STATE MINE INSPECTOR

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AGGREGATE MINED LAND RECLAMATION PLAN AMENDMENT
HANSON AGGREGATES, LLC
CLARKDALE OPERATIONS
CLARKDALE, ARIZONA

by Haley & Aldrich, Inc.
Phoenix, Arizona

REGISTERED GEOLOGIST
CERTIFICATE NO. 50993
RICHARD A. BROWN
DATE SIGNED 2/16/21
ARIZONA U.S.A.
Expires 6/30/2022

for Hanson Aggregates, LLC
Phoenix, Arizona

File No. 134558-002
February 2021

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HALEY ALDRICH

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1. Introduction

This Aggregate Mined Land Reclamation Plan Amendment (Plan) details the closure and reclamation of the Clarkdale aggregate operations of Hanson Aggregates LLC (respectively, Hanson and Clarkdale Operations) located in Clarkdale, Arizona. Reclamation planning has been conducted in accordance with the Arizona Aggregate Mined Lands Reclamation Act (Arizona Revised Statutes [A.R.S.] § 27-1201) as authorized by A.R.S. § 27-1204. This amended Plan has been developed pursuant to the format and content prescribed in the Arizona Aggregate Mined Lands Reclamation Rules (Arizona Administrative Code [A.A.C.] R11-3-101, *et seq.*). Figure 1 presents the facility location map of the Clarkdale Operations.

The Project Boundary Area in the 2006 Arizona State Mine Inspector (ASMI)-approved Plan[1] (2006 Plan) for the Clarkdale Operations is approximately 207 acres. This amendment will expand the project boundary to approximately 280 acres. The Clarkdale Operations consists of two parcels owned by Verde Exploration, Ltd., currently assigned Yavapai County Assessor's Parcel number 401-03-010F, 401-05-004F, and 401-05-004G (respectively, Verde and Verde Parcels) and one parcel owned by Hanson Aggregates LLC (Hanson); this parcel is currently assigned Yavapai County Assessor's Parcel number 401-05-004C (Hanson Parcel). Only a portion of Parcels 401-03-010F and 401-05-004F are currently included in this Plan and the Clarkdale Operations. Collectively, the three parcels are the "Parcels." All the parcels are operated by Hanson under established mining leases with Verde.

[1] Reclamation Plan, 2006. – Hanson Aggregates Arizona, Inc., Clarkdale Operation

2. Reclamation Plan Narrative

2.1 OWNER/OPERATOR INFORMATION

Pursuant to the records of the Yavapai County Tax Assessor, the Parcels have two owners: Hanson and Verde Exploration, Ltd. (Verde). The required owner and operator information is provided below.

2.1.1 Owner/Operator Name and Address

Owner of Yavapai County Assessor's Parcel No. 401-05-004C:

Hanson Aggregates LLC
4025 S. McClintock Drive, Suite 202
Tempe, Arizona 85282

Owner of Yavapai County Assessor's Parcel No. 401-03-010F and 401-05-004F:

Verde Exploration, Ltd.
c/o BPCWS Law Firm
125 North Granite Street
Prescott, Arizona 86301

Operator:

Hanson Aggregates LLC
4025 S. McClintock Drive, Suite 202
Tempe, Arizona 85282

2.1.2 Contact Person Name and Address

Operator's Contact Person:

Hanson Aggregates LLC
Attention: Land Manager
4025 S. McClintock Drive, Suite 202
Tempe, Arizona 85282
(858) 577-2770

Owner's Contact Person:

Boyle, Pecharich, Cline, Whittington, and Stallings, P.L.L.C.
Jonathan A. Millet
125 North Granite Street
Prescott, Arizona 86301
(928) 445-0122

2.1.3 Responsible Party

Hanson hereby assumes responsibility for the reclamation of surface disturbances that are attributable to the aggregate mining unit consistent with A.R.S. § 27-1201 and A.A.C. § R11-3-501, and other provisions of A.A.C. Title 11, Chapter 3. All areas that have been disturbed at the site will be reclaimed to a safe and stable condition upon cessation of aggregate mining operations.

Ben Calo, Environmental & Land Specialist

2/16/2021
Date

2.2 CERTIFICATE OF DISCLOSURE

The certificate of disclosure required by A.R.S. § 27-1205 has been prepared by Hanson and will be submitted separately.

2.3 CURRENT OPERATIONS

The mining operation at this facility has included the removal and processing of earthen materials for the production of aggregate as described in A.R.S. § 27-441. The 2006 Plan addressed mining and plant operations within the approximate 207-acre property. This amendment addresses the expansion of mining area operations by approximately 97 additional acres on Parcel 401-03-010F to the south of the property addressed by the 2006 Plan. The ground surface slopes from the southwest towards the northeast, with elevations ranging from approximately 3,775 to 4,150 feet above mean sea level (amsl). Existing site conditions and the additional acreage to be added in this amendment are presented in Figure 2.

Equipment, structures, buildings, and utilities on the site are located within the Plant Area on the Hanson Parcel and are utilized for aggregate crushing and screening, hot-mix asphalt production, concrete batch mixing, administrative operations, and equipment maintenance. Details of the Plant Area are as follows:

- All Plant Area equipment, structures, buildings, and utilities are located on the Hanson owned parcel, 401-05-004C, in the northern portion of the property.
- Plant Area equipment, structures, and buildings include:
  - One crushing and screening plant;
  - One wash plant;
  - One freshwater pond;
  - Two water recycle/settling ponds;
  - One ready-mix concrete batch plant;
  - One hot-mix asphalt plant;
  - One administrative office;
  - One maintenance and warehouse facility; and
  - One truck scale.
- Plant Area utilities include:
  - Overhead power lines with transformers and portable generators for electricity;
  - Aboveground storage tanks for fuel storage;
  - Four water supply wells;

- Sanitary facilities provided by on-site septic systems; and
- Solid waste disposal provided by contract waste removal services.

- Numerous aggregate stockpiles are present in the Plant Area, with an average slope at the angle of repose or approximately 1.5 horizontal to 1 vertical (1.5H:1V).

Within the Mining Area, all existing or proposed aggregate excavation will occur within the parcels owned by Verde. Reclamation of the existing mining areas on the east and northeast side of an unnamed drainage delineated on Figure 2 where material is no longer being mined and reclamation has begun in accordance with the 2006 Plan. No processing of material occurs within the Mining Areas. Operations consist of digging and hauling of material from the Mining Area to the Plant Area for processing. Hanson uses water from the on-site water wells for material washing and dust control throughout the entire site.

Current access is provided by Cement Plant Road, a paved road located east of the site. A primary off-highway access road is maintained from the entrance to the office and shop areas located in the northeast portion of the property. Other off-highway and haul roads provide access to the open pit, overburden stockpiles, processing plants, process material stockpiles, and the maintenance shop. The haul roads within the Mining Area may change configuration frequently as the mining operations continue.

Table 1 presents the current status of property acreage.

