www.haleyaldrich.com

RECLAMATION PLAN
FOR THE SUNROC CORPORATION
COOLIDGE AGGREGATE PROPERTY
COOLIDGE, ARIZONA

by Haley & Aldrich, Inc.
Phoenix, Arizona

for Sunroc Corporation
Orem, Utah

File No. 211134-000
September 2024

Table of Contents

REGISTERED GEOLOGIST
CERTIFICATE NO. 50990
RICHARD A. BROWN
DATE SIGNED 9/12/24
ARIZONA U.S.A.
Expires 6/30/2025

Page

List of Tables

List of Figures

List of Appendices

1. Introduction

This Reclamation Plan (Plan) was written for the Sunroc Coolidge Property (Site), owned and operated by Sunroc Corporation (Sunroc), located in Pinal County, Arizona. State law requires a reclamation plan for all aggregate mining operations that are located on private land, create disturbance areas larger than 5 acres, and have continued operations after 1 April 1997 (Aggregate Mined Land Reclamation Act, Arizona Revised Statute [A.R.S.] 27-1202 et. seq.). Plans for existing operations were required to be submitted to the Arizona State Mine Inspector (ASMI) before 1 January 2007. After 1 January 2007, all new aggregate mining operations located on private land must have an approved reclamation plan before exceeding a cumulative disturbance area of 5 acres.

The property operated by Sunroc consists of two Pinal County parcels (209-04-0080 and 209-04-0110) located in Section 3, Township 1 North, Range 5 East of the Gila and Salt River Base and Meridian, Pinal County, Arizona and encompasses approximately 72.5 acres. The property address is 15534 North Christensen Road and is located approximately 1 mile north of State Highway 87 in Coolidge, Arizona. Refer to Figure 1, Project Locus.

This Plan was written to describe and summarize the overall reclamation approach to reclaim the Site during production using concurrent reclamation techniques, followed by final closure and reclamation at the cessation of mine operations, in accordance with Arizona statutes and regulations.

2. Reclamation Plan Narrative

2.1 OWNERSHIP/OPERATOR INFORMATION

The two Pinal County parcels are owned and operated by Sunroc Corporation. Sunroc plans on conducting aggregate mining and processing on Pinal County Assessor Parcel Number 209-04-0080 and 209-04-0110 as shown on Figure 2. Owner and operator information are provided below.

2.1.1 Owner/Operator Name and Address

Owner/Operator: Sunroc Corporation
730 N 1500 W
Orem, Utah 84057

2.1.2 Contact Person Name and Address

Operator's contact person (for regulatory contact):

Adam Cook
730 N 1500 W
Orem, Utah 84057
Phone: (801) 802-6900
acook@sunroc.com

2.1.3 Responsible Party

Sunroc is the responsible party for the reclamation described in this Plan. Sunroc assumes responsibility for the reclamation of surface disturbances that are attributable to the aggregate mining unit consistent with A.R.S. Article 27-1201, 1271 (B)(2), and Title 11 of the Arizona Administrative Code.

Adam Cook — 9/13/24
Signature — Date

ADAM Cook — V.P. Const. Materials
Name — Title

2.1.4 Certificate of Disclosure

The certificate of disclosure required by A.R.S. 27-1205 was prepared by Sunroc and will be submitted separately.

2.1.5 Description of Current Operation

The property operated by Sunroc is located in Section 3, Township 1 North, Range 5 East of the Gila and Salt River Base and Meridian in Pinal County, Arizona and encompasses approximately 72.5 acres across two parcels (Figure 1). The Site was previously mined for aggregate materials by another company who subsequently filed for closure of their approved ASMI reclamation plan and their financial assurance bond was released and the plan was closed. The majority of the Site has been disturbed by the previous operation. A reclaimed pit area is present in the western portion of the two parcels along with the cleared area in the eastern portion of the parcel where the material processing facilities and stockpiles were located. The Site is bounded to the north, west, and south by open vacant land. An aggregate mining operation is located to the east on the east side of Christensen Road. The property is located within the northern floodplain of the Gila River, and partially extends into the main channel along the southwestern property boundary.

According to the property owner, there are no known sensitive species habitats within the Site boundary that would potentially be disturbed by Site operations. Features of the property include the following:

- A previously mined open pit area that was excavated using conventional front-end loading and track excavating equipment;
- Existing concrete foundation and pads from the previous material processing equipment and fuel storage facilities;
- Parking area for employees;
- Overhead power line and power poles;
- One groundwater well is located at the Site for use as a future water supply;
- Fencing around the entire area of disturbance with two gates along Christensen Road for access to the Site; and
- Several remaining material stockpiles.

Utilities on the Site include:

- Water provided by an on-Site well;
- Power supplied via overhead power to the property; and
- Solid waste disposal provided a licensed solid waste contractor.

2.1.6 Current Permits, Licenses, and Approvals

Operations will comply with applicable air, storm water, and hazardous/regulated materials management regulations. The property currently has/will obtain the following permits/plans:

- Pinal County Floodplain Use Permit FUP1206-008;
- Storm Water Pollution Prevention Plan (SWPPP);
- Spill Prevention, Control, and Countermeasures (SPCC) Plan;
- Arizona Department of Environmental Quality Air Quality Permit; and
- Arizona Department of Transportation Material Source Certification Designation

2.2 DESCRIPTION OF FUTURE DISTURBANCE

Excavated materials at the Site will be processed through the wash plant for use in the on-Site ready-mix plant to produce concrete products. Figure 3 shows the planned limits of excavation adjacent undeveloped land that surrounds the Site. The mining plan is designed to excavate concurrent reclamation slopes as the pit is advanced to the final depth and dimensions. The proposed mining and reclaim slopes are 1.5 horizontal to 1 vertical (1.5H:1V) to a maximum depth of 100 feet. The proposed setback distances to the proposed pit area will be as follows:

- 50 feet from the northern property line;
- 50 feet from the eastern property line;
- 315 feet from the southern property line; and
- 50 feet from the western property line.

Processing and stockpiling of aggregates will be contained within the mining and plant processing areas. Portable (mobile) mining and process equipment will be utilized during active aggregate mining activities.

- Total disturbances are estimated at approximately 56 acres; approximately 50 acres for the mining and stockpile areas, and approximately 6 acres for the plant and processing (light industrial) area.
- Undisturbed areas of the Site include approximately 16.5 acres.
- Pit walls concurrently mined to a reclamation slope of 1.5H:1V.
- The Site will maintain unpaved haul roads that lead from the active mining pits to the screening, stockpile, and ready-mix batch plant areas.

2.3 RECLAMATION MEASURES TO ACHIEVE POST-MINING LAND USE

The entire mining area and plant and processing area encompasses approximately 56 acres. The post-aggregate mining land use at the Site has been designated as naturalized open space for the excavation area and the majority of the processing area. An area of 6 acres in the northeast portion of the Site will be designated as light industrial use for post-mining land use to continue operation of the ready-mix batch plant utilizing off-Site materials after mining has ceased (Figure 4). All mining excavations will be graded at the final reclamation slope angle of 1.5H:1V, thereby creating a concurrent reclaimed slope throughout the mine life.

All portable mining and maintenance equipment will be demobilized upon cessation of mining and completion of reclamation activities. Compacted surfaces and unpaved roads will be left in place after the cessation of mining activities for use by the landowner. Existing property fencing, water well, powerlines and poles, maintenance facility, and the ready-mix concrete batch plant will remain in place post reclamation.

2.4 POST-AGGREGATE MINING REGRADING AND EROSION CONTROL

2.4.1 Description of Final Topography

The final topography for the mining excavation area will be mined to final reclamation slopes of no steeper than 1.5H:1V (Figure 4). Mining activities will occur above the groundwater level and the pit will remain dry. The berms around the pit perimeter will remain in place post-reclamation.

The processing plant material stockpiles and aggregate stockpiles will be depleted and removed by the end of mining operations or moved to the remaining light industrial area around the ready-mix batch plant for use in the operation.

2.4.2 Slope Stability Evaluation

Acceptable static and pseudostatic factors of safety were estimated by others for the proposed overall slope grade of 1.5H:1V. The results of the analysis show that a factor of safety of 1.5 can be obtained for a general side slope of 1.5H:1V or shallower. The circular analysis results in a factor of safety for the pit slope of 1.5 which is lower than the wedge analysis with a factor of safety of 1.8. A pseudostatic analysis was not carried out for the wedge failure since the factor of safety will be higher than for the circular analysis (Axelrod, 2024[1]). The complete slope stability evaluation is detailed in Appendix A.

2.4.3 Erosion Control Plan

Stormwater drainage controls will be established as part of the SWPPP, which will be continually updated as Site conditions change. The Site will be non-discharging and specific erosion control measures include:

- Storm water will be routed into the active (and future inactive) mining pit from the plant area and low-lying areas;
- An earthen berm will be maintained around the perimeter of the pit; and
- The SWPPP will be followed in addition to Site-specific best management practices.

