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ST. ANTHONY MINE
SITE CLOSEOUT PLAN

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1.0 INTRODUCTION

1.1 PROJECT DESCRIPTION AND BACKGROUND

This Closeout Plan (Plan) for the former United Nuclear Corporation (UNC) St. Anthony Mine (the Site) has been prepared in compliance with the requirements of Section 5 of the New Mexico Mining Act. The Plan is prepared with available site data and topographic mapping in conjunction with the Mining Act Reclamation Program Closeout Plan Guidelines compiled by the State of New Mexico Energy, Minerals and Natural Resources Department. The Plan intends to address environmental concerns and reclaim the Site to a post-mining land use of livestock grazing. The Plan's principal components include regrading and revegetating non-economic material storage areas.

The St. Anthony Mine was an open pit and underground shaft uranium mine located on the Cebolleta Land Grant approximately 40 miles west of Albuquerque, New Mexico located in Cibola County approximately 4.6 miles southeast of Seboyeta, New Mexico. The mine site is located in a very remote, sparsely populated area with difficult access. A location map is included as Figure 1, *General Location Map*. UNC operated the St. Anthony Mine from 1975 to 1981, pursuant to a mineral lease with the Cebolleta Land Grant, the current surface and mineral rights owner. The original lease covered approximately 2,560 acres. This lease was obtained on February 10, 1964 and was surrendered by a Release of Mineral Lease dated October 24, 1988. UNC has access to the site through access agreements with the Cebolleta Land Grant and an adjacent landowner.

The site includes underground workings consisting of one shaft, and a number of vent shafts that are sealed at the surface, two open pits (one containing a pond), seven large piles of non-economical mine materials with some revegetation, numerous smaller piles of non-economical mine materials, and three topsoil piles. No perennial streams occur within the St. Anthony site, but an arroyo (Meyer Gulch) passes through the site. The site layout of the St. Anthony Mine is included as Figure 2, *Site Layout*. The two open pits at the mine site are located in Sections 19 and 30, Township 11 North, Range 4 West, and the entrance to the underground mine is located in Section 24, Township 11 North, Range 5 West. The area disturbed during mining encompasses approximately 430 acres and includes roads and other disturbed areas along with the open pits and non-economical mine materials piles. Existing conditions at the St. Anthony Mine Site are shown on Figure 3, *Existing Conditions*.

1.2 SITE SOILS

The native soils within the site boundary consist of well-drained silty sands and inorganic silts and clays. Soil material samples will be collected as described in the Materials Characterization Work Plan. Closeout Plan components will be modified, if necessary, depending on the results of the Materials Characterization.

1.3 SITE GEOLOGY

The site is located on the Colorado Plateau physiographic province, broadly characterized by plateaus of stratified sedimentary rock overlying tectonically stable Precambrian basement. The relatively high relief and dramatic topography of the Colorado Plateau formed as canyons were incised within thick sedimentary sequences. Within the southeastern portion of the Colorado Plateau lies the San Juan Basin, a structural depression encompassing most of northwestern New Mexico and adjoining parts of Colorado and Utah. The strata of the San Juan Basin dip gently to the north (approximately 2 degrees), although small faults and folds alter the dip of the strata locally. The San Juan Basin is truncated on its southeastern margin by the Jemez lineament, a northeasterly trending structural boundary between the Colorado Plateau to the northwest and the Rio Grand Rift to the south and east. The St. Anthony site is located within the Grants uranium district that lies on this transitional

margin amidst many prominent Late Cenozoic volcanic fields that demarcate the Jemez lineament and the southeast margin of the San Juan Basin.

Sediments in the Grants area were deposited in various continental environments. During late Permian time, the area now defined by the San Juan basin was an active seaway connecting the central New Mexico Sea with the Paradox basin in Utah. During this time, the Glorieta sandstone and San Andreas limestone were deposited. The region was subsequently uplifted in Laramide time and fluvial, lacustrine, and aolian sediments of the respective Chinle Formation, San Rafael Group, and Morrison Formation were deposited. Upper Cretaceous strata consist of marine shorezone sandstones, marine shales, and various continental deposits. In ascending order, these are represented by the Dakota Sandstone, Mancos Shale, and the Mesaverde Group.

Stratigraphy of interest at the St. Anthony site includes the Mancos Formation (Late Cretaceous), the Dakota Formation (Early and Late Cretaceous) and the Morrison Formation (Late Jurassic). The surficial geologic unit at the site is the Mancos Formation consisting of three sandstone units and interbedded shale units with a maximum thickness of 465 feet. The upper sandstone caps Gavilan Mesa to the south of the pits. The Dakota Formation sandstone has a thickness of six to twenty feet in the site area. The Morrison Formation is approximately 600 feet thick and is comprised of the Jackpile Member (sandstone), the Brushy Basin Member (interlayered mudstone and sandstone), the Westwater Canyon Member (sandstone), and the Recapture member (interbedded claystone and sandstone).

Uranium production at the site was from the Jackpile Member with each pit penetrating approximately 75 feet into this unit. The Jackpile sandstone varies in thickness in the site area from 80 to 120 feet and is representative of deposition in a braided stream environment.

1.4 SURFACE WATER, GROUNDWATER, AND PIT WATER

1.4.1 Surface Water

Meyer Gulch is an intermittent arroyo that bisects the site, flowing from northwest to southeast across the site. Near the southeast corner of the site, Meyer Gulch joins an unnamed intermittent arroyo to form Arroyo Pedro Padilla. Arroyo Pedro Padilla flows southward for approximately 4 miles where it joins Arroyo de Piedre Lumbre to form Arroyo Conchas. Arroyo Conchas flows southward for approximately 11 miles where it joins the Rio San Jose. Each of these streams is intermittent.

Surface water quality in the vicinity of the mine was evaluated as part of the Phase I Abatement Plan investigation. The results of this investigation are reported in the St. Anthony Mine Status Report issued by INTERA (Dec 2004). As a part of this investigation, Meyer Gulch surface water was sampled in upstream/downstream sets. The Meyer Gulch surface water samples were analyzed for dissolved metals and select cations and anions. In comparison to the temporal variation in constituent background levels, the spatial variation in constituent levels from upstream to downstream of the Site were insignificant. The presence of the non-economic material piles does not measurably add to the arroyo mass loading during runoff events. The specific surface water quality data as presented in St. Anthony Mine Status Reports are reproduced as they appear in their original form in Appendix A. Any additional surface water data, if available, will be analyzed and reported in the Final Stage I Abatement Plan Report to be issued by INTERA.

Piles of non-economical mine materials are located immediately adjacent to the north and south banks of Meyer Gulch as shown on Figure 2. During an inspection performed in November 2000, the NMED opined that there was excessive sedimentation in the arroyo caused by mass wasting of the piles (NMED, 2001). During a later site visit conducted by UNC, it was noted that sediment

deposition in the arroyo was localized near the non-economic material piles, and no evidence of sediment from the St. Anthony piles was noted beyond the limits of the site. Most importantly there did not appear to be any mass wasting of the ore-bearing materials into the Arroyo.

1.4.2 Groundwater

The regional ground water flow is to the southeast (Stone, et al., 1983). The local St. Anthony Mine site ground water flows are radially inward toward Pit 1 (INTERA, 2004). Pit 1, therefore, acts as a local ground water sink and no groundwater appears to be leaving the mine. The Preliminary Assessment Report, St. Anthony Mine (NMED, 1995) indicated that the closest domestic wells to the site are located at a distance of two to three miles. This report also mentions several stock wells and one mine well located within two miles of the site.

Groundwater quality monitoring performed in December 2004 as part of the Phase I Abatement Plan investigation found that the St. Anthony Mine is not impacting groundwater quality in the vicinity of the mine. The most recent site-specific groundwater data for the St. Anthony Mine site is reported as part of the ongoing Phase I Abatement Plan investigation. The results confirm the original Status Report for the Phase I Abatement Plan investigation finding that the St. Anthony Mine is not impacting groundwater quality in the vicinity of the mine (INTERA, 2004). The specific groundwater quality data as presented in St. Anthony Mine Status Reports are reproduced as they appear in their original form in Appendix A. Exceedances of groundwater quality standards are associated with the undisturbed, mineralized orebody. There is no indication that the disturbed soil stockpiles contribute any degradation to groundwater quality in comparison to natural background conditions, or that impacted water leaves the Site.

The nearest groundwater rights in the vicinity of the site are owned by Two Rivers Ranch, Inc for 80 acre-feet per year from seven wells the closest of which is located less than one mile north of the site. The water rights are for mining, milling and associated operations. John Dilts owns the rights to a combined 1370 acre-feet per annum from 14 wells the closest well located 1.7 miles north of the site. The nearest stock well is located 1.3 miles to the northeast of the site and the nearest domestic well is located 2.8 miles to the northwest of the site. No wells were identified within the New Mexico Water Administration Technical Engineering Resource System (WATERS) database as being located within 10 miles southeast (downgradient) of the site.

1.4.3 Pit Water

Pits 1 and 2 have affected the hydrologic balance and drainage by diverting a minor amount of surface water into the pits rather than allowing it to flow, unrestricted, into Meyer Gulch. Surface evaporation and evapotranspiration from both pits causes a net loss from the ground water system. The presence of Pits 1 and 2 at the site has effectively created a large-diameter well that has penetrated all geologic units above and into the Jackpile. Currently information detailing contaminant transport into and through any adjacent water-bearing formations is limited. However, due to high rates of evaporation and the lack of potential recharge through the upper units at the site, any movement of constituents from the site via groundwater will be within the Jackpile unit, and is radially inward to the pit pond. The specific pit water quality data as presented in St. Anthony Mine Status Reports are reproduced as they appear in their original form in Appendix A. The quality of the pit water is poor, owing to the evaporative concentration of dissolved minerals that discharge to the pit from the surrounding orebody.

1.5 POST-MINING LAND USE

Reclamation at the St. Anthony Mine is intended to achieve a post-mining land use of livestock grazing comparable to surrounding areas. A vegetation survey has been conducted in nearby areas by

Cedar Creek Associates of Fort Collins, Colorado to determine the native species and corresponding plant densities for undisturbed areas. The survey was performed in accordance with the approved work plan (Cedar Creek, 2005). A report detailing results of the survey, revegetation requirements, success monitoring and criteria will be submitted to by March 31, 2006. Soils will be sampled as described in the Materials Characterization Work Plan in order to determine agronomic requirements to ensure vegetation success.

1.6 CULTURAL RESOURCES

A cultural resources survey of the Site and proposed borrow areas has been performed by Lone Mountain Archaeological Services. The cultural resources survey included a records search of known historic sites in the vicinity of the St. Anthony Mine and a 100 percent pedestrian survey of proposed disturbance areas. A report of finding will be submitted to HPD.

2.0 CLOSEOUT PLAN COMPONENTS

2.1 SURFACE WATER AND EROSION CONTROL

Surface water will be controlled to limit flow velocities and route runoff away from regraded and revegetated slopes. Silt fence and straw bales will be installed prior to construction and will be maintained for the duration of construction. All runoff from the site will be conveyed into Myers Gulch and the two open pits. A National Pollutant Discharge Elimination System (NPDES) construction permit will be applied for prior to construction. The Storm Water Pollution Prevention Plan (SWPP) to be prepared under the NPDES permit will provide additional information on surface water and erosion control during construction.

2.2 REGRADING

Regrading at the St. Anthony Mine will consist of reshaping material piles to promote non-erosive runoff and slope stability. All regrading at the St. Anthony Mine will be completed while adhering to the following general regrade requirements:

- A 3H:1V slope angle is to be used for all final side slope regrading.
- All slopes of greater than 50 feet of elevation will be interrupted with a flat, ten-foot wide bench.
- Material piles will be set back 50 feet from the edge of the natural channels.
- All materials extracted from Piles 1, 2, and 3, as a result of area specific regrading, are to be consolidated into Pit 2. The total volume of material to be deposited into Pit 2 is 1,505,000 cubic yards (cy).
- All materials excavated from Piles 4, 5, 6, and 7, as a result of area specific regrading, will be consolidated into Pit 1. The total volume of material to be deposited into Pit 1 is 3,541,000 cy.
- All regraded areas will be covered with a minimum of two feet of cover material.

