



Freeport-McMoRan Chino Mines Company
P.O. Box 10
Bayard, NM 88023

May 14, 2026

Certified Mail # 70221670000184298201

Mr. Kevin Barnes
Energy, Minerals and Natural Resources Department
Mining and Minerals Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Dear Mr. Barnes:

Re: Response to Request for Additional Information 2,
Revision 24-2, 2024 CCP Update, Chino Mine, Permit No. GR009RE

Freeport-McMoRan Chino Mines Company (Chino) submitted an update to the Chino Mine Closure-Closeout Plan on October 30, 2024. On March 18, 2026, Chino received Mining and Minerals Division's (MMD) comments regarding "*MMD Technical Review Comments: Kessel Stockpile, Lampbright Far East Sump Project, and Response to Request for Additional Information Revision 24-2, 2024 CCP Update*". This letter provides Chino's responses to MMD's comments. Below are MMD's comments reproduced in italics followed by Chino's responses.

Please note that Chino included only those comments where MMD provided follow-up comments or requests. Comments with no further MMD response were not included. Chino appreciates your time reviewing the responses and confirming agreement.

New Mexico Mining and Minerals Division Request – Cover Letter

MMD requests that Chino submit a draft form of the CCP Reclamation Cost Estimate ("RCE") to allow MMD to begin review of the document ahead of a Technically Complete determination of the PAP. If sections of the RCE are not able to be finalized due to unresolved issues with technical comments, Chino may include a list of calculations, designs, or reclamation activities that may be subject to change. RCE submittal should include electronic copies of the spreadsheets used to calculate the RCE in the form of an '.xlsx' file or similar Microsoft Excel compatible file, in addition to any relevant backup materials, plans, figures, or calculations.

Chino's response:

Enclosed is a preliminary CCP Reclamation Cost Estimate (RCE) that represents the scope of work, including modifications associated with responses to agency comments received to date. As technical comments from state agencies are still under review, the calculations, design and reclamation scope may be subject to change.

New Mexico Mining and Minerals Division (MMD) Technical Comments R2

Amendment 2: Kessel Stockpile Reclamation Plan and Reclamation Cost Estimate ("RCE")

1. MMD requests that FMI provide electronic copies for the spreadsheets used to calculate the RCE in the form of a .xlsx file or similar Microsoft Excel compatible file, in addition to any backup materials, plans, or calculations to explain FMI's assumptions in calculating the RCE. MMD notes that this request will also

apply to the Chino CCP RCE. MMD will continue review of the Kessel RCE once the requested files are received.

Chino's response:

Enclosed is the Kessel full build-out RCE. Chino will provide the requested RCE spreadsheet calculation files in Microsoft Excel format to MMD via email by the date of this letter.

2. MMD notes in Section 4.0, FMI states "Reclaimed acres increase from 243 in the 2030 mine plan to 806 for the full buildout," and in Section 2.2.2 of Appendix C it states that "reclamation progresses at a steady rate of about 200 acres per year" and estimates that reclamation of Kessel will last from the ninth to tenth years following closure. Please update Section 2.2.2 with an estimate of the time it will take to reclaim Kessel at full build-out in addition to the 2030 mine plan.

Chino's response:

Chino estimates that it will take approximately 4 years to reclaim the Kessel Stockpile at full-build out. Section 2.2.2 of Appendix B has been updated to include this estimate.

3. MMD notes that in the RCE for the Kessel Stockpile, the hauling of the 3,910,700 cubic yards of RCM is considered as one load & haul task from the Rubio Peak Stockpile to the Kessel, with dozer assistance (IDs 9003-B-b-Dz4, 9003-C-b-Ld2, and 9003-D-b-Tk1). The Kessel plans state that the Rubio Peak Stockpile will be constructed from materials excavated from the Kessel Stockpile footprint and has a design limit of 1,746,000 cubic yards. This would indicate that a substantial amount of RCM required to reclaim Kessel would not come directly from the Rubio Peak Stockpile, but from in-situ materials located elsewhere. The cost estimate should be updated to include tasks and costs associated with these additional mining and hauling activities given the different haul distances and challenges mining the in-situ material as opposed to a constructed stockpile. Please update the Kessel and Chino CCP RCE to account for this additional salvage required post-closure.

Chino's response:

Please note that the 1,746,000 cubic yards excavated and hauled to the "Rubio Peak Stockpile" is simply topsoil salvaged from the footprint of the Kessel Stockpile prior to waste rock placement. This shallow, easily excavated soil, will be used later for the reclamation of Kessel and other nearby facilities. Only a small portion of the salvaged topsoil overlaps with the Rubio Peak Conglomerate deposit. The remaining Rubio Peak Conglomerate is not excavated during operations.

The Kessel and Chino RCE's are updated to include the use of the in-situ Rubio Peak Conglomerate borrow material. Previously submitted Tables 1 and 2 in Appendix E have been revised to reflect the use of Rubio Peak material, both stockpiled and in-situ, for reclamation of stockpiles on the eastern side of the mine (i.e., Lampbright, Kessel, etc.).

To meet the required reclamation borrow volume, excavation of the in-situ Rubio Peak Conglomerate will occur at closure, when reclamation activities begin. While field investigations indicate approximately 30 feet of suitable borrow material is available, only 15 to 20 feet of excavation is required across 177 acres of the 192-acre borrow area to obtain the volume of cover material required. The remaining 15 acres are overlain by the Kessel footprint and have been removed from the Rubio Peak cover material estimate in Table 2; however, topsoil salvaged from this area is still accounted for in the Rubio Peak RCM Stockpile estimate.

4. MMD notes that a portion of the Kessel footprint is located on lands managed by the US Department of the Interior, Bureau of Land Management ("BLM"). MMD requests figures clarifying the position of both the 2030 Kessel mine plan (5-year build considered under the CCP) and the ultimate build out with respect to BLM lands.

Chino's response:

Bureau of Land Management (BLM) land boundaries are included in the updated Figure 8 of the Main CCP document.

5. Please provide figures illustrating the haul routes and distances included in the RCE calculations for major earthwork activities at Kessel, especially where haul routes may diverge from simple distances between stockpile centroids. This request will also apply to the Chino CCP RCE.

Chino's response:

Sheet 5 was added to the Kessel CCP drawing set to illustrate haul routes associated with the ultimate build-out. Sheets 17 and 27 in the Chino CCP drawing set depict haul routes for the main CCP. Corresponding haul distances are included in the RCE spreadsheet in worksheet "3 Material" under activity E.

Response to Request for Additional Information, Revision 24-2, 2024 CCP Update (December 22, 2025)

1.Design limit change driven by Kessel Stockpile and Rubio Peak RCM Stockpile: *MMD requests that FMI provide any additional data used to support the determination of a "minimum thickness of 30 feet", per the 2016 Rubio Peak As-Built, for the Rubio Peak Formation materials located in the 192-acre borrow area other than the observed surficial exposure. If no additional data is currently available, MMD requests a justification for the estimate of 9,300,000 cubic yards of available in-situ Rubio Peak Formation RCM materials based on borehole drilling data or geotechnical studies of the area. MMD would support conditionally approving this estimate based on an investigation of the formation area to be conducted at a later time as a condition of the Permit.*

MMD notes that based on review of the 2016 Rubio Peak Formation Demonstration Plot As-Built ("As-Built"), it is unclear if the material to the west of the proposed Kessel Stockpile, shown as the Rubio Peak Flows (RPF) on Figure 2 of the As-Built, was tested as part of the test plot program which characterized the Rubio Peak Conglomerate (RPC). The RPF formation roughly corresponds with the footprint of the Kessel Stockpile, which FMI has estimated will yield 1,746,600 cubic yards of material to be stored in the Rubio Peak RCM Stockpile. That same Figure 2 shows 5 soil sample locations to the east of Reservoir 8 that were examined for soil suitability, but none appear to have been taken from materials to the west along the slopes of Santa Rita range, within the Kessel Stockpile footprint, or the RPF formation as shown on that Figure 2. FMI should provide any characterization data for any material that may be taken from the RPF formation area, as described above, that may be used wholly or in part with RPC materials that were already characterized. Use of materials not included in the As-Built and not presented before as RCM materials (e.g. Rubio Peak Flows, Sugarlump Tuff, Colorado Formation, etc.) will likely require a test plot program to show that these materials, individually or as a mixture, are appropriate RCM. MMD would support the initial stockpiling of these materials in the Rubio Peak Stockpile with a test plot program to follow at a later time as a condition of the Permit.

Chino's response:

The 30-foot Rubio Peak Conglomerate deposit depth was determined by Chino geologists who completed a surface visual estimate of the area with their field mapping. Chino agrees to conduct test pitting to confirm the visual estimates as a condition of the permit.

As stated above (see Amendment 2, response to Comment 3 above), the "Rubio Peak Stockpile" is a salvaged topsoil stockpile. Chino proposes to salvage shallow, easily excavated soil and rock (topsoil) material within the footprint of the proposed Kessel Stockpile as part of the initial phase of the stockpile construction process. This material will be stockpiled for use in reclamation of the Kessel stockpile and

other nearby facilities. The Kessel salvaged material quantity is conservatively based on site field observations and test pits. One foot of topsoil material could be practically/safely salvaged from about ½ of the footprint of the proposed facility to yield the 1.7 Million cubic yards proposed. These materials do not require a test plot program because this topsoil is already the foundation of the currently existing self-sustaining ecosystem that exists at the site now. It is already proven to support the ecosystem in the surrounding life zone.

2.Reservoir 9 expansion within permitted 9 stockpile footprint: *While Chino has not included plans to construct the 9 Waste Rock Stockpile in the 2030 mine plan, MMD recommends including reclamation costs for this stockpile in the Chino RCE, rather than just the costs of reclaiming Reservoir 9. This will avoid a situation in which Chino may require the construction of the Stockpile, but not have adequate financial assurance in place, requiring revision of the RCE and the mine permit. Table 1 of Appendix E should be updated to include the RCM requirements for either Reservoir 9 or the 9 Waste Stockpile, as appropriate.*

Chino's response:

Chino agrees with MMD's suggestion and has included the higher-cost scenario of reclaiming the 9 Waste Rock Stockpile to ensure adequate financial assurance (FA) coverage for both scenarios over the next five years. This scenario is included in the enclosed RCE.