2.4.4 Surrounding Area Land Use

The Site is located in a predominantly open space area approximately 1 mile north of Coolidge, Arizona. Surrounding land uses generally consist of:

- Open space and desert to the north;
- Existing aggregate operation and open space to the east;
- Open space and the Gila River to the south; and
- Gila River to the west.

The planned post-aggregate mining land use as naturalized open space and light industrial are consistent with the surrounding undeveloped parcels.

[1] Axelrod, Paul, 2024. Stability Analysis Technical Memorandum – State 48 Materials Pit. 16 April.

2.5 POST-AGGREGATE MINING PLAN FOR STRUCTURES AND EQUIPMENT

2.5.1 Structures to be Removed

The Site will have no permanent structures remaining within the mining and stockpile area after reclamation activities occur. The only structures that will remain on-Site will be the ready-mix concrete batch plant, maintenance facility, and associated equipment necessary to operate the ready-mix plant in the northeast corner of the Site. Temporary structures planned for removal from the Site post-mining include:

- One mobile office trailer;
- One portable wash plant; and
- One scale and scale house.

2.5.2 Facilities, Wells, and Improvements to Remain

All improvements, facilities, and above ground storage tanks (ASTs) will be located within the plant processing area. These facilities include:

- One water well;
- Electrical transformer and power line;
- AST for fuel storage; and
- Solid waste portable bins (provided by contracted waste removal services).

All of the items listed above will remain on Site for use in the light industrial area for post-mining reclamation activities.

2.5.3 Access Restriction/Public Safety

Final mining slopes will be 1.5H:1V to provide an acceptable factor of safety against deep seated failure. Earthen berms will be established around the perimeter of the excavation area and will be graded to a slope of 1.5H.1V. Signs will be installed along the perimeter fencing and maintained to identify any potential hazards.

2.6 POST-AGGREGATE MINING ROAD RECLAMATION

All compacted and unpaved mining roads within the mining area will be reclaimed by ripping and scarifying to promote natural revegetation. All perimeter roads around the mining area will be left in place for use in post-mining land use activities. The roads within the light industrial area will remain in place for use in the operation after post-mining reclamation activities.

2.7 SOIL CONSERVATION AND REVEGETATION

2.7.1 Topsoil Conservation Plan

The Site will be concurrently mined to the reclamation slopes as the pit advances. Since the Site was previously mined, limited to no topsoil or overburden remain. If topsoil or overburden are encountered, it will be removed and placed on the slopes or berms around the Site. Any remaining material stockpiles will be spread out around the Site for grading to allow for surface water drainage into the pit area and to enhance natural revegetation. The Site is planned for natural revegetation due to the fine-grained surficial soils that are conducive to natural revegetation growth.

2.7.2 Revegetation Plan

Soil placement will not occur at the Site. Active revegetation is planned for the disturbed areas. Grasses, forbs, and shrubs suitable for the Lower Colorado River/Sonoran Scrub environment will be used in the planned revegetation. A seed mixture of at least two grasses, two forbs, and two shrubs will be selected from the table of seeds listed in Appendix B. The planting method will be by broadcast seeding. Mulching, fertilizing, or supplemental irrigation will not be required to successfully revegetate the Site.

Care and maintenance of the reclamation effort will involve annual inspections of the Site (for three years maximum) monitoring slope movement, erosion, and vegetation growth. Annual inspection reports will be submitted on the anniversary of closure for up to three years or until the Site is released by ASMI.

2.8 CONCEPTUAL SCHEDULE FOR DISTURBANCE AND RECLAMATION

The conceptual schedule includes:

- Disturbance operations are ongoing.
- Excavation and concurrent reclamation are anticipated to continue through approximately 2050.
- Reclamation activities will be concurrent with excavation activities as conditions allow.
- If concurrent reclamation is not feasible, areas will be reclaimed after excavation activities are completed. Final post-aggregate excavation reclamation activities will begin within 12 months of the cessation of mining activities and are anticipated to be completed within 12 months.
- Reclamation will be deemed complete once the ASMI verifies that the owner or operator has fulfilled the requirements of the approved reclamation plan.

2.9 PROBABLE FUTURE CONDITIONS

The profitable operation of a mine is based on a variety of factors including the amount and quality of geologic resources available for extraction, site-specific hydrogeologic conditions, permitting constraints, economic factors affecting the cost of extraction and processing, and market conditions which influence the supply and demand for these materials or finished products containing these materials. Changes to any of these factors can have significant impacts to mine profitability and can thus require operators to modify mining, processing, or operational methods or expand or temporarily cease operations.

Further, the means and methods described in this Plan to operate a mining facility and implement reclamation are based on the application of currently available technologies and practices. These technologies and practices are constantly evolving, and the operations described in this Plan may be modified if the currently specified means and methods become outdated, obsolete, cost ineffective, or impracticable.

Consequently, factors affecting profitable operation or means and methods are likely to change due to unanticipated or unknown future conditions. Therefore, the operator of the facility described in this Plan reserves the right to adapt their operations or plans to these changing, unanticipated, or unknown future conditions to the extent that these operational changes do not cause substantial non-compliance with existing permits or authorizations.

2.10 ESTIMATED RECLAMATION COSTS

The unit costs developed for this Plan are based primarily on the cost estimating database RS Means Facilities Construction Cost Data (2023) along with estimated productivity for material movement based primarily on the Caterpillar Handbook (Edition 31). Administrative costs were based on Arizona Rock Products Association recommended best practices.

Material volumes and surface areas have been calculated using the topographic base map provided by Pinal County. Surface areas were defined by planned projections of outline areas above.

The estimated costs developed for this Plan include:

- Mining excavation area regrading and scarifying;
- Limited road restoration;
- Structures and equipment removal;
- Care and maintenance;
- General construction;
- Plant equipment removal; and
- Administrative costs.

A summary of the estimated reclamation costs is listed in Table I at the end of this section. The sources and calculation of the estimated reclamation costs are provided in Appendix C.

2.10.1 Mining Excavation Area Regrading and Scarifying

The mining area will be concurrently mined to the reclamation slope of 1.5H:1V. Consequently, no regrading of pit walls will be necessary to achieve the final reclamation slopes. The active revegetation of the mining area and stockpile areas has been estimated to be approximately 50 acres and will be revegetated by broadcast seeding.

The total estimated cost for scarifying and regrading the mining excavation and stockpile areas is $19,000.

2.10.2 Roads

There will be approximately 2,500 feet of mine roads that will be reclaimed. All other perimeter compacted and unpaved mining roads will be left in place for use in post-mining land use activities per the landowner’s request.

The total estimated cost associated with this item is $1,000.

2.10.3 Structure Demolition Cost

The reclamation activities detailed in this category include removal of the following:

- One mobile office trailer; and
- One scale and scale house.

The power line infrastructure, fuel storage AST and secondary containment structure, maintenance facility, and water well will remain on-Site for future use and will not be abandoned or removed. However, any structures or improvements not located in the Light Industrial Area must be removed and reclaimed at the end of the mining operations.

The total estimated cost for this category is $4,000.

2.10.4 Care and Maintenance Cost

Care and maintenance for the reclamation effort at this operation consist of:

- Three annual inspections of the Site;
- Preparation of the required annual report describing Site conditions; and
- Trash removal.

Three annual inspections are anticipated to be needed before the Site is released. Approximately 10 tons of trash removal is assumed for this category. The cost of care and maintenance and trash removal at the Site is estimated to be $24,000.

2.10.5 Construction Cost

A fence is currently installed around the perimeter of the site. The current configuration of the fencing along the west side of the mining area will be extended to the west to accommodate for the expansion of the pit area. Approximately 1,385 feet of additional fencing will be installed along the western mining area after the completion of the excavation. Installation and maintenance of signage will be conducted to prohibit entrance into the property for use as a recreational area by the public.

The cost of fence construction and maintenance is estimated to be $15,000.

2.10.6 Plant Equipment Removal Cost

The estimated reclamation costs detailed in this section include the dismantling, loading onto transport, and removal of the following equipment:

- One portable wash plant; and
- One portable ready-mix concrete batch plant.

It is the intention to leave the portable ready-mix concrete batch plant operational in the light industrial area as part of the post-mining land use; however, costs associated with the removal have been included in this Plan. The cost of plant removal is estimated at $43,000.

2.10.7 Administrative Cost

The administrative costs provide the necessary components to generate a third-party estimate. The estimated administrative costs include:

- Contingency;
- Mobilization/demobilization;
- Indirect costs;
- Contractor profit; and
- Contract administrative costs.

The total administrative cost is estimated to be $39,000.

2.10.8 Total Reclamation Cost

The total reclamation cost for this Plan is estimated to be $145,000.

