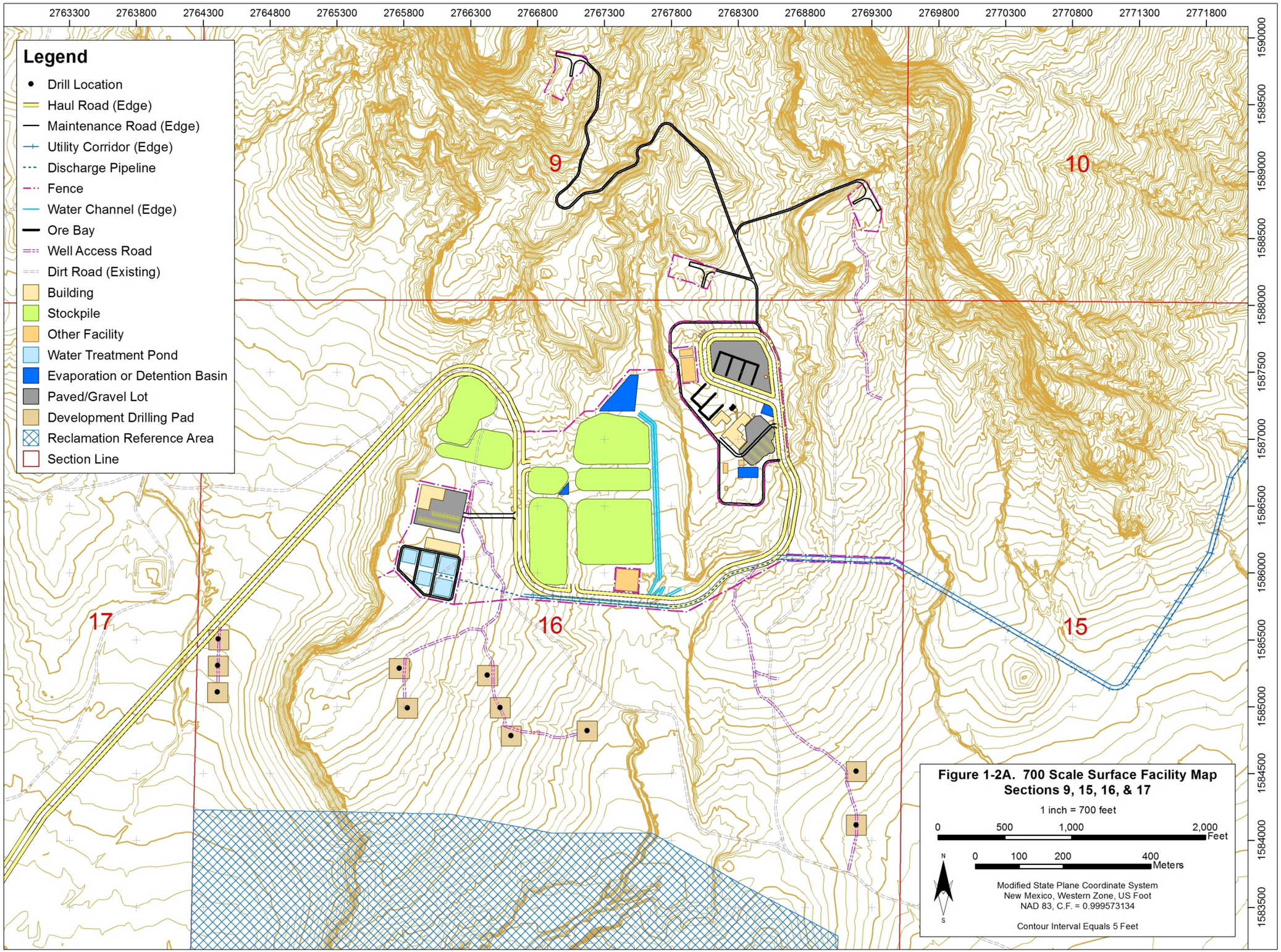


Figure 1-2A. 700 Scale Surface Facility Map (Sections 9, 15, 16, & 17)

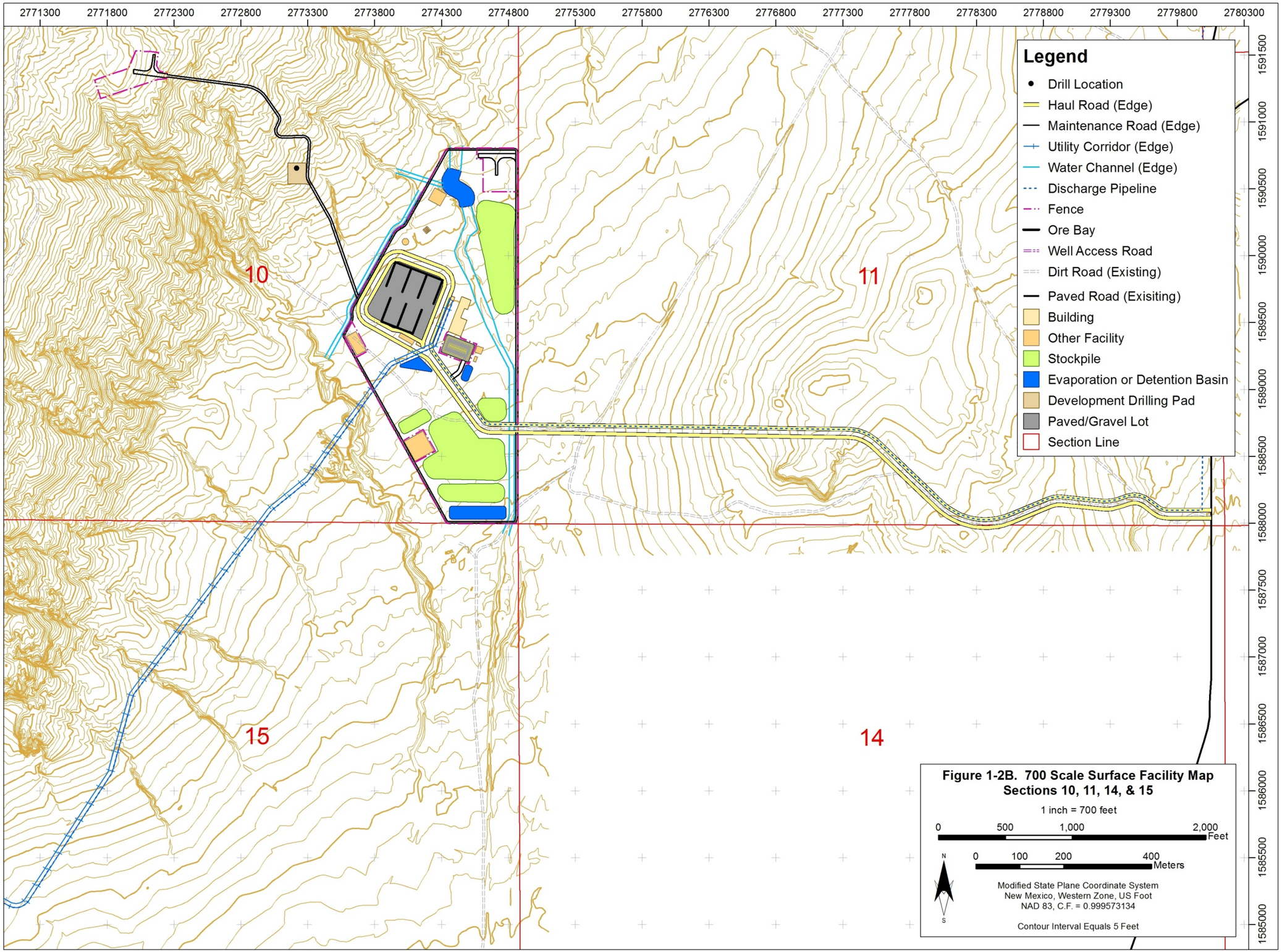


Figure 1-2B. 700 Scale Surface Facility Map (Sections 10, 11, 14, & 15)

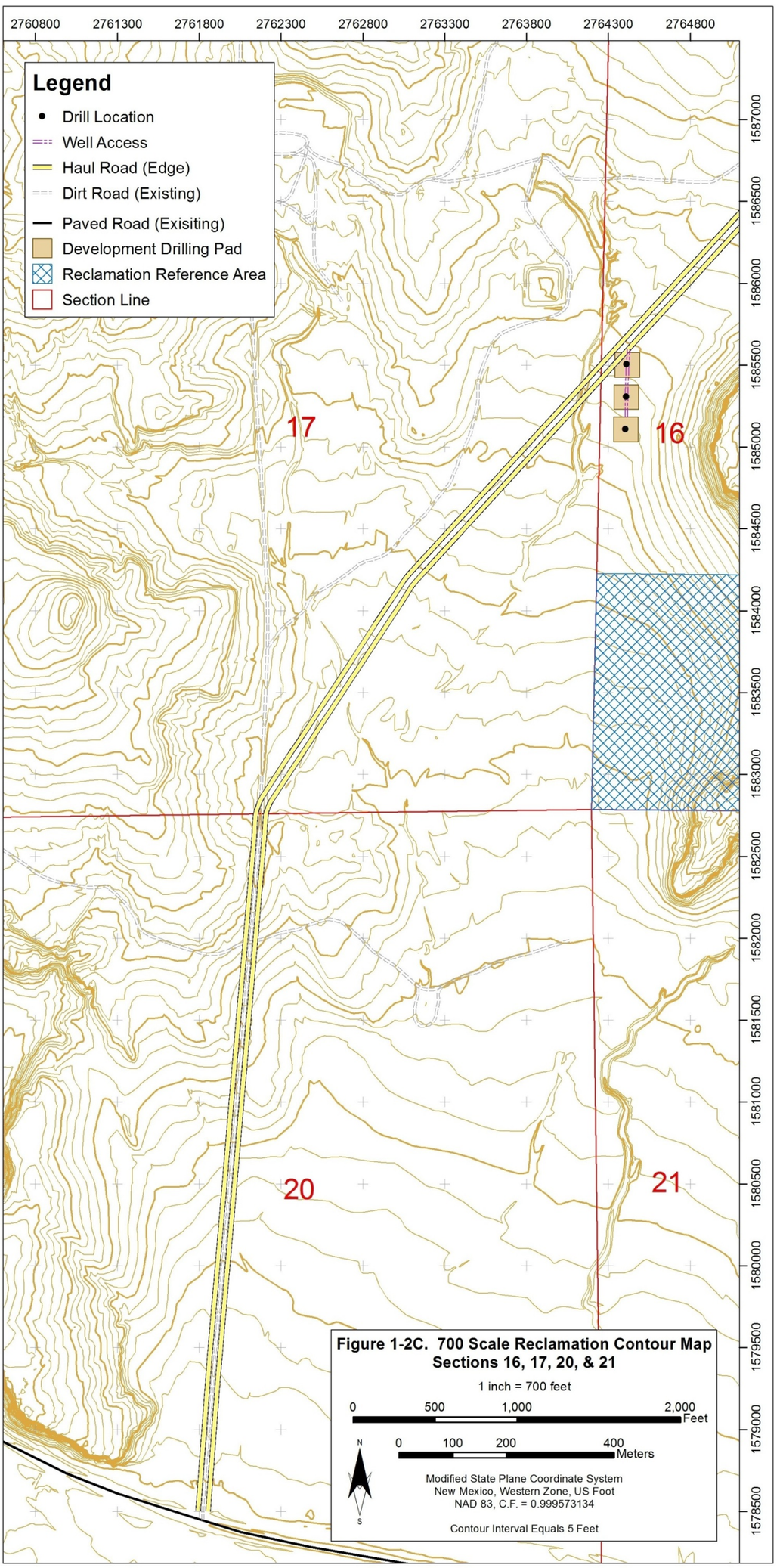


Figure 1-2C. 700 Scale Surface Facility Map (Sections 16, 17, 20, & 21)

2.0 Reclamation Plan

This Reclamation Plan has been developed consistent with the requirements of Title 19, Natural Resources and Wildlife, Chapter 10, Non-Coal Mining, Part 6, New Mining Operations. The Plan is organized to address all regulations developed under Part 6, and each section is shown and addressed here. As discussed in more detail in RHR's mine permit application (see Section 11.3 of the Baseline Data Report, Revision 1, and Sections 1.1 and 5.3.3 of the Mine Operations Plan) the proposed surface facilities of the mine have been located to avoid archaeological sites wherever possible. The Reclamation Plan also takes into account the presence of these sites at the Roca Honda permit area to ensure protection of these cultural resources.

RHR recognizes the sensitivity and importance of the presence of cultural resources on the Roca Honda permit area. RHR conducted archaeological surveys of the entire permit area and designed its surface facilities to avoid these sites wherever possible. The surveys produced a list of sites eligible for listing on the National Register of Historic Places on the state Register of Cultural Properties. RHR is working with the appropriate State and Federal authorities to ensure all of these sites are protected and/or the required clearances have been granted. RHR, in concert with the U.S. Forest Service and State archaeologists, identified eleven sites (of the 193 sites found by the surveys) that required closer evaluation because of the proximity to proposed mining activities. These sites will be further investigated in more detail and mitigation plans will be devised to ensure their protection during construction, operations and reclamation. For example, some sites may be excavated to recover data prior to construction. The surface facility layout may be further modified to protect and avoid sites.

2.1 Post Mining Land Use

If a post-mining land use is proposed, a detailed description of how the disturbed area will be reclaimed to achieve that use and written approval of the surface owner for the proposed use.

RHR proposes to reclaim the surface areas of the mine permit area that are disturbed by its mining operation to the approved post-mining land use of grazing. Sections 9 and 10 of the permit area are owned by the federal government and administered by the USFS; RHR holds all of the mining claims in these two sections. The Cibola National Forest Land and Resource Management Plan (1985) provides for multiple land uses of the forest, including grazing. Appendix A of this Reclamation Plan contains a letter from Ms. Nancy Rose, Forest Supervisor of the Cibola National Forest and National Grasslands, approving RHR's proposed grazing post-mining land use for these sections.

Section 16 is owned by the state of New Mexico and administered by the State Land Office (SLO). RHR holds the general mining lease for the section. The Fernandez Company holds the grazing lease. Appendix A of this Reclamation Plan contains a letter from the New Mexico SLO approving RHR's grazing proposed post-mining land use for Section 16.

The Post Mining Land Use (PMLU) of grazing will be achieved through the successful revegetation of the areas disturbed by the RHR mining operation as described in more detail herein. The reclaimed area will be managed until a viable vegetative community is established which will support livestock grazing.

2.2 Description of Proposed Reclamation Plan (NMAC §19.10.6.602 D. (15)(g) and NM Mining Act §69-36-7(H)4)

A description of the proposed reclamation plan, including, a detailed description of how the disturbed area will be reclaimed to meet the requirements of Section 69-36-7(H)4 and the performance and reclamation standards and requirements of this Part.

The Reclamation Plan provides a detailed description of the processes to be followed to reclaim areas disturbed by the RHR mine to meet the requirements of the above cited regulations and Mining Act Section, and the performance and reclamation standards required by this Part. The Plan includes performance of a post mining radiological survey of the facilities footprint in compliance with 19.10.6.603. C(1)(f) to identify and cleanup potential radiological contamination. Appendix D, Post Mine Radiological Surveys, contains the details of the surveys.

The Mine Operations Plan provides a detailed description and design drawings for the construction of the mine surface facilities and the stockpile areas for the excavated soils and rock. To meet the requirements of these Sections of the Act and the Rules, RHR will recontour disturbed areas utilizing geomorphic design principles to reestablish the general landforms of the area, and to provide for stable configurations that will minimize erosion and provide for successful reclamation. Included in this Plan are descriptions of how subgrade materials will be prepared, topdressing applied and prepared for seeding, and seeding and mulching of reclaimed areas, including utilization of native species adapted to the soils and regional conditions of the Roca Honda Project in the revegetation seed mix. As with much of the Southwest and New Mexico, soil horizons that exist in non-riparian zones of the state do not meet soils criteria for classification as "topsoil". Therefore, the final layer of soil material to be placed for revegetation and reclamation is identified as topdressing in this Plan.

Section 3.7 of this Plan describes the revegetation plans in detail. The seed mix, shown in Table 3-3 of this Plan (see page 49, is a mixture of cool and warm season species of grasses, forbs and shrubs that have demonstrated ability to re-establish in mine reclamation soils and also support livestock grazing. All species are known for their palatability to livestock and wildlife, are high in nutritive value for native plant species, and have differing seasonal value between species, which makes the mix supportive of the post mining land use of grazing on a year round basis. After seeding, the areas will be managed to control access to allow for reestablishment of the vegetative community that will support livestock grazing.

A detailed design of the facility reclamation is provided in this Reclamation Plan to establish the basis for financial surety. The following sub-sections summarize the major reclamation activities planned for the Roca Honda permit area following completion of mining activities. These activities are discussed generally in the order they will occur.

2.2.1 Disposition of non-ore and shaft excavation material.

Production of non-ore material is described in more detail in Section 4.0 of the October 2009 Mine Operations Plan. Generally, non-ore material is described as material that is excavated from the ore bearing formation, i.e., the Westwater Canyon, and brought to the surface but contains no uranium in economic quantities. Reclamation considerations of this material are dependent upon its ultimate disposition. The non-ore will either be stockpiled and hauled offsite for future processing or long term disposal or returned to the mine for use as backfill.

Shaft excavation material is that material produced during shaft construction from the surface of the ground to the bottom of the shaft. This material will also either be temporarily stockpiled on the surface within the permit area (Figures 1-2A and 1-2B) and transported off site for disposal or returned to the mine for use as backfill. RHR has committed to the New Mexico Environment Department (NMED) to perform the analysis of the excavated shaft material as a condition of an approved Discharge Plan to demonstrate that the material can be returned to the mine without impact to groundwater.

The non-ore and shaft excavation material stockpile areas will be underlain with a liner material to prevent infiltration of water from the material. These temporary stockpile areas will be reclaimed by first excavating down below the original surface grade about 12 inches and that material either removed off site or returned to the mine. The areas will then be ripped to a depth of 12 to 18 inches, topdressing placed in a single lift, and the topdressing lightly ripped or disked to prepare the seedbed. The areas will then be seeded as described in Section 2.2.10 of this Plan.

2.2.2 Remove salvageable equipment and materials from underground and prepare other equipment for leaving underground.

An assessment of equipment and materials will be made to determine whether or not it is salvageable. Salvageable equipment in the mine will be dismantled and transferred to the surface via the production shaft hoisting system. Salvageable equipment and materials will be removed offsite for disposition.

Unsalvageable equipment and materials will be left in the mine. No hazardous materials or toxic substances will be left underground. Prior to any equipment being left underground, all batteries, fuel, lubricants, hydraulic fluids and other potential sources of materials will be drained from the equipment, the equipment steam cleaned and cleaning water collected. All of these materials will be removed from the mine. The solutions and materials removed from the mine will be recycled or disposed of in an approved landfill.

2.2.3 Plugging shafts, wells and drill holes

Wells and drill holes will be plugged or abandoned in accordance with the Office of the State Engineer (OSE) requirements per NMAC 19.27.4.31. Drill holes and wells will be grouted with neat Type I/II Portland cement. The grout will be placed through tremie pipe, and progress from bottom to top in one continuous pour. The surface completion will be deconstructed, leaving only a small marker in the top of the grout to identify the abandoned drill hole or well.

Shafts will be plugged by installing an engineered concrete plug at a location below ground surface. The plug will be approximately four (4) feet in thickness poured, with reinforcing rebar, at a depth of approximately 10 feet below the shaft collar. After curing, the area above the plug will be backfilled with rock and soil material to within one (1) foot of the surface. Another concrete plug will be poured at the surface, again with reinforcing rebar. Once cured, this surface plug will be covered with 12-inch lift of subgrade soil material and each lift wetted with water and wheel rolled for compaction.

The profile of the cover fill will be a mound with 5H:1V sideslopes to result in positive drainage of precipitation. The last lift will not be compacted. It will be lightly ripped or disked to a depth

of six (6) to twelve (12) inches, on the contour and then covered with topdressing in the same manner. Topdressing will be ripped or disked on contour and then seeded and mulched.