3.Additional PMLU of Water Management:

Conceptual Salt Disposal Area

MMD does not take issue with the relocation of the salt disposal facility to the North In-Pit Leach and Waste Rock Stockpiles given the cited issues. Given that future mine plans may continue to shift the best location of the salt disposal facility, MMD requests that the planned location of this facility be reconsidered and updated in each 5-year CCP update.

MMD notes that the CCP, specifically Appendix G, does not address why FMI has shifted the water treatment plan design to include an enhanced evaporation system for treatment of High TDS waters in Years 6-100. MMD requests that FMI prepare additional justification for the operation of the open evaporation and salt disposal facilities inside the permit area for high TDS waters in addition to the operation of the water treatment facility for low TDS waters at closure as part of the CCP RCE. This justification should compare the costs of operating both treatment options versus solely running all water through the water treatment facility, compare the amount of treated water that may be put to some beneficial use, and include any other relevant justification for the design change. This justification should focus on Year 6-100 of the treatment plan and does not need to address recirculation of process solutions on the South, Main Lampbright, and South Lampbright stockpiles considered in Years 1-5.

Chino's response:

Chino acknowledges MMD's request for additional justification for selecting enhanced evaporation and salt disposal to manage high-TDS water during Years 6–100. The closure plan was developed to meet the requirements of the New Mexico Mining Act and the New Mexico Water Quality Act and represents a technically feasible and compliant approach based on current site conditions and long-term water-management needs. While detailed cost comparisons of multiple alternative treatment designs would require development of additional conceptual designs beyond the scope of this CCP update, the following discussion provides the basis for the selected approach.

The long-term use of evaporation to manage high-TDS water is consistent with the approach approved in the 2018 CCP. While reverse osmosis (RO) treatment was also included in the 2018 plan, it relied on lime pretreatment to remove metals. The current plan eliminates this pretreatment step due to improved influent water quality achieved by intercepting groundwater before it enters the pit. This approach is already being

implemented at Chino for mine and pit wall dewatering, demonstrating its effectiveness under site-specific conditions.

The updated plan significantly simplifies operations and improves long-term sustainability by eliminating the need for lime, polymers, mixing infrastructure, and the associated power demands, thereby reducing operational complexity and resource use. Relocating the water treatment plant to the North Mine Area allows for full reclamation of Tailings Pond 7 as scheduled and removes the requirement to manage and store high-density sludge previously proposed for disposal in that facility or elsewhere. In addition, placing the long-term evaporation system entirely within the area of open pit hydrologic containment results in a simpler and more sustainable configuration.

Current cost estimates for earthwork and water management are included with this submittal. These costs are not directly comparable to previous estimates due to differences in planning horizons, water volumes, and mine configurations. Cost changes primarily reflect the addition of interceptor wells and pumps and the elimination of the lime treatment system. The estimates are based on an independent evaluation of projected site conditions and water quality and quantity and are consistent with regulatory requirements and current operations.

4. Rubio Peak materials changed from a conditional to an approved RCM:

Rubio Peak Conglomerate materials, which was characterized as part of a test plot program, is supported by MMD for approval as an RCM at Chino. However, other materials within the Kessel stockpile footprint are not approved as no characterization data has been provided to MMD and will likely require a test plot program prior to approval.

Chino's response:

Chino was under the impression that MMD would require or support salvage of "topsoil/RCM" from beneath the footprint of facilities like Kessel. Please see the response to Kessel Comment 1 above. For materials outside of Kessel, where Chino proposes to utilize the top 15 to 20 feet for RCM within the same deposit as Rubio Peak, Chino agrees to complete additional test pitting and sampling to compare to the Rubio Peak material that was utilized in the test plot program. Demonstrating sufficient correlation to Rubio Peak will support approval of this material in addition to the justification mentioned in response to Kessel Comment 1 above.

Appendix E: Material Handling Plan 2024 Update "MHP"

1.FMI: Per the updated Table 2 in the Material Handling Plan, the anticipated volume of material stored in the Rubio Peak RCM Stockpile is approximately 1,746,600 cubic yards. This material is expected to support reclamation of both the 5-year and ultimate Kessel build-out configurations, which require 1,176,100 cubic yards and 3,910,700 cubic yards of RCM, respectively. Because the stockpiled volume alone is not sufficient to fully reclaim the Kessel area, additional in-situ Rubio Peak material will be used to complete reclamation of the remaining Kessel and Lampbright stockpiles. Table 1 of the Material Handling Plan has been updated to incorporate Kessel and presents the total RCM volume required to reclaim the Chino North Mine Area. As described above and in Table 2 of Appendix E, it is estimated that there is 10,953,600 cubic yards of total Rubio Peak material available. According to the 2016 Rubio Peak Formation Demonstration Plot As-Built Report, approximately 9,300,000 cubic yards of Rubio Peak material are present within the original 192-acre borrow area, calculated using the observed 30-foot formation depth. An additional 1,746,600 cubic yards of Rubio Peak material associated with the Kessel Stockpile pad will be placed in the 49-acre Rubio Peak RCM Stockpile. The total Rubio Peak material quantity was then reduced by a 1% rejection rate to account for oversized material that resulted in the available volume presented in Table 2.

MMD: Please refer to comment 1 above.

Chino's response:

Please refer to response to comment 1 above

2.FMI: The RCM balance in Table 2 incorporates the portion of the Upper South material identified as unsuitable for use as RCM in Golder's 2006 Supplemental Materials Characterization for the Upper South Stockpile. An additional 7% rejection rate is applied to account for chemical exclusion and oversized material. Of this, 2% reflects anticipated rejection due to historic plating of haul roads constructed with sulfate-bearing materials. This assumes that a 6-inch layer of plated material over each 30-foot lift will require removal. Chino proposes to provide MMD with a Material Handling Plan for the RCM stockpiles as a condition of the issued permit. Chino's experience reflecting the relative ease Tyrone and Chino have experienced managing the borrow sites from either shovel pits and/or stockpiles to visually select appropriate material for cover during reclamation of test plots and/or actual reclamation projects can be incorporated in the stockpile specific MHPs.

MMD: MMD supports the creation of a separate Material Handling Plan ("MHP") for all RCM materials at Chino as described as a condition of Revision 24-2, in addition to an updated MHP for In-Pit Materials.

Chino's response:

As previously discussed with MMD, Chino agrees to develop a site-specific MHP as a condition of the permit to allow sufficient time to develop a comprehensive plan.

3.FMI: See response to Comment 1 above for unsuitable RCM percentages for the Upper South Stockpile. A 5% and 1% rejection rate is applied to the STS2 and Rubio peak RCM quantities respectively to account for oversized material. The available RCM quantities for STS2 and Upper South Stockpile in Table 2 were taken from the Permit GR009RE Technical Comments on Revision Application 18-1 for the Updated Closure Closeout Plan submitted to MMD on April 15, 2018. Updated cut/fill analyses completed in AutoCAD for STS2 and Upper South indicated substantially higher available quantities than were previously reported. These updated volumes were developed by generating cut/fill reports in AutoCAD using the base elevations that represent the point at which RCM material begins within each stockpile, compared against current surface topography. The resulting calculated volumes are approximately 10.7 million cubic yards for STS2 and 31.6 million cubic yards for the Upper South. However, to maintain consistency with values historically reviewed by MMD, Chino will continue to use the previously reported (lower) RCM quantities.

These quantities have been updated in the attached Table 2 to reflect the following:

- Updated Rubio Peak Cover Material quantities discussed in primary Comment 1 and Material Handling Plan Comment 3
- Rejection rates discussed in Comment 1 and the first additional comment on the MHP
- Relocation of the Whitehouse material to STS2 completed in March 2024

MMD: MMD concurs that previously approved values for the STS2 and Upper South Stockpiles in Table 2 should continue to be used. If FMI wishes to use newly calculated values for these stockpiles, sufficient justification for the volume calculations will need to be provided.

Chino's response:

Chino will continue to use the previously approved values.

MMD General Comments

1.FMI: Chino agrees that updates of the pit and stockpile waiver areas are useful, but recommends the

agency consider whether annual updates are truly necessary. Chino believes that updating them in conjunction with the 5-year CCP updates is sufficient.

MMD: Given the likelihood of regular changes to the Chino pit perimeter (and the difference between the pit perimeter boundary and waived area boundary of the West Stockpile and South Stockpile), MMD reiterates its request for annual updates of the pit waiver and stockpile waiver areas as part of the Annual Report submittal. Permit language requiring these updates will likely be modelled after applicable language in Section 9.S of Revision 9-1 to Permit No. GR010RE.

Chino's response:

The pit perimeter generally remains unchanged from year to year. Some of the stockpiles adjacent to the pit do increase in height slightly which tends to increase the waiver area minimally. Over more than a decade of annual evaluations at Tyrone, this process has not resulted in a need to change FA and is conveniently updated in the five-year CCP updates. In instances where the evaluation has resulted in minimal decreases of the waiver area, no increase FA has been required as these changes fall well within the existing allowance of excess FA to address minor scope changes. Given the minimal impact of year-to-year change, Chino considers annual waiver updates to be unnecessary.

If you have any questions or concerns, please contact Ned Hall at (520) 498-6314 or me at (575) 912-5927.