The regrading requirements listed above are incorporated into the regrading plan shown in Figure 4, *Regrade Plan.* The regrade volume for each pile is summarized in Table 2.1, *Regrade Volumes.*

TABLE 2.1
REGRADE VOLUMES

Facility	Cut Volume[1] **(cy)**	Fill Volume[2] **(cy)**	Haulage[3] (cy)	**Haulage Location**
Pile 1 & 2	746,000	20,000	726,000	Pit 1
Pile 3	819,000	40,000	779,000	Pit 1
Pile 4	4,029,000	780,000	3,249,000	Pit 2
Pile 5	185,000	15,000	170,000	Pit 2
Pile 6	101,000	5,000	96,000	Pit 2
Pile 7	31,000	5,000	26,000	Pit 2
Crusher/Stockpile Area	102,000	102,000	0	na

Notes:
1. Cut volume is total volume of material to be moved during regrade.
2. Fill volume is amount of cut volume to be consolidated within the final facility footprint shown on Figure 4.
3. Haulage is the amount of cut volume to be hauled and consolidated at the haulage location.

2.2.1 Piles 1 and 2

Piles 1 and 2 are shale piles covering approximately 18 acres, adjacent to Meyer Gulch at the South end of the St. Anthony Mine property. The surface of Piles 1 and 2 will be regraded with the side slope and natural drainage buffer requirements noted above. Material from the eastern edges of these shale piles will be pulled back from Meyer Gulch towards the top (northwestern) portion of the piles. There is a topsoil pile at the southwestern tip of Pile 1. This topsoil pile will be used as cover material for the final regraded surfaces of Piles 1 and 2. The total available topsoil material at this location is 284,000 cy. The total volume of materials to be extracted from Piles 1 and 2 and deposited into Pit 2 is 726,000 cy.

The dense, low permeability nature of the shale makes it a poor growth medium for revegetation, plant roots have difficulty penetrating the dense material and the low permeability prevents rainfall from infiltrating in sufficient quantity to sustain vegetation. It is anticipated that six feet of non-shale material will be required over the shale to provide sufficient rooting depth and water storage capacity for revegetation success. The top two feet of cover material will be sourced from the topsoil stockpiles and borrow areas. The remaining four feet of material may come from the cover material stockpile or from other non-economic material piles. Depth and sources of cover material will be determined from the results of the Materials Characterization Plan. The volume of material required for six feet of cover over the final regraded surface of Piles 1 and 2 is 211,000 cy.

There is an earthen control structure at the western end of the Piles 1 and 2 topsoil pile that will be knocked down and pushed to the North, away from the southern mine property line. Once this drainage control structure has been demolished, the native surface water drainage will be restored. Two feet of cover will be placed over the knocked down control structure material.

2.2.2 Pile 3

Pile 3 is a non-economic material area covering approximately 24 acres immediately adjacent to Meyer Gulch. The surface of Pile 3 will be regraded with the side slope and natural drainage buffer requirements noted above. The final regraded surface will be achieved by pulling material back from Meyer Gulch and the existing footprint of Pile 3. The total volume of material that will be extracted from Pile 3 and deposited into Pit 2 is 779,000 cy. Two feet of cover will be placed on all regraded areas requiring 89,000 cy of cover material.

2.2.3 Pile 4

Pile 4 covers 120 acres and is the largest non-economic material pile at the St. Anthony Mine site. Due to the size of the pile, the regrading plan for this pile will be split into four specific sections. First, the northeast corner of Pile 4 will be regraded by pushing material away from the non-economic material area towards the northern St. Anthony Mine property line where allowable as per the side slope and drainage buffer requirements noted above. Second, the southern half of Pile 4 will be regraded by pulling the side slopes of the pile away from Meyer Gulch and the Arroyo east of Pile 4. No material from the southern half of Pile 4 will be pushed into the flood plain between the southern tip of Pile 4 and the Meyer Gulch/Arroyo confluence. Third, the southwestern edge of Pile 4 will be regraded by pulling material away from the natural drainage on the western edge of Pile 4 and Meyer Gulch. Fourth, the northwestern edge of Pile 4 will be regraded by pushing material towards the northern St. Anthony Mine property boundary. The total volume of materials to be extracted from Pile 4 and deposited into Pit 1 is 3,249,000 cy.

Depending on the results of the abatement plan investigation, deposition of excavated materials from Pile 4 into Pit 1 may not be possible. Therefore, as an alternative, the footprint of Pile 4 may be

extended to the west where it will overlap with the footprints of Pile 5 and Topsoil/Overburden Pile (after removal of the topsoil).

Two feet of cover will be placed on all regraded areas. Using the current regrade plan, 396,000 cy of cover material will be required.

The existing power line to the north of Pile 4 will be relocated to the north of the toe of the regraded and covered pile. Final alignment of the power line will be dependent on the whether Pit 1 is backfilled.

A stability analysis was performed on the regraded pile using available geotechnical data. The internal friction angle was estimated using the existing slope angles assuming that the material is at angle of repose (Factor of Safety of one). Remaining parameters were estimated based on professional experience. Given these assumptions, the factor of safety for the regraded slope of Pile 4 is 2.1. This is greater than the acceptable factor of safety of 1.5 typical for this situation. The stability analysis will be refined based on the material properties acquired during implementation of the Material Characterization Plan.

2.2.4 Pile 5 and Adjacent Topsoil Pile

Pile 5 is a non-economic material pile covering approximately 9 acres adjacent to Pile 4 and Meyer Gulch. Pile 5 will be regraded by pulling material away from Meyer Gulch and pushing material towards the St. Anthony Mine northern property boundary as per the general regrading requirements noted above. The total volume of materials to be extracted from Pile 5 and deposited into Pit 1 is 170,000 cy. Depending on the results of the abatement plan investigation, deposition of excavated materials from Pile 5 into Pit 1 may not be possible. Therefore, as an alternative, the total volume of material that may be excavated and consolidated within the final regraded extents of Pile 5 is 185,000 cy. The final regrade extents of Pile 5 may include the fan area on the western edge of Pile 4. Two feet of cover will be placed on all regraded areas requiring 31,000 of cover material.

There is a topsoil pile North of Pile 5. This topsoil pile will be used as cover material for regraded non-economic material piles. After the existing topsoil stores are removed, the topsoil pile area will be returned to the native topography. The total volume of topsoil material available as a source of cover material is 558,000 cy.

2.2.5 Pile 6

Pile 6 is a non-economic material pile covering of approximately 5 acres adjacent to Meyer Gulch. Pile 6 will be regraded by pulling material away from Meyer Gulch as per the general regrading requirements noted above. The total volume of materials to be extracted from Pile 6 and deposited into Pit 1 is 96,000 cy. Depending on the results of the abatement plan investigation, deposition of excavated materials from Pile 6 into Pit 1 may not be possible. Therefore, as an alternative, the excavated material from Pile 6 may be deposited into Pit 2. Two feet of cover will be placed on all regraded areas requiring 20,000 cy of cover material.

2.2.6 Pile 7

Pile 7 is a non-economic material pile covering approximately 3 acres adjacent to Meyer Gulch. Pile 7 will be regraded by pulling material away from Meyer Gulch as per the general regrading requirements noted above. The total volume of materials to be extracted from Pile 7 and deposited into Pit 1 is 26,000 cy. Depending on the results of the abatement plan investigation, deposition of excavated materials from Pile 7 into Pit 1 may not be possible. Therefore, as an alternative, the total volume of

material that may be excavated and consolidated within the final regraded extents of Pile 7 is 30,693 cy. Two feet of cover will be placed on all regraded areas requiring 10,000 cy of cover material.

2.2.7 Crusher/Stockpile Area

The Crusher/Stockpile Area is located between Pit 1 and Meyer Gulch. This 24-acre area consists of multiple piles of non-economic material. Individual piles will be regraded as per the general regrading requirements noted above. The Crusher/Stockpile Area will be regraded by pushing material towards the St. Anthony Mine northern property boundary as per the general regrading requirements noted above. The total volume of material to be excavated and consolidated within the final extents of Crusher/Stockpile area as a result of regrading is 102,000 cy. Two feet of cover will be placed over the entire Crusher/Stockpile Area requiring 84,000 cy of cover material.

2.2.8 West Disturbance Area

There are a number of small non-economic material piles west of Pile 6. These piles cover a total of 6 acres of non-economical material in 9 individual piles. All of these piles will be regraded by pushing material out from the current pile footprints as per the general regrading requirements noted above. Two feet of cover will be placed on all regraded areas requiring 18,000 cy of cover material.

2.2.9 Mine Shaft

The mine shaft is located to the West of the Pit 1 approximately as shown on Figure 2. The mine shaft area includes a work pad constructed on non-economic material covering approximately 6 acres and an access road that runs to the north of the bluff that separates Pit 1 from the shaft area. An aerial photo of the shaft area is shown on Figure 5.

The shaft area will be regraded per the general regrading requirements noted above. Side slopes will be pushed out to a stable slope angle and material along the wash will be pulled back and consolidated with the material on the top of the work pad. Concrete pads located on the work area will be cracked as discussed below and covered. The shaft area will be covered with two-feet of cover material requiring 20,000 cy. Cover material for the mine shaft area will come from the borrow area located to the north of the shaft work pad.

The access road was constructed using standard cut and fill methods. The sideslope of fill areas will be regraded to a stable slope angle per the general regrading requirements. The access road to the mine shaft will be reclaimed as discussed in Section 2.6 below.

2.3 PITS 1 AND 2

Depending on recommendations in the water abatement investigation, Pit 1 may be backfilled with 3,541,000 cy of material, filling the pit to an elevation of 5,943 feet. The fill depth over the surveyed pit lake elevation is 91 feet. The fill material will be covered with two-feet, 139,000 cy, of cover material. Pit 1 will be fenced with a four-wire barbed wire fence to discourage human or grazing access to the pit.

Pit walls were originally excavated at the steepest stable angle to minimize the pit's disturbance area and the amount of non-economic materials generated during mining. Setting back the pit walls to a slope capable of supporting a self-sustaining ecosystem is not recommended. Setting back the west pit wall will expand the slope into the mesa to the west of the pit, significantly increasing the disturbance area and the volume of material that would require placement. This runs counter to the overall goal of reclamation. Backfilling along the pit walls would require approximately 10,000,000 cy of material at an estimated cost of $17,000,000, more than doubling the cost of earthworks at the site.

Additionally, backfilling along the pit wall would require backfilling of the pit pond, which the Phase I Abatement Plan Investigation report may recommend against. Leaving the pit wall in its current state is consistent with engineering constraints and economic considerations. The pit walls are stable and they do not pose any risk to water resources; they are non-acid generating, and reducing their slope would only increase the aerial contact of disturbed material with rainfall. Current industry standards and practices as reflected in federal mine reclamation laws and mine reclamation laws of other states (e.g., Arizona, Idaho, Montana, and Nevada)(McElfish, 1996) all allow for the retention of the pit walls in the current state. Safety issues are managed by the fence.

Pit 2 will be backfilled with 1,505,000 cy of material from the sources described above. Backfill material will be placed along the pit walls to facilitate drainage using slopes not steeper than 3H:1V. Shale material from Piles 1 and 2 will be covered with a minimum of four feet of non-shale non-economic material to minimize effect of the shale on the establishment of a self-sustaining ecosystem. Two feet of cover material will be placed over all backfill material requiring 113,000 cy of cover material.

2.4 CONCRETE SLABS

Concrete slabs located west of Pile 3 will be broken or cracked on three-foot centers and covered with two feet of cover requiring 600 cy of material.

2.5 BORROW AREAS

Cover material will be sourced from three material stockpiles and potentially four borrow areas. The locations of the stockpiles and three of the borrow areas are shown on Figure 2 the fourth borrow area is located near the mine shaft and is shown on Figure 5. Suitability of stockpile and borrow sources for use as cover material will be confirmed under the Material Characterization Plan.

The volume of cover material required is summarized in Table 2.2, *Cover Material Volume Requirements.* The volume of material available from the three stockpiles is summarized in Table 2.3, *Cover Material Stockpile Volumes.* Material from the topsoil stockpiles will be used first the remaining 251,000 cy of cover material required will be sourced from the borrow areas. If non-economic material is used for four feet of the six foot cover over Piles 1 and 2 the volume of material required from the borrow areas will be 110,000 cy.