Table 1. Property Acreage Use

Area Description	Description	Acres
Project Boundary Area	Area within the property boundary line includes the previously approved 207-acre area plus the additional approximate 73 acres.	280
Property Disturbed Area	Total area of property to be disturbed by mining and processing activities as depicted on the Existing Site Conditions Map (Figure 2). The setback areas will not be disturbed by mining or processing activities.	242
Mining Area	Total area includes the existing 148 acres of disturbance and the additional Mining Area (97 acres) to be added through this amendment to the reclamation plan.	245
Plant Area	Portion of the property largely covered by previously approved reclamation plan presently occupied by office and shop activities, concrete production, materials processing areas, ponds, and storage of materials.	35

2.3.1 Surrounding Area Land Use

The site is located in an area of predominantly open space and mining/industrial activities. Surrounding land uses generally consist of:

- Open space occurs on the east, south, and west sides of the property; and
- Industrial facilities and mining are located directly north of the site.

The planned post aggregate mining uses of naturalized open space for the Mining Area and light industrial for the Plant Area are consistent with surrounding land uses. However, after reclamation in

accordance with the approved Plan is completed as defined in this Plan is deemed complete by the ASMI, Verde has reserved the right to develop its parcels for other uses subject to county zoning classifications and general development plans.

2.3.2 Current Permits, Licenses, and Approvals

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

- An Arizona Department of Environmental Quality (ADEQ) Air Quality Permit;
- Aggregate Mined Land Reclamation Act, A.R.S. § 27-1202 *et seq.* (Reclamation Plan);
- A Storm Water Pollution Prevention Plan (SWPPP); and
- A Spill Prevention Control and Countermeasure (SPCC) Plan.

Although these permits/plans indirectly regulate operations at the site, they do not have the authority to control or limit the depth or extent of mining at the site.

2.3.3 Description of Future Disturbance

Hanson anticipates continued aggregate mining operations within the proposed mining area boundaries of the leased Verde Exploration parcels (Figure 2). This includes expansion and excavation of open pits and the development of additional stockpiles. Figure 3 presents the post-aggregate mining conditions addressed by this amendment. All pit areas will be excavated to an approximate depth of 100 feet below ground surface (bgs) at an overall slope of 3H:1V. All pits, existing and proposed, within the mining area will have 30-foot setbacks from the west and east property line of Yavapai County Assessor's Parcel 401-03-010F (except the boundary line between Parcel 401-03-010F and Parcel 401-05-004F) and the west property line of Parcel 401-05-004F.

Previously approved disturbances predominantly located in the Plant Area and the open pits to the east and west are essentially unchanged by this amendment. Hanson has begun reclamation and regrading of areas within the approved disturbance area on the eastern and northeastern sides of the property. Grading and fill are planned in the northeast portion of the site to allow for flows in the unnamed drainage and flows in the areas where mining is completed to leave the site. This amendment will not disturb the unnamed natural drainage at the site.

As defined in this amendment, Hanson intends to continue to operate the Plant Area in the Hanson Parcel after aggregate excavation within the leased Mining Area (Verde Parcels) has been completed. It is Hanson's intention to complete the reclamation described in this Plan for the Mining Areas and operate the Plant Area as a light industrial facility. The Plant Area in the Hanson Parcel will continue to process material from off-site sources to produce ready-mix concrete, hot-mix asphalt, and other aggregate products. All equipment, structures, buildings, and utilities will remain on the Hanson owned property after the cessation of mining and reclamation activities.

While the equipment, structures, buildings, and utilities considered "mining facilities" per the definition in A.R.S. § 27-441, they should not be subject to the reclamation plan or bond requirements as they are standalone facilities on the property that do not create a land disturbance triggering reclamation. They will not create further land disturbance and once aggregate mining ceases on the adjacent property they

will continue to operate utilizing materials from off-site sources. Similarly, if a concrete batch plant or hot-mix asphalt plant were placed on a separate property, it may be considered a mining facility for the purposes of zoning regulations under the A.R.S., but the Plant would not be subject to Mine Safety and Health Administration oversight nor would the property need a reclamation plan or bond requirements due to the lack of mineral extraction activities.

2.4 POST-AGGREGATE MINED LAND RECLAMATION PLAN

The following sections identify the items and the methods in which each item will be reclaimed in accordance with this amendment to the reclamation plan.

2.4.1 Final Site Topography

Upon cessation of aggregate mining operations, Hanson intends to reclaim the Mining Area to a safe and stable condition that is compatible with good engineering practices and the approved naturalized open space post-aggregate mining land use. After the Verde Parcels are reclaimed to naturalized open space, Verde will retain the right to maintain the site as open space or otherwise develop the property. Hanson plans to mine to a final slope grade of 3H: 1V. No pit lakes are expected to form as groundwater elevations in wells within the area are greater than 300 feet bgs. Stockpiled topsoil and overburden material will be distributed to reclaim pit and haul road areas and be allowed to naturally revegetate.

The grading for the Plan shall ensure that storm water flowing through the site generally flows in the direction of natural drainage patterns present before mining, and ensures that outflows of surface water for a 10-year storm event will not pond on the Verde Parcels for more than 72 hours. Reclamation efforts will ensure that flows in the unnamed ephemeral stream on the site will not be restricted, retarded, or diverted on the property. Any inert materials used to backfill pits or depressions on the property for the purposes of establishing controlled drainage from the pits will be compacted to at least 90 percent of their maximum density to reduce the erosion potential of these backfilled areas. Any inert riprap used for erosion control will be appropriately sized for flows anticipated during the same 10-year storm event.

The Plant Area will continue to operate in the current condition depicted on Figure 2 as a light industrial facility.

2.4.2 Slope Stability Evaluation

In the 2006 approved Plan, acceptable static and pseudo static factors of safety were estimated for a final slope of 3H:1V. The indicated factors of safety for static and seismic conditions were greater than 1.5 and 1.3, respectively.

It should be noted the slope stability analyses only considered potential deep-seated failure planes. Near surface or localized failures and deformation were not addressed in the stability analyses. The slopes may be susceptible to localized surface slumping and should be periodically inspected as part of the post-closure monitoring plan.

2.4.3 Structures and Equipment

In accordance with this amendment, Hanson intends to continue to operate the Plant Area as a light industrial facility. The Plant Area will continue to process material from off-site sources to produce ready-mix concrete, hot-mix asphalt, and other aggregate products. All equipment, structures, buildings, and utilities will remain on the Hanson owned property after the cessation of mining activities.

The equipment, structures, and buildings that will remain on the Hanson owned parcel (401-05-004C) include:

- One crushing and screening plant;
- One wash plant;
- One freshwater pond;
- Two water recycle/settling ponds;
- One ready-mix concrete batch plant;
- One hot-mix asphalt plant;
- One administrative office;
- One maintenance and warehouse facility; and
- One truck scale.

2.4.4 Roads

The site contains only unpaved roads. The facility roads currently include, or will include, approximately:

- Roads within the Mining Area:
  - 13,000 feet of unpaved roads; and
- Roads within the Plant Area:
  - 7,500 feet of unpaved roads. These roads will remain within the Plan Area and not be removed for Hanson's use.

Two unimproved access roads: (1) 2,000 feet in length, and 30 feet in width, located on the eastern border of the Parcel 401-03-010F, and (2) 1,500 feet in length and 30 feet in width, traversing the western edge of the final graded pit of the Mining Area of the Verde Parcels. These two roads will be preserved on site following completion of aggregate excavation within the Mining Area to allow for care and maintenance inspections and property access for the property owner. All remaining roads within the Mining Area will be reclaimed by ripping and scarifying, covering with preserved topsoil and overburden materials, and allowing natural revegetation. Roads located on pit floors and slopes will be incorporated into the final reclaimed topography.