Sincerely,

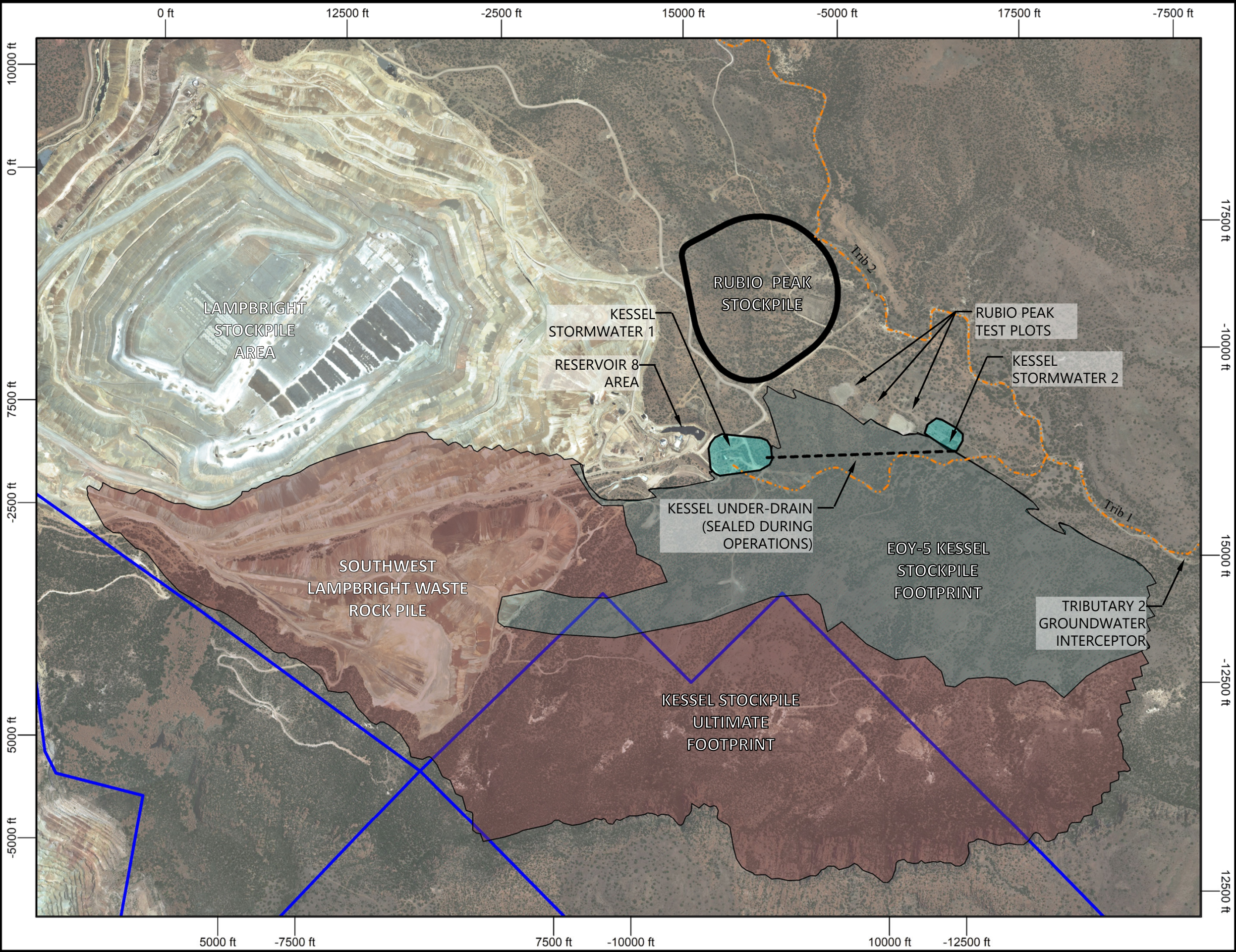
A handwritten signature in cursive script that reads "Sherry Burt-Kested".

Sherry Burt-Kested, Manager
NMO Environmental Services

SBK:eh
Enclosures
20260319-001

ec: David Ennis, MMD
Ned Hall, FMI

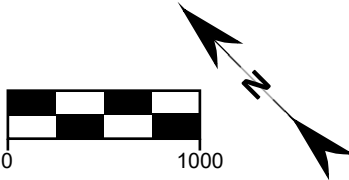
Figures



NOTES:

AERIAL IMAGERY: CHINO MINES
SATELLITE SURVEY, JUNE 26, 2023

- FACILITY BOUNDARY
- BLM BOUNDARY
- PROJECTED KESSEL FOOTPRINT (2030)
- PROJECTED KESSEL FOOTPRINT BEYOND 2030



SCALE IN FEET

COORDINATE SYSTEM
CHINO LOCAL MINE

FIGURE 8
PROPOSED KESSEL STOCKPILE AND ASSOCIATED FACILITIES

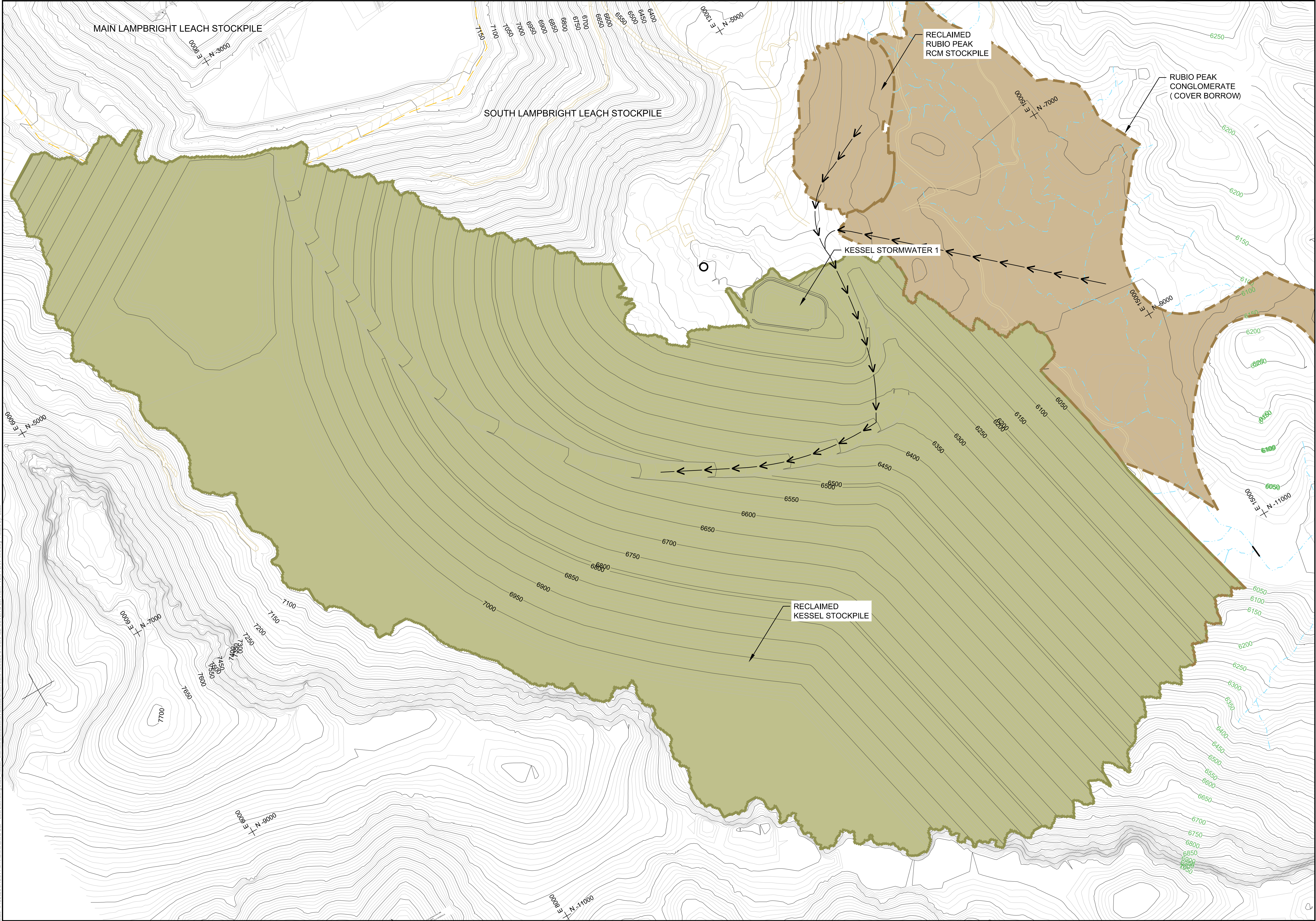
PREPARED BY:

TELESTO
SOLUTIONS INCORPORATED

PREPARED FOR:

Freeport-McMoRan

Appendix C



LEGEND & NOTES

- FINAL GROUND CONTOURS
- GRAVEL ROAD
- EXISTING DRAINAGE
- PROPOSED CONTOURS
 - MAJOR (50 FT)
 - MINOR (10 FT)
- COVER+REVEGETATE
- BORROW+REVEGETATE
- HAUL ROUTES