TABLE 2.2
COVER MATERIAL VOLUME REQUIREMENTS

Facility	Volume (cy)
Piles 1 & 2	212,000
Pile 3	89,000
Pile 4	396,000
Pile 5	31,000
Pile 6	20,000
Pile 7	10,000
Crusher/Stockpile Area	84,000
West Disturbance Areas	18,000
Pit 1	139,000
Pit 2	113,000
Mine Shaft	20,000
TOTAL	**1,132,000**

TABLE 2.3 COVER MATERIAL STOCKPILE VOLUMES	
Stockpile	**Volume (cy)**
Topsoil Stockpile 1	39,000
Topsoil Stockpile 2	284,000
Topsoil/Overburden Stockpile	558,000
TOTAL	**881,000**

2.6 ROAD RECLAMATION

Existing access roads on the site are shown on Figure 2. Reclamation of roads will involve ripping and regrading the road surfaces at the completion of reclamation activities. Road reclamation will likely be completed as a final task after regrading has been completed. Revegetation of the regraded roads will be performed concurrently with other areas. It is not anticipated that any roads will be left on site as part of the final reclamation.

2.7 REVEGETATION

Areas impacted by reclamation activities will be revegetated. Revegetation is intended to reduce impacts to surface water by establishing a self-sustaining plant community that provides erosional stability. Site soils will be sampled for agronomic properties as part of the Material Characterization Plan. Required quantities of soil amendments will be determined on a site-specific basis. Inorganic fertilizer will be added to increase the nitrogen, phosphate, and potassium available to reseeded areas as required by analytical analysis. Mulch will be applied after seeding is complete to conserve soil moisture and protect the soil from wind and water erosion. Revegetation will take place between June and September. Approximately 320 acres will be revegetated as part of this plan. Regraded areas will be seeded with a mixture containing native grasses and forbs that will not depend on external inputs of water or fertilizer. Specific species, composition percentages and seeding rates will be determined by a vegetation and wildlife survey conducted by Cedar Creek Associates of Fort Collins, Colorado. The initial vegetation survey was performed September 26 to 28, 2005. This survey was performed under the St. Anthony Vegetation and Wildlife Survey (Cedar Creek Associates, 2005). Results of the survey will be reported by March 31, 2006 and will include seed species and composition percentages. In addition, the report will include cover monitoring and success criteria.

2.8 REGULATORY COMPLIANCE

An NPDES construction permit for storm water discharge will be obtained prior to implementation of the Closeout Plan. A SWPP will be prepared as part of the NPDES permit application. The SWPP will present erosion control measures that will be implemented, inspected, and maintained for the duration of construction. Dust will be controlled by periodically watering haul roads and other dust-generating areas as necessary.

Applicable permits required under Section 404 of the Clean Water Act (CWA) for construction activities in Meyer Gulch will be obtained prior to implementation of the Closeout Plan.

2.9 SITE ACCESS CONTROL

Access to the St. Anthony Mine is across lands owned by the Seboyeta Land Grant and Jack Diltz. A locked gate currently exists at the entrance to the site to prevent public access. Fences that are currently on site will remain in place and will be repaired and photographically documented. UNC does not own or control the St. Anthony Mine site.

Therefore, UNC will assume no responsibility for the maintenance of site access controls or for security of the site once the improvements have been made.

3.0 SCHEDULE

Implementation of the St. Anthony Closeout Plan will begin after it has been approved by the Mining and Minerals Division (MMD). Approval of the Closeout Plan is dependent on the Vegetation and Wildlife Report, results of the archaeological survey, results of the Phase I Abatement Investigation, and results of the Material Characterization Plan. Upon approval construction documents and permit applications will be prepared, a construction contractor will be selected and construction will begin.

A specific reclamation schedule will be developed by the contractor during the construction bidding process. The general schedule for implementation of the Closeout Plan is below. This schedule may have to be adjusted depending on the results of the surveys and reports to be submitted in the spring and summer of 2006.

Spring 2006

- Submission of Vegetation and Wildlife Report
- Completion of Archaeological Survey
- Submission of Phase I Abatement Plan Investigation Report
- Implement Materials Characterization Work Plan

Summer 2006

- Submission of Materials Characterization Report

Fall 2006

- Revision of Closeout Plan based on comments from State agencies and results of Vegetation and Wildlife Report, Archaeological Survey, Phase I Abatement Plan Investigation, and Materials Characterization Report

Winter 2006/2007

- Respond to comments to revised Closeout Plan
- Develop bidding documents, select contractor and apply for applicable permits

Spring 2007

- Construction mobilization and begin site reclamation

Fall 2007

- Complete site reclamation and demobilization

Winter 2007/2008

- Preparation and submission of As-Built Report and construction documentation

2008 – 2021

- Monitoring of revegetation success

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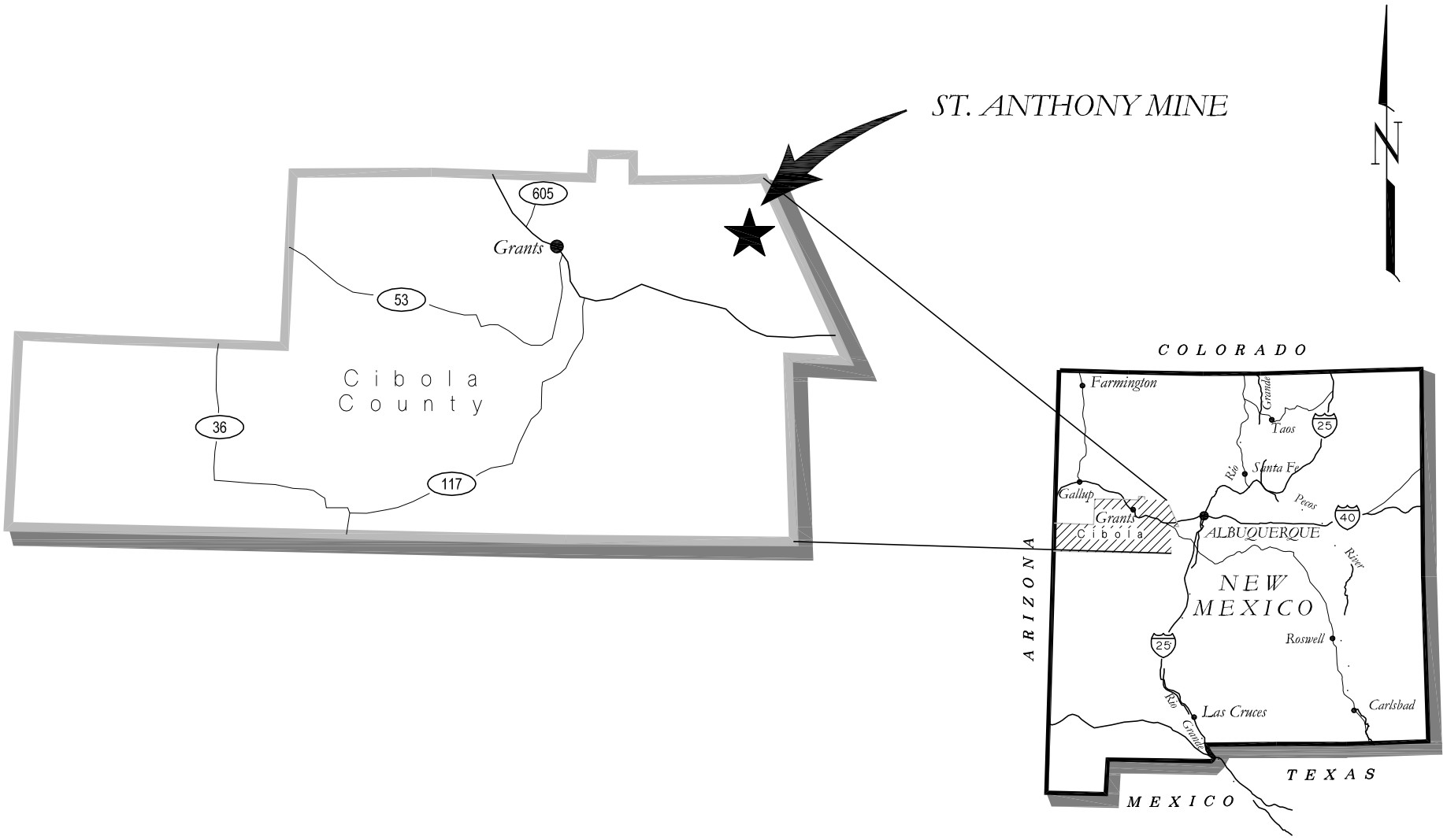
United Nuclear Corporation (UNC), 1978, Final Draft Saint Anthony Open Pit Mine Feasibility Study, Gallup, New Mexico.

FIGURES



REV. No.	REVISIONS	DATE	DESIGN BY	DRAWN BY	REVIEWED AND SIGNED BY
0	Issued for Final Report	01/06	J.Thompson	K.Conrath	J.Thompson

MWH

PROJECT No.: 1004490.018701

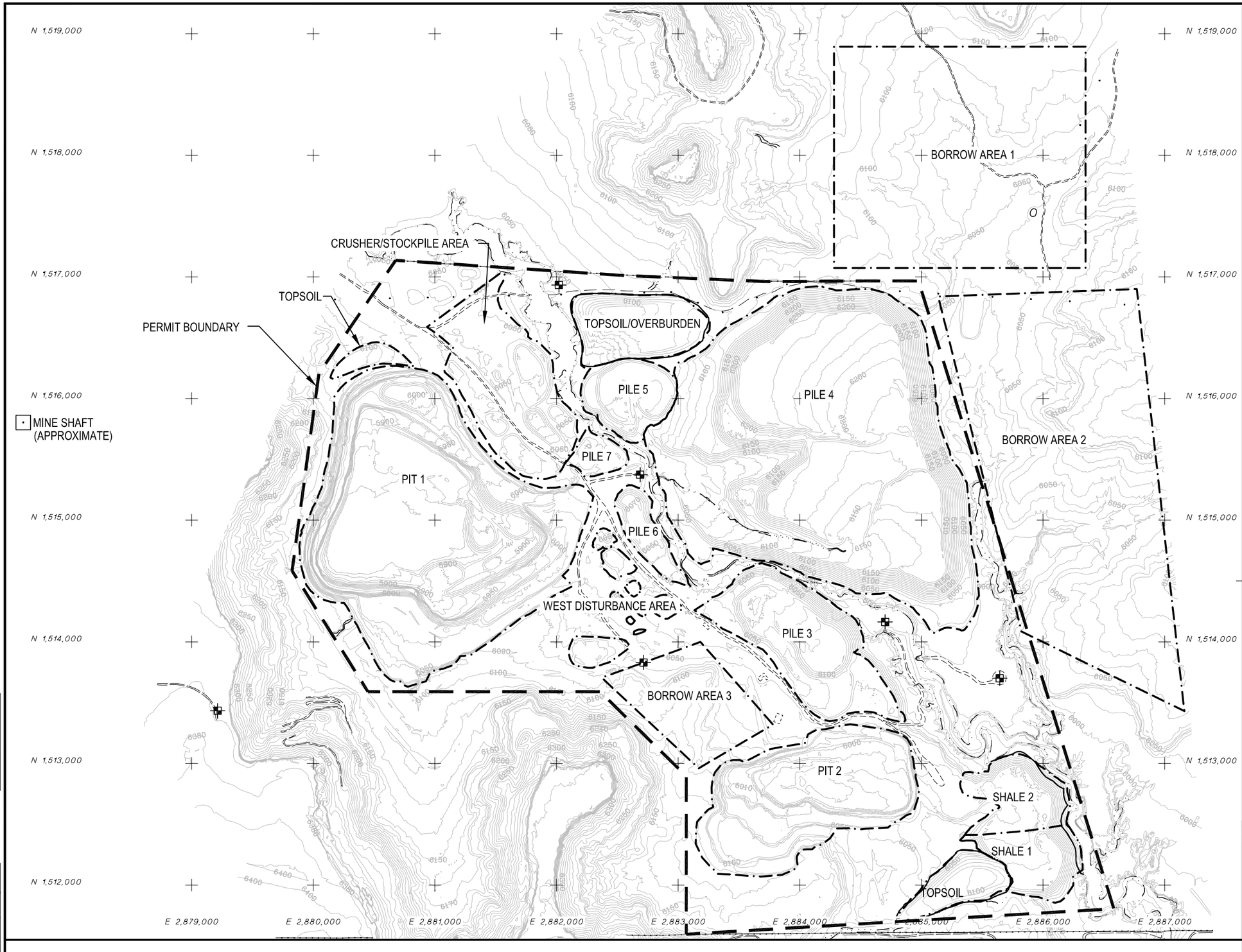
AutoCAD FILE: UNC Gen Location.dwg

SCALE: Not to Scale

FIGURE No: 1

UNITED NUCLEAR CORPORATION
St. Anthony Mine

GENERAL LOCATION MAP



LEGEND

- FACILITY BOUNDARY
- PERMANENT WASH
- DIRT ROAD
- PERMIT BOUNDARY
- MINE SHAFT
- MONITORING WELL

N

SCALE

400' 0 400' 800'

CONTOUR INTERVAL 10FT.