Table I. Estimated Reclamation Cost Summary

Section	Reclamation Item	Cost
2.10.1	Pit Regrading and Scarifying	$19,000
2.10.2	Roads	$1,000
2.10.3	Structure Demolition Cost	$4,000
2.10.4	Care and Maintenance Cost	$24,000
2.10.5	Construction Cost	$15000
2.10.6	Plant Equipment Removal Cost	$43,000
2.10.7	Administrative Cost	$39,000
	Total Reclamation Cost	**$145,000**

3. Fees

The fee for a new Aggregate Mined Land Reclamation Plan is $3,800. A check covering this fee has been submitted with this Plan.

4. Financial Assurance

Corporate self-insurance will be the Financial Assurance Mechanism used to cover the estimated reclamation costs. The corporate information required to satisfy the financial test requirements of Arizona Administrative Code R11-3-809.C will be submitted within 60 days under separate correspondence.

FIGURES

LEGEND

SITE AREA

NOTES

1. PROJECT LOCUS BASED OUT OF PINAL COUNTY, ARIZONA.
2. MAP SOURCE: IMAGE DATED APRIL 2024 TAKEN ELECTRONICALLY FROM GOOGLE EARTH ON WEB.

N

0 2000 4000 6000 8000
SCALE IN FEET

HALEY ALDRICH

SUNROC CORPORATION - RECLAMATION PLAN
COOLIDGE PROPERTY
COOLIDGE, ARIZONA

PROJECT LOCUS

SCALE: AS SHOWN
SEPTEMBER 2024

FIGURE 1

Printed: 9/12/2024 11:19 AM Sheet: HA-FIG-D-L
Saved by: CTSMITH
\\HALEYALDRICH.COM\SHARE\CF\PROJECTS\134360\CAD\FIGURES\134360-FIG-1_LOCUS.DWG

LEGEND

- SITE AREA
- PARCEL BOUNDARY
- EXISTING STRUCTURES
- PERIMETER FENCE
- OVERHEAD ELECTRIC
- FEMA EFFECTIVE FLOODWAY
- FEMA EFFECTIVE FLOODPLAIN
- EXISTING MINING AREA

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. ASSESSOR PARCEL DATA SOURCE: PINAL COUNTY
3. AERIAL IMAGERY SOURCE: ESRI.

N

0 150 300 450 600
SCALE IN FEET

HALEY ALDRICH

SUNROC CORPORATION - RECLAMATION PLAN
COOLIDGE PROPERTY
COOLIDGE, ARIZONA

EXISTING SITE CONDITIONS

SCALE: AS SHOWN
SEPTEMBER 2024

FIGURE 2

Saved by: CTSMITH Printed: 9/12/2024 11:19 AM Sheet: HA-FIG-D-L
\\HALEYALDRICH.COM\SHARE\CF\PROJECTS\134360\CAD\FIGURES\134360-FIG-2_EXS-STE-COND.DWG

LEGEND

- SITE AREA
- PARCEL BOUNDARY
- EXISTING STRUCTURES
- PERIMETER FENCE
- OVERHEAD ELECTRIC

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. ASSESSOR PARCEL DATA SOURCE: PINAL COUNTY
3. AREAS NOTED IN FIGURE:
   - 3.1. MINING AREA: 50 ACRES
   - 3.2. LIGHT INDUSTRIAL AREA: 6 ACRES
   - 3.3. UNDISTURBED AREA: 16.5 ACRES

N

0 100 200 300 400
SCALE IN FEET

HALEY ALDRICH

SUNROC CORPORATION - RECLAMATION PLAN
COOLIDGE PROPERTY
COOLIDGE, ARIZONA

POST-AGGREGATE MINING MAP

SCALE: AS SHOWN
SEPTEMBER 2024

FIGURE 3

Saved by: CTSMITH Printed: 9/12/2024 11:20 AM Sheet: HA-FIG-D-L
\\HALEYALDRICH.COM\SHARE\CF\PROJECTS\134360\CAD\FIGURES\134360-FIG-3_POST-AGG.DWG

LEGEND

- SITE AREA
- EXISTING STRUCTURES
- PERIMETER FENCE
- OVERHEAD ELECTRIC
- LIGHT INDUSTRIAL AREA
- NATURALIZED OPEN SPACE
- UNDISTURBED AREA

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. ASSESSOR PARCEL DATA SOURCE: PINAL COUNTY
3. AREAS NOTED IN FIGURE:
   - 3.1. NATURALIZED OPEN SPACE AREA: 50 ACRES
   - 3.2. LIGHT INDUSTRIAL AREA: 6 ACRES
   - 3.3. UNDISTURBED AREA: 16.5 ACRES

0 100 200 300 400
SCALE IN FEET

HALEY ALDRICH

SUNROC CORPORATION - RECLAMATION PLAN
COOLIDGE PROPERTY
COOLIDGE, ARIZONA

POST-MINING RECLAMATION PLAN

SCALE: AS SHOWN
SEPTEMBER 2024

FIGURE 4

APPENDIX A
Slope Stability Analysis

AXELROD, INC.

TECHNICAL MEMORANDUM

To: Mr. J. Lessard, Erie and Associates	**Job:** State 48 Materials Pit
From: P. Axelrod	**Date:** April 16, 2024
Subject: Stability Analysis	

This memorandum updates a previous memorandum, dated February 23, 2009, that presented the results of a stability analysis for the CalPortland aggregate pit, located in Coolidge, AZ. The 2009 analysis was carried out for Brown and Caldwell as part of the Aggregate Mined Land Reclamation Plan for the pit. The update is required because CalPortland are no longer mining the pit and State 48 Materials are the current owners of the property.

State 48 intend to use the same mining plan as CalPortland and the overall pit dimensions and side slopes are unchanged from the 2009 layout. The 2009 stability analysis and recommendations are therefore still applicable and are reproduced in the following sections with some minor name and pit description changes.

Items to note from the 2009 memorandum are as follows:

- The findings of the stability analysis were based on material evaluations and depth to water table obtained from others.
- It is recommended that the analysis carried out in 2009 is updated using site specific data obtained from an investigation - see page 5 for more detail.

The sections in this memorandum include the Introduction, Geotechnical Parameters, Stability Analysis and References. Stability analysis figures are presented in Appendix A.

1.0 INTRODUCTION

State 48 Materials intend to operate an aggregate resource located adjacent to the Gila River, north of the Highway 87 near the town of Coolidge, Arizona. The aggregates are unconsolidated sediments and will be excavated from a pit that lies within the floodplain of the Gila River and partially extends into the main channel. The planned final dimensions of the pit will be approximately 2,100 feet long by 1,200 feet wide and 100 feet deep.

Erie and Associates is preparing and coordinating information for a Flood Plain Use Permit for the pit. This stability analysis is required as part of the permit.

Existing slopes in the pit range from approximately 1.3 horizontal to 1 vertical (1.3H:1V) to 2H:1V and are up to 50 feet in height. Proposed final slopes will be cut at 1.5H:1V. The floor of the pit will be at approximately elevation 1,300 amsl with the crest of the excavation at elevation 1,400 amsl. From the Arizona Department of Water Resources database, groundwater in the area is at an approximate elevation of 1,297 amsl.

2.0 GEOTECHNICAL PARAMETERS

Site geotechnical information was obtained from a Brown and Caldwell stability memorandum dated June 20, 2008. The memorandum presented the results of a stability evaluation for the same location with a higher proposed final floor elevation.

On-site soil consists of dense sand and gravel with less than 10 percent silt. For the Brown and Caldwell evaluation, an angle of friction (shear strength) of 38 degrees was used throughout for the side slope material. The shear strength was based on empirical relationships presented in Peck, Hanson, Thornburn (1974). Dry soil density was taken as 120 pounds per cubic foot (pcf) for undisturbed soil (Winterkorn and Fang, 1975). Shear strengths of 37 to 38 degrees have been used by Axelrod, Inc. on similar projects.

For the purpose of this analysis, it has been assumed that the same material exists to below the final depth of the pit. No subsurface geotechnical investigation was undertaken.