0 1"=400'
SCALE IN FEET

COORDINATE SYSTEM
CHINO LOCAL MINE

REVISIONS					
#	DESCRIPTION	DATE	BY	CHKD	APPROVED
1	FOR CLIENT REVIEW	8/26/25	WN	SZ	

DATE	08-26-25
PROJECT	200450-006
TASK NUMBER	01
DRAWN BY	SN
PROJECT ENGINEER	WN
CHECKED BY	SZ

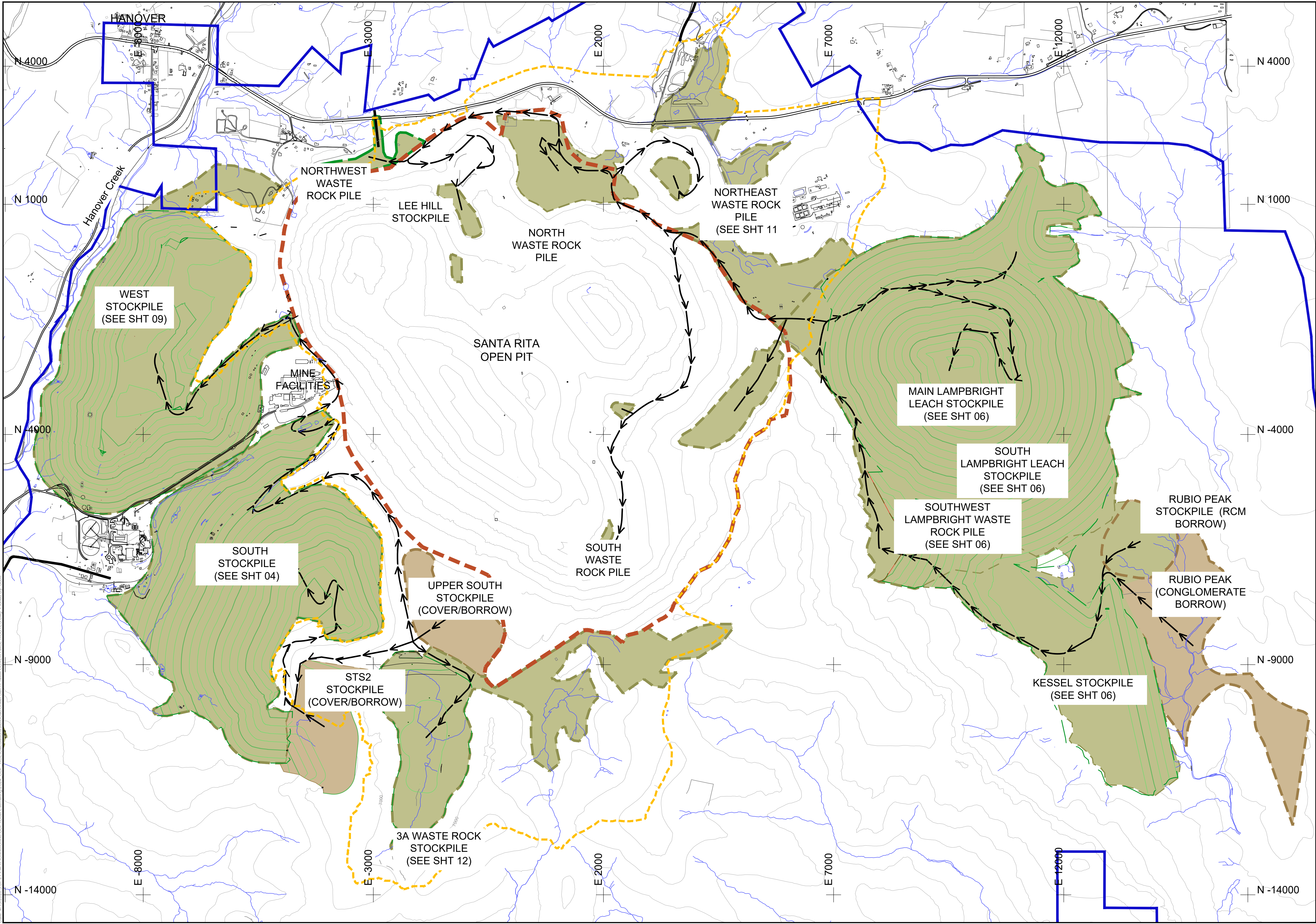
KESSEL ULTIMATE CCP

COVER BORROW AND VEGETATION PLAN

SHEET NUMBER: 5 REVISION NUMBER: 1

PREPARED BY: **TELESTO**
SOLUTIONS INCORPORATED

PREPARED FOR: **Freeport-McMoRan**



LEGEND & NOTES

- PERMIT BOUNDARY
- OPSDA 2030
- EOY 2030 CONTOURS
- PAVED ROAD
- GRAVEL ROAD
- EXISTING DRAINAGE
- BUILDING
- RECLAMATION AREAS
- PIT WAIVER AREA
- BENCH CHANNEL
- DOWN DRAIN
- ENERGY DISSIPATOR
- SLUDGE/SALT DISPOSAL AREA
- HAUL ROUTES
- BORROW
- COVER
- REVEGETATION
- PROFILE/SECTION
- EXISTING GROUND
- RECLAMATION GRADE
- CROSS SECTION DESIGNATION
- S-1
- 006
- SHEET NUMBER

REFERENCE

1. END OF YR 2030 TOPOGRAPHY SUPPLIED BY CHINO MINE PLANNING

SCALE IN FEET
CONTOUR INTERVAL = 200' MAJ
50' MIN
COORDINATE SYSTEM
CHINO LOCAL MINE

REVISIONS				
#	DESCRIPTION	DATE	BY	APPROVED
1	CLIENT REVIEW	07/01/24	JC	WN
2	FOR SUBMITTAL	10/25/24	SN	JC
3	AGENCY REVIEW	06/09/25	SN	WN
4	AGENCY REVIEW	12/19/25	SZ	TS
5	AGENCY REVIEW	05/01/26	SZ	TS

DATE	12/1/25
PROJECT	200430A-002
TASK NUMBER	02
DRAWN BY	SN
PROJECT ENGINEER	WN
CHECKED BY	JC

CHINO MINE AREA RECLAMATION

NMA COVER HAUL ROUTES

SHEET NUMBER: 17

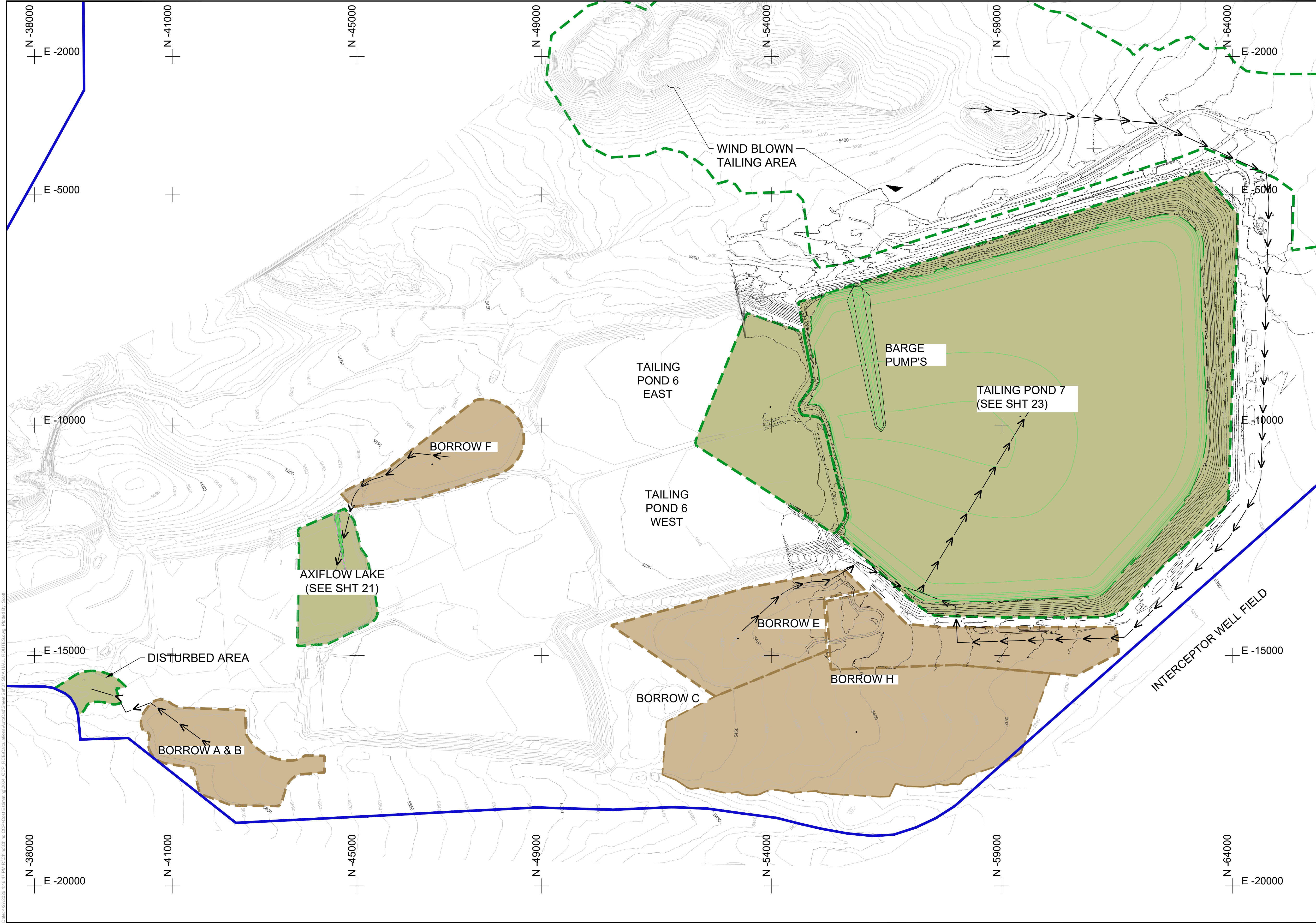
REVISION NUMBER: 4

PREPARED BY:

TELESTO SOLUTIONS INCORPORATED

PREPARED FOR:

FREEPORT-McMORAN



LEGEND & NOTES

- PERMIT BOUNDARY
- OPSCA 2030
- EOY 2030 CONTOURS
- PAVED ROAD
- GRAVEL ROAD
- EXISTING DRAINAGE
- BUILDING
- RECLAMATION AREAS
- PIT WAIVER AREA
- BENCH CHANNEL
- DOWN DRAIN
- ENERGY DISSIPATER
- SLUDGE/SALT DISPOSAL AREA
- HAUL ROUTES
- BORROW
- COVER
- REVEGETATION