2.2.4 Decommissioning of evaporation ponds

If water exists in the evaporation ponds (Figures 1-2A and 1-2B) when the ponds are scheduled for closure, the water will be transported via pipeline or truck to the water treatment plant for treatment and release. Pond sediment will be removed, analyzed to determine the content of the material and the appropriate method of management and disposal. The liner will be removed and disposed in the same manner as the pond sediment. Pond embankments developed by pond construction will be regraded to backfill the ponds. Pond backfill lifts will be compacted for stability and contoured to control drainage and have a positive drainage profile and to blend into the geomorphological character of the surrounding landforms. While the regraded site may not exactly match the erosional and depositional characters of the surrounding terrain, the grading will be conducted to blend the reclaimed area so that it is representative of the geomorphological character of the area in general and will meet the geomorphic objective of a stable landform that is resistant to excessive erosion.

The grading will be left approximately one (1) foot lower than the final desired elevation. The area will be lightly ripped or disked to a depth of six (6) to twelve (12) inches, and the topdressing applied on this prepared slope. The topdressing will then be prepared by disking with a farm disk (12 to 14 inch diameter), and the area seeded with the approved seed mix.

2.2.5 Decommissioning of the water treatment plant

The water treatment plant (Figure 1-2A) will not be needed after the mine dewatering has ended and the evaporation ponds are dry. After the last water has been treated and released, to include the water in the treatment ponds, the bottom sediments will be analyzed to determine the content of the material and the appropriate method of management and disposal. The sediments will be excavated from the ponds using vacuum equipment or small, rubber tired equipment to minimize tearing of the liner, loaded into highway trucks with load covers, and transported to an approved landfill for such material. The liners will then be cut into manageable pieces, folded in and removed for disposal in an approved landfill.

The treatment units (filtration, ion exchange or reverse osmosis, etc.) will be cleaned and rinsed, and disassembled, if necessary, for sale and reuse at another facility. If the units are not reusable, they will be cleaned and rinsed, dismantled and disposed of in an approved facility. Treatment chemicals and storage tanks will be recycled or disposed of at an approved landfill. The empty building will be demolished with heavy equipment, cut or smashed into pieces small enough to be loaded and hauled to a landfill. The concrete slab will be broken and placed in pond areas prior to backfilling and covered with at least 24 inches of fill prior to placement of topdressing and reclamation.

At decommissioning of the water treatment plant, when all water treatment has ceased, the reuse water pipeline will be removed and the pipeline corridor reclaimed as necessary to meet the geomorphic character of the surrounding areas. Material such as concrete structures and culverts used for arroyo crossings will be removed and the arroyos regraded to approximate pre-crossing

conditions. Disturbed areas will be reseeded. The plastic and steel pipeline will be sawed into manageable lengths, loaded on flatbed trailers and transported to offsite disposal.

2.2.6 Removal of detention basins, arroyo armoring and erosion/channel stabilization structures

The detention basins will be constructed in existing arroyos at an entrance point to the operational areas to control the flow of stormwater near the surface facilities. As such the detained water will not have been altered by the mining operation. Therefore, it will not be necessary at reclamation to excavate soils from the basins.

The basins and arroyo improvements will be removed after mine operation ends. First the basin overflow structures will be removed. The concrete will be crushed for disposal as fill or hauled to an approved landfill. The embankment material will be regraded to backfill the basins. The

final configuration will be constructed to fit the geomorphic characteristics of the surrounding area. The embankment material may be of sufficient quality that no additional topdressing is required. However, if it is deemed desirable to place topdressing over the area prior to reseeding, the grading of the embankment material will be left approximately one (1) foot lower than the final desired elevation. The area will be lightly ripped or disked to a depth of six (6) to twelve (12) inches, and the topdressing applied on this prepared slope. The topdressing will then be prepared by disking with a farm disk (12 to 14 inch diameter), and the area seeded with the approved seed mix.

Arroyo improvements and modifications constructed to stabilize them and reduce erosion during mining operations will be removed. Improvements to the existing channels, including armoring, structures for energy dissipation at pipeline entry points or culverts added at road crossings, as shown on Figures 1-2A and 1-2B will be removed after mining.

Constructed channels (Figures 1-2A and 1-2B) will be filled and compacted with the stockpiled material. The area will be graded to meet the geomorphic character of the surrounding adjacent area and meet geomorphic objectives of a stable landform resistant to excessive erosion. As with other features described for reclamation previously, if it is deemed necessary to place topdressing over the area prior to reseeding, the grading will be left approximately one (1) foot lower than the final desired elevation. The area will be lightly ripped or disked to a depth of six (6) to twelve (12) inches, on contour if feasible and safe for the equipment operator, and the topdressing applied on this prepared slope. The topdressing will then be prepared by disking with a farm disk (12 to 14 inch diameter), on contour if feasible and safe to do so, and the area seeded with the approved seed mix. Energy dissipaters such as fiber or straw wattles will be added at the point where the arroyos originally flowed across the surface.

The reclaimed contours of the area will restore the geomorphic character of the area and allow the surface flow to soak into the ground or find its way to the reestablished channel of the arroyo and thereby meet the geomorphic objective of a stable landform that is resistant to excessive erosion. On those features identified on Figures 1-2A, 1-2B, and 1-2C arroyo armament, concrete structures and culverts will be removed, crushed and used as fill or hauled to a licensed landfill. The channel side slopes and inverts will be restored as close as possible to their original geomorphic configuration and the areas graded, as necessary, to meet geomorphic objectives. The areas will be seeded with the approved seed mix.

2.2.7 Disposition of salvageable material and demolition debris

All salvageable materials will be segregated for recycling. Demolition debris will be staged for transportation and disposal at approved facilities.

Buildings and structures will be decommissioned, including de-energizing electrical power and shutting off all other utilities and removing all products such as process reagents, oils, lubricants and batteries to be recycled or disposed of at approved facilities. Salvageable materials such as metal and copper piping and wiring, corrugated metal siding and roofing, metal beams, windows, doors, interior cabinetry and shelving, lighting, etc. will be recovered and shipped offsite for re-use and/or recycling.

2.2.8 Regrade disturbed areas consistent with pre-existing and surrounding geomorphological character to promote positive drainage and slope stability

After the reclamation steps discussed above have been completed, the disturbed areas of the surface facilities will be contoured and graded to meet the geomorphology of the surrounding area to provide controlled drainage and to prepare those areas for revegetation. An archaeologist will be on-site to temporarily mark the sites and monitor the regrading activities to ensure that archaeological sites are not inadvertently disturbed.

The approximate final reclamation contours are shown in Figures 2-4, 2-4A, 2-4B, and 2-4C found in Section 2.4, Final Site Contours. Constructed areas that required cut-and-fill to level the surface and control stormwater runon will require the return of fill to a cut area. Recontouring will consist mostly of removing constructed drainages and berms and shaping the surface to match the pre-existing and surrounding geomorphology of the area and to direct runoff to the permanent drainage arroyos in a stable configuration that will minimized excessive erosion. The areas to be recontoured will be protected by erosion control BMPs such as straw bales, wattles and silt fencing to reduce the loss of soil from stormwater. Prior to reclamation, the cut slopes in rock will be evaluated to determine their potential for long-term stability. The evaluation will include a review of observed movements from initial construction through the mining period of operation. Obvious rock debris, visible displacements of rock blocks, and other physical evidence will be considered. Any potentially unstable slopes will be backfilled to a final slope no greater than 3H:1V.

Recontouring will be performed by primarily utilizing bulldozers, excavators and roadgraders. Bulldozers and excavators will be used for shaping of areas to meet geomorphological objectives of making the reclaimed areas consistent with pre-existing and surrounding geomorphology of the area. The graders will be used to blend the recontoured surface into adjacent undisturbed areas. The disturbed area will be staked by a survey crew to establish the final contour. Other equipment, such as scrapers, front-end wheel loaders and haul trucks may be used to move material from cut areas or from stockpiles to the areas to be filled and to spread the material to match the lift depth indicated on the stake (approximately one foot per lift). As a lift is completed, it will be compacted to the predetermined density (approximately 90% standard proctor). Water will be added to the material as required to enhance compaction and to control dust. Compaction and moisture levels will be checked on a regular basis and the results recorded.

The placement and compaction of lifts will continue until the final lift has been placed before the topdressing layer. A smooth transition to the surrounding surface will be bladed to meet geomorphic objectives and to maintain the proper slope gradient. The final layer of subsoil will not be compacted except with the normal movement of the equipment. After placement of this layer, and prior to the addition of topdressing, this layer will be ripped or disked to a depth of six (6) to twelve (12) inches to develop a transitional interface between the subsoil and topdressing. This technique enhances root penetration from the topdressing layer to be added later.

Control of surface water runon and runoff of the reclaimed areas will be accomplished as part of the recontouring and final grading, and as a part of the overall geomorphological objectives for the site. Existing natural drainage arroyos will be preserved to the extent feasible and improved as necessary as discussed in Sub-section 2.2.6 above.

The pre-mining stormwater runoff in the areas of construction was via surface flow to an arroyo. Design of the reclaimed area contours, following geomorphologic objectives will result in the same type of drainage to continue into the same arroyos. The pre-existing drainages that were diverted away from the mine operation will be recreated to the extent possible. These drainages will follow natural surface gradients so that control structures and energy dissipaters will not be required.

2.2.9 Reclamation of roads

Proposed disposition of haul roads and access roads will be reviewed by the landowners. Prior to final reclamation, the State and USFS will determine which roads will be left intact, which will be left but returned to pre-mining condition, and which will be removed and the area reclaimed. If the roads retained include constructed crossings such as culverts, these structures will be removed if requested by the landowners, and drivable fords will be constructed as part of reclamation.

If the roads are to be reclaimed, the first step will be to excavate the gravel on the surface and use it as fill or road material in other places on the site, or removed offsite. The roadbed will then be ripped to a depth of twelve (12) to eighteen (18) inches to loosen the subgrade. Any road segments that were lower than the surrounding topography will be filled to match the surrounding grade, consistent with geomorphic objectives. Drainage crossings will be removed, and the natural drainages will be graded to match the upstream and downstream inverts. After the grade meets the geomorphic objective for that area and is consistent with the natural terrain, the subgrade surface will be prepared for placement of topdressing by ripping or disking to a depth of six (6) to twelve (12) inches. The topdressing will then be placed on the prepared subgrade to an approximate depth of twelve (12) inches and scarified to a depth of three (3) to six (6) inches, and the area reseeded with the approved permanent seed mix. Topdressing for these roads will be sourced from the closest topdressing stockpile.

The reclaimed roadways will then have a weed-free straw mulch applied at the approximate rate of 2-tons per acre. As with other locations on the reclamation site, the straw applied will be a long stemmed straw mulch, which will then be crimped into the soil.

Access roads to the ventilation/escape shafts that are not to be retained will be graded to match the original topography. If road surfaces were improved with crushed rock or concrete, this material will be removed prior to regrading, and the material used on another area of the roadways to be retained, or hauled off site.

The utility corridor is a two-track access road and a surface pipeline to carry water from the Section 10 mine, across Section 15, to the water treatment plant in Section 16 and to transport treated water to its discharge point(s). The corridor will be approximately 30 feet wide and approximately 11,000 feet long. The water transport pipeline will be 24 inches in diameter or less and will be placed on the surface. The corridor will be reclaimed by removing the surface pipeline for disposal and ripping the two-track road, removing the culverts, grading to match the original topography, and applying the specified seed mix, mulched and crimped.

2.2.10 Placement of topdressing, seeding and mulching

Topdressing will be placed as the final layer of material over the areas to be reclaimed. Prior to topdressing placement, the subsoil will be disked to approximately six (6) to twelve (12) inches to form a good subsoil/topdressing interface to enhance moisture retention and root establishment.

Topdressing materials that have been placed in stockpiles during the mining operation to a depth of greater than 2 feet from the surface will be amended with the addition of Mycorrhizal Inoculum, which consist of spores, mycelium and mycorrhizal root fragments in a solid carrier suitable for handling in reclamation equipment. The Mycorrhizal Inoculum will include three or more species of endomycorrhiza of the genus *Glomus*. Inoculum will be applied into topdressing at the time of seeding at a rate of 3.6 million propagules per acre (as specified by the supplier). The Mycorrhizal Inoculum is a good soil amendment in a mined lands reclamation program, but is especially beneficial in amending topdressing that has been stockpiled at a depth of 24 or more inches for a period of one year or more. These topdressing materials have been largely restricted from oxygen and water due to the way that stockpiles are generally constructed to ensure their stability and prevent them from failing or eroding. Mycorrhizae are fungi that form a symbiotic relationship with the root systems of a majority of plant species, and are actually better for adsorbing water and nutrients and providing these to the root systems. This gives the topdressing that has been deprived of oxygen and water a "boost" to establish root system of reseeded plants, and thereby increases plant community establishment and revegetation success.

Fertilizer will be applied at a rate of 75 pounds of nitrogen per acre, in the form of organic fertilizer to amend the topdressing that has been below 2 feet from the surface in stockpiles. Current organic fertilizer utilized for this type of amendment include Biosol 6-1-3, Fertil-Fibers 6-4-1 and Sustane 5-2-4.

After topdressing placement, it will be lightly ripped or disked to a depth of three (3) to six (6) inches to prepare a loose and optimum seedbed. The seed/soil contact and establishing seed cover with soil are important conditions to improve effective plant establishment on reclaimed areas.

Revegetation of the disturbed area will be designed to create a stable, self-sustaining plant community and will conform with the post-mining land use of grazing. Greater detail on revegetation is presented in Section 3.7 of this Plan. The entire area disturbed by the Roca Honda Mine Project will be reseeded; the method of seeding will be determined according to the area's topography. Most topography will be gentle slopes conducive to broadcast or drill seeding. In select areas where slopes may not allow drill seeding, the area may be hand broadcast or hydroseeded.

The plant species selected to be seeded on areas to be reclaimed have a proven record of success in this region of New Mexico. The seed mix has been previously approved by the New Mexico Mining Division for use at the Lee Ranch Coal Mine and many other smaller exploration and some former uranium mines in the area. The plant species, and varieties in the seed mix, are adapted to the soils, climate and geomorphic character of the McKinley/Cibola County region. Local experience has shown that these plant species reestablish stable, self-sustaining plant communities that support livestock grazing without soil amendment, or special care other than

good topdressing management and placement, and mulching with a weed free straw mulch after seeding.

Mulch will be applied at a rate of 2-tons per acre, and will consists of a long-stemmed, weed-free straw. The straw will be from the large, 1-ton round bales and distributed with a mulch blower that unrolls the bales and spreads the straw. This results in longer stemmed straw segments which can then be effectively crimped into the soil to anchor it and provide its beneficial properties to the reestablishment of vegetation on the area. This practice has been shown to be effective at the nearby Lee Ranch Coal operations.

On slopes that may be too steep to apply mulch with this method, straw may be hand spread or spread with a smaller straw blower and anchored using a tackifying agent. Lastly, the areas may be hydroseeded and hydromulched if no other technique is feasible. Additional erosion control BMPs will be placed around the reclaimed areas, in close proximity and remain until vegetation has been established. Monitoring of the areas will be conducted on a periodic basis by a qualified botanist, vegetation specialist, or similarly educated professional. The progress of the reclaimed areas will be compared to the reference plot as discussed in Section 3.7.

2.2.11 Remove reclamation areas fencing

During operation, the various activity areas will be fenced to control access, as described in the Mine Operations Plan. These fences will remain during reclamation until the recontouring and grading begins. The 8 foot fences will be removed and sent offsite for disposal or recycling, to allow access and ease of movement for the heavy equipment for regrading and reclamation operations. After the areas have been seeded, they will be fenced with livestock fencing constructed in accordance with specifications for minimizing injury to big game animals as described in the NMDGF Habitat Handbook at http://wildlife.state.nm.us/conservation/habitat handbook/documents/FencingGuidlines.pdf, until vegetation is established. If the landowners (USFS and NM SLO) desire, this fencing will be removed after approval of the reclamation.

2.3 Disturbed Area and Reclamation Schedule (NMAC 19.10.6.602D.(15)(h))

A map or maps at a scale approved by the Director and an approximate schedule indicating the reclamation activities to take place on disturbed areas of the mine site including the number of acres to be reclaimed. A permittee will be required to follow the sequence described unless modified or revised.

Figures 1-2A, 1-2B, and 1-2C found in Section 1.0 of this Plan, indicate the surface facilities to be constructed for the proposed mine operation. These facilities will be removed and the surface reclaimed in the order presented in Section 2.2. It is estimated that approximately 168 acres required for surface facilities and 30 acres for access roads, haul roads, utility corridors and pipeline corridors will require reclamation. The mine operation is estimated to last 13 years.

Reclamation will begin after the mining ceases in Section 16 and continue for approximately two years after mining in Section 10 ceases. The schedule is relative to when activities start and end, as exact year and month that reclamation will be initiated cannot be accurately predicted at this time. The schedule for the reclamation activities is presented in Figures 2-1, 2-2, and 2-3. The schedule is divided into the three section permit area and includes the reclamation activities in adjoining sections where mine related disturbed areas, such as roads occured.

ROCA HONDA PROJECT RECLAMATION PLAN SCHEDULE SECTION 16

ID	Task Name	Duration	Start	Finish
1	Mobilization	15 days	Mon 5/30/11	Fri 6/17/11
2	Wells/Drill Pads	5 days	Mon 6/6/11	Fri 6/10/11
3	Wells/Drill Holes Access Rds	5 days	Thu 6/9/11	Wed 6/15/11
4	Non-ore stockpile	20 days	Mon 6/13/11	Fri 7/8/11
5	Shaft Excavation Material	22 days	Mon 7/4/11	Tue 8/2/11
6	Remove Underground Equipment	30 days	Mon 6/20/11	Fri 7/29/11
7	Ore Bays	5 days	Mon 7/11/11	Fri 7/15/11
8	Explosives Magazines	3 days	Mon 7/11/11	Wed 7/13/11
9	Dewatering Wells Plug & Abandon	10 days	Mon 7/11/11	Fri 7/22/11
10	Dewatering Pipelines	5 days	Mon 7/18/11	Fri 7/22/11
11	Headframe Demolition	10 days	Mon 7/25/11	Fri 8/5/11
12	Prodution Shaft Closure	10 days	Mon 8/8/11	Fri 8/19/11
13	Truck Wash	5 days	Mon 8/1/11	Fri 8/5/11
14	Admin Facilities	15 days	Mon 8/1/11	Fri 8/19/11
15	Hoist House	10 days	Mon 8/15/11	Fri 8/26/11
16	Scale/Assay House	5 days	Mon 8/22/11	Fri 8/26/11
17	Parking Area	5 days	Mon 8/22/11	Fri 8/26/11
18	Chain link fencing removal	30 days	Mon 6/27/11	Fri 8/5/11
19	Electric Substation	15 days	Mon 8/8/11	Fri 8/26/11
20	Emergency Generator	4 days	Mon 8/22/11	Thu 8/25/11
21	Maintenance Shop	20 days	Mon 8/1/11	Fri 8/26/11
22	Storage & Laydown Yard	5 days	Mon 8/22/11	Fri 8/26/11
23	Haul Roads & Utility Corridor (Sects 16, 15 & 17)	40 days	Mon 8/1/11	Fri 9/23/11
24	Sewage Plant	10 days	Mon 8/15/11	Fri 8/26/11
25	Water Tank	7 days	Mon 8/22/11	Tue 8/30/11
26	Fuel Depot	10 days	Mon 8/29/11	Fri 9/9/11
27	Evaporation Ponds	20 days	Mon 8/22/11	Fri 9/16/11
28	Evaporation Ponds Sludge Mgmt	5 days	Mon 8/29/11	Fri 9/2/11
29	Detention Pond	15 days	Mon 8/22/11	Fri 9/9/11
30	Arroyo Diversions	10 days	Mon 8/29/11	Fri 9/9/11
31	Subbase rock stockpile	10 days	Mon 8/29/11	Fri 9/9/11
32	Subsoil Stockpiles	5 days	Mon 9/5/11	Fri 9/9/11
33	Topdressing Stockpiles	30 days	Mon 8/15/11	Fri 9/23/11
34	Water Treatment Facility	30 days	Mon 8/15/11	Fri 9/23/11
35	Reuse Water Pipeline Removal	10 days	Mon 9/26/11	Fri 10/7/11
36	Access Roads	10 days	Mon 9/19/11	Fri 9/30/11
37	Revegetation	30 days	Mon 9/5/11	Fri 10/14/11
38	Fence Revegetated Areas	20 days	Mon 9/26/11	Fri 10/21/11