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UNITED NUCLEAR CORPORATION

PROJECT: **ST ANTHONY MINE**

DRAWING TITLE: **SITE LAYOUT**

MWH

Sheet 1 Of 1 Sheets

SCALE: As Shown

DRAWING No. 2

AutoCAD FILE: UNC_Site Layout.dwg PROJECT NUMBER: 1004490.018701

LEGEND

- FACILITY BOUNDARY
- PERMANENT WASH
- DIRT ROAD
- PERMIT BOUNDARY
- MONITORING WELL

N

SCALE

200' 0 200' 400'

CONTOUR INTERVAL 2FT.

REV. No.	REVISIONS	DATE	DESIGN BY	DRAWN BY	REVIEWED AND SIGNED BY
0	Issued for Final Report	01/06	J.Thompson	K.Conrath	J.Thompson

UNITED NUCLEAR CORPORATION

PROJECT:

ST. ANTHONY MINE

DRAWING TITLE:

EXISTING CONDITIONS

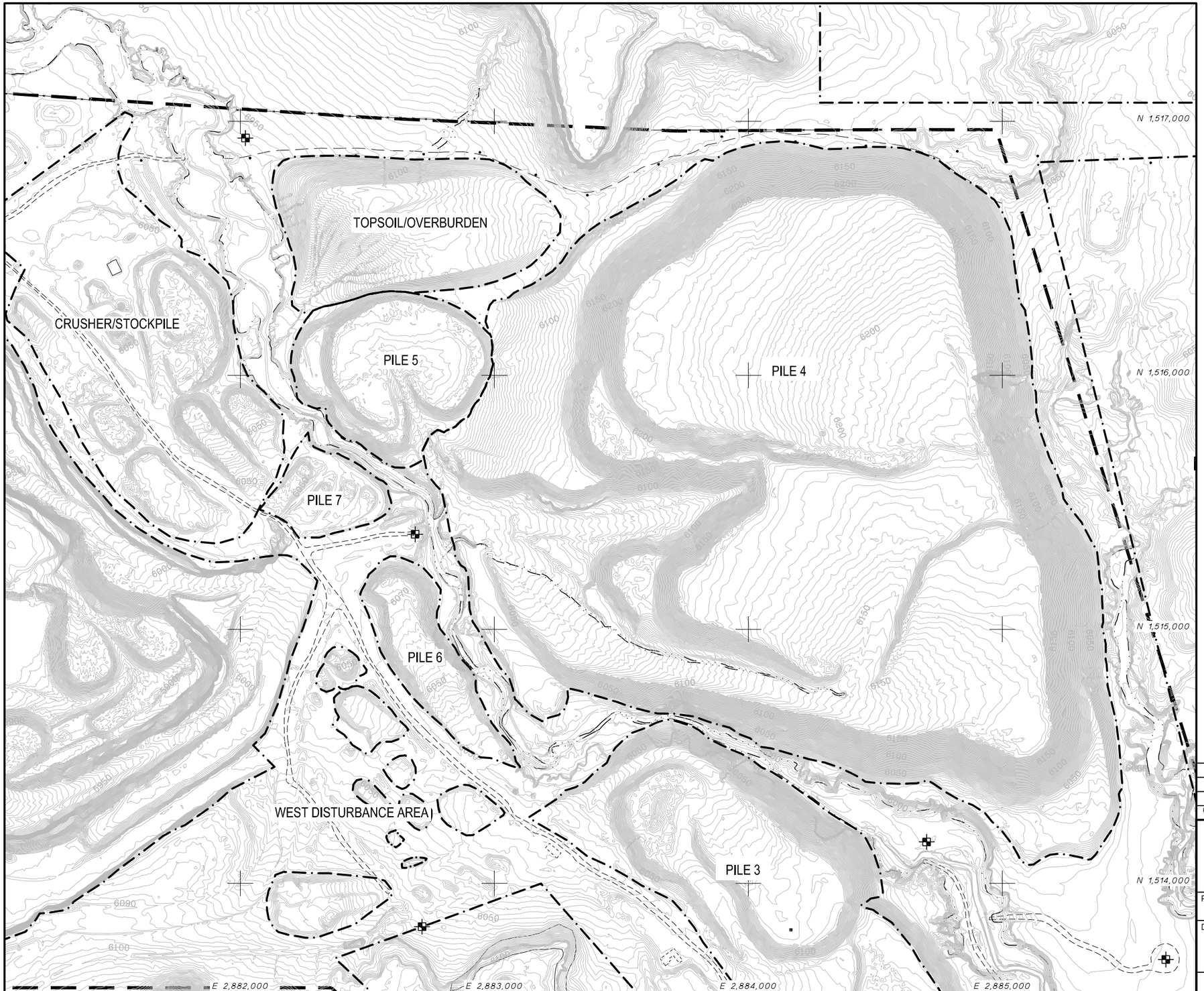
MWH

Sheet 1 Of 3 Sheets

SCALE: As Shown

DRAWING No. 3

AutoCAD FILE: UNC_Existing_Cond_NW.dwg PROJECT NUMBER: 1004490.018701



LEGEND

- FACILITY BOUNDARY
- PERMANENT WASH
- DIRT ROAD
- PERMIT BOUNDARY
- MONITORING WELL

SCALE

200' 0 200' 400'

CONTOUR INTERVAL 2FT.

REV. No.	REVISIONS	DATE	DESIGN BY	DRAWN BY	REVIEWED AND SIGNED BY
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UNITED NUCLEAR CORPORATION

PROJECT: ***ST. ANTHONY MINE***

DRAWING TITLE: ***EXISTING CONDITIONS***

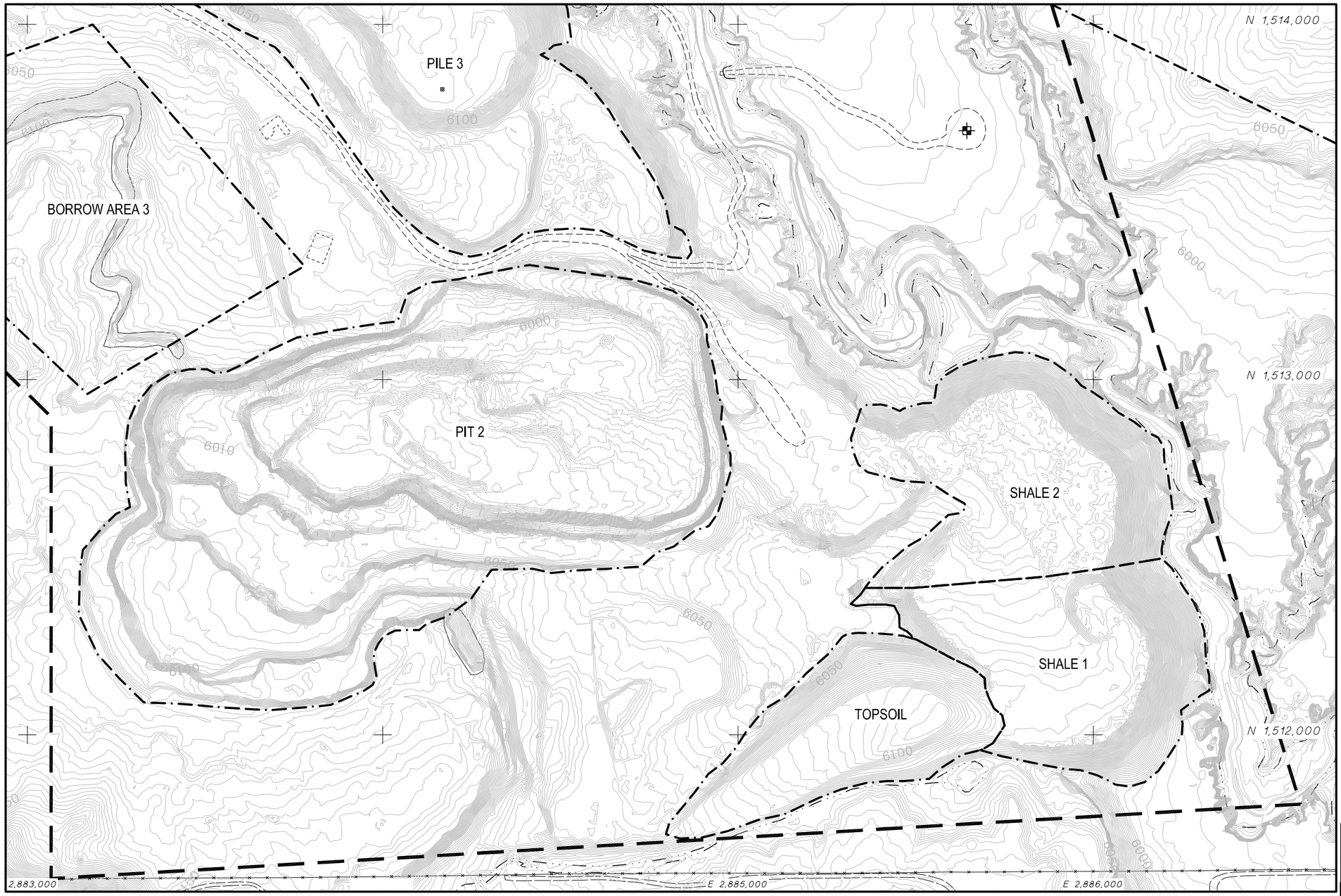
MWH

Sheet 2 Of 3 Sheets

SCALE: *As Shown*

DRAWING No. **3**

AutoCAD FILE: *UNC_Existing_Cond_NE.dwg* PROJECT NUMBER: *1024490.018701*



LEGEND

- FACILITY BOUNDARY
- PERMANENT WASH
- DIRT ROAD
- PERMIT BOUNDARY
- MONITORING WELL

SCALE

150' 0 150' 300'

CONTOUR INTERVAL 10FT.

REV. No.	REVISIONS	DATE	DESIGN BY	DRAWN BY	REVIEWED AND SIGNED BY
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UNITED NUCLEAR CORPORATION

PROJECT: ***ST. ANTHONY MINE***

DRAWING TITLE: ***EXISTING CONDITIONS***

MWH

Sheet 3 Of 3 Sheets

SCALE: *As Shown*

DRAWING No. **3**

AutoCAD FILE: *UNC_Existing Cond_South* PROJECT NUMBER: *1004490.018701*

CRUSHER/STOCKPILE AREA

TOPSOIL

PERMIT BOUNDARY

TOPSOIL/OVERBURDEN

PILE 4

PILE 5

PILE 7

PILE 6

PILE 3

PIT 1

WEST DISTURBANCE AREA

BORROW AREA 3

N 1,517,000

N 1,516,000

N 1,515,000

N 1,514,000

E 2,879,000

E 2,880,000

E 2,881,000

E 2,882,000

E 2,883,000

LEGEND

- FACILITY BOUNDARY
- PERMANENT WASH
- DIRT ROAD
- 6190 REGRADE CONTOURS
- PERMIT BOUNDARY
- MONITORING WELL

SCALE

200' 0 200' 400'

CONTOUR INTERVAL 10FT.