PROFILE/SECTION

- EXISTING GROUND
- RECLAMATION GRADE

CROSS SECTION DESIGNATION

- S-1
- 006
- SHEET NUMBER

REFERENCE

- END OF YR 2030 TOPOGRAPHY SUPPLIED BY CHINO MINE PLANNING

01000

SCALE IN FEET

01000

CONTOUR INTERVAL = 50 MAJ 10' MIN

COORDINATE SYSTEM

CHINO LOCAL MINE

REVISIONS					
#	DESCRIPTION	DATE	BY	APPROVED	
1	CLIENT REVIEW	07/01/24	JC	WN	
2	FOR SUBMITTAL	10/25/24	SN	JC	
3	AGENCY REVIEW	06/09/25	SN	WN	
4	AGENCY REVIEW	12/19/25	SZ	TS	
5	AGENCY REVIEW	05/01/26	SZ	TS	

DATE	12/1/25
PROJECT	200430A-002
TASK NUMBER	02
DRAWN BY	SN
PROJECT ENGINEER	WN
CHECKED BY	JC

CHINO MINE AREA RECLAMATION

SMA COVER HAUL ROUTES

SHEET NUMBER:
27

REVISION NUMBER:
4

PREPARED BY:

TELESTO

SOLUTIONS INCORPORATED

PREPARED FOR:

Freeport-McMoRan

Appendix E – Tables

Appendix E: Material Handling Plan Updated Tables

Table 1 Reclamation Cover Material Requirements for the North Mine Area

Stockpile	Area (ac)	Required RCM Vol. (CY)	Cover Source
South Stockpile	610	2,952,400	STS2/Upper South
West Stockpile	522	2,526,500	Upper South
3A Stockpile	215	1,040,600	Upper South
South Waste Rock Pile (Top Area)	6	29,000	Rubio Peak
Northwest Stockpile	16	77,400	Rubio Peak
Lee Hill Stockpile (Top Area)	12	58,100	Rubio Peak
East Pit Waste Rock Pile	2	9,700	Rubio Peak
North Stockpile	76	367,800	Rubio Peak
Northeast Stockpile (Top Area)	12	58,100	Rubio Peak
Lampbright Stockpiles ¹	928	4,491,500	Rubio Peak
Kessel Stockpile -5 year	243	1,176,100	Rubio Peak
<i>Kessel Stockpile - Full Build-Out²</i>	<i>808</i>	<i>3,910,700</i>	<i>Rubio Peak</i>
9 Waste Rock Stockpile ³	161	779,200	Upper South
Other Evaporation Areas	117	566,300	Rubio Peak
Dams and Reservoirs	24	116,200	Upper South
Miscellaneous NMA	77	372,700	Upper South
Total:	3,021	14,621,600	

Italicized = Not included in the 2024 CCP and therefore quantities are not reflected in the totals

¹Lampbright Stockpiles include the Main, North and South Lampbright Leach Stockpiles

²The full build-out of Kessel Stockpile is included here to demonstrate that there is sufficient RCM available to reclaim it based on excess RCM quantities presented in Table 2

³Reclamation design for 9 Waste Rock Stockpile is not included in the 2024 CCP submittal. Costs to reclaim this stockpile are based on quantities from the 2017 CCP submittal

Table 2 Reclamation Cover Material Balance for the North Mine Area

Borrow Source	Available (CY)	RCM Used in Reclamation Plan (CY)
STS2	2,830,500	2,830,500
Upper South	12,967,600	4,957,100
Rubio Peak Cover Material	8,481,000	5,087,400
Rubio Peak RCM Stockpile	1,746,600	1,746,600
Total Available RCM (CY)		26,025,800
Total Required RCM (CY)		14,621,600
Excess RCM (CY)		11,404,200

**Earthwork Reclamation Cost Estimate
Process Summary Report
Kessel Ultimate Stockpile**

Prepared for

**Freeport-McMoRan
Chino Mines Company
P.O. Box 10
Bayard, New Mexico 88023**

Prepared by

**Telesto Solutions, Inc.
750 14th Street SW
Loveland, CO 80537**

August 2025



Signature Page

Earthwork Reclamation Cost Estimate Process Summary Report

Kessel Ultimate Stockpile

August 2025



Report Authors and Contributors

Telesto Solutions, Inc.

A handwritten signature in dark ink, appearing to read "D Mawlawi", is positioned above a horizontal line.

Dena Mawlawi – Primary Author

Shea Zeman – Report Review

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Attachment 3	Cost Spreadsheet

1.0 INTRODUCTION

Telesto Solutions Inc. (Telesto) presents this Reclamation Cost Estimate (RCE) report for the final build-out of the Kessel Stockpile at Chino Mines Company (Chino). This earthwork RCE report outlines the scope of earthwork related to closure and closeout activities, including attachments that describe the main assumptions and methods used to determine financial assurance. The supporting reclamation drawings for the cost estimate are in Appendix A. Agreements made in 2019 between the agencies and Chino form the basis for the earthwork RCE costs.

1.1 Reclamation Overview

The earthwork RCE is based on the planned ultimate build-out of the Kessel stockpile. The plan assumes that the reclamation design for Kessel will be implemented during the ninth closure year, with reclamation beginning that same year. The O&M cost estimate assumes revegetation maintenance will continue for 12 years after reclamation is completed, while erosion control, road maintenance, and groundwater monitoring will continue for 100 years after closure.

While this report solely focuses on the Kessel Ultimate Stockpile, it aligns with the current Chino Mine's Closure/Closeout Plan. Therefore, additional information and supporting documents are available in the 2024 Chino CCP, Appendix F: Earthwork Reclamation Cost Estimate Process Summary Report. Refer to Table 1 for further details.

1.2 Report Organization

This earthwork RCE process summary report includes the following sections:

- **Section 1.0** offers an introduction and overview of the RCE prepared for Kessel
- **Section 2.0** outlines the data and assumptions used for estimating earthwork, equipment, operation and maintenance (O&M) costs, quotes, and unit costs
- **Section 3.0** summarizes the information used in calculating the earthwork RCE
- **Section 4.0** presents the results, covering both direct and indirect capital costs
- **Section 5.0** lists the references cited in this report

The following attachments provide supporting information and calculations:

- **Attachment 1** presents the engineering take-offs used in the calculations
- **Attachment 2** presents supporting data for the cost estimation, including labor rates, equipment data, direct quotes, and information on fuel costs
- **Attachment 3** presents the RCE spreadsheet

2.0 DATA AND ASSUMPTIONS

Appendix A of the Kessel CCP report contains the reclamation design that serves as the foundation for the earthwork RCE. The calculation sheet in Attachment 3 of this earthwork RCE report provides the reclamation cost estimate.

Data and key assumptions used in the cost estimate calculations for earthwork processes and equipment, indirect and O&M costs, and direct quotes are outlined in this section. Attachment 2 of this earthwork RCE report provides more detailed information.

2.1 Earthwork Processes and Equipment

The RCE uses the following data and assumptions to determine the cost of earthwork processes and equipment:

- **Dozer Push Distances:** Dozer push distances indicate the distance from the centroid of the cut block to the centroid of the fill block
- **Cover Placement:** Trucks, loaders, shovels, and graders manage loading and distribution with optimal truck-to-equipment ratios for each haul route
- **Haul Distances:** Haul distances are calculated based on a preferred route and up to three segments; they start and end at the approximate source and reclamation area centroids
- **Borrow Area:** All coverage for the Kessel Stockpile is supplied by the Rubio Peak Stockpile and Rubio Peak Conglomerate Borrow Area
- **Truck and Shovel Operations:** This RCE refers to the Caterpillar 770G haul truck for operation calculations; no shovels are included
- **Scrapers:** No scrapers are used in this reclamation plan
- **Dust Suppression and Road Maintenance:** A water truck and motor grader are part of the reclamation fleet, with the same task time as a loader or hydraulic shovel
- **Labor Rates:** All labor rates are based on the NMDOL Type H (Heavy Engineering) rates. These rates include the base pay, fringe benefits, and apprenticeship contribution rates
- **Equipment Rates:** Operational costs per equipment unit are sourced from the EquipmentWatch Custom Cost Evaluator
- **Hourly Adjustment:** The cost information provided in EquipmentWatch is based on 50 minutes of work per hour. Since the RCE calculation also uses this time frame, an hourly adjustment is made when applying this data to a 60-minute work hour
- **Revegetation and Scarification:** The revegetation unit cost is based on R.S. Means, EquipmentWatch, and direct quotes. Scarifying the final surface occurs alongside revegetation
- **Equipment Production Factors:** Table 3 summarizes equipment production factors from the Caterpillar Handbook (CPH) and

EquipmentWatch. Productivity curves are also developed from the Caterpillar references and equipment-specific brochures.

- **Fuel Costs:** The fuel cost is based on discussions with the FA Work Group in the fall of 2018, as agreed in January 2019; historical local quotes are correlated with public data to estimate the fuel cost (see Attachment 2)
- **Miscellaneous Unit Costs:** Other miscellaneous unit costs, shown in Table 5, were taken from several sources. Supporting documentation is included in Attachment 2.

2.2 Indirect and Operation and Maintenance Costs

The following sections explain how the RCE manages indirect and O&M costs.

2.2.1 Capital Indirect Costs and Operation Maintenance

Total indirect costs of 30% are applied to direct capital costs, and 17.5% indirect costs to direct O&M costs (Chino, 2019; MMD and NMED, 2019). Indirect costs include, but are not limited to, mobilization and demobilization, contingencies, engineering redesign fees, contractor profit and overhead, project management fees, and state procurement costs.

2.2.2 Reclamation Timeframe

The earthwork RCE assumes reclamation progresses at a steady rate of about 200 acres per year (see Chino's 2024 CCP, Table 16). Under the 2030 mine plan, reclamation of the Kessel Stockpile begins in the ninth year after closure and is finished by the tenth year, with O&M starting the following year.

At full build-out, reclamation of the Kessel Stockpile is anticipated to take approximately 4 years, with O&M starting the following year. Revegetation monitoring is expected to end 12 years after initial revegetation.