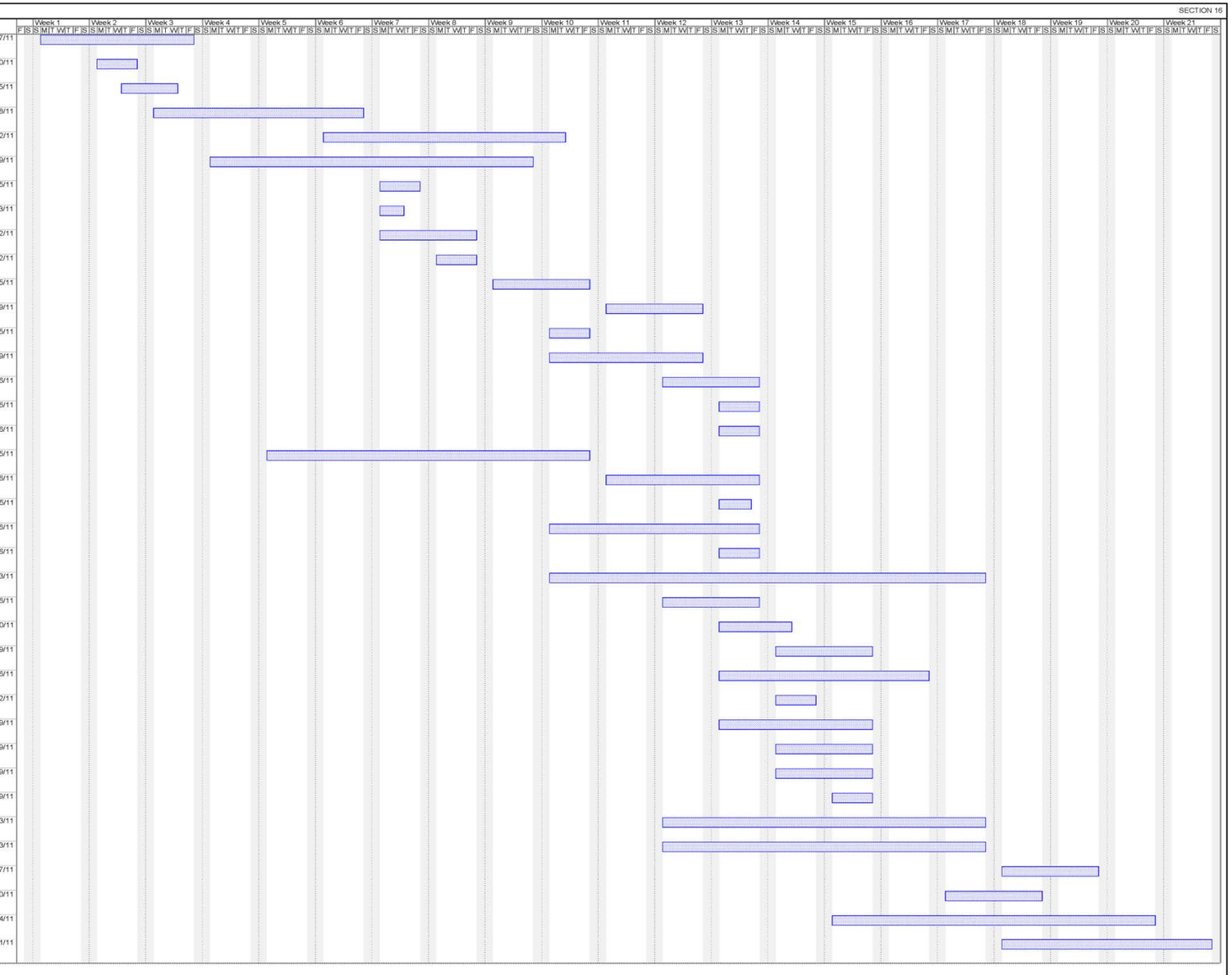
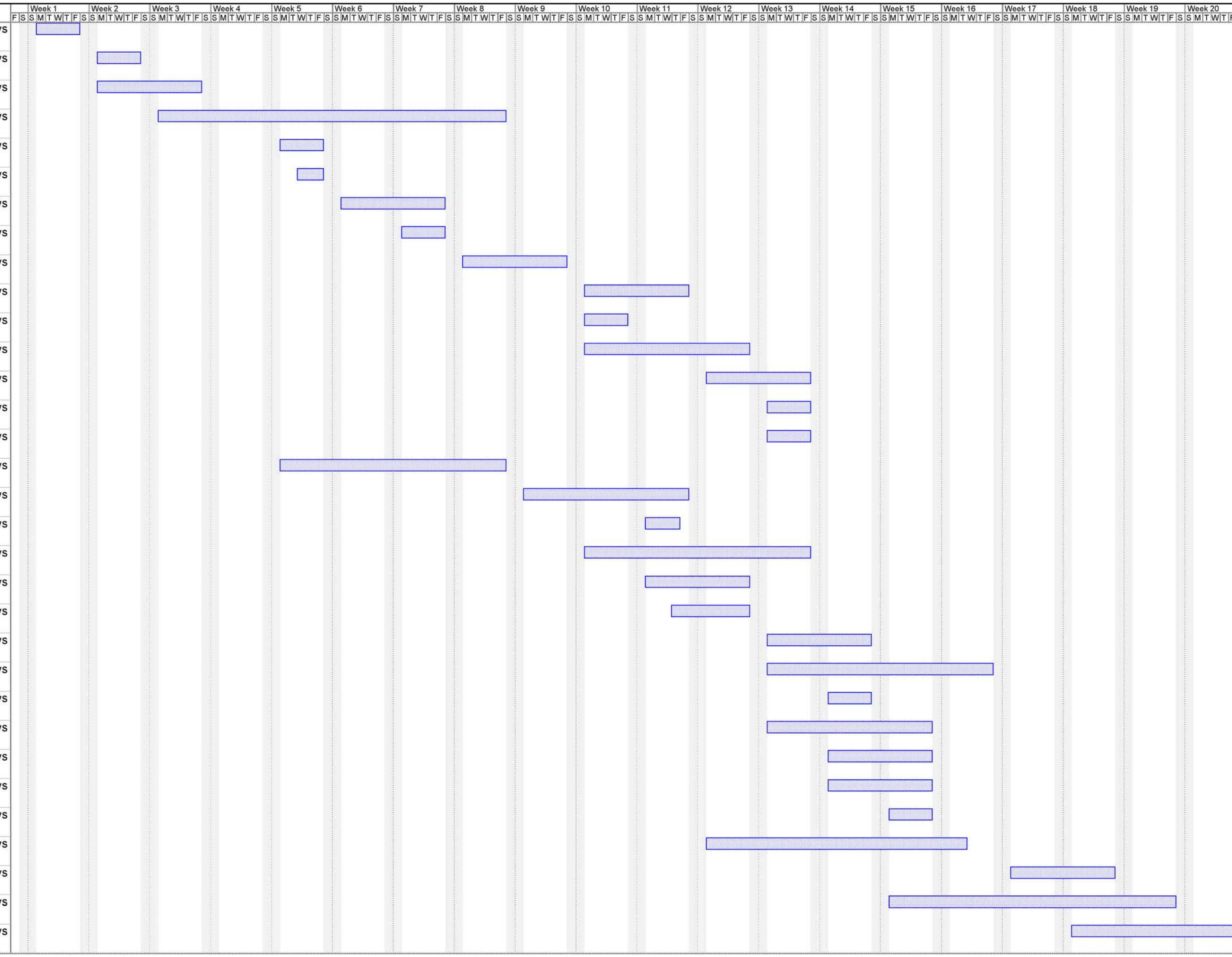


Figure 2-1. Schedule of Reclamation Activities for Section 16

ROCA HONDA PROJECT RECLAMATION PLAN SCHEDULE SECTION 10

ID	Task Name	Duration
1	Wells/Drill Pads	5 days
2	Wells/Drill Holes Access Rds	5 days
3	Non-ore stockpile	10 days
4	Shaft Excavation Material	30 days
5	Ore Bays	5 days
6	Explosives Magazines	3 days
7	Dewatering Wells Plug & Abandon	10 days
8	Dewatering Pipelines	5 days
9	Headframe Demolition	10 days
10	Prodution Shaft Closure	10 days
11	Truck Wash	5 days
12	Admin Facilities	15 days
13	Hoist House	10 days
14	Scale/Assay House	5 days
15	Parking Area	5 days
16	Chain link fencing removal	20 days
17	Electric Substation	15 days
18	Emergency Generator	4 days
19	Haul Roads & Utility Corridor (Sects 10 & 11)	20 days
20	Sewage Plant	10 days
21	Water Tank	7 days
22	Fuel Depot	10 days
23	Evaporation Ponds	20 days
24	Evaporation Ponds Sludge Mgmt	5 days
25	Detention Pond	15 days
26	Arroyo Diversions	10 days
27	Subbase rock stockpile	10 days
28	Subsoil Stockpiles	5 days
29	Topdressing Stockpiles	22 days
30	Access Roads	10 days
31	Revegetation	25 days
32	Fence Revegetated Areas	15 days



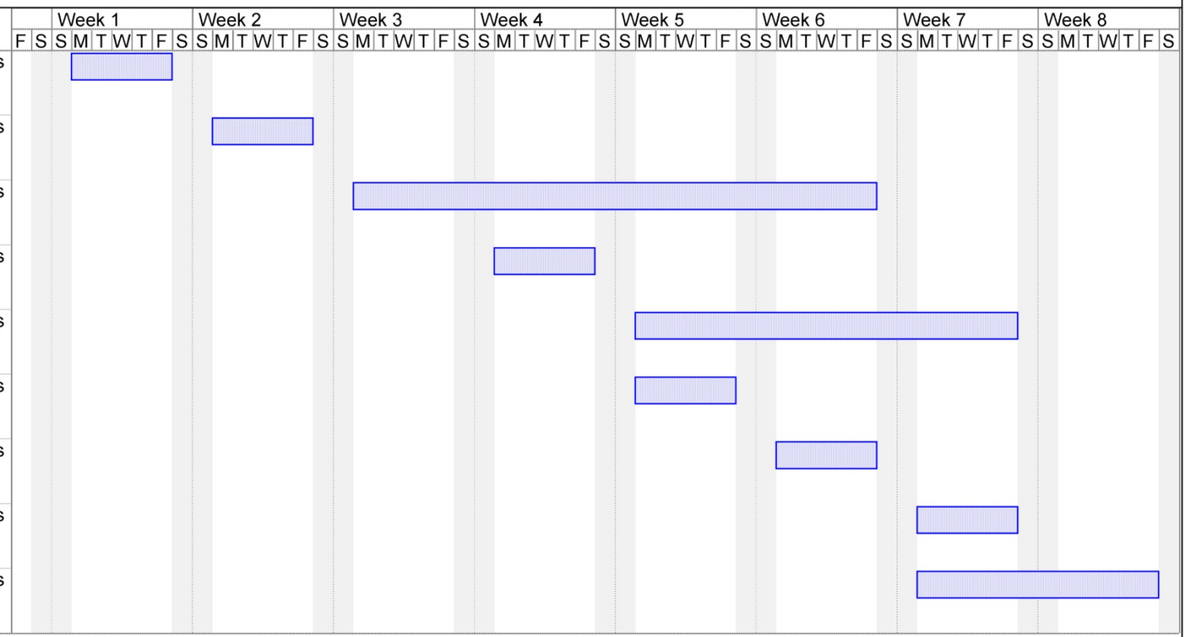
Project: 12.05.18 Rev3 Roca Honda R
Date: Fri 5/18/12

Task | Split | Progress | Milestone | Summary | Project Summary | External Tasks | External Milestone | Deadline

Figure 2-2.Schedule of Reclamation Activities for Section 10

ROCA HONDA PROJECT RECLAMATION PLAN SCHEDULE SECTION 9

ID	Task Name	Duration
1	Wells/Drill Pads	5 days
2	Wells/Drill Holes Access Rds	5 days
3	Shaft Excavation Material	20 days
4	Escape Headframe Demolition	5 days
5	Vent Shafts Closure (3)	15 days
6	Chain link fencing removal	5 days
7	Access Roads	5 days
8	Revegetation	5 days
9	Fence Revegetated Areas	10 days



Project: 11.07.24 Rev2 Roca Honda R
Date: Tue 7/26/11

Task
Split
Progress
Milestone
Summary
Project Summary
External Tasks
External Milestone
Deadline

Page 1

Figure 2-3. Schedule of Reclamation Activities for Section 9

The reclamation operations in Section 16 are anticipated to extend over a period of 17 weeks. Reclamation is Section 10 is expected to extend over a period of 16 weeks, and Section 9 over a period of 8 weeks. There could be some overlap in these activities, as mine development and actual production proceeds. Overall reclamation operations are currently planned to extend for approximately 39 weeks.

2.4 Final Site Contours (NMAC 19.10.6.602 D.(15)(i))

A topographic map of the anticipated surface configuration of the permit area upon the completion of reclamation operations

Topographic maps of the anticipated surface configuration of the permit area upon the completion of reclamation operations are provided in Figure 2-4. Figure 2-4 is a 1 inch to 2000 feet scale and serves as an index map for Figures 2-4A for Sections 9 and 16, 2-4B for Section 10, and 2-4C for the haul road into Section 16. Figures 2-4A, 2-4B and 2-4C provide a more detailed view of the surface reclamation at a scale of 1 inch to 200 feet per NMAC requirements. RHR has provided a set of large working drawings to MMD and USFS of the 1 inch to 200 feet figures for ease of review. This document contains 11 by 17 inch figures in 1 inch to 700 feet scale bound into the Plan. The package of large drawings is available on request. The objective of the final site contours of the project area is for the reclaimed areas to be stable from mass-movement and erosional conditions and to meet the geomorphic character of the general area. In addition, with the PMLU of grazing, flatter slopes are desirable as vegetation generally forms more robust, stable and productive community on areas where precipitation has more opportunity to be absorbed by the surface soil profile and therefore be available to plant root systems. Steeper slopes shed precipitation more readily, are more difficult to control erosion, and generally are less productive in biomass generation through plant growth.

2.5 Acid and Other Toxic Drainage (NMAC 19.10.6.602 D.(15)(j))

A description of the potential for the generation of acid or other toxic drainage from overburden and waste materials following reclamation and a design that incorporates measures to reduce, to the extent practicable, the formation of acid or other toxic drainage that may otherwise occur following reclamation to prevent releases that cause federal or state standards to be exceeded.

As discussed in Section 7.4 of the Baseline Data Report (BDR) Revision 1, historically, acid mine drainage has not been a problem in the Grants Mineral Belt. While some sulfides are known to exist in the rock formations of the project area, acid neutralization potential exceeds acid generation potential.

There is little or no potential for geochemical alteration of overburden, the ore body or other material. The material excavated during shaft construction and operations will primarily be overburden from rocks overlying the Westwater Formation and material from the Westwater Formation, i.e., the ore zone. The only materials overlying the Westwater Formation in the permit area that have a potential to contribute to acid drainage are the thin coal beds in the Dilco Coal and the Gibson Coal Members of the Crevasse Canyon Formation.

The Dilco Coal Member is present only deep below ground surface in the permit area. Section 7.3.1, Figures 7-7 through 7-11 of the BDR, indicate that the Dilco is approximately 600 ft below the surface in Section 16 and 900 ft below the surface in Section 10. The Dilco has an average

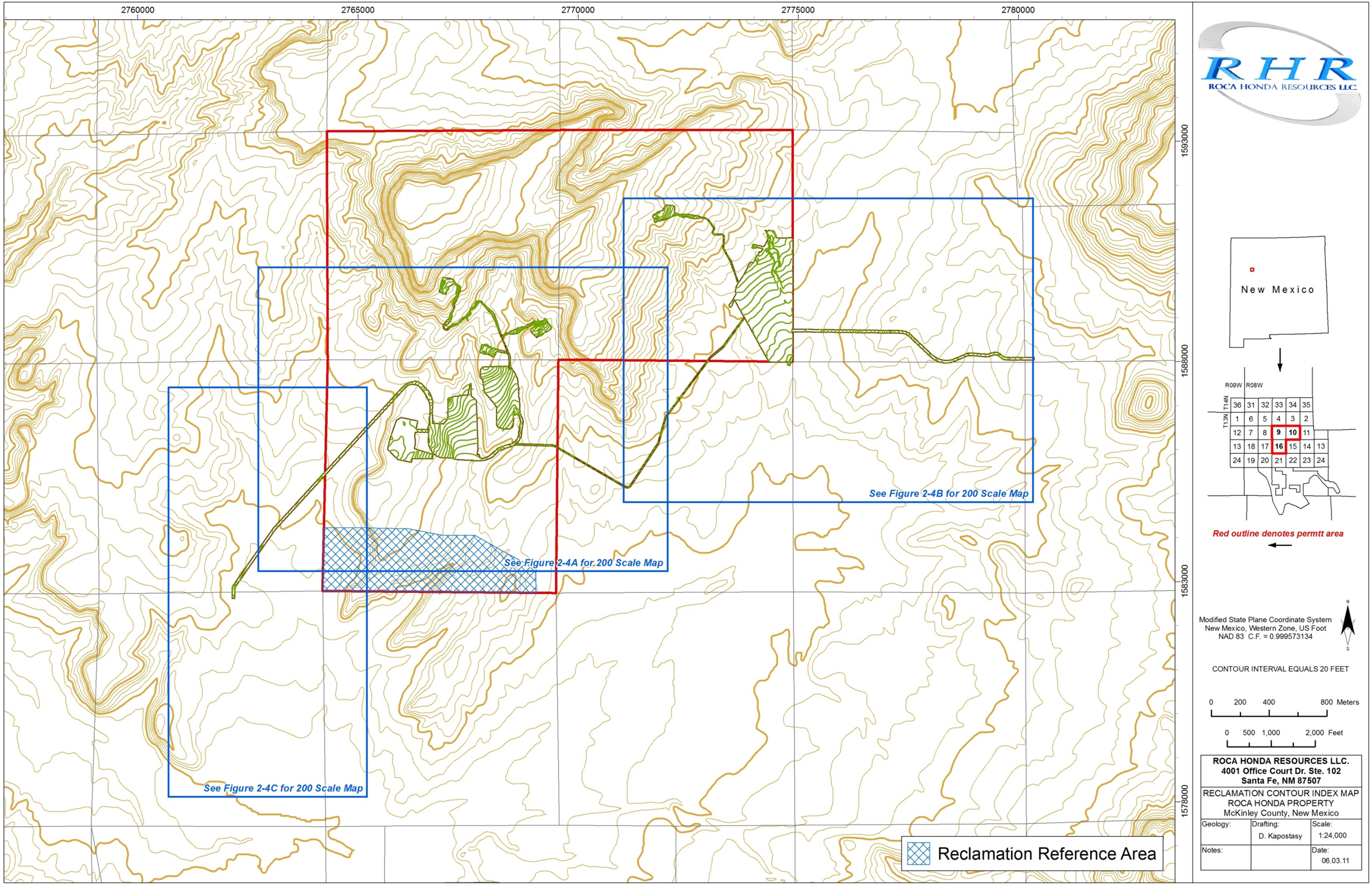


Figure 2-4. Reclamation Contour Index Map (1:2,000 Scale)