3.0 STABILITY ANALYSIS

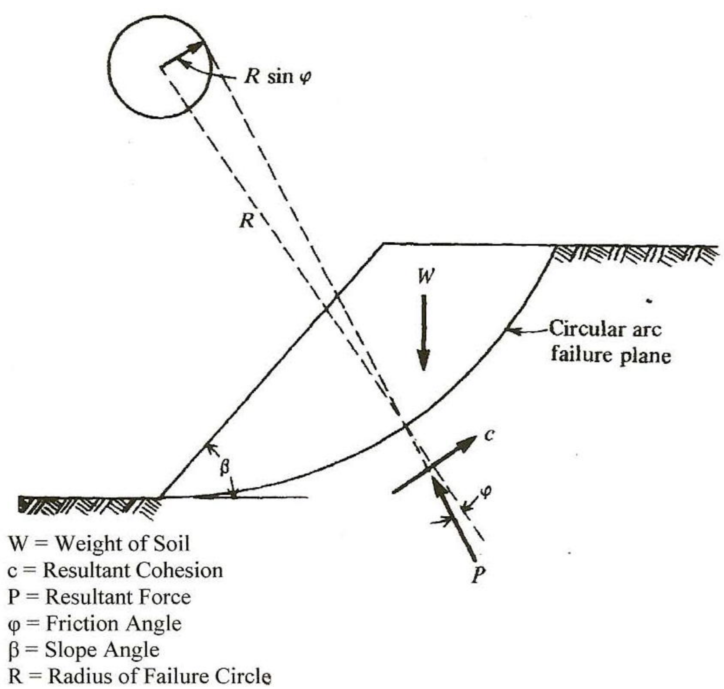
Stability analyses were conducted using the computer program PCSTABL ver. 6. This program is a modified version of the original STABL program developed at Purdue University in 1987. Minimum factors of safety are calculated using the Bishop circular surface method. The Janbu or wedge type specified surface method was also used to generate failure surfaces. Both static and pseudo-static (seismic) stability analyses were performed.

Figure 1 shows a simplified diagram of gravitational forces and soil shear resistance tending to produce sliding.

For the Bishop method a circular failure surface is assumed and the earth mass within the surface is divided into small vertical slices for analysis. For the Janbu method a wedge-shaped failure surface is assumed (see Figure 4). The basic premise of the stability analysis is that Coulomb's failure criterion is satisfied along the assumed failure surface.

The calculated factor of safety is the ratio of soil shear resistance to the gravitational and water pressure (disturbing) forces tending to produce sliding. When the resisting forces are equal to the disturbing forces, a factor of safety of 1.0 would exist and the slope would be on the verge of movement. Factors of safety of 1.5 for static and 1.3 for pseudo-static are normally required in the absence of more detailed geotechnical data to account for uncertainties in parameters used in the analyses. The factors of safety are generally reduced to 1.3 for static and 1.1 for pseudo-static when there is sufficient geotechnical data.

Figure 1 – Simplified Diagram of Slope Forces



Pseudo-static analyses were used to evaluate the effect of potential earthquake forces on slope stability. A design pseudo-static acceleration of 0.03g was selected by considering a number of approaches described below.

- The site is located within the Basin and Range Zone of Arizona, a zone with a lower level of seismic activity than other parts of Arizona. The zone is characterized by northwest southeast trending mountain ranges separated by broad alluvial valleys. The China Wash Scarp, the only major fault in the area is located 6 miles northeast of Florence, approximately 20 miles from the site.

- The maximum credible earthquake postulated for the China Wash Scarp is 6.5 (Euge et al, 1992). Data published by Algermissen et al., (1982) indicates that the maximum rock acceleration at the site would be attenuated to a maximum value of approximately 0.15g. According to a publication titled *Arizona Earthquakes 1776 - 1980*, by S du Bois, the largest magnitude earthquake recorded in the region was approximately 4 and occurred more than 70 miles from the project site. Using a rock acceleration of 0.15g in the analysis would be overly conservative based on the earthquake record.
- Data published by Bausch et al., (1994) indicate that the maximum rock acceleration at the site is approximately 0.04g for a 90 percent probability of not being exceeded in 100 years.
- The peak horizontal ground acceleration presented in the Brown and Caldwell memo was 0.044g

The last two approaches yield similar accelerations and a value of 0.04g was selected for the analysis. Seismic conditions for the slope stability analysis are represented by an equivalent horizontal acceleration or pseudostatic coefficient. In a pseudostatic analysis the maximum rock acceleration is commonly multiplied by a coefficient ranging from 0.4 to 0.7 (Jansen) to determine a pseudostatic coefficient. Since the China Wash Scarp is relatively far from the site a 30 percent reduction in the maximum rock acceleration was used, resulting in a seismic coefficient of 0.03g.

The stability analysis results are presented on Figures 2 through 4 and summarized in Table 1. Results are shown for a slope of 1.5 horizontal to 1 vertical.

Factors of safety lower than those presented could have been obtained for a thin layer of material sliding down the slope. However, this kind of shallow seated surface is not a significant overall slope failure. The failure surfaces shown were generated a distance of 5 feet back from the crest of the pit slope.

TABLE 1: STABILITY ANALYSIS RESULTS

ANALYSIS	FACTOR OF SAFETY	
	STATIC	PSEUDO-STATIC
Circular	1.5	1.4
Specified Surface Wedge	1.8	-

The results of the analysis show that a factor of safety of 1.5 can be obtained for a general side slope of 1.5:1 or shallower. The circular analysis results in a factor of safety for the pit slope of 1.5 which is lower than the wedge analysis factor of safety of 1.8. A pseudo-static analysis was not carried out for the wedge failure since the factor of safety will be higher than for the circular analysis.

The findings of the stability analysis report are based on material evaluations and depth to water table obtained from others, and the assumption that the materials are consistent to the final depth of the pit. If there is a variation in the materials with depth or the water table is higher than used, the analysis used for this report would need to be updated. The analysis does not account for the effect of an elevated water table or rapid dewatering of the pit. It is recommended that the analysis carried out for this report is updated using site specific data obtained from an investigation that includes a method for determining the material properties of the underlying soils on the site, to the depth to be analyzed. The method of obtaining the site-specific data should include an adequate number of investigation holes to assess the potential variation in materials across the site and verify the material properties used for the stability analysis.

The factors of safety obtained in the stability analysis are within the generally accepted range for this type of structure.

Paul A. Axelrod, P.E.

4.0 REFERENCES

1. Lambe, T.W. and Whitman, R.V., Soil Mechanics, 1969. John Wiley & Sons
2. Bowles .J.E., 1996. Foundation Analysis and Design, Fifth Edition, McGraw-Hill