2.3 Direct Quotes

Direct quotes help determine unit costs in the RCE. Direct quotes include the following:

- **Articulated Concrete Blocks (ACBs):** ACB material and installation unit costs
- **Revegetation Materials:** Costs for seed and hay mulch used for reclamation

3.0 CALCULATIONS

This section describes the elements used to estimate the earthwork reclamation costs for the Kessel Stockpile, based on the data and assumptions discussed in Section 2.0. Attachment 1 details the quantity take-offs used in the RCE spreadsheet, which are based on the Ultimate Kessel closure plans. Chino's 2024 CCP, Appendix F, Attachment 2, offers additional details on the key equations and calculations used for the cost estimate. Cost calculations are presented in the spreadsheet in Attachment 3, along with design parameters, assumptions, and other relevant information to support the cost estimate.

The steps taken to complete the earthwork RCE include:

1. List relevant reclamation activities, and estimate the effort needed for each, including material quantities, distances, slopes, equipment choices, and work types. (Table 2)
2. Estimate the unit cost of each reclamation activity based on construction industry data, including labor and fuel costs (see Tables 3 through 5)

3. Multiply the quantities by the unit costs to calculate the total subcost for each reclamation activity, then add them together for the total direct costs
4. Multiply the indirect percentage rate by the total, then add the direct and indirect costs to determine the final cost estimate

Overall, the cost-estimating process follows the typical, standard approach used in the engineering and construction industries. The earthwork cost estimate is an iterative process based on the required loading and hauling operations and the haul distance. Telesto uses the unit costs associated with equipment in the fleet to calculate the total reclamation cost using spreadsheets. Figure 1 outlines the costing steps for one piece of equipment in the development of the fleet.

3.1 Stockpile Reclamation

The following discusses the main reclamation activities for the Ultimate Kessel Earthwork RCE as summarized in Table 2.

3.1.1 Regrading and Grading

Slopes are graded to an overall outslope gradient of 3.5:1 (horizontal: vertical), with inter-bench slope lengths of 200 ft and 3:1 inter-bench slopes, where possible. Grading is performed to ensure positive drainage. The top surface is graded to a minimum final grade of 1% toward water management structures.

3.1.2 Top Surface Channels and Channel Construction

Due to the shallow reclamation grade on top of the Kessel Stockpile, top surface channels are unnecessary. Bench channels running nearly parallel to the out-slopes are

designed to carry a 100-year, 24-hour storm with a six-inch freeboard. Slopes vary from 1% to 5%. Bench channels are stable against erosion when constructed with reclamation cover material, unless velocities exceed 5 feet per second (fps). If velocities exceed 5 fps, channels are lined with rip-rap.

3.1.3 Down Drain, Cover, Scraper Operations, Truck and Shovel

To prevent erosion, use ACBs and energy dissipators in down drains as needed. The cost estimate includes transporting and placing 36 inches of fine-grained cover. Backfilling and repositioning are performed by trucks and loaders with dozer support. Trucks, loaders, or hydraulic shovels, with dozer assistance, handle all cover loading and distribution. Each haul route will use the most cost-effective number of trucks per loader or hydraulic shovel.

3.1.4 Revegetation, Scarification, and Haul Road Reclamation

The revegetation unit cost is based on R.S. Means, EquipmentWatch, and direct quotes. Scarifying the final surface is performed simultaneously with the revegetation and is included in the revegetation cost. Haul road areas will be reclaimed through ripping and revegetation; however, since the cost for haul road reclamation is included in the 2024 Chino Mines CCP, it is not repeated in this cost estimate.

3.2 Reservoirs

Before starting earthwork reclamation on the Kessel Stockpile, water management measures must be completed. The first step is to open both ends of the Haul Road Underdrain. Next, the Kessel Stormwater 2 dam will be breached. Finally, both Kessel Stormwater 1 and 2 will be reclaimed by ripping and burying the liners in place, and the

sedimentation basins will be demolished. Since this work involves general Kessel Stockpile reclamation rather than final build-out activities, the related costs are included in Chino Mine's 2024 CCP and are not repeated here.

3.3 Seepage Collection

Seepage collection areas that are not designated for PMLU or used in water treatment are reclaimed and buried as part of the stockpile reclamation process. Costs for ongoing seepage collection are included in the water treatment section of the 2024 Chino Mine's CCP and are not repeated here.

3.4 Roads

All haul roads, except those within the OPSDA, designated for PMLU or used during O&M, are included in the 2024 Chino Mine's reclamation cost estimate and are not repeated here.

3.5 Other Reclamation Costs

Other reclamation activities covered in the earthwork RCE include building demolition, well abandonment, utility demolition, pipeline demolition, pipeline corridor closure, and unplanned future disturbance area closures. These costs are all included in the 2024 Chino Mine's CCP and are not repeated here. However, operation and maintenance (O&M) costs discussed below are included in this report.

3.5.1 Operations and Maintenance

Operations and maintenance (O&M) costs in this estimate include periodic erosion control, water quality monitoring, road maintenance, and vegetation maintenance, as detailed in the spreadsheet calculations (Attachment 3). These costs are assumed to decrease over time.

Erosion Control and Monitoring: Chino Mine's annual erosion control and monitoring costs assume an erosion control crew engaged for:

- Reclamation Years 0–12: 12 days/year
- Reclamation Years 13–39: 4 days/year
- Reclamation Years 40–99: 1 day/year

Water Quality Monitoring and Reporting: Groundwater quality monitoring will consist of sampling and analysis at designated site locations:

- Reclamation Years 0–19: 4 days/year
- Reclamation Years 20–39: 2 days/year
- Reclamation Years 40–99: 1 day/year

Road Maintenance: Roads will be maintained monthly during the four-month monsoon season using a motor grader for 24 hours per month:

- Reclamation Years 0–19: 4 months/year at 24 hours/month
- Reclamation Years 20–39: 2 months/year at 24 hours/month
- Reclamation Years 40–99: 1 month/year at 24 hours/month

Vegetation Maintenance: Vegetation maintenance of reclaimed areas assumes a 2% failure rate per year for 12 years at each facility, starting from the completion of reclamation.

4.0 RESULTS

The total current-dollar cost for earthwork reclamation of the Kessel Ultimate Stockpile is estimated at \$17,212,968, plus \$4,678,088 in O&M, for a total of **\$21,891,056**. A summary of the cost estimate is provided in Table 6. The costs presented in this RCE are current (2025) dollar costs.

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TABLES

Table 1 Relevant Resources from Chino's 2024 CCP RCE

2024 CCP Appendix F: Earthwork Reclamation Cost Estimate Process Summary Report		
Relevant Tables	Table Title	Notes
Table 1	Facility Overview	Gives a description of the stockpile and an overview of reclamation activities
Table 2	NMA Stockpiles - Cost Estimating Reclamation Activities	Checklist of reclamation activities used in the cost estimate
Table 5	Earthwork Equipment Production Factors	Complete list of equipment from the RCE spreadsheet; Table 3 below includes only equipment used at Kessel with updated 2025 costs
Relevant Attachments	Attachment Title	Notes
Attachment 2	Key Equations and Calculations	• Earthwork RCE Calculation Summary • Truck and Scaper Optimization • O&M Costs • Bench Grading Unit Costs • Bench Channel Unit Costs • Downdrain/Dissipater Unit Costs • Revegetation Unit Costs • Fuel Cost (in 2024 dollars)
Attachment 3	Indirect Costs	Letter and table documenting the FA Work Group agreement for indirect costs used in the RCE
Attachment 4	Supporting Data for Cost Estimation	• 4.1: tabulates the 2024 labor rates from the New Mexico Department of Labor • 4.2: contains copies of the EquipmentWatch sheets from which equipment unit rates were obtained • 4.3: provides the curve fits used in the production sheets for dozers and haul trucks • 4.4: provides copies of the pertinent information from R.S. Means and pages from several editions of the Caterpillar Performance Handbook • 4.5: provides direct quotes used in the cost estimates • 4.6: provides data and calculations used to prepare the fuel cost **Kessel-specific equipment and labor rates are updated for 2025 in this RCE's Attachment 2**

Table 2 Kessel Ultimate Stockpile - RCE Activities

	Kessel Stockpile
Rip the top surface	X
Rough Grading	X
Dozer Assist Loaders/ Scrapers	X
Load and Haul Stockpile Material	-
Load, Haul, Place, Grade Cover	X
Rip Cover Stockpiles	-
Excavate, Grade Benches	X
Install Downdrains and Dissipaters	X
Scarify & Seed / Revegetate	X
O&M	X

Table 3 Earthwork Equipment Production Factors

Parameter	Value	Comment/Reference
Swell Factor Stockpiles and Tailings ⁽¹⁾	0% for native rock	Virgin materials are being excavated to generate cover. A swell factor is applied to the excavated native volume.
	8% for cover load & haul sites	Cover material volumes are calculated based on the reclaimed area and the cover depth. A swell factor is included in the cost estimate while calculating the bank cover volume.
Coarse Regrading Tops and Outslopes (D11T CD)		
Operator Factor ⁽¹⁾	1	Due to large job size assume operator with excellent skills (CPH 48: 19-55, excellent)
Material Factor	1.2 1	(CPH 48: 19-55) 1.2 for fine grading cover, other surfaces, and channel, 1.0 for coarse regrading stockpiles and tailing
Work Hour (min/hr)	50	(CPH 48: 19-55) Job efficiency
Grade Factor – Tops	1	(CPH 48: 19-55) 1 to 5% Slope
Grade Factor - Outslopes ⁽¹⁾	1.6	(CPH 48: 19-55) 3H:1V Slopes
Material Weight (lb/cy)	3,300 2,900	Stockpiles Tailing, cover materials
Production Method/Blade Factor	1.2	(CPH 48: 19-55) Slot dozing
Visibility Factor	1	(CPH 48: 19-55) Clear, dust controlled by water trucks
Elevation Factor	1	(CPH 48: 30-7) Horsepower reduction table
Direct Drive Transmission	1	-
Fine Grading Cover, Other Surfaces, and Channels (D11T CD, D9T, D6T, 16M, 14M)		
Material Factor	1.2	(CPH 48: 19-55) fine grading cover
Grade Factor – Tops	1	(CPH 48: 19-55) 1-5% slopes