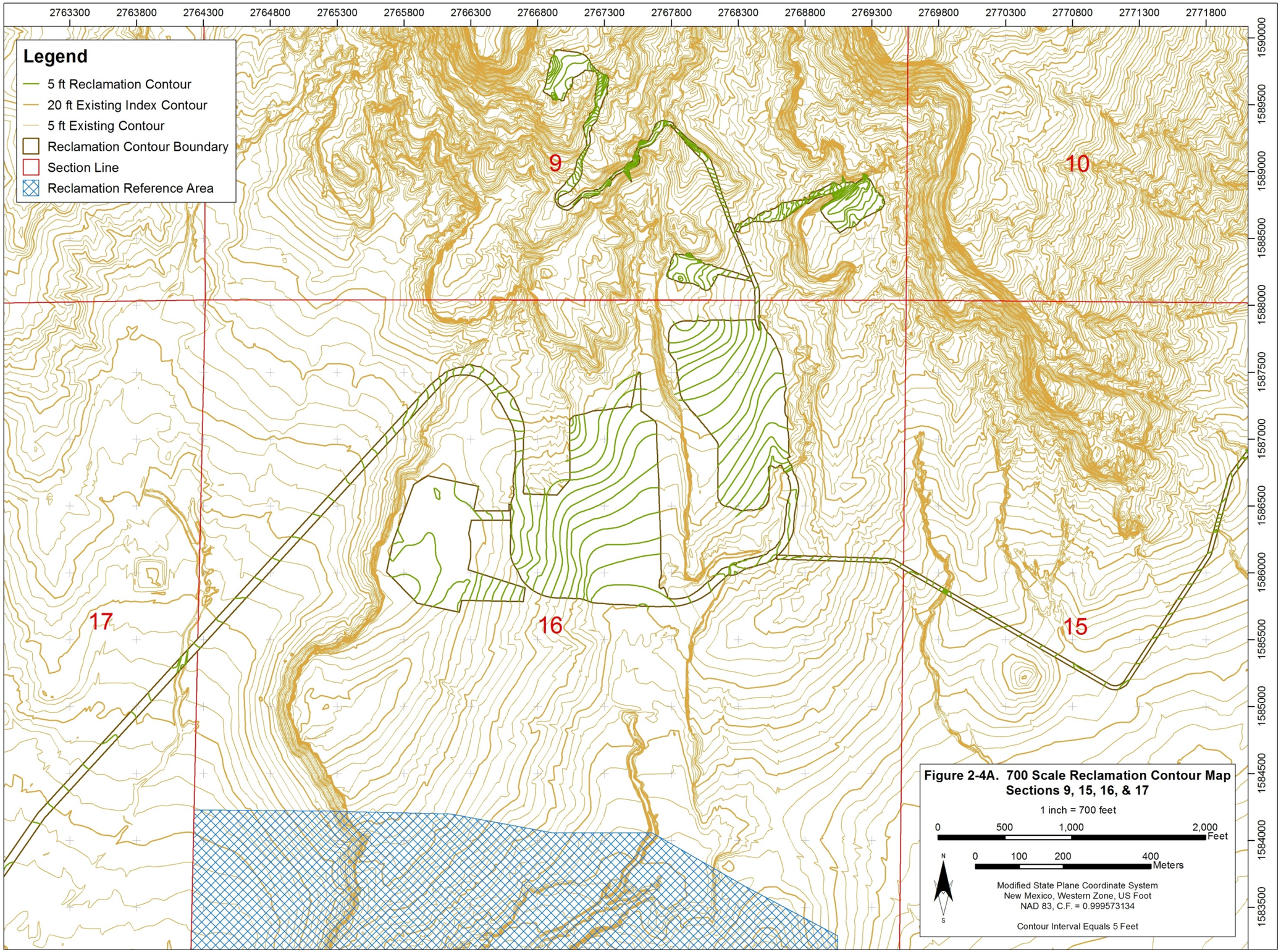


Figure 2-4A. 700 Scale Reclamation Contour Map (Sections 9, 15, 16, & 17)

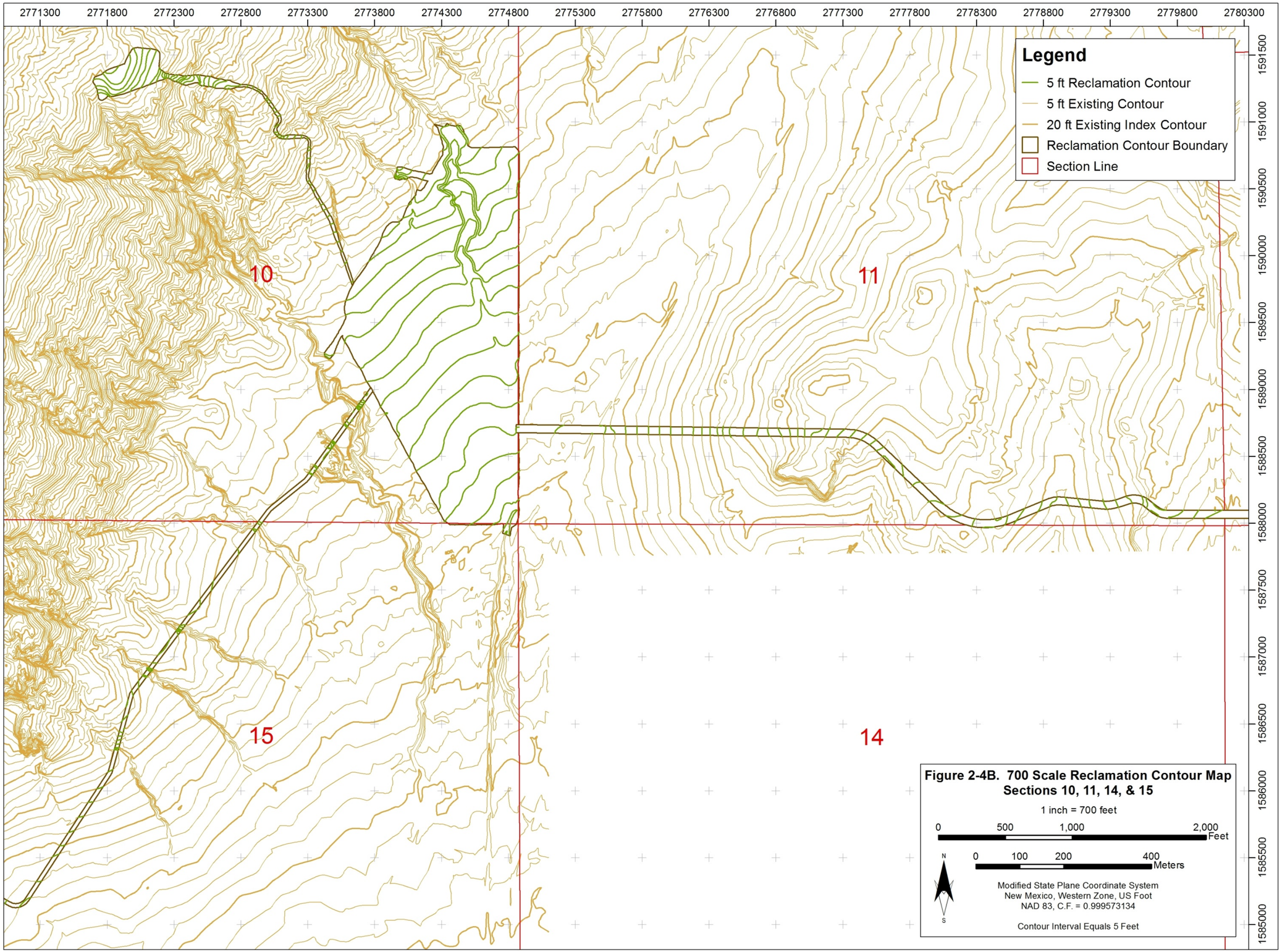


Figure 2-4B. 700 Scale Reclamation Contour Map (Sections 10, 11, 14, & 15)

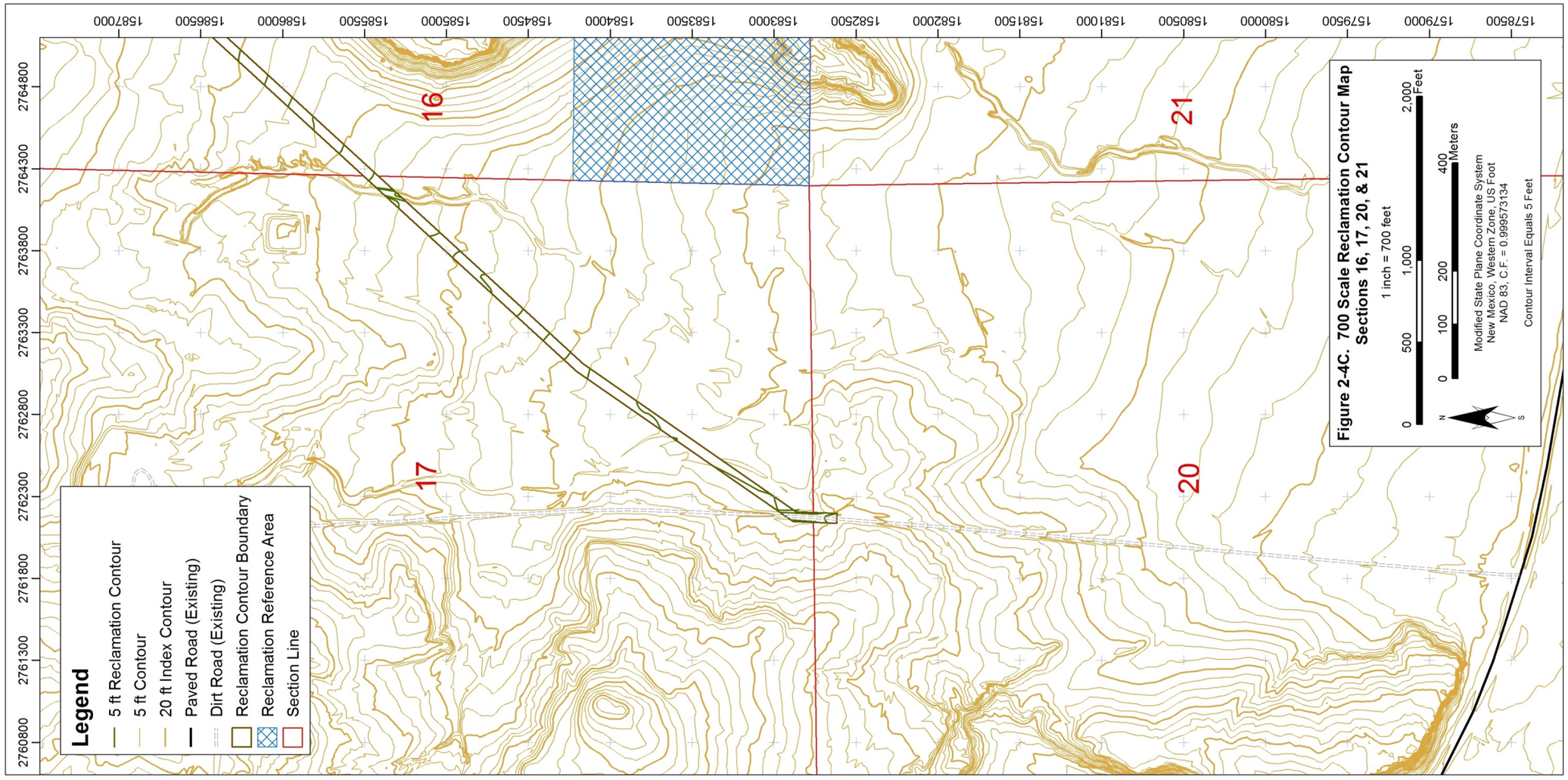


Figure 2-4C. 700 Scale Reclamation Contour Map (Sections 16, 17, 20, & 21)

thickness of 120 ft and a maximum thickness of 128 ft in the permit area. The Gibson Coal Member crops out at the surface sideslopes of the mesas in Sections 9 and 10 of the permit area (see Section 7.3.1 of the BDR). At the location of the shafts the Gibson is typically 100 to 300 ft below the surface. The Gibson has a maximum thickness of 240 ft in the permit area.

The individual thickness of the coal seams in the Dilco and the Gibson Members is in the order of 5 ft thick or less. The Gibson has a reported sulfur content of 0.6 percent sulfur due to trace amounts of pyrite (Kirschbaum and Biewick 2000). While this could theoretically lead to the production of acid drainage, laboratory studies show that shale/coal with sulfur content less than one percent rarely produce significant acid drainage (Morrison 1985).

Moreover, RHR's activities in the Dilco and Gibson are limited to transecting the formations during construction of the production and ventilation shafts. As such, the potential for acid and other toxic drainage is inconsequential.

In the Westwater Canyon Member, clay minerals are the primary iron-bearing phase (Riese, 1980). The Westwater Sandstone contains areas where the dominant iron mineral is hematite, and areas where the dominant iron mineral is limonite (Saucier, 1980). However, since both limonite and hematite chemically alter pyrite (a potential acid-producing constituent), the new compound no longer has the potential to generate acid solutions.

As previously noted RHR has committed to characterization of excavated materials as a condition of the NMED approved Discharge Plan. The excavated material will be analyzed to determine the potential for release of acid or other toxic constituents. Material excavated during construction of the mine shafts and vent holes will be temporarily stored in designed stockpiles to prevent mass movement and protected from stormwater runon. If the material is inert it will be returned to the mine and used to backfill areas for stability during mining. If the analytical results indicate that acid producing or other toxic constituents could be leached, the material will be taken off site for disposal.

Runoff from these stockpiles will be collected in stormwater evaporation ponds. Water that does not evaporate will be treated in the on-site treatment plant before it is discharged. The bottom sediment from the ponds will be analyzed for constituent makeup and disposed of appropriately in an off-site facility. Consequently, material with the potential to release acid and other toxic drainage will not remain on the permit area after reclamation.

2.6 Waste Handling to Facilitate Contemporaneous Reclamation (NMAC 19.10.6.602 D.(15)(k))

A detailed description of how all waste, waste management units, pits, heaps, pads and any other storage piles will be designed, sited and constructed in a manner that facilitates, to the maximum extent practicable, contemporaneous reclamation and are consistent with the approved reclamation plan.

The overall nature of the Roca Honda underground mine precludes much opportunity for contemporaneous reclamation operations. Areas disturbed will be minimized to the extent possible, and an area that is disturbed during construction and operations will remain disturbed and utilized for the life of the project. Unlike surface mining operations, underground mines

have mining operations taking place below the surface. There are few areas that become available for contemporaneous reclamation in an underground mining operation.
Section 5.2 of the Roca Honda Mine Operations Plan describes how materials will be handled to facilitate contemporaneous reclamation to the extent possible. Initial reclamation activities will include topdressing salvage and placement in protected stockpiles, closure of some dewatering wells when they are no longer needed, and closure of drill sites as soon as possible after drilling. Excavated rock generated during construction will be brought to the surface for sinking of the production and ventilation shafts, and may be temporarily stored in designated stockpiles. The design, siting, and construction of these temporary stockpiles are discussed in the Mine Operations Plan. The material will be either transported off-site for disposal or returned to the mine as engineered fill. As part of the contemporaneous reclamation, as soon as the material to be removed off-site is transported from a temporary stockpile, that stockpile area will be reclaimed as discussed in Section 2.2.1, above.

The non-ore material produced from initial mine development will be brought to the surface and stockpiled separately. It may be hauled to the mill or offsite for disposal. As the mine develops and ore begins to be removed from the mine, any non-ore, or non-economical material produced underground will remain underground to help backfill mined out areas.

3.0 Performance and Reclamation Standards and Requirements (NMAC 19.10.6.603 A through H)

The permit area will be reclaimed to achieve a self-sustaining ecosystem appropriate for the life zone of the surrounding areas following closure unless conflicting with the approved post-mining land use. Each reclamation plan must be developed to meet the site-specific characteristics of the mining operation and the site.

The permit area will be reclaimed to a post-mining land use of grazing following closure. This Reclamation Plan has been developed to meet the site-specific characteristics of the mining operation and the site to ensure that the permit area meets the goal of returning it to grazing uses.

3.1 Most Appropriate Technology and Best Management Practices (NMAC 19.10.6.603 A.)

Most Appropriate Technology and Best Management Practices The mining operation and the reclamation plan shall be designed and operated using the most appropriate technology and the best management practices.

"Most appropriate technology" means the most suitable technology for a given application, in this case, reclamation activities. In practice, it means selecting and using the appropriate level of technology that can effectively achieve the intended purpose while disturbing the environment as little as possible. Best Management Practices (BMPs) are effective, practical, structural or nonstructural methods that prevent or reduce the impact of a particular activity on the environment. They include currently accepted, tested methods and materials.

The reclamation methods described in the following sections include both most appropriate technologies and best management practices. These methods are developed to achieve a balance between performance of the reclamation activities and protection of the immediate and surrounding environment as an integral component of the Roca Honda Reclamation Plan.

3.1.1 Stormwater Quality

Potential effects to stormwater quality during reclamation come primarily from the earth moving activities associated with excavation, transportation and distribution of gravel from roads, subsoils and growth media. During this time should precipitation occur, the potential for downgradient effects from transport of sediment, and to a lesser extent, fuels and lubricants from equipment are the greatest. To minimize the potential effects from precipitation during reclamation operations, sediment control BMPs will be established downgradient of reclamation areas to localize effects of rain during operations. A list of potential constituents that could affect stormwater quality is listed in Tables 3-1 and 3-2.

3.1.2 Stormwater Management Controls

The types of temporary BMPs proposed to be used during reclamation of the Roca Honda mine site will provide soil stabilization for work areas and structural controls to divert runon and runoff and remove sediment. These measures will also address potential stormwater constituent sources from activities such as vehicle tracking and wind erosion. Practices to minimize effects

Table 3-1. Potential Site Stormwater Constituents from Equipment

Material	Chemical/Physical Description	Use	Stormwater Contaminant[1]
Antifreeze	Colorless or colored oily liquid	Antifreeze coolant for equipment	Ethylene glycol
Cleaning solvents	Colorless, blue, or yellow-green liquid	Cleaning equipment	Perchloroethylene, methylene chloride, trichloroethylene, petroleum distillate
Diesel fuel	Clear, blue-green, or yellow liquid	Fuel for generator, trucks, heavy equipment	Petroleum distillates, oil and grease, naphthalene, xylene
Gasoline	Colorless, pale brown or pink liquid	Fuel for trucks	Petroleum hydrocarbon, benzene, ethyl benzene, toluene, xylene, methyl tertiary-butyl ether
Grease, petroleum based	Reddish color, semi-solid gel	Lubricant	Petroleum hydrocarbon
Hydraulic fluid	Brown oily petroleum hydrocarbon	Hydraulic devices	Mineral oil
Oil	Brown or dark brown oily liquid	Lubricant	Petroleum hydrocarbon

[1]*Data from Material Safety Data Sheets, if available*

Table 3-2. Potential Sources of Stormwater Constituents - Non-equipment Related.

Drainage Area	Potential Contributors	Source of Potential Constituents of Concern
Cleared and graded areas	Soil and sediments	Erosion from cleared and graded areas
Demolition and reclamation sites	Soil; sediments; hydraulic fluid, oil, gasoline, and diesel from heavy equipment	Erosion from cleared and graded areas Leaking equipment and support vehicles Spills during fueling and maintenance of equipment and vehicles
Site entrance(s) and exit(s), and access roads	Soil, sediments, gasoline, diesel, oil, and hydraulic fluid	Leaking equipment and vehicles Spills during fueling and maintenance of equipment and vehicles Tracking of soil to and from work areas

to stormwater are discussed, such as the coordination of the reclamation activities with the implementation of the BMPs.

The following temporary and permanent BMPs may be implemented, as appropriate, during the reclamation activities at the Roca Honda mine permit area (see typical designs in Figure 3-1):

Existing vegetation. Disturbance of existing vegetation with equipment or vehicles will be minimized to the maximum extent possible in the work areas to reduce or eliminate erosion in those areas.

Straw bales. Two (2) or three (3) string bales of weed free straw, measuring approximately three (3) to four (4) feet long and eighteen (18) inches square are effective materials for the control of overland water flow, and act to filter, reduce velocity and divert surface flow. Straw bales have more weight and mass than wattles, and can often be left in place to naturally degrade over time and add organic matter to the area. Straw bales are secured with two (2) wooden stakes driven through the bales about ten (10) inches from each end.

Wattles. Wattles are tubes of rice, straw, fiber or composted material used for erosion control, sediment control, and stormwater runoff control. They help to stabilize slopes by slowing, spreading, and filtering overland water flow, which in turn helps to prevent sheet erosion and rill and gully development. As necessary, wattles will be placed along the perimeter downgradient of the areas to be graded or recontoured before any reclamation takes place during periods when precipitation is likely. They may also be placed along washes and arroyos, down-slope of exposed soil areas. Once in place, they will be staked at approximately three (3) foot intervals to anchor them in place.

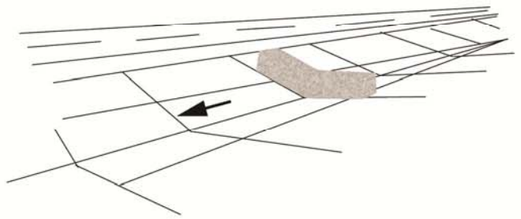
Wind erosion control. Wind erosion control consists of applying water and/or other dust palliatives as necessary to prevent or reduce erosion by the forces of wind. Water spray may be applied to small, temporary soil piles during reclamation activities.

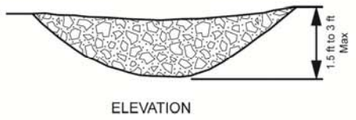
3.1.3 Practices to Minimize Effects to Stormwater

Specific management practices can be applied to reclamation activities to help minimize the potential for effects to stormwater at the Roca Honda permit area. These practices typically involve good housekeeping and spill control practices, as discussed below.

Trash and debris. All trash and debris from the site will be collected and deposited in securely lidded metal dumpsters, which will be emptied as needed by offsite licensed contractors. No trash or debris will be buried on site. All personnel will be instructed regarding the correct procedure for waste disposal during reclamation activities.