APPENDIX A

STABILITY FIGURES

Figure 2 - Ultimate Pit – Circle, Pseudo-static

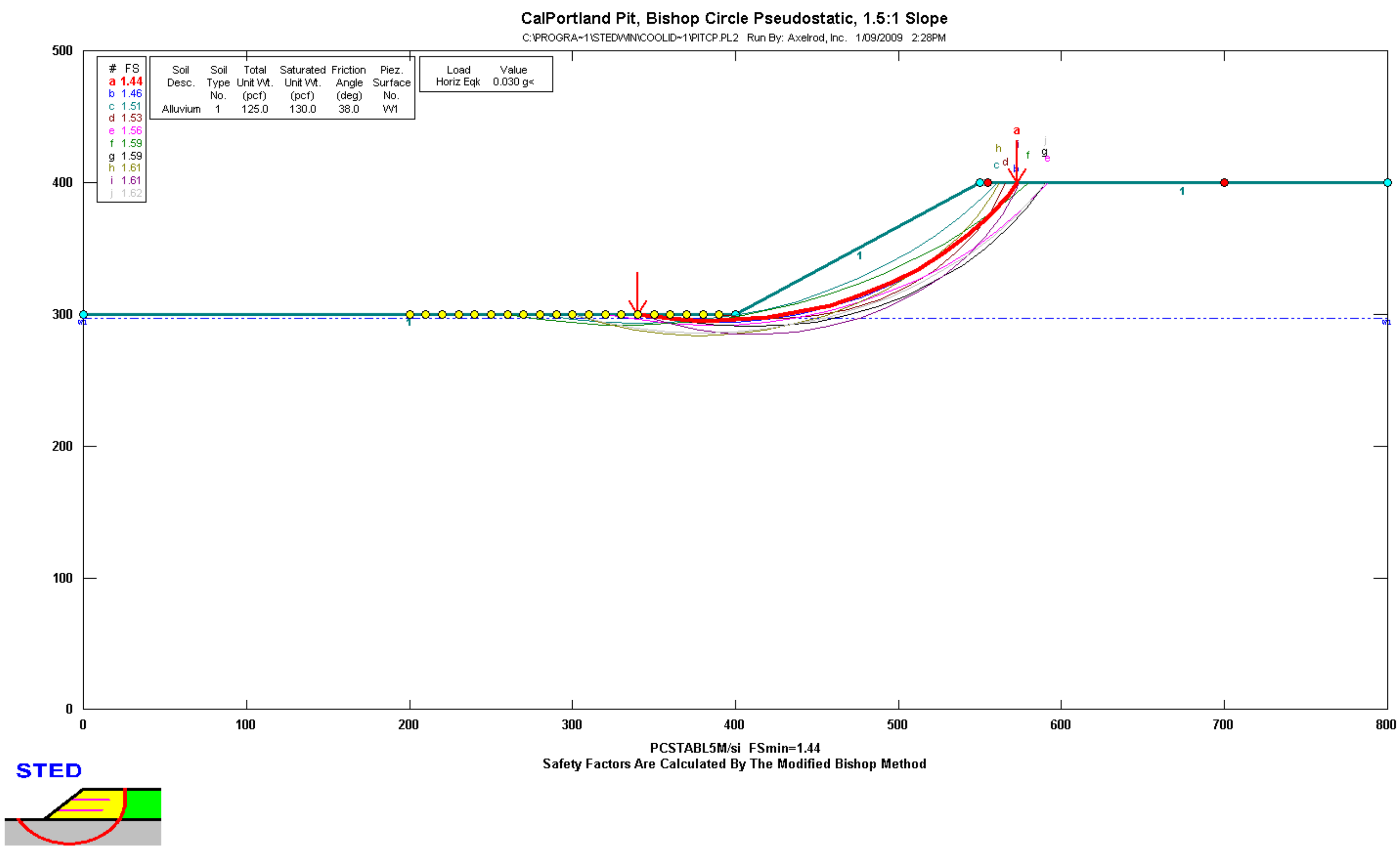
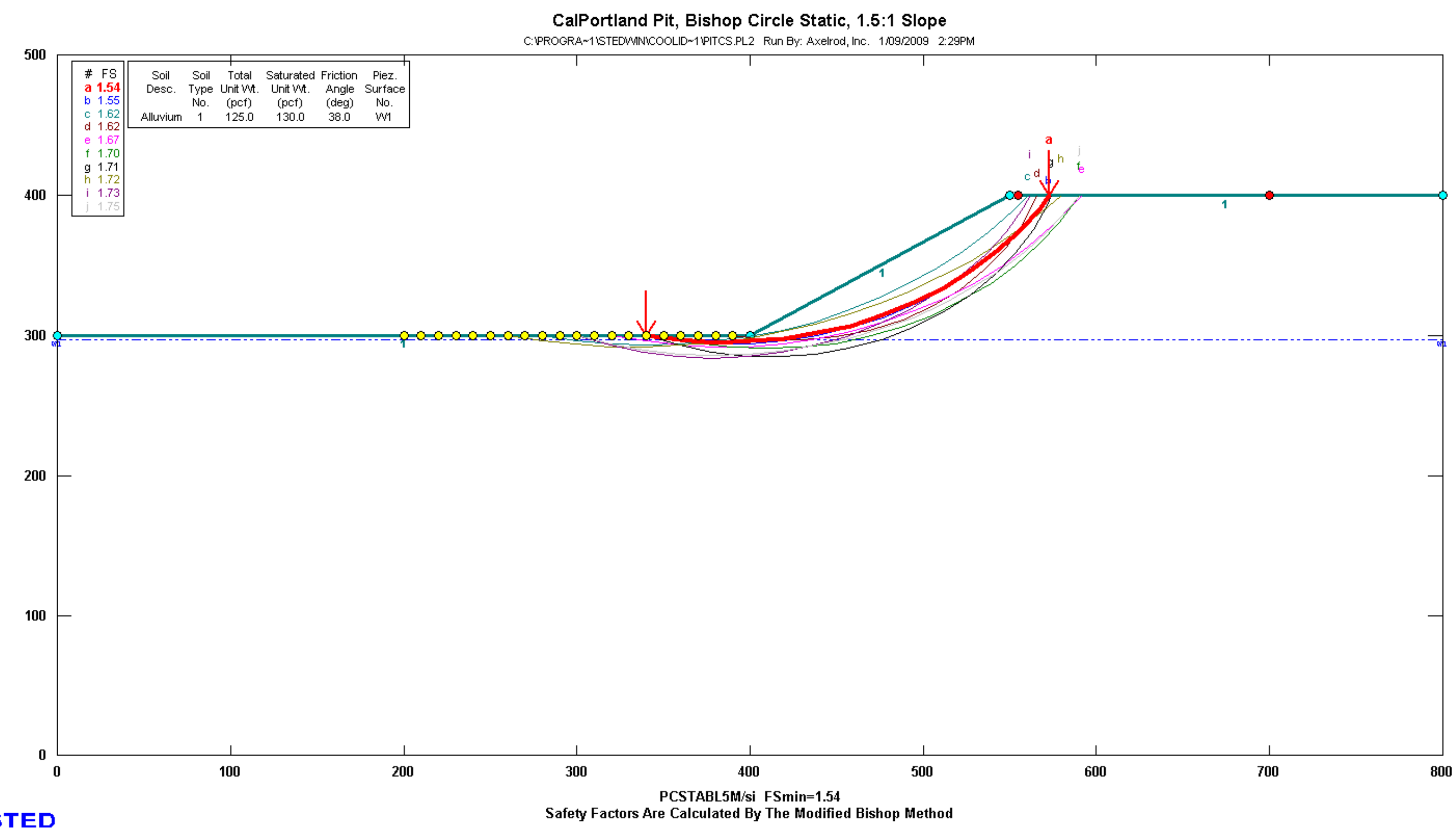
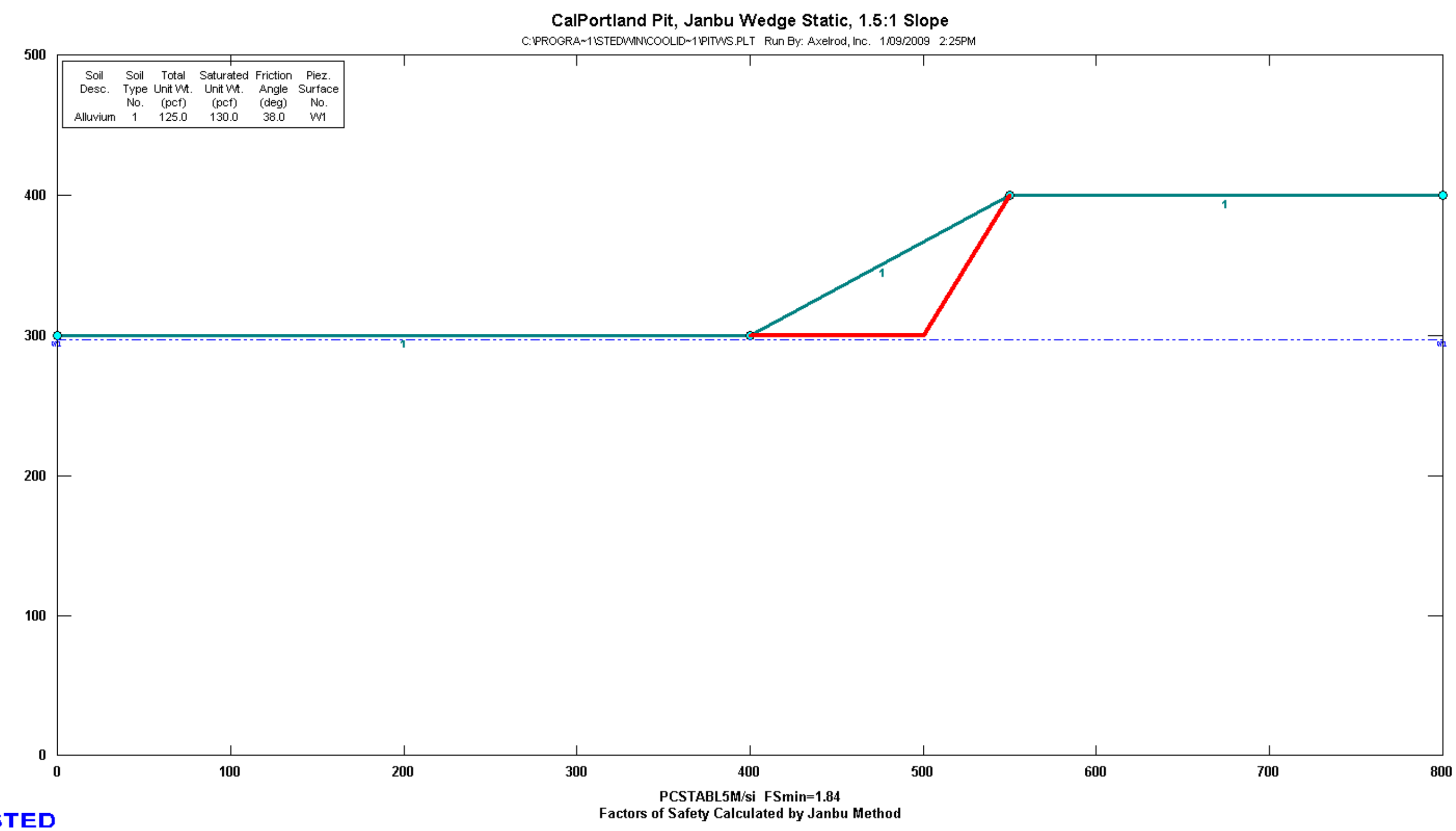