REV. No.	REVISIONS	DATE	DESIGN BY	DRAWN BY	REVIEWED AND SIGNED BY
0	Issued for Final Report	01/06	J.Thompson	K.Conrath	J.Thompson

UNITED NUCLEAR CORPORATION

PROJECT:

ST. ANTHONY MINE

DRAWING TITLE:

FINAL REGRADE PLAN

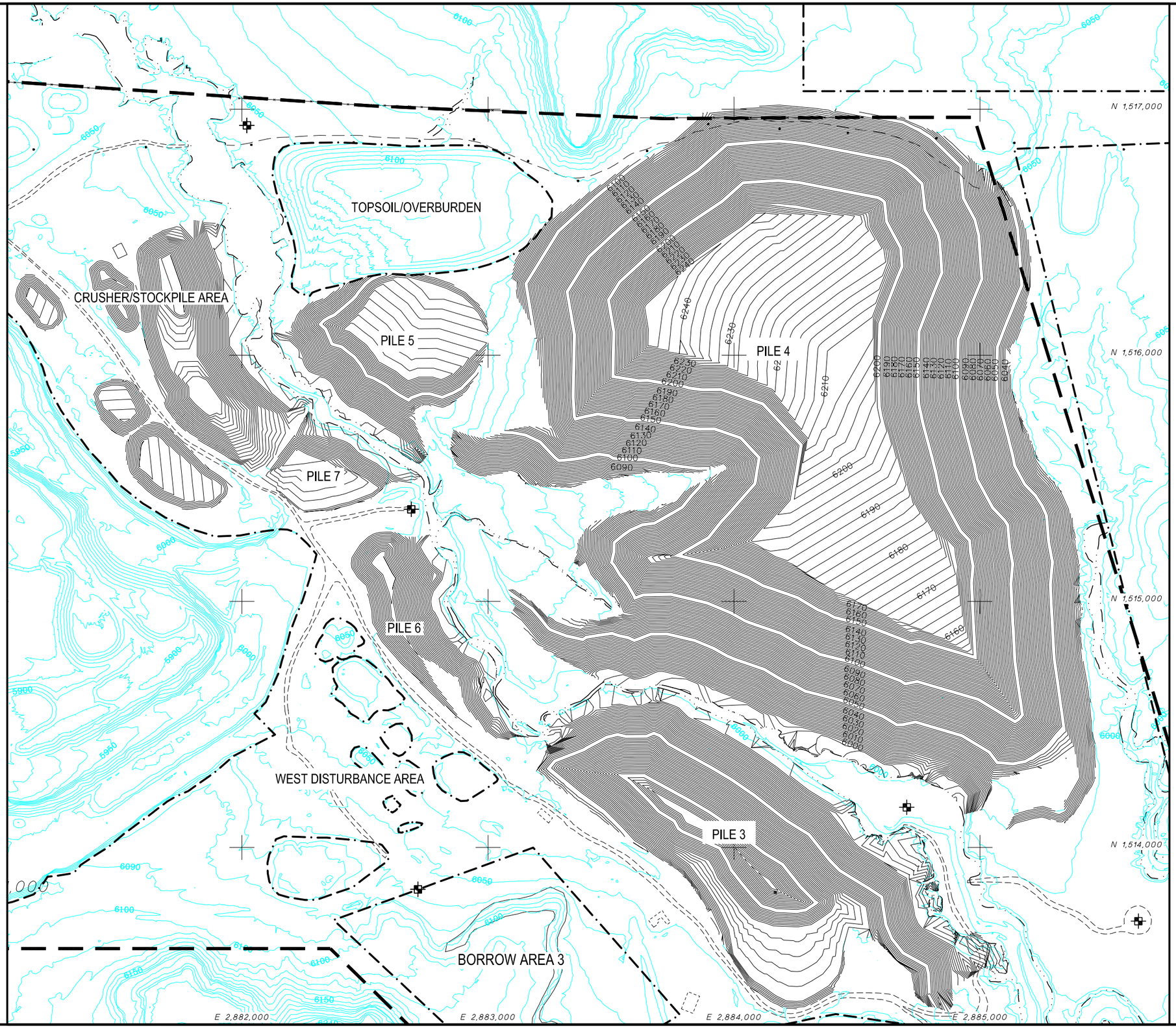
MWH

Sheet 1 Of 3 Sheets

SCALE: As Shown

DRAWING No. 4

AutoCAD FILE: UNC_Regrade_Cond NW.dwg PROJECT NUMBER: 10044490.018101



LEGEND

- FACILITY BOUNDARY
- PERMANENT WASH
- DIRT ROAD
- 6190 REGRADE CONTOURS
- PERMIT BOUNDARY
- MONITORING WELL

SCALE

200' 0 200' 400'

CONTOUR INTERVAL 10FT.

REV. No.	REVISIONS	DATE	DESIGN BY	DRAWN BY	REVIEWED AND SIGNED BY
0	Issued for Final Report	01/06	J.Thompson	K.Conrath	J.Thompson

UNITED NUCLEAR CORPORATION

PROJECT: ***ST. ANTHONY MINE***

DRAWING TITLE: ***FINAL REGRADE PLAN***

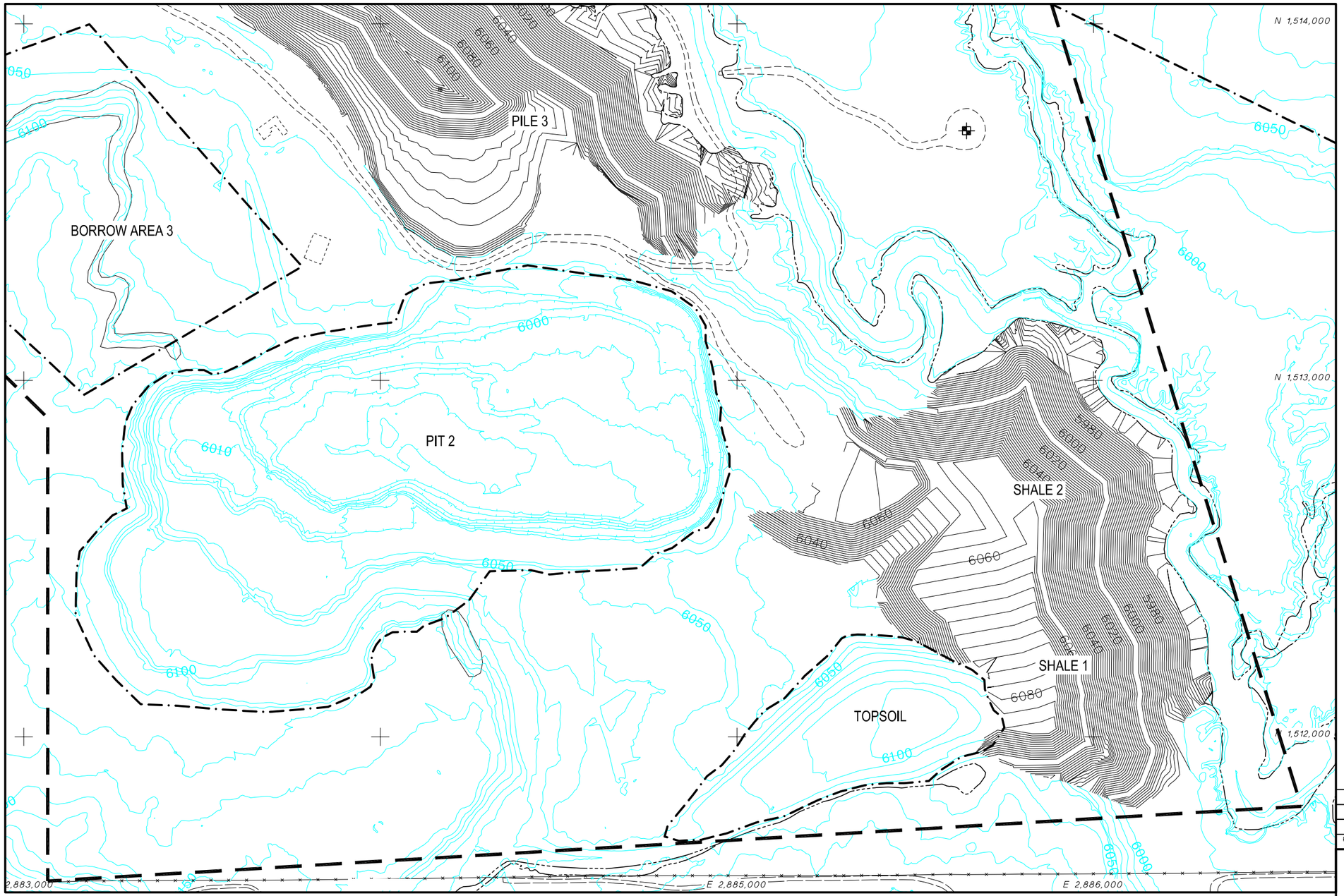
MWH

Sheet 2 Of 3 Sheets

SCALE: *As Shown*

DRAWING No. **4**

AutoCAD FILE: *UNC_Regrade_Cond_NE.dwg* PROJECT NUMBER: *1004590.018701*



LEGEND

- FACILITY BOUNDARY
- PERMANENT WASH
- DIRT ROAD
- 6190 REGRADE CONTOURS
- PERMIT BOUNDARY
- MONITORING WELL

SCALE

150' 0 150' 300'

CONTOUR INTERVAL 10FT. & 1 FT.

REV. No.	REVISIONS	DATE	DESIGN BY	DRAWN BY	REVIEWED AND SIGNED BY
0	Issued for Final Report	01/06	J.Thompson	K.Conrath	J.Thompson

UNITED NUCLEAR CORPORATION

PROJECT: ***ST. ANTHONY MINE***

DRAWING TITLE: ***FINAL REGRADE PLAN***

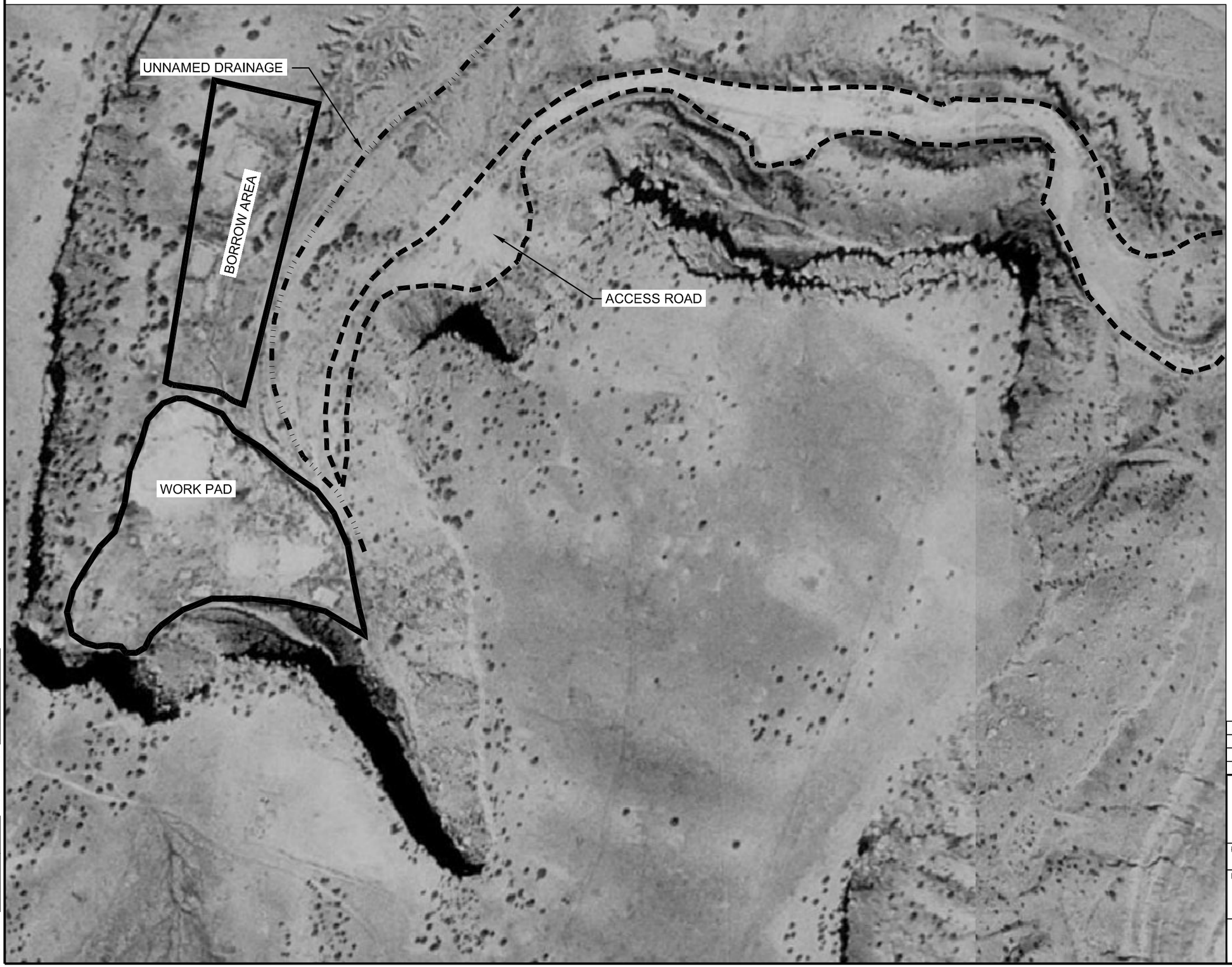
MWH

Sheet 3 Of 3 Sheets

SCALE: *As Shown*

DRAWING No. **4**

AutoCAD FILE: *UNC Regrade Cond South* PROJECT NUMBER: *1004490.018701*



LEGEND

- WORK PAD
- DRAINAGE
- ACCESS ROAD

N

0 150 300

Approximate Scale in Ft.