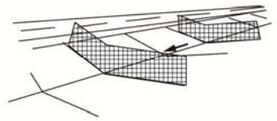
Sanitary waste. The sanitary wastewater treatment units will remain until late in the reclamation process. Portable units will be placed around the final areas after the treatment system has been dismantled.

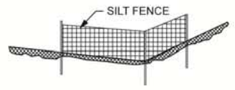


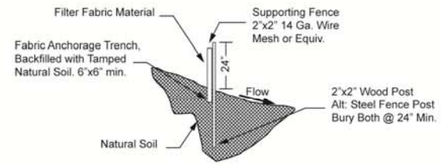


ROCK CHECK DAM
NOT TO SCALE

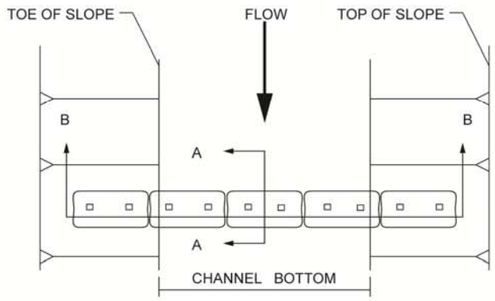
TYPICAL ROCK CHECK DAM SECTION



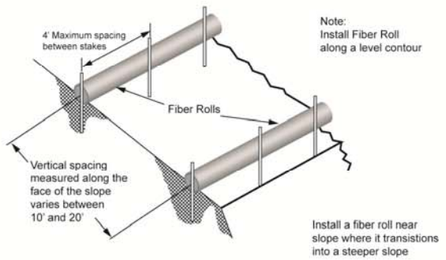




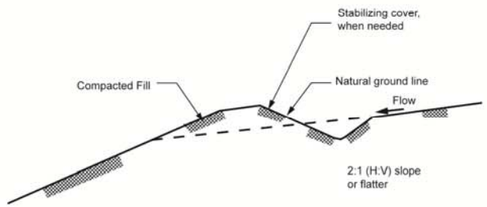
TYPICAL SILT FENCE INSTALLATION



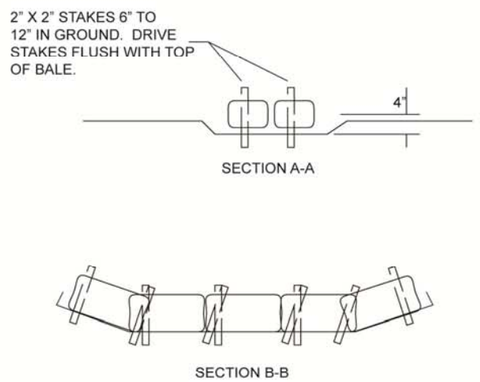
PLAN



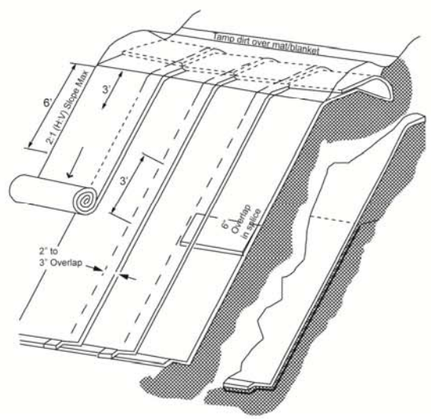
TYPICAL FIBER ROLL INSTALLATION



TYPICAL DRAINAGE SWALE
NOT TO SCALE

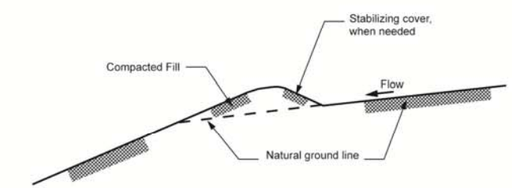


TYPICAL STRAW BALE INSTALLATION



TYPICAL SLOPE SOIL STABILIZATION

NOTES:
1. Stabilize inlet, outlests, and slopes
2. Properly compact the subgrade



TYPICAL EARTH DIKE
NOT TO SCALE

Figure 3-1. Typical Erosion Control BMPs

Project site access. The entrance and exit points to the project area will be stabilized to reduce the amount of mud and dirt tracked onto public roads by project vehicles and heavy equipment. Stabilization will be accomplished by:

- Limiting the points of entrance/exit to the project site.
- Limiting the speed of vehicles to control dust.
- Properly grading each entrance/exit point to direct runoff away from the entrance/exit.
- Placement of larger diameter rock (4 to 8 inches) in a 12 inch layer for 50 feet from the pavement for dislodging soil from vehicle tires leaving the project area.

Vehicle and equipment fueling. Vehicles that are taken from the site at the end of a work shift will be refueled off site whenever possible (i.e., in town). Equipment and vehicles refueled on site will follow the practices outlined below:

- Mobile fueling of equipment throughout the site will be minimized. Whenever practical, equipment will be transported to the designated fueling area.
- Absorbent spill clean-up materials and spill kits will be available in the fueling area and on fueling trucks used to refuel equipment outside the designated fueling area, and will be disposed of properly after use.
- Drip pans or absorbent pads will be used as necessary during vehicle and equipment fueling.
- Fueling will be performed on level-grade areas.
- Nozzles used in vehicle and equipment fueling will be equipped with an automatic shut-off to control drips. Fueling operations will not be left unattended.
- Fuel tanks will not be "topped off." Attendant will be present during all fueling operations.
- If fueling is required away from the central fueling are, the fueling area will be located at least 100 ft from downstream drainages and waterways.

Vehicle and equipment maintenance. Vehicle and equipment maintenance procedures and practices will be designed to minimize or eliminate the discharge of fuel spills and leaks to site waterways.

- All site vehicles will be monitored daily for leaks, and will receive regular preventive maintenance to reduce the potential of leaks. Vehicles with leaks will be repaired immediately or will be removed from the project site, if further maintenance is required. A daily checklist will be maintained by all operators for their equipment.

- Off-site maintenance facilities will be used whenever practical.
- Drip pans or absorbent pads will be used during vehicle and equipment maintenance work.
- All maintenance areas will have spill kits and/or use other spill protection devices.
- If maintenance is required away from the central maintenance shop, maintenance areas will be located at least 100 ft from downstream drainage facilities and waterways.
- Absorbent spill clean-up materials will be available in maintenance areas and will be disposed of properly after use.

Used oils, fluids, lubricants, and spill clean-up materials will be disposed of immediately and properly.

3.1.4 Coordination of BMPs with Reclamation Operations

Structural BMPs will be coordinated with reclamation activities so the BMPs are in place before reclamation begins. The BMPs placed prior to reclamation activities will be placed away from and downgradient enough to allow an operating perimeter so that equipment can operate safely and efficiently without damage to the BMPs. After the reclamation operations are complete for an area, the BMPs will be relocated to the edge of the newly reclaimed areas. The following BMP coordination with reclamation activities will occur:

- The temporary downgradient perimeter controls (i.e., wattles, straw bales, etc.) will be installed before any grading and recontouring begin.
- Once reclamation activities cease permanently in an area, that area will be stabilized (i.e., permanent seed and mulch, soil amendments, revegetation).
- The temporary perimeter controls will not be removed until all reclamation activities are complete and soils have been stabilized.

3.2 Contemporaneous Reclamation (NMAC 19.10.6.603 B.)

Contemporaneous Reclamation Contemporaneous reclamation is required to the maximum extent practicable and in a manner that is consistent with the approved reclamation plan.

Contemporaneous reclamation will be implemented by RHR to the maximum extent practicable, as described in Section 5.2 of the Mine Operations Plan or Section 2.6 of this Plan. However, in an underground mining operation such as the Roca Honda project, opportunities for contemporaneous reclamation are limited relative to a surface mining operation. Many of the areas that will have to be disturbed early in the project will remain disturbed until mine closure and reclamation. Since the majority of activity will take place below the surface, a relatively small percentage of project operation affects surface resources.

Surface disturbances will consist of the administrative buildings and support facilities, water treatment plant and ponds, excavation material stockpiles, roads, utility corridors, surface water flow channels and detention basins, evaporation ponds, and other facilities as described in more detail in Section 4.0 of the Mine Operations Plan. The majority of these areas must remain as constructed until mining operations cease and final site reclamation begins. As discussed in Sections 2.2 and 3.2 of this Plan, portions of the facilities in Section 16, i.e., those not needed for mining operations in Section 10, are scheduled to be reclaimed in year nine (9) of the project.

The approach to contemporaneous reclamation is to avoid site disturbance where possible and minimize the area that must be disturbed. Contemporaneous reclamation will be initiated with topdressing salvage and continue through mine operations with protection and maintenance of excavation material stockpiles, closure and reclamation of dewatering wells when they are no longer needed, and reclamation of drill sites as soon as possible after drilling. This early reclamation reduces erosion, isolates and protects material for later use, provides mitigation of potential effects, and reduces the final reclamation work and costs. The protection and maintenance of the material stockpiles are discussed in the following paragraphs.

3.2.1 Topsoil (Topdressing)

As with much of the Southwest and New Mexico, soil horizons that exist in non-riparian zones of the state do not meet soils criteria for classification as "topsoil". Therefore, the final layer of soil material to be placed for revegetation and reclamation is identified as topdressing in this Plan. This material is representative of a majority of soils that exist in the project area and in New Mexico in general. Vegetative communities that exist in the project area and New Mexico are adapted to these soil conditions. The selected seed mix will perform well in the topdressing soils of the Roca Honda Project Area, based on precipitation at the time of seeding.

Topdressing will be salvaged as detailed in the Mine Operations Plan to the extent it exists in each area. A total of approximately 295,000 cubic yards of topdressing material will be required to cover the total disturbance area of 183 acres with 12 inches of topdressing. This volume is conservative, as some areas disturbed may be retained after completion of the project to benefit the Post Mining Land Use of grazing, such as some roadways, water catchments and channels.

Clearing of the disturbed areas will begin with the removal of vegetation located in the footprint of facilities before the topdressing is collected during the site grading process. Suitable topdressing is available in the permit area.

Prior to the salvaging of topdressing, areas of salvage will be staked to allow equipment operators to salvage the available good quality topdressing to the depth that it is available until the required volume of 295,000 cubic yards is achieved. Many locations within the planned disturbance area (i.e., the 183 acres) have material that meets good topdressing criteria to a depth of more than 24 inches. These areas will be identified and staked in the field and material removed from these areas to the depth of suitable material.

Salvaged topdressing will be segregated, and stored in a stockpile designated and labeled for topdressing only. Topdressing from roads, ventilation/escape shaft pads, and the water treatment facility area, will be added to an existing stockpile or placed in localized areas if transport of the soil is impractical. The stockpiles will be stabilized with a grass cover until ready for use. The cover will be comprised of grass species to be used in the reclamation seed mix for the site as

these species are adapted to the region and several are quick to establish on disturbed soils (e.g. Sideoats grama). Table 3-3 found in Section 3.7 shows a seed mix for a temporary soil stockpile grass cover. The vegetation will reduce erosion while providing microhabitat for beneficial soil organisms. Diversion ditches will be constructed around the stockpiles where necessary to minimize stormwater runon and runoff erosion.

3.2.2 Subsoil

After the topdressing has been removed from a disturbed area, any further excavation will be performed by removing the remaining soil horizons to the required depth or until rock is reached. A predetermined cut and fill grading plan will be used for the large operational facilities, water treatment facility, the smaller vent fan pads, and the roads, per the Mine Operations Plan. Subsoil not used as fill to obtain the desired grade during facility construction or used as cover soil on other stockpiles will be stockpiled and labeled. The subsoil will be seeded with the proposed final seed mix (Table 3-3 in Section 3.7). Diversion ditches around the stockpiles will be constructed where necessary to minimize stormwater runon erosion and contain any runoff from the stockpile.

3.2.3 Sub-base Rock

The excavated rock from construction of the surface facilities described in the Mine Operations Plan will be stored in a separate and labeled stockpile. Some of this material may be used as rip rap and/or crushed and used for road base. The stockpile will be protected with diversion ditches around the stockpiles where necessary to minimize stormwater runon erosion and contain any runoff from the stockpile.

3.2.4 Shafts and Non-ore Excavated Material

The production shafts and the ventilation/escape shafts will be excavated as described in the Mine Operations Plan (Sections 3.4 and 3.5 respectively). Shaft excavation material brought to the surface will be stockpiled separately in short term stockpiles. This material will be analyzed to determine the leachability of acid or toxic constituents. If the material is inert it will be returned to the mine as engineered fill for stability in mined out areas. If the material has the potential to generate acid or toxic conditions it will be loaded into highway trucks and transported off of the permit area to be disposed off-site. The temporary stockpile areas will be reclaimed consistent with the procedures and materials as described in this Plan.

The non-ore material produced during the mining operations is discussed in Section 4.2.5 of the Mine Operations Plan. The material generated during initial mine development will be placed in one of the ore bays and sent off-site. Thereafter, the non-ore will remain underground to help backfill mined out areas.

3.2.5 Contemporaneous Reclamation Schedule

The final reclamation schedule will begin after the completion of mining operations (approximately 17 years after operations begin). Since the operation will establish temporary stockpiles during construction, and facilities and infrastructure will be utilized throughout mining operations, there will be little opportunity for contemporaneous reclamation to take place.

However, Roca Honda will continually seek opportunities and conditions to conduct contemporaneous reclamation operations.

3.3 Assure Protection (NMAC 19.10.6.603 C.)

The mining operation and completed reclamation shall meet the following requirements established to assure protection of human health and safety, the environment, wildlife and domestic animals.

3.3.1 Signs, Markers, and Safeguarding (NMAC 19.10.6.603 C.(1))

Signs, Markers and Safeguarding Measures will be taken to safeguard the public from unauthorized entry into shafts, adits, and tunnels and to prevent falls from highwalls or pit edges. Depending on site-specific characteristics, the following measures shall be required:

Access to the permit area will be controlled during mining operations and throughout reclamation operations to protect the public from possible injury due to operating conditions such as heavy equipment and truck traffic and other operations that have the potential to cause injury to untrained personnel. All personnel entering the site will be checked in, given site-specific safety training and will not be allowed to access any part of the project area without a company escort until sufficient training and orientation has been given, and specific company approval of such access to areas specified only for the tasks identified for that individual.

During reclamation operations, after the site buildings are removed, a temporary field office will be used as a control point for workers and visitors. If a visitor requires entrance beyond the office, the reclamation personnel will accompany them. The access points not being used during reclamation will remain locked. As the site hazards, such as shafts, are removed from the site, the warning signs will be removed.

Signs, markers, and safeguarding will not be required after reclamation is complete because all facilities, shafts, and other hazards will be removed and reclaimed.

NMAC §19.10.6.603 C. (1) (a) closing shafts, adits or tunnels to prevent entry;

RHR will permanently close all of the production and ventilation shafts at the Roca Honda mine in a manner that will safeguard the public from unauthorized entry into the shafts. Each shaft will be plugged in accordance with good engineering practices. Section 2.1, item 4, of this Plan provides a description of how the shafts will be closed.

NMAC §19.10.6.603 C. (1) (b) posting warning signs in locations near hazardous areas;

Signs installed around the perimeter and across the mine permit area at the beginning of construction and operation will remain until the completion of reclamation, as appropriate. Other markers or signs may be posted based on the activities occurring on the site at specific times.

NMAC §19.10.6.603 C. (1) (c) restricting access to hazardous areas;

The Mine Operations Plan (Section 5.3.1) describes the fencing of the operational area and the signage around the permit area and operational areas and roads. The fencing described in the Mine Operations Plan will be removed per this Reclamation Plan and replaced with temporary fencing while the site is undergoing reclamation.

NMAC §19.10.6.603 C. (1) (d) marking the permit area boundaries;

Permit boundaries will be marked with signs and prominent markers where fencing is not installed.

NMAC §19.10.6.603 C. (1) (e) posting a sign at the main entrances giving a telephone number of a person to call in the event of emergencies related to the mine; or

The main entrances to the permit area will have a manned guard shack to stop and check reason for entry. Signs will be posted listing the name of the project, the operator and a telephone number and other contact information to contact in the event of emergencies related to the mining operation.

NMAC §19.10.6.603 C. (1) (f) other measures as needed to protect human safety.

A radiological survey of the facilities footprint will be performed in accordance with the Post Mine Radiological Surveys plan contained in Appendix D.

3.3.2 Wildlife Protection (NMAC 19.10.6.603 C.(2))

Wildlife Protection Measures shall be taken to minimize adverse impacts on wildlife and important habitat. Based on site specific characteristics, the following measures will be required:

NMAC §19.10.6.603 C. (2)(a) Restricting access of wildlife and domestic animals to toxic chemicals or otherwise harmful materials;

The wildlife protection measures put in place during operations will remain in place during reclamation (see Section 5.3.2 of the Mine Operations Plan). Products and materials used during operations that have potential to effect wildlife or habitat will be removed from the site during closure, and any areas discovered that may have been affected will be remediated and affected materials removed from the site and disposed of in an approved and licensed facility. Overhead electric supply lines may remain on the site depending upon future plans of the utility company and landowner.

NMAC §19.10.6.603 C. (2) (b) minimizing harm to wildlife habitat during mining; and

Potential harm to wildlife habitat during mining is addressed in the Mine Operations Plan. Practices incorporated into the Mine Operations Plan will be retained throughout reclamation operations and will include minimizing disturbance, ensuring that the reclaimed areas are revegetated with native species that benefit livestock and will also benefit wildlife species with plant diversity, cover and productivity.

NMAC §19.10.6.603 C. (2) (c) reclaiming areas of wildlife habitat if not in conflict with the approved post-mining land use.

No open water ponds will remain after reclamation, except for previously existing stock ponds, which may be rebuilt to pre-mining conditions. With geomorphic design considerations and planting of trees and shrubs in clumps, islands and rows, "Edge Effect" can be created which is beneficial to wildlife and livestock as wind breaks, shade and habitat diversity.

The New Mexico Department of Game and Fish (NMDGF) *Habitat Guidelines for Mine Operations and Reclamation* (NMDGF 2004) describes measures that minimize potential adverse effects to wildlife and their habitat. Specific measures to be taken to mitigate wildlife habitat loss and degradation include:

- Creating topographic variability during grading (rather than traditional smooth slopes). Where feasible, topographic variability will be created that reflects the natural site surroundings (geomorphic character of the area). Such features include, where practicable, undulating profiles, niches or ledges on slope faces, brush piles, and rock piles.
- The exclusive use of native plant species.
- The exclusive use of certified weed-free seed and mulch.
- Implementing weed control to prevent the introduction and spread of noxious weeds, particularly those harmful to livestock and wildlife. A Weed Control Plan is included as Appendix C.

3.3.3 Cultural Resource (NMAC 19.10.6.603 C.(3))

Cultural resources listed on or eligible for listing on the National Register of Historic Places or the State Register of Cultural Properties, and any cemeteries or burial grounds shall be protected until clearance has been granted by the State Historic Preservation Office or other appropriate authority.

RHR recognizes the sensitivity and importance of the presence of cultural properties on the Roca Honda permit area. RHR conducted archaeological surveys of the entire permit area and designed its surface facilities to avoid these sites wherever possible. The surveys produced a list of sites eligible for listing on the National Register of Historic Places on the state Register of Cultural Properties. RHR is working with the appropriate Sate and Federal authorities to ensure all of these sites are protected and/or the required clearances have been granted. RHR in concert with the U.S. Forest Service and State archaeologists identified eleven sites (of the 193 sites found by the surveys) that required closer evaluation because of the proximity to proposed mining activities. These sites will be further investigated in more detail and mitigation plans will be devised to ensure their protection during construction, operations and reclamation. For example, some sites may be excavated to recover data prior to construction. The surface facility layout may be further modified to protect and avoid sites.

3.3.4 Hydrologic Balance (NMAC 19.10.6.603 C.(4))

Operations shall be planned and conducted to minimize change to the hydrologic balance in both the permit and potentially affected areas. If not in conflict with the approved post-mining land use, reclamation shall result in a hydrologic balance similar to pre-mining conditions unless non-mining impacts have substantially changed the hydrologic balance.