Figure 3 - Ultimate Pit – Circle, Static



STED

Figure 4 - Ultimate Pit – Wedge, Static



STED

APPENDIX B
Seed Mix Table

Appendix B
Seed Mix Table
Sunroc Corporation
Coolidge Property

Botanical Name	Common Name	Grass/Scrub/Forb	PLS Rate (Pounds per Acre)
Lower Colorado River Sonoran Desert Scrub			
Abronia villosa	San Verbena	Forb	0.5
Argemone platyceras	Prickly Poppy	Forb	2
Aristida purpurea	Purple Treeawn	Grass	3
Baileya multiradiata	Desert Marigold	Forb	1.5
Bouteloua aristidoides	Needle Grama	Grass	1
Bouteloua rothrockii	Rothrock's Grama	Grass	0.5
Castilleja exerta ssp. exerta	Purple Owl's Clover	Forb	0.25
Encelia farinosa	Brittlebush	Shrub	1
Eschscholtzia mexicana	Mexican Poppy	Forb	3
Kallstroemia grandiflora	Arizona Poppy	Forb	0.5
Larrea tridentala	Creosote Bush	Shrub	0.5
Lupinus sparsiflorus	Desert Lupine	Forb	2
Phacelia crenulata	Arizona Desert Bluebell	Forb	0.5
Salvia Columbariae	Desert Chia	Forb	0.5
Sphaeralcea ambigua	Desert Globemallow	Shrub	1.5
Sporobolus contractus	Spike Dropseed	Grass	0.5
Sporobolus cryptandrus	Sand Dropseed	Grass	0.5

APPENDIX C
Reclamation Cost Estimate

Appendix C
Reclamation Cost Estimate
Sunroc Corporation - Coolidge Property

Date Checked	Checked By	Job Number	By	Date	Calc. No.	Sheet No.
9/12/2024	EJM	211134	RAB	9/12/2024		1 of 12
Project			**Subject**			
Sunroc Corporation - Coolidge Property			**Estimated Cost Summary (1 of 2)**			

Reclamation Item	Description and Units	Est. Cost	Number of Units	Cost	References/Notes
Mining Excavation Area					Section 2.10.1 of Report
	Surface Regrading and Scarifying (square foot)	$ 0.01		$ -	
(No Mulch or Fertilizer)	Revegetation Cost - Broadcast (Acre)	$ 377	50.0	$ 19,000	
	Revegetation Cost - Hydroseed (Acre)	$ 1,175		$ -	
	Containerized Trees (Each)	$ 10		$ -	
	Mining Area Regrade and Scarifying Sub-Total =			$ 19,000	
Stockpiles, Overburden, or Fines Area					
	Surface Regrading and Scarifying (square foot)	$ 0.01		$ -	
	Revegetation Cost - Broadcast (Acre)	$ 377		$ -	
	Revegetation Cost - Hydroseed (Acre)	$ 1,175		$ -	
	Containerized Trees (Each)	$ 10		$ -	
	Plant Area Regrade and Scarifying Sub-Total =			$ -	
Roads					Section 2.10.2 of Report
(Side Slope < 30%)	Rip/Scarify (Linear Ft.)	$ 0.28	2,500	$ 1,000	
(Side Slope >30%)	Re-Grading and Topsoiling (Linear Ft.)	$ 1.69		$ -	
(No Mulch or Fertilizer)	Revegetation Cost - Broadcast (Acre)	$ 377		$ -	
	Revegetation Cost - Hydroseed (Acre)	$ 1,175		$ -	
	Roads =			$ 1,000	
Structures					Section 2.10.3 of Report
(Break-up and bury Slab)	Demolition and Removal - Metal Building (Sq. Ft.)	$ 3.81	1,000	$ 4,000	
(Break-up and bury Slab)	Demolition and Removal - Secondary Containment (Sq. Ft.)	$ 8.52		$ -	
(Break-up and bury Slab)	Demolition and Removal - Concrete Building (Sq. Ft.)	$ 15.86		$ -	
	Powerline Removal - Single Pole Utility (Linear Mile)	$ 12,560		$ -	
	Transformer Removal (Each)	$ 6,280		$ -	
	Demolition - Chain-Link Fencing (Linear Ft.)	$ 4.36		$ -	
	Demolition - Barb Wire Fencing (Linear Ft.)	$ 1.94		$ -	
	Septic Tank Removal (Each)	$ 1,000		$ -	
	Well Removal (Ft. Depth)	$ 33.55		$ -	
	Removal - 15" Culvert (Linear Ft.)	$ 10.29		$ -	
	Removal - 36" Culvert (Linear Ft.)	$ 17.15		$ -	
(Break-up and bury Slab)	Demolition - Concrete Roads and Pads (Sq. Ft.)	$ 8.52		$ -	
	Structures =			$ 4,000	
Care and Maintenance					Section 2.10.4 of Report
	Site Monitoring and Reporting (Annual)	$ 7,500	3	$ 23,000	
	Trash Removal (Ton)	$ 75	10	$ 1,000	
	Care and Maintenance =			$ 24,000	
Construction					Section 2.10.5 of Report
	Construction - Chain-Link Fencing (Linear Ft.)	$ 9.21	1,385	$ 13,000	
	Install Rip Rap Erosion Lining (Sq. Yd)	$ 118.00		$ -	
	Install Access Restriction Sign	$ 83.40	25	$ 2,000	
	Construction =			$ 15,000	
	Est. Reclamation Operating and Material (O&M) Cost Sub-Total =			**$ 63,000**	

Appendix C
Reclamation Cost Estimate
Sunroc Corporation - Coolidge Property

Date Checked	Checked By	Job Number	By	Date	Calc. No.	Sheet No.
9/12/2024	EJM	211134	RAB	9/12/2024		2 of 12

Project	Subject
Sunroc Corporation - Coolidge Property	Estimated Cost Summary (2 of 2)

Reclamation Item	Description and Units	Est. Cost	Number of Units	Cost	References/Notes
	Est. Reclamation Operating and Material (O&M) Cost Sub-Total (from page 1) =			**$ 63,000**	
Material Haulage for Backfill					
	Truck and Loader - 2000Ft. One Way (Cu. Yd)	$ 1.21		$ -	
	Dozer and Scraper - 1000Ft. One Way (Cu Yd)	$ 0.68		$ -	
			Material Haulage =	$ -	
Plant Removal					Section 2.10.6 of Report
(Processing Equip)	Removal - Plants	$43,000	1.0	$ 43,000	Appendix D - Subcontractor Quote Provided
(Beltline)	Removal - Conveyor			$ -	
			Plant Removal =	$ 43,000	
	Est. Reclamation Operating and Material (O&M) Cost Sub-Total =			**$ 106,000**	
Cost Adjustment					
Template based on 2023 costs	Consumer Price Index Increase			$ -	https://www.usinflationcalculator.com/inflation/current-inflation-rates/
			Cost Adjustment =	$ -	
	Est. Reclamation Operating and Material (O&M) Cost Total =			**$ 106,000**	
Administrative Costs					Section 2.10.7 of Report
% of O&M Cost	Contingency	10%		$ 11,000	ARPA Recommendations
% of O&M Cost	General Mobilization/De-Mobilization	4%		$ 4,000	ARPA Recommendations
% of O&M Cost	Indirect costs	2%		$ 2,000	ARPA Recommendations
% of O&M Cost	Contractor Profit	10%		$ 11,000	ARPA Recommendations
% of O&M Cost	Contract Administration	10%		$ 11,000	ARPA Recommendations
			Administrative Costs =	$ 39,000	
	Total Estimated Financial Assurance Amount =			**$ 145,000**	

Appendix C
Reclamation Cost Estimate
Sunroc Corporation - Coolidge Property

Date Checked	Checked By	Job Number	By	Date	Calc. No.	Sheet No.
9/12/2024	EJM	211134	RAB	9/12/2024		3 of 12

Project	Subject
Sunroc Corporation - Coolidge Property	Unit Cost Basis

References/Notes

The unit cost basis for the estimate is based on two key databases

- RS Means - Facilities Construction Cost Data -2023, and
- Caterpillar Performance Handbook, Edition 31.

Equipment rental rates and operator labor rates are based on the RS-MEANS CREWS data, as referenced for each piece of equipment. The unit rates can be adjusted by the city cost index for specific locations, however, no adjustment was made since the Phoenix Area rates are close to the national average.