REV. No.	REVISIONS	DATE	DESIGN BY	DRAWN BY	REVIEWED AND SIGNED BY
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UNITED NUCLEAR CORPORATION

PROJECT:
ST. ANTHONY MINE

DRAWING TITLE:
MINE SHAFT AREA

MWH

Sheet 1 Of 1 Sheets

SCALE: *Not to Scale*

DRAWING No. **5**

AutoCAD FILE: *UNC_Site_Add.dwg* PROJECT NUMBER: *10044490.018701*

APPENDIX A

PHASE I ABATEMENT PLAN ANALYTICAL DATA

TABLE 1
MONITORING WELL AND PIT WATER ELEVATION AND SURVEY DATA
ST. ANTHONY STATUS REPORT

Location ID	Northing	Easting	Top of Casing Elevations	Location of Survey Measurement	Total Depth of Well (feet bgs)	Date Gauged	DTW (feet)	Ground Water Elevation (feet)
MW-1	1516934.39	2882019.92	6047.87	North Side of PVC Casing	202	8/17/2004	105.97	5941.90
						9/17/2004	108.93	5938.94
						12/17/2004	105.10	5942.77
						3/9/2005	105.54	5942.33
MW-2	1515374.35	2882687.95	6037.87	North Side of PVC Casing	52	8/17/2004	Dry	
						9/17/2004	Dry	
						12/17/2004	Dry	
						3/9/2005	Dry	
MW-3	1514163.47	2884702.08	5989.39	North Side of PVC Casing	67	8/17/2004	52.67	5936.72
						9/17/2004	55.94	5933.45
						12/17/2004	52.52	5936.87
						3/9/2005	52.51	5936.88
MW-4	1513700.60	2885643.90	6008.55	North Side of PVC Casing	95	8/17/2004	75.43	5933.12
						9/17/2004	85.14	5923.41
						12/17/2004	75.13	5933.42
						3/9/2005	75.16	5933.39
MW-5	1513829.91	2882715.11	6058.58	North Side of PVC Casing	193	8/17/2004	114.24	5944.34
						9/17/2004	110.80	5947.78
						12/17/2004	114.04	5944.54
						3/9/2005	113.97	5944.61
MW-6	1513433.40	2879214.31	6370.32	North Side of PVC Casing	510	8/17/2004	437.61	5932.71
						9/17/2004	445.46	5924.86
						12/17/2004	437.01	5933.31
						12/30/2004	436.91	5933.41
						3/8/2005	436.65	5933.67
Mystery Well	NA		NA		578*	9/17/2004	119.92	NA
						3/8/2005	115.87	NA
Large Pit	1514744.77	2880911.33	5852.80	Southerly Shore at Water's Edge	NA	8/17/2004	NA	5852.80
						9/17/2004		5852.47
						12/30/2004		5853.30
						1/13/2005		5853.40
						3/2/2005		5853.82
						3/8/2005		5853.90
						3/29/2005		5853.87
Small Pit	1512917.67	2884057.73	5956.29	East Shore at Water's Edge	NA	1/13/2005	NA	5956.29
						3/2/2005		5955.98
						3/10/2005		5955.99
						3/29/2005		5955.77

Survey Measurements were recorded in West Zone NAD 83, elevations in NADV88
* Total depth of mystery well is below top of casing

TABLE 2
MONITORING WELL SAMPLE ANALYTICAL RESULTS
ST. ANTHONY STATUS REPORT

MONITORING WELL ID	DATE	mg/L																		
		Aluminum	Arsenic	Barium	Beryllium	Boron	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Potassium	Selenium	Silver
MW-1	08/10/04	**7.6**	<0.0049	0.090	<0.00041	0.35	<0.00027	4.7	0.0080	0.0024	0.0057	**6.0**	0.0062	1.8	0.047	<0.000025	0.015	0.0050	5.1	<0.0046	<0.00070
	12/17/04	**0.12**	<0.015	0.019	<0.0050	0.33	<0.0050	4.1	<0.010	0.0025	<0.0025	**0.12**	<0.0030	0.62	0.016	<0.00020	0.0091	0.0027	1.9	<0.015	0.00039
	03/09/05	0.060	<0.015	0.015	<0.0050	0.36	<0.0050	4.4	<0.010	<0.010	<0.010	0.030	<0.0030	0.63	0.018	<0.00020	0.0093	<0.040	1.6	<0.015	0.0011
MW-2	08/10/04	DRY - WELL NOT SAMPLED																			
	12/17/04	DRY - WELL NOT SAMPLED																			
	03/09/05	DRY - WELL NOT SAMPLED																			
MW-3	08/10/04	0.14	<0.0049	0.021	<0.00041	0.36	<0.00027	20	<0.0021	0.00069	<0.00097	0.16	<0.0021	8.3	0.10	<0.000025	0.0066	<0.0042	2.7	<0.0046	<0.00070
	12/17/04	<0.10	<0.015	0.014	<0.0050	0.36	<0.0050	18	<0.010	0.00140	<0.010	0.11	<0.0030	7.5	0.086	<0.00020	0.0043	<0.040	2.1	<0.015	0.00038
	03/10/05	<0.10	<0.015	0.014	0.0050	0.36	<0.0050	18	<0.010	<0.010	<0.010	0.13	<0.0030	7.5	0.084	<0.00020	0.0064	<0.040	2.2	<0.015	0.0020
MW-4	08/10/04	1.5	<0.0049	0.045	<0.00041	0.25	<0.00027	30	<0.0021	0.0013	<0.00097	**1.1**	<0.0021	13	**0.38**	<0.000025	0.011	<0.0042	4.9	<0.0046	<0.00070
	12/17/04	0.061	0.007	0.017	<0.0050	0.33	<0.0050	30	<0.010	0.0044	<0.010	0.061	<0.0030	13	0.15	<0.00020	0.0032	<0.040	3.9	<0.015	<0.010
	03/29/05	<0.10	<0.010	0.017	<0.0050	0.36	<0.0050	34	<0.010	0.0019	<0.010	0.045	<0.0030	14	0.2	<0.00020	0.0047	<0.040	4.4	<0.0050	0.00066
MW-5	08/10/04	0.039	<0.0049	0.015	<0.00041	0.26	<0.00027	330	<0.0021	0.0034	<0.00097	**1.6**	<0.0021	180	**0.40**	<0.000025	<0.0023	<0.0042	7.6	<0.0046	<0.00070
	12/17/04	<0.10	<0.015	0.010	<0.0050	0.25	<0.0050	310	<0.010	0.0016	<0.010	**1.9**	<0.0030	170.0	**0.29**	<0.00020	<0.020	0.0025	7.2	<0.015	0.00085
	03/09/05	<0.10	<0.015	0.0099	<0.0050	0.26	<0.0050	330	<0.010	0.0010	<0.010	**1.5**	<0.0030	180	**0.27**	<0.00020	0.0024	<0.040	7.1	<0.015	0.00081
MW-6	08/10/04	0.039	<0.0049	0.016	<0.00041	0.27	<0.00027	3.6	0.015	<0.00067	<0.00097	<0.019	<0.0021	0.94	0.0014	<0.000025	0.013	<0.0042	16	<0.0046	<0.00070
	12/30/04	0.074	<0.015	0.023	<0.0050	0.26	<0.0050	5.8	<0.010	0.0016	<0.010	0.058	<0.0030	0.91	0.053	<0.00020	0.017	0.0024	3.5	<0.015	0.00038
	03/09/05	<0.10	0.0054	0.019	<0.0050	0.27	<0.0050	5.9	<0.010	<0.010	<0.010	<0.10	<0.0030	0.82	0.034	<0.00020	0.012	<0.040	2.7	<0.015	0.00067
NMWQCC		5.0**	0.1	1.0	NA	0.75**	0.01	NA	0.05	0.05**	NA	1.0*	0.05	NA	0.2*	0.002	1.0**	0.2**	NA	0.05	0.05

MONITORING WELL ID	DATE	mg/L														pCi/L					
		Sodium	Thallium	Uranium	Vanadium	Zinc	Bicarbonate Alkalinity	Carbonate Alkalinity	Total Alkalinity	Chloride	Fluoride	Nitrate-Nitrite	Sulfate	Total Dissolved Solids	Total Suspended Solids	Radium 226	Radium 226 error (+/-)	Radium 228	Radium 228 error (+/-)	Field Conductivity (uhmos/cm)	Field pH (pH Units)
MW-1	08/10/04	350	<0.0081	0.025	0.015	0.013	390	25	410	19	1.4	<0.021	290	**2100**	5300	**225**	2.69	**3.23**	0.849	1026	8.52
	12/17/04	330	<0.010	0.018	<0.010	0.0053	410	15	420	17	1.4	0.056	300	**1300**	470	**36**	2.21	**1.29**	0.703	1487	8.33
	03/09/05	350	<0.010	0.010	<0.010	<0.020	410	17	430	18	1.6	0.061	320	1000	310	12.9	0.842	1.59	0.595	1430	8.39
MW-2	08/10/04	DRY - WELL NOT SAMPLED																			
	12/17/04	DRY - WELL NOT SAMPLED																			
	03/09/05	DRY - WELL NOT SAMPLED																			
MW-3	08/10/04	350	<0.0081	0.019	<0.0026	0.0096	390	<0.85	390	20	1.6	<0.021	370	1000	67	1.01	0.233	0.232	0.731	1027	7.86
	12/17/04	350	<0.010	0.015	<0.010	<0.010	390	<5.0	390	19	1.6	<0.10	390	1000	48	2.10	0.548	0.494	0.634	1500	7.71
	03/10/05	350	0.0061	0.016	<0.010	<0.020	400	<5.0	400	20	1.6	0.067	420	1000	150	2.69	0.362	2.00	0.616	1559	7.95
MW-4	08/10/04	430	<0.0081	**0.85**	<0.0026	0.013	300	<0.85	300	21	1.3	<0.021	**680**	**1400**	200	1.84	0.244	0.799	0.754	1405	7.96
	12/17/04	440	<0.010	**0.25**	<0.010	0.0075	380	<5.0	380	20	1.1	<0.10	**1300**	**1400**	92	3.12	0.674	0.74	0.69	1715	7.72
	03/29/05	430	<0.010	**0.10**	<0.010	0.023	390	<5.0	390	20	1.1	<0.10	**720**	**1500**	680	0.31	0.160	1.08	0.742	NT	NT
MW-5	08/10/04	580	<0.0081	**0.12**	<0.0026	0.029	270	<0.85	270	25	0.32	<0.021	**2500**	**3900**	90	**196**	2.46	**1.78**	0.793	12490	7.49
	12/17/04	590	<0.010	**0.17**	<0.010	<0.020	270	<5.0	270	22	0.35	0.18	**2700**	**3900**	6.4	**232**	5.37	**1.61**	0.736	3570	7.14
	03/09/05	600	<0.010	**0.27**	<0.010	<0.020	270	<5.0	270	24	0.34	0.18	**2600**	**3900**	4.4	**296**	4.07	**3.87**	0.701	4450	7.19
MW-6	08/10/04	310	<0.0081	0.024	0.011	<0.0071	330	100	430	18	1.3	0.36	230	830	20	1.08	0.216	0.465	0.670	961	8.81
	12/30/04	320	<0.010	0.024	0.010	0.016	NR	NR	420	19	1.4	0.13	240	870	17	0.563	0.222	0.379	0.670	1412	8.47
	03/09/05	310	<0.010	0.022	0.012	<0.020	410	13	430	18	1.4	<0.10	250	860	17	1.30	0.327	1.12	0.632	1332	8.19
NMWQCC		NA	NA	0.03	NA	10.0*	NA	NA	NA	250*	1.6	10	600*	1000*	NA	30				NA	6 to 9

Bold values indicate exceedance of standard
NMWQCC = New Mexico Water Quality Control Commission Standards for Ground Water
* = Standards for domestic water supply ** = Standards for irrigation use
NA = No limit available
< = less than
MW = Monitoring Well
Dup = Duplicate
pCi/L = picocuries per liter
mg/L = milligrams per liter
NR = Not reported by analytical laboratory
NT=Not Taken - Field instrument malfunctioned.