Mine operations surface facilities were designed and located to avoid disturbance to minimize potential effects to surface hydrologic resources and the hydrologic balance through minimizing alteration of arroyos, springs, and stock ponds, as described in the Mine Operations Plan. To the extent possible, surface water will be routed around the disturbed area via constructed diversion channels. Surface water entering the permit area will continue to flow through and exit the permit area in its natural channels during operations. Some of the arroyos that transect the operational area may be armored or straightened to avoid further erosion into the site, stabilizing and enhancing the surface hydrologic resources, and otherwise be unaltered. Some detention basins will also be added to control the flow rate through the watercourses, per the Mine Operations Plan. If desired and approved by the landowners, these basins may be retained as enhancements to the hydrologic stability of the area and to the post mining land use and for wildlife use.

After operations have ceased, mine water will no longer be discharged. If desired by the landowners, final reclamation will include removal of armaments and flow structures in the arroyos, removal of the detention basins, and reclamation of the evaporation ponds as described in Section 3.3.6. The natural drainage will be allowed to flow as before mining. The disturbed areas will be returned to grazing land use.

The following points describe reclamation specifics per NMAC 19.10.6.603 C. (4), to minimize change to the hydrologic balance in the permit area and potentially affected areas.

NMAC 19.10.6.603 C. (4)(a) Operations shall be designed so that non-point source surface releases of acid or other toxic substances shall be contained within the permit area, and that all other surface flows from the disturbed area are treated to meet all applicable state and federal regulations.

Non-point surface releases will be contained within the permit area in evaporation ponds, and only clean stormwater or treated surface water will leave the area. Materials excavated as part of mine operations will be retained within the permit area in constructed stockpiles, and reclaimed as part of the contemporaneous reclamation operations as described in the Mine Operations Plan. Stormwater that falls on disturbed areas during reclamation will be directed to an existing lined evaporation pond for disposal. If necessary, the water will be pumped to the water treatment facility. These facilities will be among the last facilities to be reclaimed.

NMAC §19.10.6.603 C. (4)(b) The disturbed areas shall not contribute suspended solids above background levels, or where applicable the Water Quality.

A Stormwater Pollution Prevention Plan (SWPPP) will be developed for the Roca Honda mine permit area that outlines the mechanisms to control stormwater runon and runoff from disturbed areas during construction and operations and reclamation. Control of suspended solids from the disturbed areas to the arroyos will be achieved with the use of BMPs. The following BMPs are

examples recommended by the New Mexico Department of Transportation and the U.S. Environmental Protection Agency (NMDOT 2009, US EPA 2009):

- Regrading
- Runoff control swales
- Detention basins
- Seeding and mulching
- Erosion control wattles
- Chemical soil stabilization
- Excavated sediment traps
- Sedimentation/evaporation ponds

The operational BMPs will remain during reclamation until the specific area is reclaimed. New BMPs will be installed during and after reclamation to help prevent formation of rills and gullies until the vegetation is established.

NMAC §19.10.6.603 C. (4)(c) To provide data to determine background levels for surface water entering the permit area, appropriate monitoring shall be conducted on drainages leading into the permit area.

During reclamation operations, the background quality and quantity of the surface water entering and leaving the permit area will continue to be monitored as it was during operations.

NMAC §19.10.6.603 (4)(d) All diversions of overland flow shall be designed, constructed and maintained to minimize adverse impacts to the hydrologic balance and to assure the safety of the public.

There are areas within Sections 10 and 16 of the permit area where rainfall is likely to flow from topographically higher locations into the disturbed area before entering the arroyos. The Mine Operations Plan (Section 5.3.4) describes the design and construction of diversion channels and a detention basin to collect and divert the overland flow away from the operational area and into existing arroyos during mine operations.

During reclamation, the small diversions channels will be retained until areas that could be affected by flows are reclaimed. They will then be filled and regraded to match the final site contour plan. The detention basins and diversion channels will be filled and recontoured to match the geomorphic character of the surrounding topography and reclamation areas and will return stormwater flow to natural sheet flow. These areas will require erosion protection with straw bales, wattles or other BMPs until the vegetation is established.

NMAC §19.10.6.603 C. (4)(d) (i) No diversion shall be located so as to increase the potential for landslides.

The Mine Operations Plan identifies that no diversion will be located so as to increase the potential for landslides.

NMAC §19.10.6.603 C. (4)(d) (ii) Unless site-specific characteristics require a different standard which is included in the approved permit, diversions which have watersheds larger than 10 acres shall be designed, constructed and maintained to safely pass the peak runoff from a 10-year, 24-hour precipitation event.

The Mine Operations Plan identifies diversions design criteria specific to watershed size.

NMAC §19.10.6.603 C (4)(d) (iii)All diversion designs which have watersheds larger than 10 acres shall be certified by a professional engineer registered in New Mexico as having been designed in accordance with 19.10 NMAC. Diversion designs shall be kept on-site or otherwise be made available, upon request, to the Director for inspection.

The Mine Operations Plan describes diversion design, and any watersheds larger than 10 acres are certified by a New Mexico registered professional engineer, consistent with this part.

NMAC §19.10.6.603 C. (4)(d) (iv) When no longer needed, temporary diversions shall be removed and the disturbed area reclaimed.

Temporary surface water diversions will be removed, regraded consistent with the geomorphological character of the region, and reclaimed as part of reclamation.

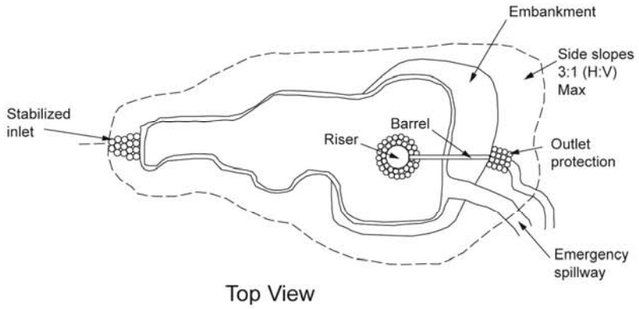
3.3.5 Stream Diversions (NMAC 19.10.6.603 C.(5))

When streams are to be diverted, the stream channel diversion shall be designed, constructed, and removed in accordance with the following:

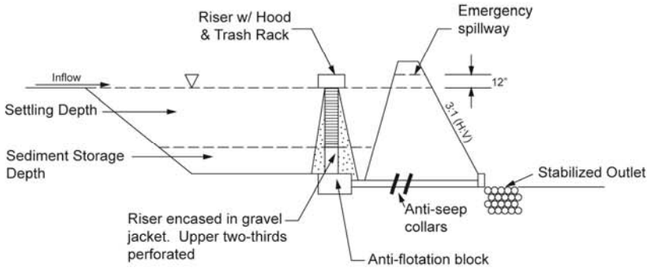
No perennial stream channels exist within the Roca Honda permit area. Several ephemeral arroyos do exist, however, near the planned disturbed areas in the permit area. Aerial topography and ground surveys were used to identify the existing conditions of these arroyos. The Mine Operations Plan Revision 1, January 2012 and design drawings present the existing topography and the constructed modifications. As a part of reclamation, detention basins constructed during operations will be filled and will become a part of the arroyo reconstruction. The existing bank elevations of the arroyo will remain and the interior side slopes will be reconstructed to 3H:1V. The bottom inverts will match the original contours. The reconstructed arroyo will meet the geomorphic character of the surrounding area and will end at the location at which it turns into sheet flow. An energy dissipater (see Figure 3-2) will be added to the point where the arroyo ends to enhance the transfer to sheet flow. The remainder of the improved channel will be filled and regraded to match the surrounding topography.

NMAC §19.10.6.603 C. (5) (a) unless site-specific characteristics require different measures to meet the performance standard and are included in the approved permit, the combination of channel, bank and flood plain configurations shall be adequate to safely pass the peak runoff of a 10-year, 24-hour precipitation event for temporary diversions, a 100-year, 24-hour precipitation event for permanent diversions;

Design and construction of temporary diversions are discussed in the Mine Operations Plan and will be designed consistent with this requirement.

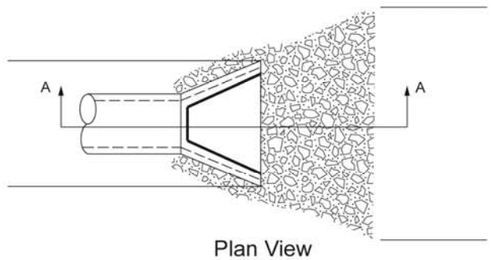


Top View

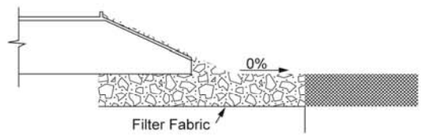


Side View

Typical Detention Basin

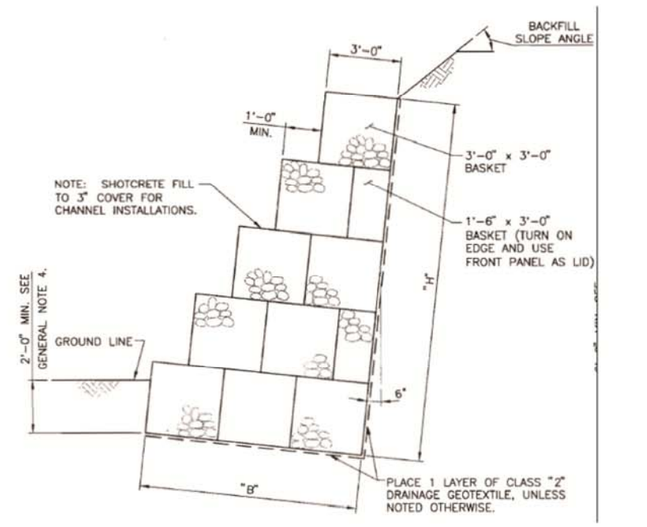


Plan View



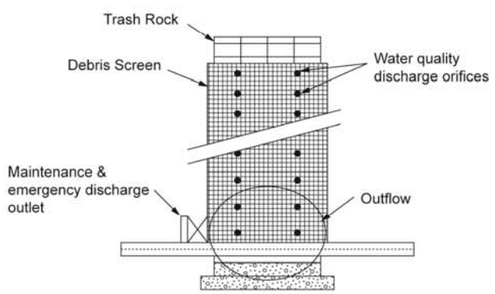
Section A-A

Typical Velocity Dissipation Device

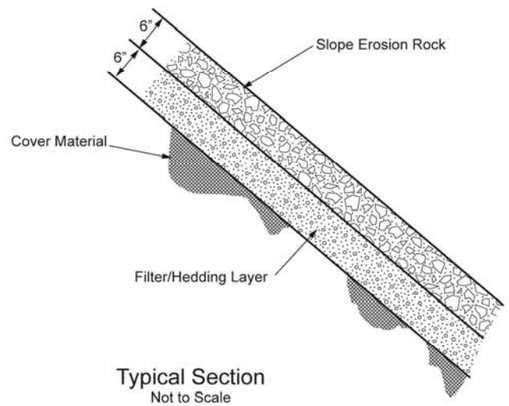


Typical Cross Section for
Type "A" Standard Retaining Wall

Profile

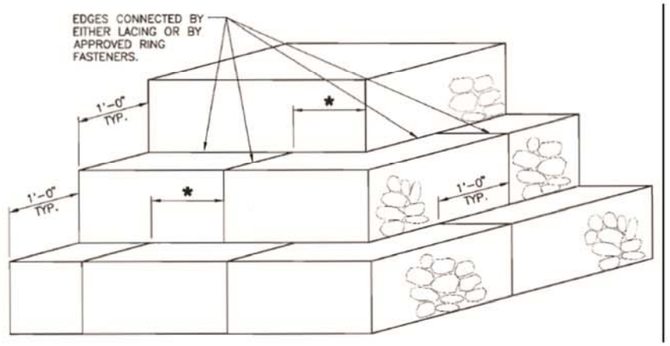


Typical Detention Basin Outlet



Typical Section
Not to Scale

Typical Riprap Installation



Typical Gabion Retaining Wall
NMDOT 602.01 4/6

Figure 3-2. Typical Channel Protection BMPs

NMAC §19.10.6.603 C. (5) (b) the design and construction of all intermittent and perennial stream channel diversions shall be certified as meeting 19.10 NMAC by a professional engineer registered in New Mexico. As-built drawings shall be completed promptly after construction and be retained on site or otherwise made available upon request to the Director; and

There are no intermittent or perennial streams within the permit area but the design and construction of all stream channel diversions are described in the Mine Operations Plan, and will be certified as meeting 19.10 NMAC by a professional engineer registered in New Mexico. As-built drawings will be completed promptly after construction and be retained on site or otherwise made available upon request to the Director.

NMAC §19.10.6.603 C. (5) (c) when no longer needed, temporary stream channel diversions shall be removed and the disturbed area reclaimed.

When no longer needed, temporary surface water diversions will be removed, regraded consistent with the geomorphological character of the region, and reclaimed as part of reclamation.

3.3.6 Impoundments (Ponds and Basins) (NMAC 19.10.6.603 C.(6))

If impoundments are required they shall be designed, constructed and maintained to minimize adverse impacts to the hydrologic balance and adjoining property and to assure the safety of the public.

NMAC §19.10.6.603 C. (6)(a)(i through ix).

These NMAC items are addressed in the Mine Operations Plan. As discussed in the Mine Operations Plan, impoundments will be designed, constructed and maintained to minimize potential adverse effects to the hydrologic balance and adjoining property and to assure the safety of the public.

NMAC §19.10.6.603 C. (6)(b) When no longer required, impoundments shall be graded to achieve positive drainage unless:
(i) the surface estate owner has requested in writing that they be retained;
(ii) they are consistent with the approved reclamation plan; and
(iii*) they are appropriate for the post-mining land use or the self-sustaining ecosystem.*

The surface estate owner will be asked if they wish for the impoundments to be retained as enhancements to the post mining land use of livestock grazing. The impoundments are consistent with the Reclamation Plan and are appropriate for the post-mining land use of livestock grazing.

Should the surface estate owner not wish for the impoundments to be retained, reclamation of the treatment ponds, evaporation ponds and detention basins constructed in the operational area of both Section 16 and 10 will all be filled and graded to match the geomorphic character of the surrounding area.

Material to fill the impoundments will come from the impoundment embankments and from stockpiles developed and maintained during mine development and operation consisting of non-

mineralized rock and soil. Materials will be placed into the impoundment in lifts of 24 inches or less, water added and then the lift wheel-rolled with equipment to achieve compaction and overall fill stability. Lifts will be added in this manner until the impoundments are filled to within approximately four feet of the surrounding land. Subsoil will then be placed from stockpiles for approximately three feet, with little compaction to provide a good rooting subgrade. The surface of the subsoil fill will be ripped or scarified. A minimum of 12 inches of topdressing will be added and graded to meet the geomorphic character of the surrounding topography. The areas will then be lightly ripped or disked, the approved seed mix applied at the prescribed rates. The area will be mulched with a weed-free mulch and the mulch crimped into the soil or stabilized with a tackifyer.

The evaporation ponds and the water treatment plant ponds will be lined during their construction. If at the time of closure, the evaporation ponds contain water, the water will be characterized and treated, as necessary, by pumping it to the treatment facility prior to discharge. The evaporation pond bottom solids and the liners will be removed and disposed of in approved offsite landfills. The ponds will be reclaimed as discussed in the previous paragraph.

When the water treatment plant is no longer needed, the treatment ponds will be closed. Any pond bottom solids and the liners will be removed and disposed of in approved and licensed offsite landfills. The ponds will be reclaimed as described above.

The detention basins will not be lined because only stormwater that has not contacted potentially contaminated disturbed mine-site areas will be caught in the detention basins. That water will slowly dissipate by soaking into the ground as it does naturally in the arroyos. The sole purpose for the detention basins is to control runoff.

At reclamation, the detention basins will be drained, the overflow structures removed, and the basins filled and regraded as discussed above. These basins may be appropriate for the landowners to consider leaving for use as livestock or wildlife water sources. Otherwise, they will be recontoured to meet the geomorphic character of adjacent topography, and reclaimed as discussed previously in this section.

3.3.7 Minimization of Mass Movement (NMAC 19.10.6.603 C.(7))

All man-made piles such as waste dumps, topsoil stockpiles and ore piles shall be constructed and maintained to minimize mass movement.

The man-made slopes and stockpiles were constructed to prevent mass movement and the design is described in the Mine Operations Plan. To ensure that the potential for mass movement of reclaimed slopes or fill areas is minimized, the fill areas will be constructed in 24 inches or less lift, with the addition of water, and each lift wheel rolled to achieve compaction. Since the areas will not be required to support structures or weight other than overlying material, these procedures will be adequate to prevent mass movement.

The soil and rock stockpiles will be used as part of the final reclamation for fill and vegetation growth. No stockpiles will remain on the surface in the permit area after final reclamation.

3.3.8 Riparian and Wetland Areas (NMAC 19.10.6.603 C.(8))

Disturbance to riparian and wetland areas shall be minimized during mining. Adverse effects to riparian and wetland areas shall be mitigated during reclamation unless the mitigation conflicts with the approved post-mining land use.

No wetlands areas, as defined by the Clean Water Act Section 404, were identified in the baseline data gathering investigations within the permit area.

3.3.9 Roads (NMAC 19.10.6.603 C.(9) (a) & (b))

Roads shall be constructed and maintained to control erosion.

The Mine Operations Plan describes how roads shall be constructed and maintained to control erosion, and to meet the requirements of Sections (a) and (b) of this Section.

NMAC §19.10.6.603 C. (9) (c) Roads to be made permanent must be approved by the surface owner and be consistent with the approved post-mining land use.

Roads constructed for the Roca Honda project will aid in management of the lands for livestock grazing operations, and are therefore consistent with the approved post-mining land use. The surface owners will be contacted by RHR to determine if it is their desire to have roads made permanent, after mining operations, and if so, a request will be made to the NM Mining and Minerals Division to retain roads.

3.3.10 Subsidence Control (NMAC 19.10.6.603 C.(10) (a) & (b))

Underground and in situ solution mining activities shall be planned and conducted, to the extent technologically and economically feasible, to prevent subsidence which may cause material damage to structures or property not owned by the operator.

The potential of subsidence resulting from the mining operation at Roca Honda relative to damage to structures or property or to the aquifers is discussed in the Mine Operations Plan Section 5.3.10. No impact to the ground surface or aquifers is expected due to subsidence, as a result of underground mining activities on Sections 9, 10, or 16.

3.3.11 Explosives (NMAC 19.10.6.603 C.(11))

Blasting shall be conducted to prevent injury to persons or damage to property not owned by the operator. Fly rock shall be confined to the permit area. The Director may require a detailed blasting plan, pre-blast surveys or specify blast design limits to control possible adverse effects to structures.

The use of explosives for construction and mining is discussed in the Mine Operations Plan. No explosives use is expected for reclamation.

3.4 Site Stabilization and Configuration (NMAC 19.10.6.603 D.)

The permit area shall be stabilized, to the extent practicable, to minimize future impact to the environment and protect air and water resources. The final surface configuration of the disturbed area shall be suitable for achieving a self sustaining ecosystem or approved post-mining land use.

This Reclamation Plan describes in detail how the permit area will be stabilized to minimize the potential for future effects to the environment and to protect air and water resources. The final surface configuration of disturbed areas will meet the geomorphological character of the region and surrounding areas, and will be suitable for achieving the approved post-mining land use of livestock grazing.

3.4.1 NMAC §19.10.6.603 D. (1)

Final slopes and drainage configurations must be compatible with a self-sustaining ecosystem or approved post-mining land use.

Final slopes and drainage configurations will be constructed to conform with the geomorphic character of the region and surrounding are, and will be compatible with the approved post-mining land use of livestock grazing.

3.4.2 NMAC §19.10.6.603 D. (2)

Backfilling or partial backfilling shall be required only when necessary to achieve reclamation objectives that cannot be accomplished through other mitigation measures.

Shafts, impoundments, roads and other depressions will be backfilled, as described in this Reclamation Plan, to meet stability requirements and the geomorphic character of the region and surrounding areas.

3.4.3 NMAC §19.10.6.603 D. (3)

All reconstructed slopes, embankments and roads shall be designed, constructed and maintained to minimize mass movement.

Prevention of mass movement of reclaimed slopes, embankments, roads or other fill areas will be achieved through the construction of fill areas in lifts of 24 inches or less, with the addition of water, and the areas wheel rolled to achieve compaction. Since the areas will not be required to support and structures or weight other than overlying material, these procedures will be adequate to prevent mass movement.

The soil and rock stockpiles will be used as part of the final reclamation for fill and vegetation growth. No stockpiles will remain on the surface in the permit area after final reclamation.

3.4.4 NMAC §19.10.6.603 D. (4)

Measures must be taken to reduce, to the extent practicable, the formation of acid and other toxic drainage that may otherwise occur following closure to prevent releases that cause federal or state standards to be exceeded.