2.4.5 Utilities and Wells

All utilities, water wells, and aboveground storage tanks located in the Plant Area will remain in place on the Hanson owned parcel to continue operating as a light industrial facility. The items to remain within the Plant Area include:

- Overhead power lines with transformers and portable generators for electricity;
- Aboveground storage tanks for fuel storage;
- Four water supply wells;
- Sanitary facilities provided by on-site septic systems; and
- Solid waste disposal provided by contract waste removal services.

2.4.6 Access Restriction/Public Safety

All Mining Area slopes will be concurrently mined to a reclamation slope grade of 3H:1V or flatter to provide an acceptable factor of safety against deep-seated slope failures. Once reclamation is complete, signs previously installed and maintained to identify potential hazards associated with active mining operations will be removed. Where practicable, earthen berms will be established around the perimeter of the reclaimed pits or ponds.

2.5 TOPSOIL CONSERVATION AND REVEGETATION PLANS

2.5.1 Topsoil Conservation Plan

The topsoil recovered from mining operations will be stored in stockpiles near the pit areas from which they will be removed. The stockpiles will be naturally vegetated, which will prevent fugitive loss or erosion prior to reclamation. During reclamation activities, areas will be regraded and ripped as necessary to incorporate the growth materials, to prevent excess compaction, and to achieve a suitable soil zone to enhance volunteer growth. Once mining in the Verde Parcels is complete, the topsoil will be placed and naturally revegatated. The current volume of topsoil and fines stored in stockpiles is approximately 65,000 cubic yards. The volume of topsoil and fines remaining in-situ for the 59 acres of future excavation is equivalent to approximately 95,200 cubic yards. The total volume of topsoil and fines that will be available by the end of aggregate excavation for reclamation is approximately 160,200 cubic yards.

2.5.2 Revegetation Plan

Surface disturbances within the Mining Area that result in compaction of the soil will require ripping, disking, or other means to reduce compaction and to establish a suitable root zone for volunteer revegetation growth. All disturbed areas will be regraded and ripped to promote volunteer growth. Persons responsible for care and monitoring will inspect the facility annually for 3 years and perform any needed maintenance and repairs.

The success of revegetation efforts will be determined by conducting a limited vegetation inventory. The inventory will compare the reclaimed areas to surrounding undisturbed areas of the site and will be conducted by Hanson in accordance with generally accepted industry standards that includes a site survey to identify comparative study plots or cross sections based on soil types, slope profiles and exposure. Vegetation attributes will be measured within the comparative study areas or along cross sections such that the type, density, species, and size of vegetation is determined.

Revegetation success is deemed achieved when the results of the limited vegetation inventory indicate that the reclaimed surfaces at the site possess at least 70 percent of the vegetation attributes (specifically, type and density) as compared to the undisturbed areas of the site. A report of the limited vegetation inventory will be provided to the ASMI in the final annual reclamation report.

2.6 CONCEPTUAL SCHEDULE FOR DISTURBANCE AND RECLAMATION

The anticipated schedule for implementation of the amended Plan is:

- Reclamation within portions of the Mining Area have begun east of the unnamed drainage. Reclamation throughout the remainder of the Mining Area will be completed concurrently as mining progresses.
- Once reclamation activities are initiated, Hanson will continue reclamation measures as described in this Plan amendment until complete.
- The care and monitoring period for the facility is estimated to continue for 3 years.
- Reclamation will be deemed complete once the reclaimed surfaces have been regraded to a safe and stable condition, revegetation success is demonstrated by a limited vegetation study, and the ASMI verifies that the owner or operator has fulfilled the requirements of the approved reclamation plan.

2.7 PROBABLE FUTURE LAND USE

Hanson will regrade all disturbed areas within the Mining Area in accordance with this amended Plan and bring the area to a safe and stable condition suitable for the naturalized open space post-mining land use. The Plant Area will continue to operate as a light industrial facility and produce ready-mix concrete, hot-mix asphalt, and other aggregate products. It is anticipated that the post-mining land uses for the following specific areas of the site will include:

- Mining Area: Naturalized open space for the Verde Parcels or as otherwise developed by Verde after the Verde parcels are reclaimed to naturalized open space.
- Plant Area: Light Industrial Uses for the parcel owned by Hanson.

Figure 4 presents the proposed post-mining land uses.

2.8 ESTIMATED RECLAMATION COSTS

The unit costs developed for this Plan amendment are based primarily on the cost estimating database RS Means Facilities Construction Cost Data (2019) along with estimated productivity for material movement based primarily on the Caterpillar Handbook (Edition 31). Administrative costs were based on Arizona Rock Products Association and Haley & Aldrich, Inc. recommendations.

The estimated costs developed for this Reclamation Plan include:

- Earthwork and regrading;
- Road reclamation;
- Care and maintenance;
- General construction; and
- Administrative costs.

A summary of the estimated reclamation costs is listed in Table 2 at the end of this section. The sources and calculation of the estimated reclamation costs are detailed in Appendix A.

2.8.1 Pit Walls Regrading Cost

The pit walls will be mined to the final reclamation slope within the Mining Area of 3H:1V; therefore, post-aggregate re-grading of pit slopes will not be required.

There is no cost for this category.

2.8.2 Stockpile, Dumps, and Fines Area Cost

Approximately 160,200 cubic yards of topsoil and fines stockpiles will be spread on pit wall slopes and some pit floors within the Mining Area. Aggregate stockpiles in Mining Areas are expected to be removed by the end of operations.

The cost of distributing and re-grading topsoil is $75,000.

2.8.3 Structure Demolition Cost

There are no structures or buildings within the Mining Area on the leased property. All structures and buildings are located within the Hanson owned property and will remain in place for the post mining land use as a light industrial facility.

There is no cost for this category.

2.8.4 Road Reclamation Cost

There is an estimated 13,000 feet of unpaved haul and access roads within and around the Mining Area that will be reclaimed by ripping/ scarifying and top soiling. The roads within the Plant Area will remain for use by Hanson.

The cost of reclaiming the roads is estimated at $22,000.

2.8.5 Care and Maintenance Cost

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

- An annual inspection of the site;
- Storm water management;
- Trash removal; and
- Maintenance for items found during annual inspections.

Three annual inspections are estimated to be needed before the site is released. The cost of care and maintenance is estimated at $31,000.

2.8.6 Construction Cost

Construction efforts for reclamation include:

- Installation of site restriction signs; and

- Installation of rip-rap erosion control.

The cost of construction is estimated at $22,000.

2.8.7 Material Haulage for Backfill

The estimated reclamation costs in this section include the loading and hauling of material from the stockpiled areas to the location for placement within the Mining Area.

The cost of material haulage is estimated at $110,000.

2.8.8 Plant Removal Cost

There are no equipment or utilities associated with the Plant Area within the Mining Area on the leased property. All equipment and utilities associated with the Plant Area are located within the Hanson owned property and will remain in place for the post mining land use of light industrial facility.

There is no cost for this category.

2.8.9 Cost Adjustment

A price index factor was included to adjust from 2017 pricing to estimated 2019 pricing on operating and material costs. The index factor supplied is the Consumer Price Index (CPI) for the period 2017 through 2019.