Notes:
Nitrate-Nitrite standard combined
Radium-226 and Radium-228 standard is combined
Estimated equivalent value is derived by pCi/L * .00148 = mg/L (approximate)

Mystery Well Sampling Results
Grab sample collected by NMED on 6/30/2004

Constituent	Unit	Result	Unit	Estimated Equivalent
Gross Alpha w/Am-241	pCi/L	23.20	mg/L	0.034
Gross Alpha w/ U-nat	pCi/L	33.50	mg/L	0.050
Gross Beta w/Cs-137	pCi/L	8.30	mg/L	0.012
Gross Beta w/Sr/Y-90	pCi/L	7.90	mg/L	0.012
Uranium, Mass Concentration	µg/L	<1.00	mg/L	<0.001
Radium-226, SDWA Method	pCi/L	8.21	mg/L	0.012

TABLE 3
ARROYO SAMPLE ANALYTICAL RESULTS
ST. ANTHONY STATUS REPORT

SAMPLE ID	DATE	mg/L																			
		Aluminum	Arsenic	Barium	Beryllium	Boron	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium
Arroyo	6/29/2004	0.045	<0.0049	0.048	<0.00041	0.047	<0.00027	150	<0.0021	0.00081	<0.00097	0.15	<0.0021	26	0.022	0.000056	0.0024	<0.0042	11	<0.0046	<0.00070	32
AS-N	8/21/2004	0.023	<0.0049	0.065	<0.00041	0.06	<0.00027	250	<0.0021	<0.00067	0.0032	0.051	<0.0021	32	0.027	0.000082	<0.0023	<0.0042	13	<0.0046	<0.00070	34
AS-S	8/21/2004	0.035	<0.0049	0.048	<0.00041	0.051	<0.00027	150	<0.0021	<0.00067	0.003	0.04	<0.0021	21	0.016	<0.000025	0.0023	<0.0042	7.3	0.0054	<0.00070	24
Upstream to Downstream Effect		↑	=	↓	=	↓	=	↓	=	=	↓	↓	=	↓	↓	↓	↑	=	↓	↑	=	↓
AS-N	9/22/2004	<0.02	<0.0049	0.054	<0.00041	0.035	<0.00027	210	<0.0021	<0.00067	0.0012	0.034	0.0026	23	0.0015	0.000042	0.0030	<0.0042	10	<0.0046	0.0013	14
AS-S	9/22/2004	<0.02	0.0053	0.063	<0.00041	0.093	<0.00027	250	<0.0021	0.0028	<0.00097	0.87	<0.0021	35	1.0	<0.000025	0.0035	<0.0042	6.6	<0.0046	0.0011	42
Upstream to Downstream Effect		=	↑	↑	=	↑	=	↑	=	↑	↓	↑	↓	↑	↑	↓	↑	=	↓	=	↓	↑
AS-N	10/15/2004	<0.10	0.0035	0.03	<0.005	0.053	<0.005	58	0.0013	<0.01	<0.01	0.034	<0.003	15	0.0046	<0.0002	<0.02	<0.04	10	0.0047	0.0014	12
AS-S	10/15/2004	0.16	<0.015	0.047	<0.005	0.059	<0.005	150	<0.01	0.002	<0.01	0.16	0.0025	23	0.47	<0.0002	<0.02	<0.04	6.2	0.0078	0.00074	19
Upstream to Downstream Effect		↑	ND	↑	=	↑	=	↑	ND	ND	=	↑	ND	↑	↑	=	=	=	↓	↑	↓	↑
AS-N	12/17/2004	<0.10	<0.015	0.029	<0.0050	0.032	<0.0050	64	<0.010	0.0029	<0.010	0.030	<0.0030	11	0.0073	<0.00020	<0.020	<0.040	7.4	<0.015	0.00056	10
AS-S	12/17/2004	<0.10	<0.015	0.022	<0.0050	0.037	<0.0050	140	<0.010	0.0078	<0.010	0.033	<0.0030	23	0.22	<0.00020	<0.020	0.0029	6.9	<0.015	0.00054	26
Upstream to Downstream Effect		=	=	↓	=	↑	=	↑	=	↑	=	↑	=	↑	↑	=	=	ND	↓	=	↓	↑

SAMPLE ID	DATE	mg/L												pCi/L							
		Thallium	Uranium	Vanadium	Zinc	Total Dissolved Solids	Total Suspended Solids	Bicarbonate Alkalinity	Carbonate Alkalinity	Total Alkalinity	Chloride	Fluoride	Nitrate-Nitrite	Sulfate	Radium 226	Radium 226 error (+/-)	Radium 228	Radium 228 error (+/-)	Gross Alpha	Gross Alpha error (+/-)	Gross Beta	Gross Beta error (+/-)
Arroyo	6/29/2004	<0.0081	0.28	<0.0026	<0.0071	790	69	48	<0.85	48	3.8	0.46	3	480	3.98	0.422	-0.0621	0.656	356	32	69.1	9.39
AS-N	8/21/2004	<0.0081	0.0014	<0.0026	<0.0071	1100	3500	69	<0.85	69	5.9	0.51	0.98	570	0.223	0.166	1.31	0.563	675	90.4	472	124
AS-S	8/21/2004	<0.0081	0.0041	<0.0026	<0.0071	130	1700	59	<0.85	59	9	0.63	1.6	340	1.21	0.273	-0.155	0.562	869	98.9	678	125
Upstream to Downstream Effect		=	↑	=	=	↓	↓	↓	=	↓	↑	↑	↑	↓	↑		↓		↑		↑	
AS-N	9/22/2004	<0.0081	0.00087	<0.0026	<0.0071	930	170	67	<0.85	67	4.2	0.42	1.3	500	0.00	0.144	0.484	0.730	0.697	1.57	11.5	23.1
AS-S	9/22/2004	<0.0081	0.0059	<0.0026	0.041	1200	660	120	<0.85	120	17	0.72	0.18	720	2.07	0.254	1.54	0.651	81.1	11.7	64.2	9.49
Upstream to Downstream Effect		=	↑	=	↑	↑	↑	↑	=	↑	↑	↑	↓	↑	↑		↑		↑		↑	
AS-N	10/15/2004	<0.01	0.0020	<0.01	<0.02	340	480	91	<5.0	91	13	13	0.16	130	1.22	0.213	3.46	1	23.5	3.6	36.4	4.22
AS-S	10/15/2004	<0.01	0.0042	<0.01	<0.02	740	470	120	<5.0	120	8.1	8.1	0.5	400	0.623	0.173	4.1	1.27	12.2	2.52	47.5	2.42
Upstream to Downstream Effect		=	↑	=	=	↑	↓	↑	=	↑	↓	↓	↑	↑	↓		↑		↓		↑	
AS-N	12/17/2004	<0.010	0.0088	<0.010	0.0050	310	NS	79	<5.0	79	7.1	0.28	NS	140	0.365	0.25	0.438	0.659	19.7	2.18	18.6	1.06
AS-S	12/17/2004	<0.010	0.42	<0.010	0.0067	820	NS	110	<5.0	110	6.1	0.30	NS	430	6.13	0.902	0.757	0.632	287	16.6	40.8	2.38
Upstream to Downstream Effect		=	↑	=	↑	↑		↑	=	↑	↓	↑		↑	↑		↑		↑		↑	

"Arroyo" sample was collected upstream of AS-S near MW-3 location
ND = Not discernable because of less than detection limit result
NS = Insufficient sample volume for all analyses TSS and Nitrate-Nitrite not analyzed
= Not Applicable
< = less than
AS = Arroyo Sample
pCi/L = picocuries per liter
mg/L = milligrams per liter

Notes:
Nitrate-Nitrite standard combined
Radium-226 and Radium-228 standard is combined

TABLE 4
PIT WATER SAMPLE ANALYTICAL RESULTS
ST. ANTHONY MINE STATUS REPORT

SAMPLE ID	LOCATION	DATE	mg/L																				
			Aluminum	Arsenic	Barium	Beryllium	Boron	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium
LP-1	~11 foot depth	9/17/2004	0.081	0.011	0.11	0.0016	**1.8**	<0.00027	480	<0.0021	0.0012	<0.00097	0.19	<0.0021	1300	**0.37**	<0.000025	0.0038	<0.0042	68	<0.0046	<0.00070	8000	0.0086
	~10.5-foot depth	12/30/2004	0.071	0.032	0.074	0.0014	**1.5**	<0.0050	410	0.0030	0.0082	0.0029	0.16	<0.0030	1400	<0.010	<0.00020	0.0035	0.0062	50	0.035	0.00040	6600	0.028
	~10.5-foot depth	3/8/2005	0.095	0.0037	0.039	0.0012	**1.5**	<0.0050	390	<0.010	<0.010	<0.010	0.14	<0.010	1200	<0.010	<0.00020	0.0036	<0.040	48	<0.015	0.00039	6500	0.0073
LP-2	surface water	9/17/2004	0.062	0.0081	0.12	0.0016	**1.8**	<0.00027	470	<0.0021	<0.00067	<0.00097	0.18	<0.0021	1200	0.0074	<0.000025	0.0055	<0.0042	64	<0.0046	<0.00070	7700	0.0084
	surface water	12/30/2004	0.11	0.024	0.081	0.0012	**1.4**	0.00054	420	0.0022	0.0059	0.0018	0.20	<0.0030	1100	<0.010	<0.00020	0.0043	0.0055	49	0.025	<0.010	6300	0.019
	surface water	3/8/2005	0.070	0.0040	0.042	0.0012	**1.3**	<0.0050	390	<0.010	<0.010	0.069	0.12	<0.0070	1000	<0.010	<0.00020	0.0030	<0.040	43	<0.015	0.0011	5700	0.0061
SP-1	~0.5 foot depth	9/17/2004	<0.020	<0.0049	0.072	<0.00041	0.043	<0.00027	190	<0.0021	<0.00067	<0.00097	0.046	<0.0021	46	0.014	<0.000025	<0.0023	<0.0042	10	<0.0046	<0.00070	9.3	<0.0081
	surface water	12/30/2004	<0.10	<0.015	0.047	<0.0050	0.040	<0.0050	200	<0.010	0.0022	<0.010	0.036	<0.0030	53	0.016	<0.00020	<0.020	0.0039	12	<0.015	0.00072	11	<0.010
	surface water	3/10/2005	<0.10	<0.015	0.036	<0.0050	0.039	<0.0050	190	<0.010	<0.010	<0.010	0.040	<0.0030	51	0.0026	<0.00020	<0.020	0.0026	15	<0.015	0.0023	12	<0.010
Pit 1	Unknown	12/5/2000	<0.1	<0.025	<0.1	<0.05	**1.1**	<0.1		<1.0	<0.5	<0.1	<0.1	<0.005	810	<0.05		<0.1	<0.1	37.7		<0.1	4500	
Pit 1	Unknown	10/5/2000	<0.05	<0.005			**1.32**	<0.005		<0.01	<0.01	<0.01		<0.005			<0.001				<0.005			
Pit 1	Unknown	11/16/1978		<0.005	0.1			<0.001						<0.005				0.0096		5.07	<0.005		641.7	
Pit 1	Unknown	10/26/1977		0.005														0.018			0.019		724.5	
NMWQCC			5.0**	0.1	1.0	NA	0.75**	0.01	NA	0.05	0.05**	1.0*	1.0*	0.05	NA	0.2*	0.002	1.0**	0.2**	NA	0.05	0.05	NA	NA