CREWS DATA

Earthmoving Equipment, cost $/hr — RS Means : Facilities Construction Cost Data

List	Labor (1)*	Equipment (2)*	Total		References/Notes
980G Loader	$58	$135	$193	$/hr	crew B-10U
775D Haul Truck	$55	$369	$424	$/hr	crew B-34J
Water Truck	$55	$60	$115	$/hr	crew B-59
D10 Dozer	$58	$234	$292	$/hr	crew B-10M
325 Excavator	$57	$300	$357	$/hr	crew B12-D
16H Motor Grader	$55	$85	$140	$/hr	crew B-11L
631E Scraper	$59	$304	$363	$/hr	crew B-33D
80 ton Crane	$61	$281	$342	$/hr	crew A-3L
120 ton Crane	$61	$305	$366	$/hr	crew A-3M

LABOR DATA

Mechanical labor	$61	$0	$61	$/hr	crew A-1A
Laborer	$47	$0	$47	$/hr	crew A-1

MISC COST DATA

Demolition/Removal - Metal Building and Foundation	$	3.81	$/Sq. Ft.	RACER (ver. 8.1.2)
Demolition//Removal - Block Building and Foundation	$	7.61	$/Sq. Ft.	RACER (ver. 8.1.2)
Demolition/Removal - Concrete Pads/roads 12"	$	8.52	$/Sq. Ft.	RACER (ver. 8.1.2)
Demolition/Removal - Chain-Link Fencing	$	4.36	$/Sq. Ft.	RACER (ver. 8.1.2)
Removal of Single-Pole Powerline	$	12,560	$/Mile	Haley & Aldrich Data
Removal of Electrical Transformers	$	6,280	Each	Haley & Aldrich Data
Construction of Chain-Link Fence	$	11.57	$/ft	RACER (ver. 8.1.2)
Installation of Access Restriction/Public Safety Signs	$	83.40	$/sign	RACER (ver. 8.1.2)
Well Removal	$	33.55	ft depth	Haley & Aldrich Data
Trash Removal	$	75	Ton	Allied Waste Quote
Transport and Unloading, Heavy	$	1,570	$/load	Haley & Aldrich Data
Transport and Unloading, Light	$	1,068	$/load	Haley & Aldrich Data
Broadcast Seeding				
w/ straw mulch, fertilizer, desert scrub seed mixture	$	762	$/acre	Haley & Aldrich Data
w/o mulch and fertilizer	$	377	$/acre	Haley & Aldrich Data
Hydroseed				
w/ mulch and desert scrub type seed mixture	$	1,476	$/acre	Haley & Aldrich Data
Septic System Removal	$	1,000	$/tank	Haley & Aldrich Data

(1) Labor includes operating and maintenance labor
(2) Equipment costs include operating, maintenance, rental costs
* Labor and equipment costs are rounded to the nearest dollar

Date Checked	Checked By	Job Number	By	Date	Calc. No.	Sheet No.
9/12/2024	EJM	211134	RAB	9/12/2024		4 of 12

Project	Subject
Sunroc Corporation - Coolidge Property	Dozing Cost

D10 Re-grading from 1.5H:1V slope to 3H:1V slope

	D10 Dozing Productivity			References/Notes
	Optimum Production (CY/Hr)	950		(1) pg. 1-43 (200 Foot Push)
Push Factors	Operator experience	0.875		(1) pg. 1-45
	Type of material	0.8		(1) pg. 1-45
	Grade of Push	1.6		(1) pg. 1-45
	Weight Correction	0.71		(1) pg. 1-41 Material Weight = 1.62 T/CY
Work Factor	50 minutes/hour	0.83		(1) pg. 1-45
	Average Production (CY/Hr)	629		
	Average Daily Production (CY)	5,036		(8-hour work day)
	D10 Dozer Cost			
	Dozer Rental (Monthly)	$ 23,664		(2) Line # 015433204360
	Ownership Cost (Daily)		$ 1,076	(22 working days/month)
	Dozer Operating Cost (Hourly)	$ 116		(2) Line # 015433204360
	Operating Cost(Daily)		$ 928	(8-hour work day)
	Dozer Labor Cost (Hourly)	$ 58		(2) crew B-10M
	Labor Cost (Daily)		$ 464	(8-hour work day)
	Dozer Total Cost (Daily)		$ 2,468	
	Cost per CY		$ 0.49	

(1) Caterpillar Performance Handbook, Edition 31
(2) RS Means 2023

Date Checked	Checked By	Job Number	By	Date	Calc. No.	Sheet No.
9/12/2024	EJM	211134	RAB	9/12/2024		5 of 12

Project	Subject
Sunroc Corporation - Coolidge Property	**Scarifying Cost**

				References/Notes
	Scarifying - Motor Grader			
	16H Grader Productivity			
	Ripper beam (Ft.)	9.75		(1) pg. 3-13, 17.8 inch max depth
	Max first gear with std tires (mph)	2.4		(1) pg. 3-12
	Feet per mile	5,280		
	Half Speed in Ft./Hr.	6,336		assumes 2 passes are
	Double-pass factor	0.5		adequate for road scarifying
	Effective speed in Ft./Hr.	3,168		
	Optimum area/hour (Sq. Ft./Hr.)	30,888		
Work Factor	50 minute hour	0.83		(1) pg. 3-15
	Average area/hour ($Ft.^2$/Hr.)	25,637		
	Average area Daily (Sq. Ft.)	205,096		(8-hour work day)
	Grader Cost (40,000 lb)			
	Grader Rental (Monthly)	$ 11,832		(2) Line # 015433201920
	Ownership Cost (Daily)		$ 538	(22 working days/month)
	Grader Operating Cost (Hourly)	$ 57		(2) Line # 015433201920
	Operating Cost(Daily)		$ 456	(8-hour work day)
	Grader Labor Cost (Hourly)	$ 55		(2) crew B-11L
	Labor Cost (Daily)		$ 440	(8-hour work day)
	Grader Total Cost (Daily)		$ 1,434	
	Cost per Sq. Ft.		$ 0.0070	
	Cost per Linear Ft. of Road		$ 0.28	(40-foot-wide road)

(1) Caterpillar Performance Handbook, Edition 31
(2) RS Means 2023

Date Checked	Checked By	Job Number	By	Date	Calc. No.	Sheet No.
9/12/2024	EJM	211134	RAB	9/12/2024		6 of 12

Project	Subject
Sunroc Corporation - Coolidge Property	Excavator Costing

				References/Notes
	325 Excavator Productivity			
Factors	Heaped bucket capacity (Cu. Yd.)	1.5		(1) pg. 5-117 Bucket size selected for the
	Optimum Cycles/Hr.	180		(1) pg. 5-1555 325 Excavator = 1.5 CY
	Bucket Fill factor	1.0		(1) pg. 5-126
	50 minutes/Hr.	0.83		Material Weight = 1.62T/CY
	Average Hourly Production (Cu. Yd.)	224		
	Average Daily Production (Cu. Yd.)	1,793		(8-hour work day)
	325 Excavator Cost			
	Excavator Rental (Monthly)	$ 6,725		(2) 01590 200 0200 pg. 20
	Ownership Cost (Daily)		$ 306	(22 working days/month)
	Excavator Operating Cost (Hourly)	$ 29		(2) 01590 200 0200 pg. 20
	Operating Cost (Daily)		$ 232	(8-hour work day)
	Excavator Labor Cost (Hourly)	$ 57		(2) crew B12-D, pg. 1099
	Labor Cost (Daily)		$ 456	(8-hour work day)
	Excavator Total Cost (Daily)		$ 994	
	Cost per Cu. Yd.		$ 0.55	

(1) Caterpillar Performance Handbook, Edition 31
(2) RS Means 2023

Appendix C
Reclamation Cost Estimate
Sunroc Corporation - Coolidge Property

Date Checked	Checked By	Job Number	By	Date	Calc. No.	Sheet No.
9/12/2024	EJM	211134	RAB	9/12/2024		7 of 12

Project	Subject
Sunroc Corporation - Coolidge Property	Scraper Costing

				References/Notes
631E Scraper				
Scraper capacity (heaped)	31	Cu. Yd.		Yd.
Rated load	37.5	ton		(1) pg. 9-5
Scraper Productivity				
Bank Cu. Yd./Hr, 4% RR, 1000 ft haul	540			(1) pg. 9-67
Material correction	0.93			Material Weight = 1.62 T/Cu. Yd.
50 minute hour	0.83			
Actual bank Cu. Yd. per hour	415			
631 Scraper Cost				
Scraper Rental (Monthly)	$ 14,900			(2) 01590 200 3700 pg. 21
Ownership Cost (Daily)		$	677	(22 working days/month)
Scraper Operating Cost (Hourly)	$ 75			(2) 01590 200 3700 pg. 21
Operating Cost(Daily)		$	600	(8-hour work day)
Scraper Labor Cost (Hourly)	$ 34			(2) crew B-33D, pg. 1099
Labor Cost (Daily)		$	272	(8-hour work day)
Scraper Total Cost (Daily)		$	1,549	
D9 Dozer Cost				
D9 Rental (Monthly)	$ 14,300			(2) 01590-200 4370, pg. 21
Ownership Cost (Daily)		$	650	(22 working days/month)
D9 Operating Cost (Hourly)	$ 65			(2) 01590-200 4370, pg. 21
Operating Cost(Daily)		$	520	(8-hour work day)
D9 Labor Cost (Hourly)	$ 34			(2) crew B-10M, pg. 1099
Labor Cost (Daily)		$	272	(8-hour work day)
D9 Total Cost (Daily)		$	1,442	
Total Fleet				
Total Fleet Cost (Daily)		$	4,541	(1 - D9, 2 - 631)
Total Fleet Productivity (BCY/Hr)	830			
Total Fleet Productivity (BCY/Day)			6,640	
Cost per Cu. Yd. Moved		$	0.68	