- CPI = 0.045

The cost adjustment is estimated at $12,000

2.8.10 Administrative Cost

The estimated administrative costs are required to support a third-party cost estimate in accordance with A.R.S. § 27-1271.11 of the Aggregate Mined Land Reclamation Statute. These administrative costs include:

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

The total estimated administrative cost is $97,000.

2.8.11 Total Reclamation Cost

The total reclamation cost for the amended Plan has been calculated based on the changes presented above. The estimated reclamation cost from the approved 2006 Plan was $952,000. The total estimated reclamation cost for this amended reclamation plan is estimated at $369,000. The major

change proposed in this amended plan is to not remove the Plant Area structures, processing equipment, roads, and utilities from the parcel that is owned by Hanson. This decrease in plant removal and reclamation costs for the Hanson property, which will remain in operation following mining on the Verde Parcels, is the reason for the cost decrease between the plans. The remaining items were increased to 2019 dollars and accounted for the increase in disturbed area within the existing and proposed Mining Areas. The table below presents the costs estimated for the amended Plan.

Table 2. Estimated Reclamation Cost Summary

Section	Reclamation Item	Cost
2.8.1	Pit Walls Regrading	$0
2.8.2	Stockpile, Dumps, and Fines Area	$75,000
2.8.3	Structure Demolition	$0
2.8.4	Road Reclamation	$22,000
2.8.5	Care and Maintenance	$31,000
2.8.6	Construction	$22,000
2.8.7	Material Haulage for Backfill	$110,000
2.8.8	Plant Removal	$0
2.8.9	Cost Adjustment	$12,000
2.8.10	Administrative	$97,000
	Total Reclamation Cost	**$369,000**

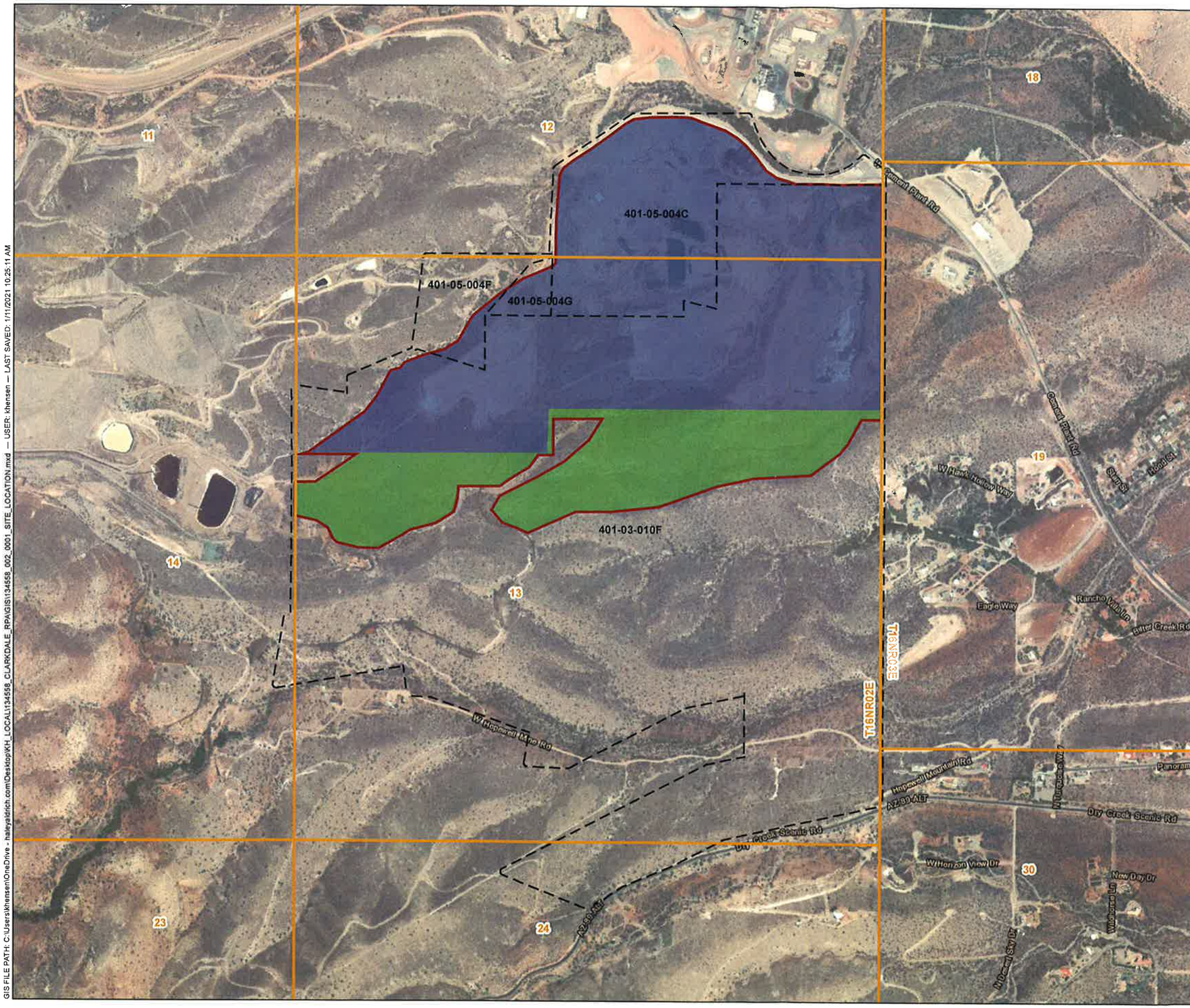
3. Fees

The fee to amend the Reclamation Plan is $1,565 for an existing aggregate mining unit. A check covering this fee is submitted with this Plan.

4. Financial Assurance

A bond with the ASMI named as oblige will be the Financial Assurance Mechanism used to cover the estimated reclamation cost.

FIGURES



LEGEND

- VERDE EXPLORATION SITE PARCEL WITH ASSESSOR PARCEL NUMBER (APN)
- SECTION BOUNDARY
- RECLAMATION PLAN AREA
- 2006 ORIGINAL RECLAMATION AREA, 204 ACRES
- 2020 AMENDED RECLAMATION AREA, 76 ACRES