Grade Factor – Outslopes ⁽¹⁾	1.6	(CPH 48: 19-55) 3H:1V Slopes
Material Weight (lb/cy)	2,900	Fine grading cover material and tailing
Production Method/Blade	1.2 1	(CPH 48: 19-55, slot dozing) No correction applied channels, downdrains, and benches
Effective Blade Width (feet [ft])	22.0 ft D11T CD Universal Blade 14.08 ft D9T Semi Universal Blade 16 ft 16M, 14 ft 14M 10.67' D6T SU	(CPH 48: 19-17, 19-49) (CPH 48: 19-47) (CPH 48: 11-17) (CPH 48: 19-10, 19-43)
Speed (miles/hr)	2.5 mph D11T CD, 16M, and 14M 1.0 mph D9T and D6T	(CPH 48: 11-19, 19-24, 19-25) maximum equipment speeds based on information provided in the Cat Handbook and Safe mining practices
Operator Factor ⁽¹⁾	0.75	(CPH 48: 19-55) Average operator skill
Work Hour (min/hr)	50	(CPH 48: 19-55) Job efficiency
Visibility Factor	1	(CPH 48: 19-55) Clear, dust controlled by water trucks
Elevation	1	(CPH 48: 30-7)
Direct Drive Transmission	1	-
Ripper (D11T CD Multi-shank [w/MSR-359H])		
Ripping Length (ft)	1,000 large surface areas 100 liners	-
Penetration (in)	18	Scope of Work (Telesto Solutions, Inc., 2017)
Pocket Spacing (in)	59	(CPH 48: 19-72)
Number of Pockets	3	(CPH 48: 19-72)
Turn Time (min/pass)	0.25	(CPH 48: 19-72 to 19-75)

Speed (mph)	1	(CPH 48: 19-72 to 19-75)
Work Hour (min/hr)	50	(CPH 48: 19-55) Job efficiency
Distance between passes (in)	59	Maintain pocket spacing value between passes (Scope of Work (Telesto Solutions, Inc., 2017))
Loader (Cat 986K)		
Struck Capacity (cy)	6.7	(CPH 49: 23-216)
Loader Cycle Time (load, dump, and maneuver; min)	0.575	(CPH 49: 23-287)
Bucket Fill Factor	0.875	(CPH 49: 23-287) $\geq 1"$ Loose Material
Speed (mph)	8 14	(CPH 49: 23-17) 8 mph loaded, forward 2 nd gear; 14 mph empty, forward 3 rd gear
Work Hour (min/hr)	50	(CPH 48: 19-55)
Trucks (CAT 770G)		
Struck Capacity (cy)	22.52	(CPH 49: 10-4)
Heaped Capacity (cy)	32.8	(CPH 49: 10-4)
Rolling Resistance	2.50%	(CPH 48: 30-2) Radial tires, dirt road maintained fairly regularly, watered, flexing slightly
Truck Exchange Time (min)	0.7	(CPH 49: 10-20) Avg. 0.6-0.8
Dump/Maneuver Time (min)	1.1	(CPH 49: 10-20) Avg. 1.0-1.2
Speed (mph)	45.7	(CPH 49: 10-4) top speed (loaded)
Work Hour (min/hr)	50	(CPH 48: 19-55) Job efficiency

CPH = Caterpillar Performance Handbook Editions 48 and 49 (Caterpillar, Inc., 2018; Caterpillar, Inc., 2019)

⁽¹⁾ The swell and operator factors used are consistent with factors presented to MMD and NMED in meetings with Tyrone on June 11, 2012, November 2, 2012, and a letter to MMD and NMED from Tyrone dated September 5, 2012 (Freeport-McMoRan Copper & Gold, 2012)

Table 4 Labor and Equipment Unit Costs

Equipment Description	Fuel Cost (\$/hr)	Total Rental Cost (w/o fuel) (\$/hr)	NMDOL Operator Group	NMDOL Labor Rates	Total Cost (Equipment, Fuel, Labor) (\$/hr)
Cat D11T CD	\$78.29	\$284.13	Equipment Operator IV	\$34.82	\$397.24
Cat D6, SU Blade	\$20.41	\$80.34	Equipment Operator IV	\$34.82	\$135.57
Cat 986K	\$21.42	\$93.24	Equipment Operator VI	\$35.20	\$149.86
Cat 14M3	\$22.48	\$59.44	Equipment Operator IV	\$34.82	\$116.74
Cat D11T CD Multi-shank (w/ MSR-189H)	\$78.29	\$289.76	Equipment Operator IV	\$34.82	\$402.87
Cat 770G	\$20.15	\$39.68	Truck Driver III	\$30.55	\$90.38
Off-Hwy Water Tanker Truck,6,000-gal.	\$33.19	\$80.03	Truck Driver III	\$30.55	\$143.77
1 Deck Screening Plant (5X16, 48X60)	\$27.23	\$65.74	Laborer I	\$27.85	\$120.82
3 Deck Screening Plant (5X16, 42X60)	\$17.32	\$92.67	Laborer I	\$27.85	\$137.84

Costs updated to reflect 2025 values.

Table 5 Miscellaneous Unit Costs

Activity	Base Per Unit Cost	Fuel Per Unit Cost	Units	Source	Reference
Fuel	\$2.95	-	gal	-	Diesel fuel cost is estimated by correlating historical local quotes with public data, as agreed upon in November 2018 discussions with the agencies. Fuel cost includes direct and indirect costs as agreed upon in a letter to MMD dated January 18, 2022. Updated August 2025.
Revegetation	\$1,697.67	\$4.38	ac	Revegetation Unit Cost Sheet	See unit rates calculations - Cost is based on a calculated unit rate that includes tractor rental and maintenance, fuel, scarifying, discing, drill seeding, mulching, crimping, seed, and mulch.
Bench Grading Stockpile	\$2.04	\$0.43	ft	Bench Grading Unit Cost Sheet	See unit rates calculations
Downdrain Construction	\$471.94	0	ft	Downdrain Unit Cost Sheet	See unit rates calculations
Downdrain Dissipater	\$18,862.91	0	ea	Downdrain Unit Cost Sheet	See unit rates calculations
Erosion Control	\$7,320.77	\$1,751.36	day	Modified Crew B-13A; Full Site O&M Sheet	Erosion control for O&M - includes 1 foreman, 2 laborers, 1 equipment operator, 2 truck drivers, 1 loader (4 cy), 2 dump trucks (8 cy)
Road Maintenance	\$5,698.17	\$1,568.88	month	Full Site O&M Sheet	Road maintenance for O&M - includes one 14M motor grader and one 6,000-gal water truck

Unit Rates updated to reflect 2025 values.

Table 6 Earthwork Cost Estimate Summary

Facility	Direct Cost	Indirect Cost (30% of Direct)	Total Estimated Cost
Kessel Stockpile	\$13,326,553	\$3,997,966	\$17,324,519
Closure Costs Total	\$13,326,553	\$3,997,966	\$17,324,519
O&M		17.5% of Direct	
Full Site O&M Costs Total	\$3,886,415	\$680,123	\$4,566,538
Total Cost (Closure + O&M)	\$17,212,968	\$4,678,088	\$21,891,056