SAMPLE ID	LOCATION	DATE	mg/L											pCi/L								Specific Conductance (uhmos/cm)	pH (pH Units)
			Uranium	Vanadium	Zinc	Total Dissolved Solids	Total Suspended Solids	Bicarbonate Alkalinity	Carbonate Alkalinity	Total Alkalinity	Chloride	Fluoride	Nitrate-Nitrite	Sulfate	Radium 226	Radium 226 error (+/-)	Radium 228	Radium 228 error (+/-)	Gross Alpha	Gross Alpha error (+/-)	Gross Beta	Gross Beta error (+/-)		
LP-1	~11 foot depth	9/17/2004	**4.4**	<0.0026	0.0092	**32000**	22	110	87	200	140	0.82	<0.021	**22000**	16.4	1.55	1.27	0.675	3050	240	423	181	29000	9.0
	~10.5 foot depth	12/30/2004	**4.6**	<0.010	<0.020	**29000**	7.2	120	67	190	140	0.68	<0.10	**19000**	12.2	0.862	1.07	0.661	3800	259	712	88.8	26000	8.9
	~10.5-foot depth	3/8/2005	**4.4**	<0.010	0.011	**27000**	6.0	150	44	190	120	0.64	0.051	**18000**	10.8	0.758	0.742	0.622	3930	296	867	67.0	25000	8.8
LP-2	surface water	9/17/2004	**4.5**	<0.0026	<0.0071	**31000**	8.4	40	110	150	140	0.83	<0.021	**25000**	22.9	1.72	1.93	0.914	3390	255	336	31.5	28000	**9.6**
	surface water	12/30/2004	**4.2**	<0.010	<0.020	**27000**	6.8	97	66	160	130	0.72	<0.10	**18000**	9.72	0.852	1.87	0.654	3450	245	720	79.6	25000	9.0
	surface water	3/8/2005	**4.5**	<0.010	0.010	**23000**	4.4	140	37	180	120	0.72	0.045	**16000**	10.1	0.717	0.889	0.579	3650	245	962	80.3	22000	8.8
SP-1	~0.5 foot depth	9/17/2004	**0.11**	<0.0026	<0.0071	970	<0.87	67	<0.85	67	2.3	0.29	<0.021	560	7.55	1.08	1.10	0.614	116	8.76	16.2	3.93	1200	7.5
	surface water	12/30/2004	**0.15**	<0.010	<0.020	**1100**	<4.0	70	<5.0	70	2.8	0.22	<0.10	**750**	6.70	0.745	2.49	0.665	162	11.9	29.2	2.620	1400	7.0
	surface water	3/10/2005	**0.16**	<0.010	<0.020	990	4.0	67	<5.0	67	3.5	0.24	<0.10	**640**	6.65	0.609	0.879	0.609	139	8.98	38.2	3.23	1300	7.7
Pit 1	Unknown	12/5/2000	**4**	<10.0	<0.1	**17800**		127	0	127	112		<0.1	**13200**	9.48				2780		1060		17040	8.2
Pit 1	Unknown	10/5/2000	**3**	<0.01	<0.025														1060		1170		17500	8.9
Pit 1	Unknown	11/16/1978	**5.5**	<0.27	0.02	**2493**		284.7		284.7	20.1		2.25	**2038.3**	90				2100				3998	
Pit 1	Unknown	10/26/1977	**2.5**			**1378**					23.5			**2151.1**	**180**								4549	8.18
NMWQCC			0.03	NA	10.0*	1000*	NA	NA	NA	NA	250*	1.6	10.0	600*	30.0				NA		NA		NA	6 to 9

The specific locations of the Pit 1 samples is unknown

= Indicate the constituent was not analyzed for In the sample

Bold values indicate exceedance of standard

NMWQCC = New Mexico Water Quality Control Commission Standards for Ground Water
* = Standards for domestic water supply
NA = No limit available
< = less than
pCi/L = picocuries per liter
mg/L = milligrams per liter

Notes:
Nitrate-Nitrite standard combined
Radium-226 and Radium-228 standard is combined
Estimated equivalent value is derived by pCi/L * .00148 = mg/L (approximate)

Pit Sampling Results

Grab sample collected by NMED on 6/30/2004

Constituent	Unit	Result	Unit	Estimated Equivalent
Gross Alpha w/Am-241	pCi/L	3320.00	mg/L	4.91
Gross Alpha w/ U-nat	pCi/L	4320.00	mg/L	6.39
Gross Beta w/Cs-137	pCi/L	1290.00	mg/L	1.91
Gross Beta w/Sr/Y-90	pCi/L	1250.00	mg/L	1.85
Uranium, Mass Concentration	µg/L	5100.00	mg/L	5.10
Radium-226, SDWA Method	pCi/L	3560.00	mg/L	5.27
Radium-228, SDWA Method	pCi/L	2.00	mg/L	0.003

TABLE 3
DRILLING SOIL SAMPLE ANALYTICAL RESULTS
ST. ANTHONY STATUS REPORT

SAMPLE ID	SAMPLE LOCATION	SAMPLE DEPTH (feet bgs)	mg/kg													
			Aluminum	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium*	Cobalt	Copper	12/17/2004	Copper	Magnesium	Manganese	Molybdenum
SS-2	MW-2	55	5800	4.1	55	0.65	5.7	<0.066	6.1	6.0	5.4	105.1	-50.1	3800	130	0.34
SS-3	MW-2	3	11000	6.6	75	0.74	8.7	<0.071	10	6.3	8.1	6.3	8.1	5800	120	0.65
SS-4	MW-3	4.5	15000	9.2	90	1.0	10	<0.065	16	7.6	15	52.52	37.5	8100	190	0.97
SS-6	MW-3	50	7600	4.1	330	0.49	7.2	<0.065	57	15	6.6	75.13	254.9	4500	350	0.95
NMED SSL			100,000	17.7	78,300	2250	61,600	8600	100,000	20,500	45,400	114	78186.0	NA	21,800	5,680
												437.01	-437.0			

SAMPLE ID	SAMPLE LOCATION	SAMPLE DEPTH (feet bgs)	mg/Kg						µg/kg		pCi/g				%
			Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Mercury**	NA	Radium 226	NA	5854.42	Radium 228 error (+/-)	Percent Moisture
SS-2	MW-2	55	8.4	<0.82	<0.08	<0.93	16	29	11	500	0.694	500	0.694	0.78	9.7
SS-3	MW-2	3	11	<0.87	<0.085	<0.99	19	41	21	15000	1.79	15000	1.79	0.746	15
SS-4	MW-3	4.5	16	<0.80	<0.077	<0.90	29	64	13	15000	7.21	15000	7.21	0.704	7.1
SS-6	MW-3	50	16	<0.80	<0.078	<0.91	23	31	14	1100	0.328	1100	0.328	0.51	8.0
NMED SSL			22,500	5,680	5,680	74.9	7,950	100,000	341	NA	NA				NA

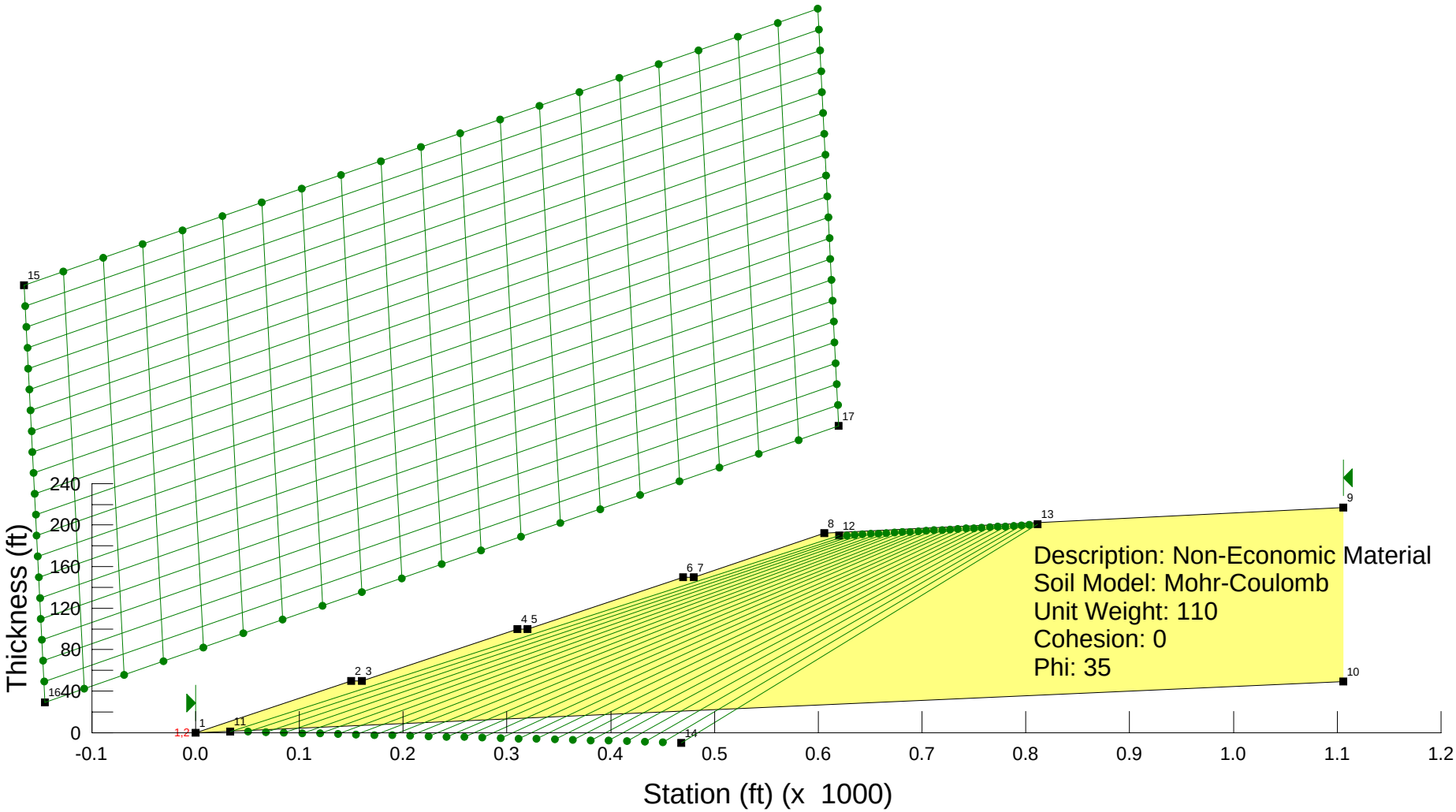
Bold values indicate an exceedance of the regulatory standard
NMED SSL = New Mexico Environment Department Soil Screening Levels for Industrial/Occupational Soils
NA = No standard available
bgs = below ground surface
< = less than
MW = Monitoring Well
SS = Soil Sample
pCi/g = picocuries per gram
ug/kg = micrograms per kilogram
mg/kg = milligrams per kilogram

* Chromium III standard (Chromium IV standard is 3,400 mg/Kg)
** Elemental mercury standard

APPENDIX B

SLOPE STABILITY ANALYSIS

Description: St Anthony Pile 4 Stability Analysis
File Name: St Anthony Stability Analysis.slz
Analysis Method: Morgenstern-Price
Slip Surface Option: Grid and Radius
Seismic Coefficient: (none)



Description: St Anthony Pile 4 Stability Analysis
File Name: St Anthony Stability Analysis.slz
Analysis Method: Morgenstern-Price
Slip Surface Option: Grid and Radius
Seismic Coefficient: (none)