NOTES

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

N

0 900 1,800
SCALE IN FEET

HALEY ALDRICH

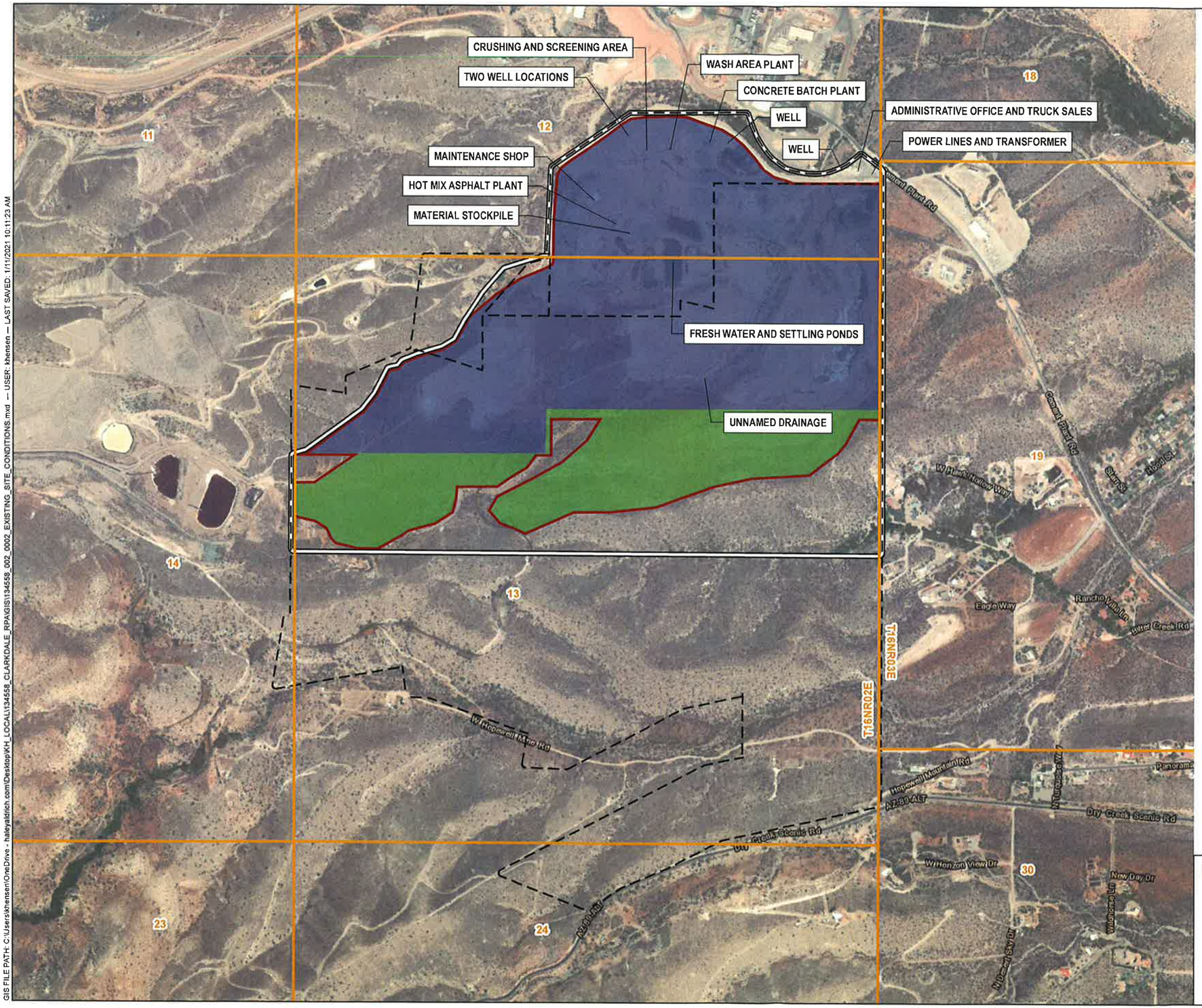
HANSON AGGREGATES, LLC
CLARKDALE OPERATIONS
CLARKDALE, ARIZONA

SITE LOCATION

FEBRUARY 2021

FIGURE 1

GIS FILE PATH: C:\Users\khensen\OneDrive - haleyaldrich.com\Desktop\KH_LOCALI\134558_CLARKDALE_RPA\GIS\1134558_002_0001_SITE_LOCATION.mxd — USER: khensen — LAST SAVED: 1/11/2021 10:25:11 AM



LEGEND

- PROPERTY BOUNDARY
- SITE PARCEL
- SECTION BOUNDARY
- RECLAMATION PLAN AREA
- EXISTING MINING AREA
- PROPOSED MINING AREA

NOTES

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

N

0 900 1,800
SCALE IN FEET

HALEY ALDRICH

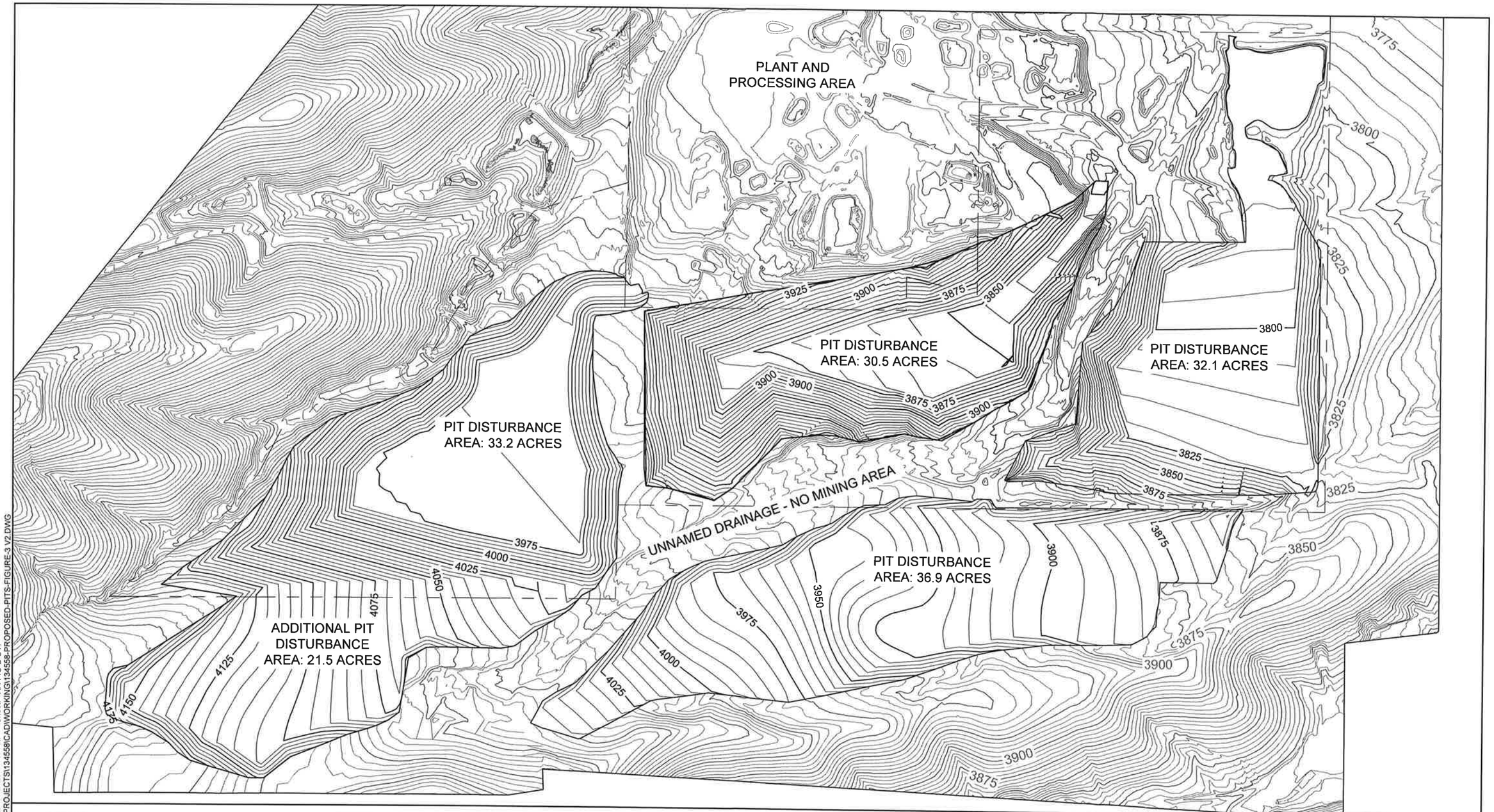
HANSON AGGREGATES, LLC
CLARKDALE OPERATIONS
CLARKDALE, ARIZONA

EXISTING SITE CONDITIONS

FEBRUARY 2021

FIGURE 2

GIS FILE PATH: C:\Users\khensen\OneDrive - haleyaldrich.com\Desktop\KH_LOCAL\134558_CLARKDALE_RPA\GIS\134558_002_0002_EXISTING_SITE_CONDITIONS.mxd -- USER: khensen -- LAST SAVED: 1/11/2021 10:11:23 AM



LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- EXISTING GROUND CONTOURS
- PROPOSED GROUND CONTOURS

NOTES

1. ALL BOUNDARIES ARE APPROXIMATE.
2. TOPOGRAPHIC SOURCE PROVIDED TO HALEY & ALDRICH INC. BY CHANG CONSULTANTS ON 11 FEBRUARY 2020. EXISTING TOPOGRAPHY SURVEYED IN 2013.
3. MINE PROCESSING EQUIPMENT STRUCTURES AND STOCKPILES WILL BE CONTAINED WITHIN THE PLANT AND PROCESSING AREA OWNED BY LEHIGH HANSON.
4. DISTURBED AREA WILL BE PROTECTED WITH BERM AND/OR FENCING.

N

0 400 800
SCALE IN FEET

HALEY ALDRICH

HANSON AGGREGATES, LLC
CLARKDALE RECLAMATION PLAN AMENDMENT
CLARKDALE, ARIZONA

POST AGGREGATE
MINING CONTOURS

SCALE: AS SHOWN
FEBRUARY 2021

FIGURE 3

CLANGHAM Printed: 9/9/2020 11:46 AM Sheet: HA-FIG-B-L-H
\\HALEYALDRICH.COM\SHARE\CP\PROJECTS\134558\CADWORKING\134558-PROPOSED-PITS-FIGURE-3 V2.DWG

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- EXISTING GROUND CONTOURS
- PROPOSED GROUND CONTOURS
- OPEN SPACE (NO MINING PLANNED)
- NATURALIZED OPEN SPACED
- LIGHT INDUSTRIAL
- NATURALIZED OPEN SPACE (PREVIOUSLY RECLAIMED)

NOTES

1. ALL BOUNDARIES ARE APPROXIMATE.
2. TOPOGRAPHIC SOURCE PROVIDED TO HALEY & ALDRICH INC. BY CHANG CONSULTANTS ON 11 FEBRUARY 2020. EXISTING TOPOGRAPHY SURVEYED IN 2013.

N

0 500 1000
SCALE IN FEET

HALEY ALDRICH

HANSON AGGREGATES, LLC
CLARKDALE RECLAMATION PLAN AMENDMENT
CLARKDALE, ARIZONA

POST AGGREGATE RECLAMATION PLAN

SCALE: AS SHOWN
FEBRUARY 2021

FIGURE 4

CLANGHAM Printed: 9/9/2020 10:31 AM Sheet: HA-FIG-B-L-H (2)
\\HALEYALDRICH.COM\SHARE\CF\PROJECTS\134558\CAD\WORKING\134558-PROPOSED-PITS-FIGURE-3 V2.DWG

APPENDIX A

Estimated Reclamation Costs

Date Checked	Checked By	Job Number	By	Date	Calc. No.	Sheet No.
		133558-002	RAB	11/25/2020		1 of 12

Project	Subject
Hanson Clarkdale Operations	Estimated Cost Summary (1 of 2)

Reclamation Item	Description and Units	Est. Cost	Number of Units	Cost	References/Notes
Pit Walls					
	Re-Grading and Topsoiling (Cu.Yds)	$ 0.47		$ -	
(No Mulch or Fertilizer)	Revegetation Cost - Broadcast (Acre)	$ 377		$ -	
	Revegetation Cost - Hydro-seed (Acre)	$ 1,175		$ -	
	Containerized Trees (Each)	$ 10		$ -	
			Pit Walls Sub-Total =	$ -	
Stockpiles,Overburden or Fines Areas					
	Re-Grading and Topsoiling (Cu.Yds)	$ 0.47	160,200	$ 75,000	
	Revegetation Cost - Broadcast (Acre)	$ 377		$ -	
	Revegetation Cost - Hydro-seed (Acre)	$ 1,175		$ -	
	Containerized Trees (Each)	$ 10		$ -	
			Stockpiles, OB or Fines Areas Sub-Total =	$ 75,000	
Roads					
(Side Slope < 30%)	Rip/Scarify (Linear Ft.)	$ 0.28		$ -	
(Side Slope >30%)	Re-Grading and Topsoiling (Linear Ft.)	$ 1.69	13,000	$ 22,000	
(No Mulch or Fertilizer)	Revegetation Cost - Broadcast (Acre)	$ 377		$ -	
	Revegetation Cost - Hydro-seed (Acre)	$ 1,175		$ -	
			Roads =	$ 22,000	
Structures					
(Break-up and bury Slab)	Demolition & Removal - Metal Building(Sq. Ft.)	$ 3.81		$ -	
(Break-up and bury Slab)	Demolition & Removal - Secondary Containment (Sq. Ft.)	$ 8.52		$ -	
(Break-up and bury Slab)	Demolition & 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 =	$ -	
Care and Maintenance					
	Site Monitoring and Reporting (Annual)	$ 10,000	3	$ 30,000	
	Trash Removal (Ton)	$ 75	16	$ 1,000	
			Care and Maintenaince =	$ 31,000	
Construction					
	Construction - Chain Link Fencing (Linear Ft.)	$ 9.21		$ -	
	Install Rip Rap Erosion Lining (Sq. Yd)	$ 77.00	250	$ 19,000	
	Install access restriction sign	$ 83.40	36	$ 3,000	
			Construction =	$ 22,000	
	Est. Reclamation Operating and Material (O&M) Cost Sub-Total =			**$ 150,000**	

Appendix A
Reclamation Cost Estimate
Hanson Clarkdale Operations

Date Checked	Checked By	Job Number	By	Date	Calc. No.	Sheet No.
		133558-002	RAB	11/25/2020		2 of 12

Project	Subject
Hanson Clarkdale Operations	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) =				**$ 150,000**	
Material Haulage for Backfill					
	Truck and Loader - 2000Ft. One Way (Cu. Yd)	$ 0.98		$ -	
	Dozer and Scraper - 1000Ft. One Way (Cu Yd)	$ 0.68	160,200	$ 110,000	
			Material Haulage =	$ 110,000	
Plant Removal					
(Processing Equipt)	Removal - Plants	$ 116,000.00		$ -	
(Beltline)	Removal - Conveyor			$ -	
			Plant Removal =	$ -	
Est. Reclamation Operating and Material (O&M) Cost Sub-Total =				**$ 260,000**	
Cost Adjustment					
Template based on 2019 costs	Consumer Price Index Increase		0.045	$ 12,000	https://www.usinflationcalculator.com/inflation/current-inflation-rates/
			Cost Adjustment =	$ 12,000	
Est. Reclamation Operating and Material (O&M) Cost Total =				**$ 272,000**	
Administrative Costs					
% of O&M Cost	Contigency	10%		$ 27,000	ARPA Recommendations
% of O&M Cost	General Mobilization/De-Mobilization	4%		$ 11,000	ARPA Recommendations
% of O&M Cost	Indirect costs	2%		$ 5,000	ARPA Recommendations
% of O&M Cost	Contractor Profit	10%		$ 27,000	ARPA Recommendations
% of O&M Cost	Contract Administration	10%		$ 27,000	ARPA Recommendations
			Administrative Costs =	$ 97,000	
Total Estimated Financial Assurance Amount =				**$ 369,000**	

Date Checked	Checked By	Job Number	By	Date	Calc. No.	Sheet No.
		133558-002	RAB	11/25/2020		3 of 12

Project	Subject
Hanson Clarkdale Operations	Unit Cost Basis

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

- RS Means - Facilities Construction Cost Data -2017, 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.