As discussed in the BDR Revision 1 and Section 2.5 of this Plan, historically, acid mine drainage has not been a problem in the Grants Mineral Belt. While some sulfides are known to exist in the rock formations of the project area, acid neutralization potential exceeds acid generation potential.

There is little or no potential for geochemical alteration of overburden, the ore body or other material. The material excavated during shaft construction and operations will primarily be overburden from rocks overlying the Westwater Formation and material from the Westwater Formation, i.e., the ore zone. The only materials overlying the Westwater Formation in the permit area that have a potential to contribute to acid drainage are the thin coal beds in the Dilco Coal and the Gibson Coal Members of the Crevasse Canyon Formation.

The Dilco Coal Member is present only deep below ground surface in the permit area. Section 7.3.1, Figures 7-7 through 7-11 of the BDR Revision 1, indicate that the Dilco is approximately 600 ft below the surface in Section 16 and 900 ft below the surface in Section 10. The Dilco has an average thickness of 120 ft and a maximum thickness of 128 ft in the permit area. The Gibson Coal Member crops out at the surface sideslopes of the mesas in Sections 9 and 10 of the permit area (see Section 7.3.1 of the BDR). At the location of the shafts the Gibson is typically 100 to 300 ft below the surface. The Gibson has a maximum thickness of 240 ft in the permit area.

The individual thickness of the coal seams in the Dilco and the Gibson Members is in the order of 5 ft thick or less. The Gibson has a reported sulfur content of 0.6 percent sulfur due to trace amounts of pyrite (Kirschbaum and Biewick 2000). While this could theoretically lead to the production of acid drainage, laboratory studies show that shale/coal with sulfur content less than one percent rarely produce significant acid drainage (Morrison 1985).

Moreover, RHR's activities in the Dilco and Gibson are limited to transecting the formations during construction of the production and ventilation shafts. As such, the potential for acid and other toxic drainage is inconsequential.

In the Westwater Canyon Member, clay minerals are the primary iron-bearing phase (Riese, 1980). The Westwater Sandstone contains areas where the dominant iron mineral is hematite, and areas where the dominant iron mineral is limonite (Saucier, 1980). However, since both limonite and hematite chemically alter pyrite (a potential acid-producing constituent), the new compound no longer has the potential to generate acid solutions.

RHR will characterize the excavated materials as a condition of an approved NMED Discharge Plan. The excavated material will be analyzed to determine the potential for release of acid or other toxic constituents. Material excavated during construction of the mine shafts and vent holes will be temporarily stored in designed stockpiles to prevent mass movement and protected from stormwater runon. If the material is inert it will be returned to the mine and used to backfill areas for stability during mining. If the analytical results indicate that acid producing or other toxic constituents could be leached, the material will be taken off site for disposal. Runoff from these stockpiles will be collected in stormwater evaporation ponds. Water that does not

evaporate will be treated in the on-site treatment plant before it is discharged. The bottom sediment from the ponds will be analyzed for constituent makeup and disposed of appropriately in an off-site facility. Consequently, material with the potential to release acid and other toxic drainage will not be on the permit area after reclamation.

3.4.5 NMAC §19.10.6.603 D. (5)

Nonpoint source surface releases for acid or other toxic substances shall be contained within the permit area.

As discussed in the previous section, materials excavated from the underground development will be temporarily stored on constructed stockpile areas that will contain any stormwater runoff from the stockpiled material and direct it to evaporation ponds. There will be no releases from the permit area.

3.5 Topsoil (Topdressing) (NMAC 19.10.6.603 E.)

Where sufficient topsoil is present, the operator shall take measures to preserve it from erosion or contamination and assure that it is in a usable condition for sustaining vegetation when needed. The following requirements shall be met unless site-specific characteristics mandate different requirements and those requirements are included in the approved permit.

3.5.1 NMAC §19.10.6.603 E. (1), (1)(a) and (1)(b)

Topsoil and topdressing shall be sampled and analyzed for vegetation establishment suitability:

As part of the Baseline Data Report Revision 1and Mine Operations Plan, topdressing has been sampled and analyzed for vegetation establishment suitability. Ample material has been identified to replace sufficient growth media for re-establishment of a vegetative community that will support the approved post-mining land use of livestock grazing.

3.5.2 NMAC §19.10.6.603 E. (2)

If revegetation is a component of the reclamation plan and if sufficient topsoil is present in the disturbed or borrow areas, it shall be collected and preserved to the extent practicable. Sufficient topsoil means that it is of sufficient quality to conform to the definition of topsoil. Any necessary topdressing may be obtained from areas to be disturbed or borrow areas and shall be salvaged separately from other materials as needed to ensure its availability for distribution when needed for reclamation.

The subject of topsoil/topdressing is discussed in detail, as it pertains to the Reclamation Plan, in Section 3.2.1 of this Plan.

3.5.3 NMAC §19.10.6.60 E. (3)

Where direct distribution of topsoil or topdressing is not possible, it shall be stockpiled separately and in a manner to prevent loss of the resource.

Stockpiling and management of stockpile topdressing is addressed in the Mine Operations Plan.

3.5.4 NMAC §19.10.6.603 E. (4)

Topsoil and topdressing shall be distributed in a manner to establish and maintain vegetation, consistent with the approved permit.

The subject of topsoil/topdressing distribution and application on reclamation areas is discussed in detail, as it pertains to the Reclamation Plan, in Section 3.2.1 of this Plan.

3.5.5 NMAC §19.10.6.603 E. (5)

After distribution, topsoiled and topdressed areas shall be stabilized to protect loss of the resource.

After topdressing distribution/application, the materials will be lightly ripped or disked to prepare a suitable seed bed, and seed applied by seed drill or broadcast seeding. The seeded areas will then be mulched and stabilized.

3.5.6 NMAC §19.10.6.603 E. (6)

Where topsoil has been stockpiled for more than one year, the permittee may be required to conduct analyses to determine if amendments are necessary.

Topdressing that has been stockpiled for more than one year will be analyzed to determine if soil amendments are necessary to support successful reclamation of disturbed areas.

3.6 Erosion Control (NMAC §19.10.6.603 F.)

Reclamation of disturbed lands must result in a condition that controls erosion. Revegetated lands must not contribute suspended solids above background levels, or where applicable the Water Quality Control Commission's standards, to streamflow of intermittent and perennial streams. Acceptable practices to control erosion include but are not limited to the following:

3.6.1 NMAC §19.10.6.603 F. (1)

stabilizing disturbed areas through land shaping, berming, or grading to final contour;

As part of reclamation operations, disturbed areas will be stabilized through grading areas to conform to the geomorphic character of the region and surrounding area, including shaping, berming and grading to final contour.

3.6.2 NMAC §19.10.6.603 F. (2)

minimizing reconstructed slope lengths and gradients;

Reclamation of slopes will incorporate the practice minimizing slope lengths and gradients, while conforming to the geomorphic character of the region and surrounding areas to minimize the potential for excessive erosion.

3.6.3 NMAC §19.10.6.603 F. (3)

Diverting runoff;

Runoff, and runon, will be diverted from reclaimed areas to prevent erosion of reclaimed areas.

3.6.4 NMAC §19.10.6.603 F. (4)

Establishing vegetation;

Establishment of vegetation is the highest priority of the Roca Honda reclamation operations, and is described in detail in previous sections of this Reclamation Plan.

3.6.5 NMAC §19.10.6.603 F. (5)

Regulating channel velocity of water;

The RHR Mine Operations Plan discussed the construction of systems to manage surface water flows, including surface water diversions, to minimize the potential for erosion by regulating channel velocity of water with channel construction/stabilization BMPs such as riprap, energy dissipation, straw bales and wattles, etc.

3.6.6 NMAC §19.10.6.603 F (6);

Lining drainage channels with rock, vegetation or other geotechnical materials; and

As discussed in the previous Section, NMAC 19.10.6.603 F. (5), stormwater channel, diversions and other conveyance channels, will be stabilized utilizing BMPs including rock, riprap, vegetation or other geotechnical materials that stabilize stormwater channels.

3.6.7 NMAC §19.10.6.603 F (7);

Mulching.

Weed-free mulch will be applied to reseeded areas at a rate of two (2) tons per acre.

3.7 Revegetation (NMAC 19.10.6.603 G.)

To obtain the release of financial assurance revegetated lands must meet the following standards:

Revegetation of areas disturbed by mining operations will be achieved following the practices and procedures outlined in this Plan. Affected areas will be backfilled, regraded and shaped to conform with the geomorphic character of the area before mining operations and of areas surrounding the disturbed areas. Salvaged topdressing will be redistributed over regraded areas, amended with mycorrhyzae, organic fertilizers and seeded using native, adapted species which are characteristic of the region and supportive of the PMLU of livestock grazing. The proposed seed mix shown in Table 3-3 is utilized at the Lee Ranch Coal Mine, which is located in the

same region as the Roca Honda Mine and in similar topography, soils and climatic regime. This seed mix has been developed and shown to be effective over the past 30+ years. The seed mix is a mixture of cool and warm season species of grasses, forbs and shrubs that have demonstrated ability to re-establish in mine reclamation soils and also support livestock grazing. All species are known for their palatability to livestock and wildlife, are high in nutritive value for native plant species, and have differing seasonal value between species, which makes the mix supportive of the post mining land use of grazing on a year round basis.

Table 3-3. Proposed Reclamation Seed Mix for the Roca Honda Mine

Common Name	Scientific Name	Variety/Source	Application Rate – PLS lbs/acre (Broadcast)
Cool Season Grasses			
Thickspike Wheatgrass	*Agropyron dasystacyum*	Critana	2.0
Indian Ricegrass	*Achnatherum hymenoides*	Nezpar or Paloma	1.0
Western Wheatgrass	*Agropyron smithii*	Arriba	3.0
Warm Season Grasses			
Blue Grama	*Bouteloua gracilis*	Hachita or Alma	2.0
Sideoats Grama	*Bouteloua curtipendula*	Niner or Vaughn	2.0
Galleta	*Hilaria jamesii*	Viva	3.0
Alkali sacaton	*Sporobolus airoides*	Native	0.1
Forbs			
Munro Globemallow	*Sphaeralcea munroana*	Native	0.4
Blue Flax	*Linum lewisii*	Appar	0.5
Shrubs			
4-Wing Saltbush	*Atriplex canescens*	Native	3.0
Winterfat	*Ceratoides lanata*	Native	1.0
Shadscale	*Atriplex confertifolia*	Native	1.0

3.7.1 NMAC §19.10.6.603 G. (1)

Revegetation success for a self-sustaining ecosystem shall be determined through comparison of ground cover, productivity and diversity and shall be made on the basis of the following approved reference areas; through the use of technical guidance procedures published by the U. S. Department of Agriculture; other reasonably attainable standards approved by the Director; or a combination. Data collection shall be performed using the same methods and techniques on reference areas and reclaimed areas.

Revegetation success for a self-sustaining ecosystem will be determined through comparison of ground cover, productivity and diversity and will be made on the basis of a reference area located in Section 16, as shown on Figure 3-3. The revegetation success will also be determined through the use of technical guidance procedures published by the U.S. Department of Agriculture and other reasonably attainable standards approved by the Director, or a combination. Data collection will be performed using the same methods and techniques on reference areas and reclaimed areas. The selection methodology for the reference area is described in Appendix B of this Plan.

NMAC §19.10.6.603 G. (1) (a) foliage and basal cover and productivity of living perennial plants of the revegetated area shall be established equal to 90 percent of the reference area or equal to the approved revegetation standard to within a 90-percent statistical confidence.

The methodology described in Appendix B to select the reference area will be used to establish reclamation success.

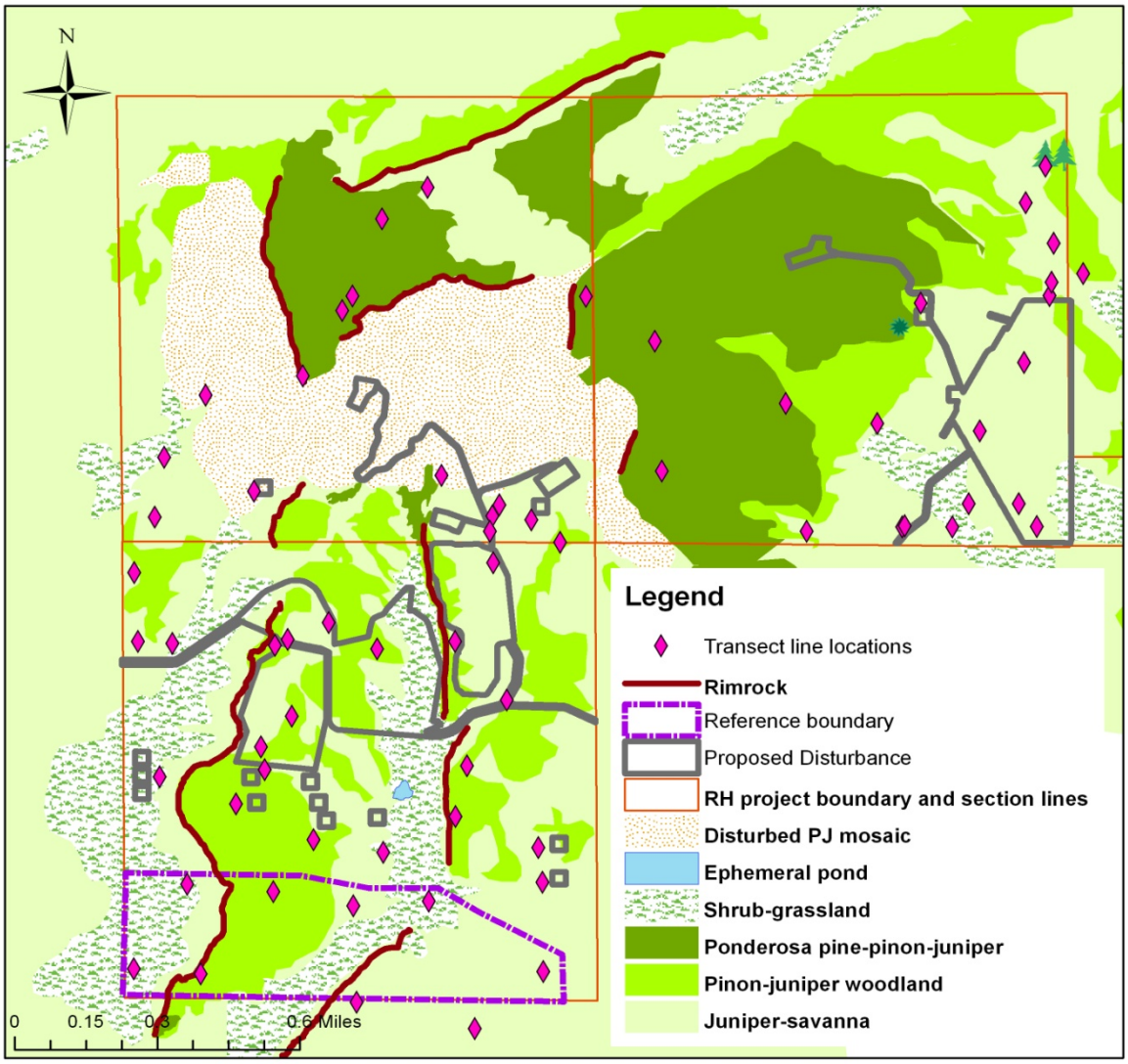


Figure 3-3. Roca Honda Vegetation and Reclamation Reference Area Map

NMAC §19.10.6.603 G. (1) (b) diversity of plant life forms (woody plants, grasses, forbs) shall consider what is reasonable based on the physical environment of the reclaimed area; and

The approved post-mining land use for the Roca Honda permit area is livestock grazing. As such, the reclamation objectives will target a higher percentage of grasses and forbs than woody plants. However, woody species such as four-wing saltbush *(Atriplex canescens)* and winterfat *(Ceratoides lanata),* also offer good livestock and wildlife forage as well as providing for habitat diversity.

NMAC §19.10.6.603 G. (1) (c) woody plant species shall be established to the approved density with an 80 percent statistical confidence.

Woody plants will be established as defined in this section, but with a focus on the approved post-mining land use of livestock grazing.

3.7.2 NMAC §19.10.6.603 G. (2)

For areas for which the approved post-mining land use is for wildlife habitat or forest land, success of vegetation shall be determined on the basis of tree or shrub stocking (density) and ground cover.

This section is not applicable, as the approved post-mining land use is livestock grazing.

NMAC §19.10.6.603 G. (2)(a) The ground cover of living perennial plants shall be equal to 90 percent of the native ground cover of the reference area or the approved standard to within a 90 percent statistical confidence and shall be adequate to control erosion.

This section is not applicable, as the approved post-mining land use is livestock grazing.

NMAC §19.10.6.603 G. (2)(b) diversity of plant life forms (woody plants, grasses, forbs) shall consider what is reasonable based on the physical environment of the reclaimed area; and

This section is not applicable, as the approved post-mining land use is livestock grazing.

NMAC §19.10.6.603.G. (2)(c) (i through iv) woody plant species shall be established to the approved density with an 80 percent statistical confidence.

This section is not applicable, as the approved post-mining land use is livestock grazing.

3.7.3 NMAC §19.10.6.603.G. (3)

Revegetation for other post-mining land shall be consistent with the approved post-mining land use. Site-specific standards may include standards for foliar or basal cover, production and diversity and will be included in the approved permit.

The approved post-mining land use is livestock grazing. The revegetation design, species and methods proposed in this Plan will result in the area being supportive of livestock grazing while additionally providing a stable, sustainable system that also provides habitat and forage for wildlife species.

3.8 Compliance with Applicable Environmental Requirements (NMAC 19.10.6.603 H.)

The operation will be designed to meet without perpetual care all applicable environmental requirements of the Act, 19.10 NMAC and other laws following closure.

In accordance with NMAC 19.10.6.603 H, the RHR reclamation will be designed to meet, without perpetual care, all applicable environmental requirements of the Act, 19.10 NMAC and other laws following closure.

4.0 Compliance with Other Applicable Laws (NMAC 19.10.6.604)

(A) Enforcement of other state or federal laws, regulations or standards shall be conducted by the agency charged with the responsibility under the applicable state or federal law, regulation or standard.

(B) Enforcement of non-point source surface releases of acids or other toxic substances shall be performed by the Environment Department.

(C) During the term of a permit issued pursuant to 19.10 NMAC, the permittee must maintain environmental permits required for the permit area. Revocation or termination of such a permit or the forfeiture of financial assurance related to the permit area by another governmental agency is adequate grounds for the Director to issue a cessation order pursuant to 19.10.11 NMAC.

In accordance with NMAC 19.10.6.604 (A-C), RHR is committed to complying with all other applicable laws in the construction, operation, closure and reclamation of the Roca Honda mine. Table 4-1 is a list of other applicable laws.

Table 4-1. List of Federal and State Permits

Permit/Approval	Granting Agency
Federal	
NPDES Discharge Permit	U.S. Environmental Protection Agency (EPA)
U.S. COE 404 Permit	If needed, U.S. Army Corps of Engineers
NPDES Construction Storm Water Permits	EPA
NPDES Storm Water Discharge Permit	EPA
Approved Plan of Operations for Mine	US Forest Service
ROW for water pipeline; depending on direction; possible special use permit	Possibly USFS
ROW for electrical power line; depending on existing ROW; possible special use permit	Possibly USFS
Radioactive material license for ion exchange	Possibly NRC for mine water treatment if > 0.05 % uranium by weight
Mine Registration	Mine Safety and Health Administration
State	
Mine registration (Form 1)	New Mexico Energy, Minerals and Natural Resources Dept., Mining and Minerals Division
Construction and Operations Permits (Air)	New Mexico Environment Dept., Environmental Protection Division, Air Quality Bureau
Petroleum Storage Tanks Registration Form	New Mexico Environment Dept., Environmental Protection Division, Air Quality Bureau, Petroleum Storage Tank Bureau
Permit to Appropriate Underground Waters of the State of NM	Office of the State Engineer, Water Resource Allocation Program
Mine Dewatering Permit	Office of the State Engineer, Water Resource Allocation Program
Mine Discharge Permit	New Mexico Environment Department, Ground Water Quality Bureau
Closure Plan for evaporation ponds	New Mexico Environment Department, Ground Water Quality Bureau
Liquid (Septic) Waste Permit or Registration	New Mexico Environment Dept., Environmental Protection Division, Solid Waste Bureau
Building Permit	New Mexico Regulation and Licensing Dept., Construction Industries Division
Non-Subdivision Road Work Request	New Mexico Dept. of Transportation through McKinley County office
State Highway Access Permit	New Mexico State Highway and Transportation Dept
Radioactive material license RCB Form 016 (possibly for source used for on-site analysis)	New Mexico Environment Dept., Field Operations Division, Radiation Control Bureau

5.0 USFS Requirements

5.1 Section 11 Haul Roads

The road in Section 11 that provides access to the proposed Section 10 facilities is an existing Forest Service road which RHR is planning to improve for hauling activities during mining operations (see Figure 1-2B). This improved haul road will be reclaimed to pre-mining condition during the reclamation phase, unless other arrangements are made with the USFS.