Cubic yards in 1 linear foot of 40 ft wide road, 1 foot thick (Cu. Yd.)		1.48
Cost of placing 1 linear foot (40 foot wide road)	$	1.01

(1) Caterpillar Performance Handbook, Edition 31
(2) RS Means 2023

Appendix C
Reclamation Cost Estimate
Sunroc Corporation - Coolidge Property

Date Checked	Checked By	Job Number	By	Date	Calc. No.	Sheet No.
9/12/2024	EJM	211134	RAB	9/12/2024		8 of 12

Project	Subject
Sunroc Corporation - Coolidge Property	Truck haul (1 of 2)

				References/Notes
	980G Loader Productivity			
	Basic Cycle Time (minutes)	0.55		(1) pg. 13-46
Cycle Time Factors	Material type (minutes)	0.02		(1) pg. 13-46
	Type of Pile (minutes)	0.02		(1) pg. 13-46
	Common ownership trucks/loaders	0		(1) pg. 13-46
	Constant operation	0		(1) pg. 13-46
	Small target (minutes)	0.025		(1) pg. 13-46
	Fragile target	0		(1) pg. 13-46
	Total Cycle Time (minutes)	0.615		
	Optimum Cycles/Hr.	98		
Work Factor	50 minutes/Hr.	0.83		(1) pg. 13-47
	Average Cycles/Hr.	81		
	Bucket Full Load (Cubic Yards)	7.5		(1) pg. 13-29
	Bucket Fill Factor	0.9		(1) pg. 13-46
	Average Bucket Load (Cubic Yards)	6.75		
	Average Volume Loaded/Hr	547		
	980G Loader Cost			
	Loader Rental (Monthly)	$ 13,015		(2) 015433204560
	Ownership Cost (Daily)		$ 592	(22 working days/month)
	Loader Operating Cost (Hourly)	$ 77		(2) 015433204560
	Operating Cost(Daily)		$ 616	(8-hour work day)
	Loader Labor Cost (Hourly)	$ 58		(2) crew B-10M pg. 1099
	Labor Cost (Daily)		$ 464	(8-hour work day)
	Loader Total Cost (Daily)		$ 1,672	
	775D Truck Productivity			
	Truck Volume (Cubic Yards)	41.1		(1) pg. 10-3
	Loader Cycles needed to Fill Truck	6.09		Use Loader Avg Bucket Load (CY)
	Average Cycles per Truck	6		
	Average Truck Payload (Cubic Yards)	40.5		
	Basic Load Time (minutes)	4.45		Calculated from Loader rate
Cycle Time Factors	Maneuver - Load Area (minutes)	0.5		(1) pg. 10-8
	Maneuver - Dump Area (minutes)	1.1		(1) pg. 10-8
	Haul Time (minutes)	1.2		(1) pg. 10-8
	Return Time (minutes)	1.2		(1) pg. 10-8
	Optimum Truck Cycle Time (minutes)	8.45		(1) pg. 10-8
	Optimum Truck Cycles/Hr.	7.1		(1) pg. 10-8
Work Factor	50 minutes/Hr.	0.83		Assumption
	Average Truck Cycles/Hr.	5.9		
	Average (Cu.Yd.)/Hr. (for 1 truck)	239		
	Average (Cu.Yd.)/Hr. (for 2 trucks)	478		

(1) Caterpillar Performance Handbook, Edition 31
(2) RS Means 2023

Appendix C
Reclamation Cost Estimate
Sunroc Corporation - Coolidge Property

Date Checked	Checked By	Job Number	By	Date	Calc. No.	Sheet No.
9/12/2024	EJM	211134	RAB	9/12/2024		9 of 12

Project	Subject
Sunroc Corporation - Coolidge Property	Truck Haulage (2 of 2)

775D Truck Cost					References/Notes
Truck Rental (Monthly)	$	12,800			(1) 01590 200 5620 p22
Ownership Cost (Daily)			$	582	(22 working days/month)
Truck Operating Cost (Hourly)	$	57			(1) 01590 200 5620 p22
Operating Cost(Daily)			$	456	(8-hour work day)
Truck Labor Cost (Hourly)	$	55			(2) crew B-34A
Labor Cost (Daily)			$	440	(8-hour work day)
Truck Total Cost (Daily)			$	1,478	
Trucks (2T total Cost (Daily)			$	2,956	
Loader Total Cost (Daily)			$	1,672	
Fleet Total Total Cost (Daily)			$	4,627	
Total Fleet Productivity (Cu. Yd. per Day)				3,821	(8-hour work day)
Fleet Cost per Cu. Yd.			$	1.21	

(1) Caterpillar Performance Handbook, Edition 31
(2) RS Means 2023

Date Checked	Checked By	Job Number	By	Date	Calc. No.	Sheet No.
9/12/2024	EJM	211134	RAB	9/12/2024		10 of 12

Project	Subject
Sunroc Corporation - Coolidge Property	Crane Costing

Rubber Tired Hydraulic Crane - 80 -on Capacity

80-Ton Crane Cost			References/Notes
Crane Rental (Monthly)	$ 11,250		(2) 01590 500 2700 pg. 27
Ownership Cost (Daily)		$ 511	(22 working days/month)
Crane Operating Cost (Hourly)	$ 58		(2) 01590 500 2700 pg. 27
Operating Cost(Daily)		$ 464	(8-hour work day)
Crane Labor Cost (Hourly)	$ 42		(2) crew B-95A, pg. 1100
Labor Cost (Daily)		$ 336	(8-hour work day)
Crane Total Cost (Daily)		$ 1,311	(8-hour work day)
Crane Total Cost (Hourly)		$ 164	

Rubber Tired Hydraulic Crane - 120-Ton Capacity

120-Ton Crane Cost			References/Notes
Crane Rental (Monthly)	$ 27,500		(2) 01590 500 2740 pg. 27
Ownership Cost (Daily)		$ 1,250	(22 working days/month)
Crane Operating Cost (Hourly)	$ 89		(2) 01590 500 2740 pg. 27
Operating Cost(Daily)		$ 712	(8-hour work day)
Crane Labor Cost (Hourly)	$ 42		(2) crew B-95A, pg. 1100
Labor Cost (Daily)		$ 336	(8-hour work day)
Crane Total Cost (Daily)		$ 2,298	(8-hour work day)
Crane Total Cost (Hourly)		$ 287	

(1) Caterpillar Performance Handbook, Edition 31
(2) RS Means 2023

Date Checked	Checked By	Job Number	By	Date	Calc. No.	Sheet No.
9/12/2024	EJM	211134	RAB	9/12/2024		11 of 12

Project	Subject
Sunroc Corporation - Coolidge Property	Rip Rap Erosion Control

References/Notes

Material Cost, Hauling, and Placing Erosion Control Structures - Rip Rap

Description	Units	Total Cost	References/Notes
18" Minimum thickness, not grouted			
Material (sq. yd.)	1	$ 23	(2) Line # 313713100200
Labor (per unit)	1	$ 53	(2) Line # 313713100200
Equipment (per unit)	1	$ 42	(2) Line # 313713100200

Estimated Cost per Square Yard for Rip Rap Material and Install = $ 118.00

(1) Caterpillar Performance Handbook, Edition 31
(2) RS Means 2023

Appendix C
Reclamation Cost Estimate
Sunroc Corporation - Coolidge Property

Date Checked	Checked By	Job Number	By	Date	Calc. No.	Sheet No.
9/12/2024	EJM	211134	RAB	9/12/2024		12 of 12

Project	Subject
Sunroc Corporation - Coolidge Property	Plant Removal

References/Notes

Removal of Crushing/Screening plants or Wash Plants

Description	Units	Total Cost
80 Ton Crane (Hr)	20	$ 3,000
120 Ton Crane (Hr)	-	$ -
Mechanical Labor (Hr)	450	$ 27,000
Loading/Unloading Labor (Hr)	50	$ 2,000
Light Transportation (Trips)	10	$ 11,000
Heavy Transportation (Trips)	-	$ -

Estimated Total Cost for Plant Removal = $ 43,000

(1) Caterpillar Performance Handbook, Edition 31
(2) RS Means 2023