References/Notes

CREWS DATA

Earthmoving Equipment, cost $/hr

List	Labor (1)*	Equipment (2)*	Total	RS Means : Facilities Construction Cost Data
980G Loader	$54	$135	$189 $/hr	crew B-10U
775D Haul Truck	$44	$369	$413 $/hr	crew B-34J
Water Truck	$46	$60	$106 $/hr	crew B-59
D10 Dozer	$54	$234	$288 $/hr	crew B-10M
325 Excavator	$56	$300	$356 $/hr	crew B12-D
16H Motor Grader	$54	$85	$139 $/hr	crew B-11L
631E Scraper	$54	$304	$358 $/hr	crew B-33D
80 ton Crane	$56	$281	$337 $/hr	crew A-3L
120 ton Crane	$56	$305	$361 $/hr	crew A-3M

LABOR DATA

Mechanical labor	$51	$0	$51 $/hr	crew A-1A
Laborer	$39	$0	$39 $/hr	crew A-1

MISC COST DATA

Demolition/Removal Metal Building and foundation	$	3.81	$/Sq. Ft.	RACER (ver. 8.1.2)
Demo/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 Chainlink Fencing	$	4.36	$/Sq. Ft.	RACER (ver. 8.1.2)
Removal of Single Pole Powerline	$	12,560	$/Mile	Haley and Aldrich Data
Removal of electrical Transformers	$	6,280	Each	Haley and 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	
Trash Removal	$	75	Ton	Allied Waste Quote
Transport and Unloading, Heavy	$	1,570	$/load	Haley and Aldrich Data
Transport and Unloading, Light	$	1,068	$/load	Haley and Aldrich Data
Broadcast seeding				
w/ Straw mulch, fertilizer, desert scrub seed mixture	$	762	$/acre	Haley and Aldrich Data
w/o mulch and fertilizer	$	377	$/acre	Haley and Aldrich Data
HydroSeed				
w/ mulch and desert scrub type seed mixture	$	1,476	$/acre	Haley and Aldrich Data
Septic System Removal	$	1,000	$/tank	Haley and 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.
		133558-002	RAB	11/25/2020		4 of 12

Project	Subject
Hanson Clarkdale Operations	Dozing Cost

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

				References/Notes
	D10 Dozing Productivity			
	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)	$ 20,500		(2) Line # 015433204360
	Ownership Cost (Daily)		$ 932	(22 working days/month)
	Dozer Operating Cost (Hourly)	$ 125		(2) Line # 015433204360
	Operating Cost(Daily)		$ 1,000	(8 hour work day)
	Dozer Labor Cost (Hourly)	$ 54		(2) crew B-10M
	Labor Cost (Daily)		$ 432	(8 hour work day)
	Dozer Total Cost (Daily)		$ 2,364	
	Cost per CY		$ 0.47	

(1) Caterpillar Performance Handbook, Edition 31
(2) RS Means 2004

Date Checked	Checked By	Job Number	By	Date	Calc. No.	Sheet No.
		133558-002	RAB	11/25/2020		5 of 12

Project	Subject
Hanson Clarkdale Operations	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		
	Double pass factor		0.5		assumes 2 passes are
	Effective speed in ft/hr		3,168		adequate for road scarifying
	Optimum area/hour (Sq.Ft./Hr)		30,888		
Work Factor	50 minute hour		0.83		(1) pg 3-15
	Average area/hour (ft2/hr)		25,637		
	Average area Daily (Sq. Ft.)		205,096		(8 hour work day)
	Grader Cost (40,000 lb)				
	Grader Rental (Monthly)	$	11,000		(2) Line # 015433201920
	Ownership Cost (Daily)			$ 500	(22 working days/month)
	Grader Operating Cost (Hourly)	$	64		(2) Line # 015433201920
	Operating Cost(Daily)			$ 512	(8 hour work day)
	Grader Labor Cost (Hourly)	$	54		(2) crew B-11L
	Labor Cost (Daily)			$ 432	(8 hour work day)
	Grader Total Cost (Daily)			$ 1,444	
	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 2004

Date Checked	Checked By	Job Number	By	Date	Calc. No.	Sheet No.
		133558-002	RAB	11/25/2020		6 of 12

Project	Subject
Hanson Clarkdale Operations	Excavator Costing

					References/Notes
Factors	**325 Excavator Productivity**				
	Heaped bucket capacity (CY)		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 (CY)		224		
	Average Daily Production (CY)		1,793		(8 hour work day)
	325 Excavator Cost				
	Excavator Rental (Monthly)	$ 6,725			
	Ownership Cost (Daily)		$	306	(2) 01590 200 0200 pg 20 (22working days/month)
	Excavator Operating Cost (Hourly)	$ 29			
	Operating Cost(Daily)		$	232	(2) 01590 200 0200 pg 20 (8 hour work day)
	Excavator Labor Cost (Hourly)	$ 35			
	Labor Cost (Daily)		$	280	(2) crew B12-D, pg 1099 (8 hour work day)
	Excavator Total Cost (Daily)		$	818	
	Cost per CY		$	0.46	

(1) Caterpillar Performance Handbook, Edition 31
(2) RS Means 2004

Date Checked	Checked By	Job Number	By	Date	Calc. No.	Sheet No.
		133558-002	RAB	11/25/2020		7 of 12

Project	Subject
Hanson Clarkdale Operations	Scraper Costing

				References/Notes
631E Scraper				
Scraper capacity (heaped)		31 CY		
Rated load		37.5 ton		Material Weight = 1.62 T/CY
				(1) pg 9-5
Scraper Productivity				
Bank CY/Hr, 4% RR, 1000 ft haul		540		
Material correction		0.93		(1) pg 9-67
50 minute hour		0.83		
Actual bank CY per hour		415		Material Weight = 1.62 T/CY
631 Scraper Cost				
Scraper Rental (Monthly)	$ 14,900			
Ownership Cost (Daily)			$ 677	(2) 01590 200 3700 pg 21 (22working days/month)
Scraper Operating Cost (Hourly)	$ 75			
Operating Cost(Daily)			$ 600	(2) 01590 200 3700 pg 21 (8 hour work day)
Scraper Labor Cost (Hourly)	$ 34			
Labor Cost (Daily)			$ 272	(2) crew B-33D, pg 1099 (8 hour work day)
Scraper Total Cost (Daily)			$ 1,549	
D9 Dozer Cost				
D9 Rental (Monthly)	$ 14,300			
Ownership Cost (Daily)			$ 650	(2) 01590-200 4370, pg 21 (22working days/month)
D9 Operating Cost (Hourly)	$ 65			
Operating Cost(Daily)			$ 520	(2) 01590-200 4370, pg 21 (8 hour work day)
D9 Labor Cost (Hourly)	$ 34			
Labor Cost (Daily)			$ 272	(2) crew B-10M, pg 1099 (8 hour work day)
D9 Total Cost (Daily)			$ 1,442	
Total Fleet				
Total Fleet Cost (Daily)			$ 4,541	
Total Fleet Productivity (BCY/Hr)		830		(1 - D9, 2 - 631)
Total Fleet Productivity (BCY/Day)			6,640	
Cost per cubic yard moved			$ 0.68	
Cubic yards in 1 linear foot of 40 ft wide road, 1 foot thick (CY)			1.48	
Cost of placing 1 linear foot (40 foot wide road)			$ 1.01	