The planned improvements to upgrade the existing road to a 60 ft wide haul roadway will include arroyo crossings, borrow-ditches, grading and base material as needed to support heavy equipment traffic. During road improvement activities the graded road material will be bermed adjacent to the south side of the haul road to create a visual barrier, screening hauling activities from public view.

Reclamation of the road will involve the removal of base material for use as fill in other reclamation areas, removal of the arroyo crossings, regrading bermed material, regrading of the entire cross-section to level the bar-ditches and road surface, adding fill if required, adding topdressing, and revegetating. Figure 2-4B shows the reclaimed Section 11 haul road.

6.0 References

Code of Federal Regulations Title 36, Parks, Forests and Public Property, Part228 Minerals, Subpart A, Locatable Minerals.

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Appendix A

Post-Mining Land Use Approvals

USDA United States Department of Agriculture | Forest Service | Cibola National Forest and National Grasslands | 2113 Osuna Road NE Albuquerque, NM 87113-1001 (505) 346-3900 FAX: 346-3901

File Code: 2800/2810
Date: July 21, 2009

Roca Honda Resources, LLC,
In Care of: Juan R. Velasquez
Vice President; Government, Regulatory &
Environmental Affairs
Strathmore Minerals Corp.
4001 Office Court Drive, Suite 102
Santa Fe, NM 87507

Dear Mr. Velasquez:

As a follow up to our phone conversation of June 10, 2009, I am sending you this letter for your inclusion in your mining permit application to the New Mexico Mining and Minerals Division (NMMMD) for the proposed Roca Honda mine. The Roca Honda mine will include sections 9 and 10 in T13N R8W in McKinley County, which are on National Forest System lands, managed by the Cibola National Forest.

I understand that the NMMMD regulations require written approval from the surface owner for reclamation of the disturbed areas to the proposed post-mining land use. The Roca Honda mine proposal is to reclaim the disturbed areas in sections 9 and 10 to a post-mining land use of grazing. This proposal is consistent with the Cibola National Forest Land Management Plan for the area in which the proposed mine is located.

If you have any questions, please contact Mary Lee Dereske, Recreation, Engineering, Archeology, Lands & Minerals Staff Officer, at (505) 346-3871.

Sincerely,

FOR
NANCY ROSE
Forest Supervisor

cc: Diane Tafoya, Matt Reidy

RECEIVED 7-23-09

PATRICK H. LYONS
COMMISSIONER

State of New Mexico
Commissioner of Public Lands
310 OLD SANTA FE TRAIL
P.O. BOX 1148
SANTA FE, NEW MEXICO 87504-1148

COMMISSIONER'S OFFICE
Phone (505) 827-5760
Fax (505) 827-5766
www.nmstatelands.org

October 8, 2009

Juan R. Velasquez
Strathmore Resources U.S. Ltd.
4001 Office Court Drive, Suite 102
Santa Fe, NM 87507

Re: State of New Mexico General Mineral Lease No. HG-0036-02 – Roca Honda Resources, LLC

Dear Mr. Velasquez:

Thank you for informing the State Land Office of your plans to submit a permit application to the New Mexico Mining and Minerals Division for a new mine at the Roca Honda Resources (RHR), LLC project. We understand that the project includes Section 16, Township 13 North, Range 08 West in McKinley County, a state-leased parcel of land to which RHR holds the mineral lease pursuant to General Mining Lease number HG-0036-02. Further, we are aware that your permit application will propose reclamation of the mine to a post-mining land use of grazing and that EMNRD requires our approval for reclamation to that proposed post-mining land use for the aforementioned lease.

According to 19.2.2.24 NMAC, a reclamation plan, consisting of the mining permit or other authorization and any other supplemental requirements deemed necessary by the Commissioner must be reviewed and approved by the Commissioner of Public Lands and shall be incorporated into the lease. Please be sure and send a copy of these documents to the State Land Office when submitting them to EMNRD so that the Commissioner may participate in the process as required in 19.2.2.25 NMAC.

The historic surface use of Section 16 is grazing. The surface grazing lease is currently held by the Fernandez Land Company. Please be advised that the State Land Office concurs with and approves RHR's proposal to reclaim the area of Section 16 disturbed by its mining operation to a post-mining land use of grazing. We believe that such reclamation is consistent with historic and anticipated future use. If you have any questions please feel free to call Michael Mariano, Minerals Manager at (505) 827-5750.

Sincerely,

Jami Bailey, Director
Oil, Gas, and Minerals Division

JB/mm

Cc: John Pheil, EMNRD

Appendix B

Reference Area

Proposed Reference Area at the Roca Honda Project Site

Introduction

As presented in Section 4, Appendix 4-C of the BDR Revision 1, transect lines were surveyed for canopy cover throughout the proposed project site. These lines were located to support the preparation of a vegetation map. The lines were placed in the various vegetation types encountered within the project area.

Eighty one (81) transects were surveyed throughout the permit area to characterize the vegetation types (see Figure 3 in Appendix 4-C). Five vegetation types were identified in the permit area (see Figure 5 in Appendix 4-C). Three vegetation types dominate Section 16, juniper savanna, shrub-grassland, and pinon juniper woodland. The juniper savanna and shrub-grassland vegetation types were similar with respect to total cover characteristics: (i) total vegetation cover (grass, forb, shrub and microbiotic cover; tree canopy excluded), (ii) the sum of bare ground, gravel and rock cover, and (iii) litter cover. The pinon juniper woodland areas have steeper slopes and valleys which are not conducive for grazing. Revegetation efforts will focus on restoring a generalized matrix of native grasses, forbs and shrubs on the landscape rather than specifically attempting to recreate both the juniper savanna and shrub-grassland now present. Therefore, combining these two vegetation types is appropriate since species composition and vegetative structure were similar.

A total of 35 of the 81 transects in these two vegetation types were distributed across Sections 9, 10, 11 and 16. Fifteen (15) transect lines are in areas where no mining disturbance is planned. The remaining 20 transect lines will most likely be disturbed by mining activity. Eight (8) of the 15 lines that are anticipated to remain undisturbed by future mining activity are located in Section 16. A revegetation reference area, which includes the 8 transect lines that will be undisturbed by mining activity is proposed in Section 16 (see Figure 3-3 in this Reclamation Plan).

Methodology

As discussed in the BDR Revision 1, data collection for vegetation cover estimates was conducted in June, July and September 2008. Vegetation cover was measured using the point intercept method along a 50 m (164 ft) long transect line. The cover that intercepted the line at 1m intervals along the 50 m (164 ft) transect line was measured using an optical device. Using this method, the different classes of cover were calculated as the percentage of interceptions ("hits"), relative to the total number of points sampled. During the survey, bare ground was defined as soil alone. Gravel and coarse sand were combined and classified as particles up to 7.6 cm (3 inches). Rocks are particles greater than 7.6 cm (3 inches). Litter was dead plant material directly covering the ground, dead perennial vegetative bases, or animal scat, including cow dung. If a small stem or piece of litter was not considered large enough to intercept a raindrop, the "hit" was the ground covering, or lack of covering, below it. Dead annual forbs were considered as litter cover when unattached to the roots and potentially windblown. A dead annual forb that was attached to its root and recognizable to species was recorded as that species.

Species were recorded when the sampling point fell on any part of the vegetation. When the canopy of multiple species overlapped, canopy overhung bare ground, litter, or gravel/coarse sand, all the cover-types were recorded. However, to estimate cover, only the uppermost layer was analyzed so that total cover added up to 100%. Basal cover was not measured.

Transect line percent-cover results were reported as the average (arithmetic mean). The variance and standard deviation of the mean was computed using a computer statistics package Statgraphics® Plus. Median values for each class of cover were also calculated. The Statgraphics® Plus software statistics package was also used to measure standard kurtosis, skewness and confidence intervals to make sure the samples came from a normal population before comparing the values using the T-test.

Analysis of ground cover data that supports the use of a reference site in Section 16

Total vegetation canopy and microbiotic cover, total bare ground plus gravel plus rock, and litter cover were compared between the transect lines in areas anticipated to be disturbed by mining and those areas that are not.

Table 1 describes the summary statistics for the two samples of total vegetation cover, inorganic ground cover and litter cover. Standardized skewness and standardized kurtosis can be used to determine whether the samples come from normal distributions. Values of these statistics outside the range of -2 to +2 indicate significant departures from normality, which would tend to invalidate the statistical tests that compare the standard deviations. In this case, both standardized skewness values and both standardized kurtosis values for all samples are within the range expected if the samples came from a normal distribution. Therefore, confidence levels can be constructed for each sample mean and the T-test can be used to compare sample means between the cover values.

Confidence intervals were constructed for each mean and the difference between the means (see Table 2 below). A T-test was also run to determine the likelihood that the means of both samples were not statistically different from each other. No differences between the standard deviations of the two samples were detected so that all tests can assume equal variances.

The confidence interval for the difference between the means of total vegetation cover extends from -13.7 to 11.5. Since the interval contains the value 0.0, there is not a statistically significant difference between the means of the two samples at the 95.0% confidence level. The T-tests also support this conclusion; t = -0.18 and P-value = 0.86. P values below 0.05 would have indicated significant differences between the two means. An F-test was used to compare the variances of the two samples and indicated that there is not a statistically significant difference between the standard deviations of the two samples at the 95.0% confidence level. Median values for each population were also compared using the Mann-Whitney (Wilcoxon) W test. This test is constructed by combining the two samples, sorting the data from smallest to largest, and comparing the average ranks of the two samples in the combined data. There is not a statistically significant difference between the medians at the 95.0% confidence level.

Table 1: Summary Statistics for total vegetation (vascular plant canopy and microbiotic) cover, total inorganic (bare ground, gravels and rock) cover and litter.

Value	Areas not to be disturbed	Areas within or near the disturbance zones
Number of transect lines	8	20
Average - total vegetation cover	43.5	44.6
Variance - total vegetation cover	280.9	188.7
Standard deviation - total vegetation cover	16.8	13.7
Minimum - total vegetation cover	16.0	22.0
Maximum - total vegetation cover	62.0	74.0
Stnd. Skewness - total vegetation cover	-0.74	0.89
Stnd. Kurtosis - total vegetation cover	-0.51	-0.28
Median - total vegetation cover	47	43
Average - total inorganic cover	27.3	24.7
Variance - total inorganic cover	98.2	118.4
Standard deviation - total inorganic cover	9.9	10.9
Minimum - total inorganic cover	8.0	2.0
Maximum - total inorganic cover	38.0	46.0
Stnd. Skewness - total inorganic cover	-1.109	-0.228
Stnd. Kurtosis - total inorganic cover	0.605	-0.101
Median - total inorganic cover	28	25
Average - litter cover	29.3	30.7
Variance - litter cover	146.2	107.484
Standard deviation - litter cover	12.1	10.4
Minimum - litter cover	18.0	8.0
Maximum- litter cover	52.0	46.0
Stnd. Skewness - litter cover	1.114	-0.535
Stnd. Kurtosis- litter cover	0.076	-0.514
Median - litter cover	25.0	32

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T*able 2: Confidence intervals for each mean and the difference between the means.*

Value	95.0% confidence interval
mean of total vegetation cover along undisturbed Transects	43.5 +/- 14.0
mean of total vegetation cover along potentially disturbed transects	44.6 +/- 6.4
difference between the means of total vegetation cover assuming equal variances	-1.1 +/- 12.6
mean of inorganic cover along potentially undisturbed lines	27.3 +/- 8.3
mean of inorganic cover along potentially disturbed lines	24.7 +/- 5.1
difference between the means of inorganic cover samples with equal variances	2.6 +/- 9.1
mean of litter cover along potentially undisturbed lines	29.3 +/- 10.1
mean of litter cover along potentially disturbed lines	30.7 +/- 4.9
difference between the means of litter cover samples with equal variances	-1.5 +/- 9.3

The confidence interval for the difference between the means of inorganic cover (bare ground, gravels and rock) extends from -6.6 to 11.7 (Table 2). Since the interval contains the value 0.0, there is not a statistically significant difference between the means of the two samples at the 95.0% confidence level. The T-tests (t = 0.57; P-value = 0.57) also arrived at the same conclusion. P-values below 0.05 indicate significant differences between the two means. An F-test was used to compare the variances of the two samples and indicated that there is not a statistically significant difference between the standard deviations of the two samples at the 95.0% confidence level. Median values for each population were also compared using the Mann-Whitney (Wilcoxon) W test. There was no statistically significant between the median values of the two samples (Table 1) at the 95.0% confidence level.

The confidence interval for the difference between the means of litter cover extends from -10.79 to 7.89. Since the interval contains the value 0.0, there is not a statistically significant difference between the means of the two samples at the 95.0% confidence level. The T-tests also arrived at the same conclusion; t = -0.32, P-value = 0.75. P-values below 0.05 indicate significant differences between the two means. An F-test to compare the variances of the two samples was run and the results were consistent with the confidence intervals constructed for each standard deviation and for the ratio of the variances, which indicated that there is not a statistically significant difference between the standard deviations of the two samples at the 95.0% confidence level. Median values for each population were also compared using the Mann-Whitney (Wilcoxon) W test. There was no statistically significant difference between the median values of the two samples (Table 1) at the 95.0% confidence level.

Adequate sampling entails making sufficient measurements of a given parameter in order to obtain a mean value that is within 10 percent of the populations' true mean value with a 90 percent statistical confidence level.

$$nmin = \frac{T^2 S^2}{(dx)^2}$$

(Equation 1)

Where:

nmin = the minimum number of sample points needed in a given vegetation type
S= the sample deviation
t = the two-tailed t statistic at the appropriate number of degrees of freedom
d = the acceptable amount of inherent variability to be identified between the sample mean and the true population mean = 0.1
x = the sample mean.

Using Equation 1 and the results from all (35) transect lines within the project site, the minimum number (*nmin*) of transect lines required to obtain a mean value that is within 10 percent of the populations' true mean value with a 90 percent statistical confidence level for total vegetation cover is 27, for litter *nmin* is 36, and for total inorganic cover (bare ground, gravel and rock) *nmin* is 48. The higher numbers required for litter and inorganic ground cover reflect the higher variability and the fact that some values fell outside the 30 to 70% threshold that is cited to indicate that data transformation is necessary (Hofmann and Ries 1990, Li 1964, Steel and Torrie 1980, Snedecor 1956). When the data was transformed by taking the square root of the value plus one, *nmin* was recalculated to be 14 for inorganic cover and 10 for litter cover.

Conclusion

An area of 137 acres containing 8 transects in Section 16 has been identified as a reference area to be utilized to determine revegetation/reclamation success. Although this area contains some pinon-juniper, re-planting of trees will not be done due to the low probability of success. In addition, the invasion of junipers, particularly in the absence of fire can lead to reduced rangeland quality. Therefore, portions of the reference area transects will not be sampled during the reclamation performance surveys, i.e., the mature pinion juniper woodland, the rock barrens, gullies and breached stock pond dikes. The seed mix provided in Table 3-3 of the Plan includes a diversity of native grasses and shrubs that can be easily established to prevent erosion, meet groundcover diversity and density objectives in Section 3.7 of the Plan, and provide forage for livestock and value for wildlife as recommended in the habitat guidelines published by the NMDGF (2004).

Appendix C

Weed Control Plan

Noxious Weed Control Plan for the Roca Honda Mine Project Area

Introduction and Current Condition

Certain invasive, non-native plant species are classed as "noxious weeds" by the State of New Mexico. Only species classified as such will be managed at the project site. The New Mexico State Noxious Weed List was revised in April 2009. Because of the dynamic nature of biological systems, the plant species recognized as noxious and management guidelines for noxious weeds may change in the future (Wanstall 2008). For example, field bindweed *(Convolvulus arvense)* observed at the project site in 2008 was listed as a Class C weed in 1999, but not in 2009. In contrast, cheatgrass *(Bromus tectorum)*, which was also observed at the project site in 2008, was not listed in 1999, but was listed as a Class C weed in 2009 (Dubois 1999, Gonzalez 2009).

Ongoing, continual observations for noxious weeds will be carried out by site personnel, and known identified noxious weed species will be treated during the appropriate season to minimize the potential of spread. In addition, on a Bi-Annual basis, a more structured pedestrian survey for noxious weeds will be carried out at the project site so that any infestations can be identified and controlled in a timely manner.

The only noxious weeds observed in 2008 were saltcedar (*Tamarix* species) and cheatgrass (*Bromus tectorum*). These non-native species are both considered to be a Class C noxious weed by the state of New Mexico (Gonzalez 2009). Class C weeds are "species that are widespread in the state. Management decisions for these species should be determined at the local level based on feasibility to control and level of infestation" (Gonzalez 2009). Saltcedar trees are a persistent, high moisture obligate species, and were observed in the central area of Section 16 at the stock pond and infrequently along the arroyo that leads from this area to San Mateo Creek. This species can be difficult to control if left unmanaged.

Cheatgrass is an annual grass that can invade and dominate grassland areas if unmanaged. It is not only a poor forage species for livestock and wildlife, once is passes the green phase, it becomes dry and brittle and can pose a significant wildfire threat if established in high numbers. Currently it appears to exist in sparse occurrence, with less than five (5) cheatgrass plants were observed in the area beside a rock water pocket in a canyon Section 10.

In 2006, two additional species of noxious weeds were observed; Canada thistle (*Cirsium arvense*) and musk thistle (*Carduus nutans*). Both of these species were observed in drainage areas in Section 16.

Canada thistle is considered a Class A noxious weed while Musk thistle is considered a Class B noxious weed by the state of New Mexico (Gonzalez 2009). Class A weeds are "species that currently are not present in New Mexico or have limited distribution; preventing new infestations of these species and eradicating existing infestations is the highest priority" and Class B weeds are "species that are limited to portions of the state. In areas that are not infested, these species should be treated as Class A weeds. In areas with severe infestations, management plans should be designed to contain the infestation and stop any further spread" (Gonzalez 2009).

Noxious Weed Control

The techniques used to manage noxious weeds must consider the species, its location, and distance from native species that may be susceptible to eradication treatments. More selective and fewer types of chemical treatments are appropriate for weeds near standing water or in arroyos. Low-disturbance mechanical treatments may be the best alternative in these situations. There are many different herbicides that achieve good levels of control and eventual elimination of most noxious weed species. Biological control methods have also been developed for certain noxious weed species. Generally all control methods must be repeated annually for 4 to 5 years.

There are a few potential control methods for species currently identified on the site:

a. Since saltcedar trees were few at the site, they could easily be eliminated. One effective way to control saltcedar in this situation is to employ a procedure known as the cut-stump herbicide or cut-stump/frill herbicide methods (e.g. Neill 1990, Hughes 1996). This procedure involves physically cutting the above ground stems as close to the ground surface as possible and then immediately painting the cut stems with an appropriate herbicide (e. g., Triclopyr (Garlon 4 or Remedy).

b. Cheat grass is not common at the site. In 2008 the only places where it was found was adjacent to the water pocket in Section 10. If population density remains at current levels, hand-pulling cheatgrass before it sets seed at the pool sites could be accomplished on an annual basis for the duration of the project. Should plant number increase enough to make t his impracticable, herbicides such as Roundup (glyphosate), Journey (imazapic plus glyphosate), or Plateau (imazapic) provide management options for cheatgrass infestations. Application when in proximity to open water or ephemeral watercourses would be with wick or other physical application method, and not spray application. This would likely control the growth at the water pocket and also stop the species progressing down the arroyos.

c. The thistles can be managed with herbicide application. No details were given as to the size of the infestations in 2006 except that they were relatively small. Therefore possible herbicide application might be Stinger (clopyralid), for example at ~2 teaspoons/gal/1000 square foot, or Confront (triclopyr + clopyralid) for example at ~4.5 teaspoons/gal/1000 square foot. Both herbicides should be applied in the spring, or possibly in the fall, when the plants are at the rosette stage.

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Appendix D

Post Mine Radiological Surveys