(1) Caterpillar Performance Handbook, Edition 31
(2) RS Means 2004

Date Checked	Checked By	Job Number	By	Date	Calc. No.	Sheet No.
		133558-002	RAB	11/25/2020		8 of 12

Project	Subject
Hanson Clarkdale Operations	Truck haul (1 of 2)

					References/Notes
	980G Loader Productivity				
	Basic Cycle Time (minutes)		0.55		
Cycle Time Factors	Material type (minutes)		0.02		(1) pg 13-46
	Type of Pile (minutes)		0.02		(1) pg 13-46
	Common ownershp 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		(1) pg 13-46
	Optimum Cycles/Hr		98		
Work Factor	50 minutes/hr		0.83		
	Average Cycles/hr		81		(1) pg 13-47
	Bucket Full Load (Cubic Yards)		7.5		
	Bucket Fill Factor		0.9		(1) pg 13-29
	Average Bucket Load (CY)		6.75		(1) pg 13-46
	Average Volume Loaded/Hr		547		
	980G Loader Cost				
	Loader Rental (Monthly)	$ 11,500			
	Ownership Cost (Daily)			$ 523	(2) 01590 200 4810 pg 21 (22working days/month)
	Loader Operating Cost (Hourly)	$ 58			
	Operating Cost(Daily)			$ 464	(2) 01590 200 4810 pg 21 (8 hour work day)
	Loader Labor Cost (Hourly)	$ 34			
	Labor Cost (Daily)			$ 272	(2) crew B-10M pg 1099 (8 hour work day)
	Loader Total Cost (Daily)			$ 1,259	
	775D Truck Productivity				
	Truck Volume (CY)		41.1		
	Loader Cycles needed to Fill Truck		6.09		(1) pg 10-3
	Average Cycles per Truck		6		Use Loader Avg Bucket Load (CY)
	Average Truck Payload (CY)		40.5		
	Basic Load Time (minutes)		4.45		
Cycle Time Factors	Manuever - Load Area (minutes)		0.5		Calculated from Loader rate
	Manuever - 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		(1) pg 10-8
	Average Truck Cycles/Hr		5.9		Assumption
	Average (CY)/Hr (for 1 truck)		239		
	Average (CY)/Hr (for 2 trucks)		478		

(1) Caterpillar Performance Handbook, Edition 31
(2) RS Means 2004

Date Checked	Checked By	Job Number	By	Date	Calc. No.	Sheet No.
		133558-002	RAB	11/25/2020		9 of 12

Project	Subject
Hanson Clarkdale Operations	Truck Haulage (2 of 2)

775D Truck Cost			References/Notes
Truck Rental (Monthly)	$ 12,800		
Ownership Cost (Daily)		$ 582	(1) 01590 200 5620 p22 (22working days/month)
Truck Operating Cost (Hourly)	$ 57		
Operating Cost(Daily)		$ 456	(1) 01590 200 5620 p22 (8 hour work day)
Truck Labor Cost (Hourly)	$ 26		
Labor Cost (Daily)		$ 208	(1) crew B-34A, pg 1104 (8 hour work day)
Truck Total Cost (Daily)		$ 1,246	
Trucks (2) total Cost (Daily)		$ 2,492	
Loader Total Cost (Daily)		$ 1,259	
Fleet Total Total Cost (Daily)		$ 3,750	
Total Fleet Productivity (CY per Day)		3,821	(8 hour work day)
Fleet Cost per CY		$ 0.98	

(1) Caterpillar Performance Handbook, Edition 31
(2) RS Means 2004

Date Checked	Checked By	Job Number	By	Date	Calc. No.	Sheet No.
		133558-002	RAB	11/25/2020		10 of 12

Project	Subject
Hanson Clarkdale Operations	Crane Costing

Rubber Tired Hydraulic Crane - 80 Ton Capacity

80 ton Crane Cost				References/Notes
Crane Rental (Monthly)	$	8,825		
Ownership Cost (Daily)			$ 401	(2) 01590 500 2700 pg 27 (22working days/month)
Crane Operating Cost (Hourly)	$	54		
Operating Cost(Daily)			$ 432	(2) 01590 500 2700 pg 27 (8 hour work day)
Crane Labor Cost (Hourly)	$	35		
Labor Cost (Daily)			$ 280	(2) crew B-95A, pg 1100 (8 hour work day)
Crane Total Cost (Daily)			$ 1,113	
Crane Total Cost (Hourly)			$ 139	(8 hour work day)

Rubber Tired Hydraulic Crane - 120 Ton Capacity

120 ton Crane Cost				
Crane Rental (Monthly)	$	25,400		
Ownership Cost (Daily)			$ 1,155	(2) 01590 500 2740 pg 27 (22working days/month)
Crane Operating Cost (Hourly)	$	83		
Operating Cost(Daily)			$ 664	(2) 01590 500 2740 pg 27 (8 hour work day)
Crane Labor Cost (Hourly)	$	35		
Labor Cost (Daily)			$ 280	(2) crew B-95A, pg 1100 (8 hour work day)
Crane Total Cost (Daily)			$ 2,099	
Crane Total Cost (Hourly)			$ 262	(8 hour work day)

(1) Caterpillar Performance Handbook, Edition 31
(2) RS Means 2004

Date Checked	Checked By	Job Number	By	Date	Calc. No.	Sheet No.
		133558-002	RAB	11/25/2020		11 of 12

Project	Subject
Hanson Clarkdale Operations	Rip Rap Erosion Control

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	$ 19	(2) Line # 313713100200
Labor (per unit)	1	$ 46	(2) Line # 313713100200
Equipment (per unit)	1	$ 13	(2) Line # 313713100200
Estimated Cost per Square Yard for Rip Rap Material and Install =		$ 77.00	

(1) Caterpillar Performance Handbook, Edition 31
(2) RS Means 2017

Date Checked	Checked By	Job Number	By	Date	Calc. No.	Sheet No.
		133558-002	RAB	11/25/2020		12 of 12

Project	Subject
Hanson Clarkdale Operations	Plant Removal

Removal of Crushing/Screening plants or Wash Plants

Description	Units	Total Cost
80 Ton Crane (Hr)	100	$ 22,000
120 Ton Crane (Hr)	70	$ 18,000
Mechanical Labor (Hr)	800	$ 41,000
Loading/UnLoading Labor (Hr)	200	$ 8,000
Light Transporation (Trips)	10	$ 11,000
Heavy Transportation (Trips)	10	$ 16,000
Estimated Total Cost for Plant Removal =		$ 116,000

References/Notes

(1) Caterpillar Performance Handbook, Edition 31
(2) RS Means 2017