FIGURES

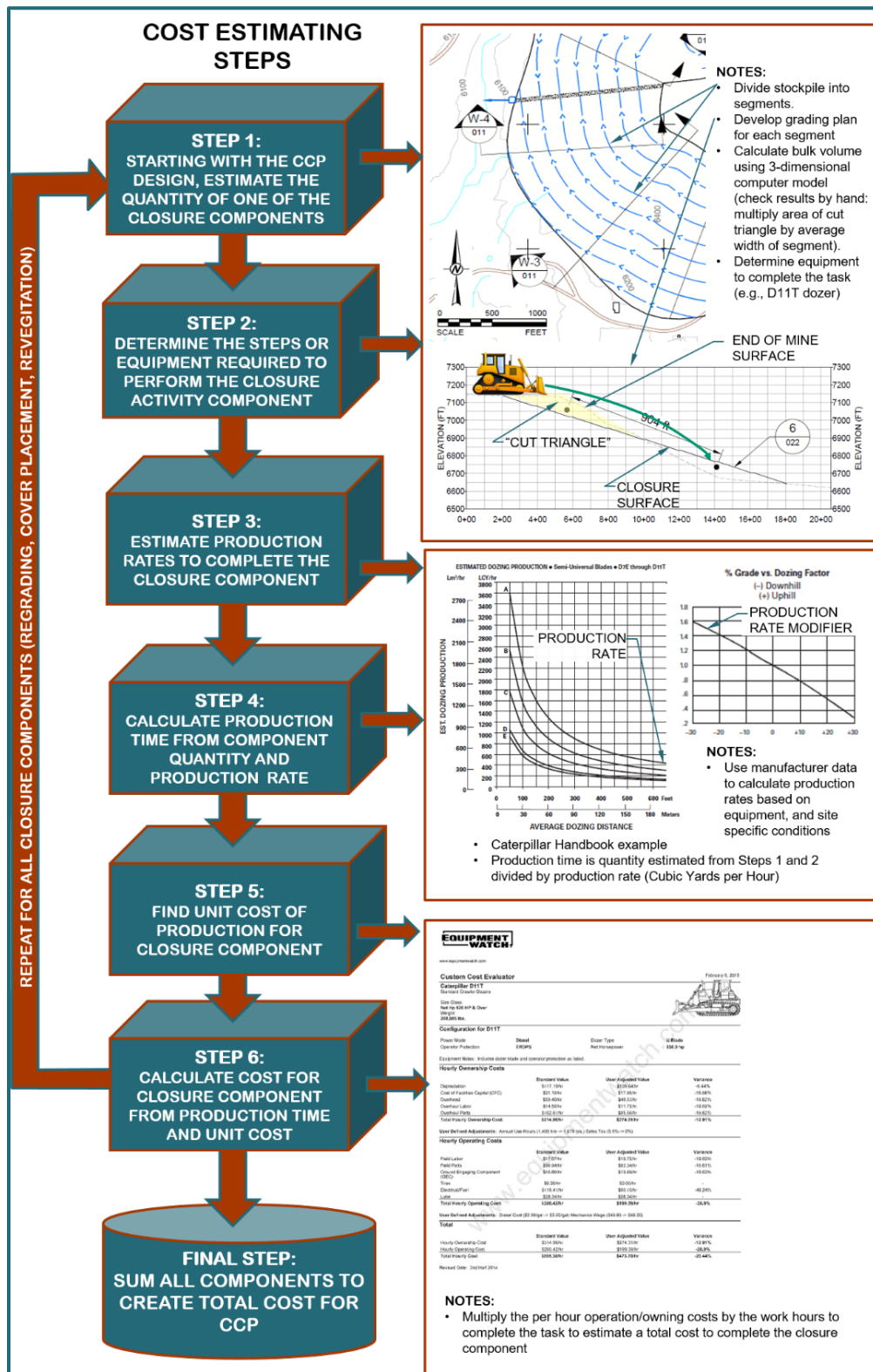


Figure 1 Earthwork Cost Estimating Process

ATTACHMENTS

Attachment 1

Engineering Take-Offs and Quantities Calculations

Kessel Ultimate Earthwork Quantities

Item	Facility	Area (sf)	Volume (cy)	Down Drains (ft)	Down drain Dissipater (ea)	Channels (ft)	Bench Grading (ft)
1200	Kessel Stockpile	35,204,756		11,495	3	129,093	129,093
1201	Kessel	5,422,784	334,983				
1202	Kessel	17,254,116	1,600,857				
1203	Kessel	12,527,856	1,230,959				
1300	RP Conglomerate	35,140,068					
1301	RP Stockpile	64,689					

Attachment 2

Supporting Data for Cost Estimation

The following pages show the updated (2025) costs used in this RCE.

For additional estimates, quotes, and equipment information, refer to Attachments 3 and 4 of Appendix F of the 2024 Chino Closure Closeout Plan.

Fuel Price Data

Data 1: U.S. No 2 Diesel Retail Prices (Dollars per Gallon)	
Date	U.S. No 2 Diesel Retail Prices ¹
1995	1.109
1996	1.235
1997	1.198
1998	1.044
1999	1.121
2000	1.491
2001	1.401
2002	1.319
2003	1.509
2004	1.81
2005	2.402
2006	2.705
2007	2.885
2008	3.803
2009	2.467
2010	2.992
2011	3.84
2012	3.968
2013	3.922
2014	3.825
2015	2.707
2016	2.304
2017	2.65
2018	3.178
2019	3.056
2020	2.551
2021	3.125
Date	U.S. No 2 Diesel Retail Prices ¹
July 2024	3.722
June 2025	3.599

FMI Fuel Quotes ²			
Site	Date	Dyed, low-sulfur diesel	Notes
Continental	1/21/2005	\$1.40	Tom Shelley - quote from fuel broker
Chino & Tyrone	5/9/2007	\$2.41	Porter Oil Quote (7500 gal capacity)
Continental	1/23/2009	\$1.80	Porter Oil Quote (7500 gal capacity)
Tyrone (Little Rock)	1/14/2010	\$2.49	Porter Oil Quote (7500 gal capacity)
Tyrone	7/7/2012	\$3.13	Western Refining Oil
Continental	6/18/2014	\$3.22	Western Refining Oil
Chino (North Lampbright)	11/5/2015	\$1.74	Western Refining Oil
Chino	5/20/2016	\$1.66	Western Refining Oil
Tyrone (Little Rock)	4/24/2017	\$1.90	Western Refining Oil
Continental	3/12/2018	\$2.75	Griffin Propane
Chino	10/10/2018	\$2.75	Griffin Propane

1. U.S. Energy Information Administration

https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=EMD_EPD2D_PTE_NUS_DPG&f=M

2. Quotes obtained from Freeport-McMoRan (FMI)

Correlation Between U.S. No.2 Diesel Retail Prices and FMI Fuel Quotes Since 1995

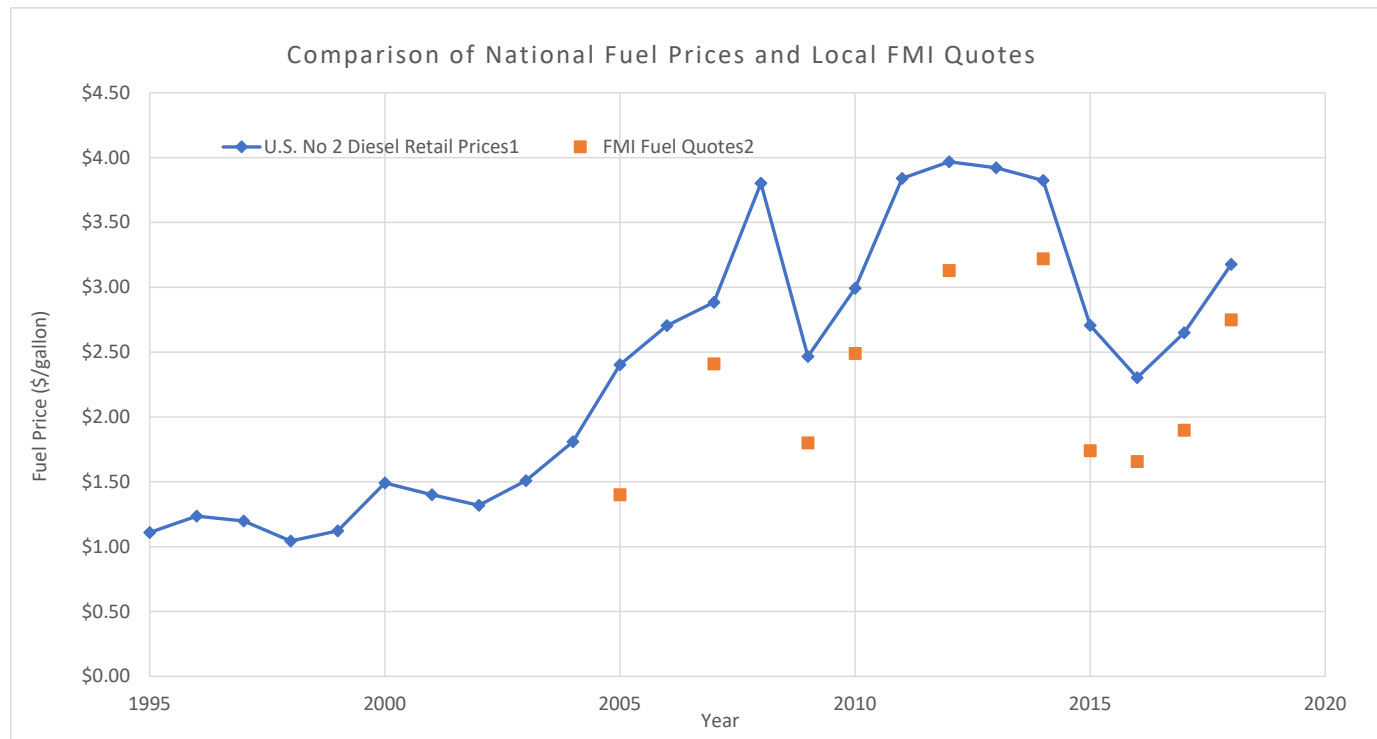
Year	U.S. No 2 Diesel Retail Prices ¹	FMI Fuel Quotes ²
1995	1.109	
1996	1.235	
1997	1.198	
1998	1.044	
1999	1.121	
2000	1.491	
2001	1.401	
2002	1.319	
2003	1.509	
2004	1.81	
2005	2.402	\$1.40
2006	2.705	
2007	2.885	\$2.41
2008	3.803	
2009	2.467	\$1.80
2010	2.992	\$2.49
2011	3.84	
2012	3.968	\$3.13
2013	3.922	
2014	3.825	\$3.22
2015	2.707	\$1.74
2016	2.304	\$1.66
2017	2.65	\$1.90
2018	3.178	\$2.75
2019	3.056	
2020	2.551	
2021	3.125	

Correlation 0.952

1. U.S. Energy Information Administration

https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=EMD EPD2D_PTE_NUS_DPG&f=M

2. Quotes obtained from Freeport-McMoRan (FMI)



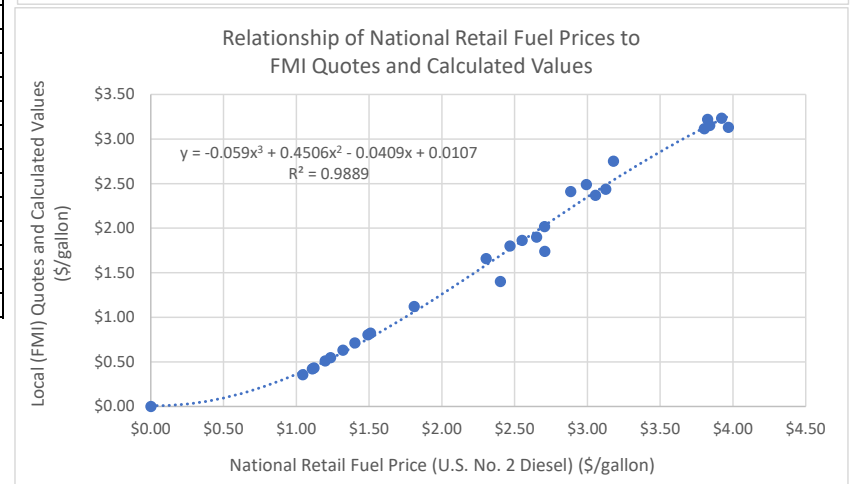
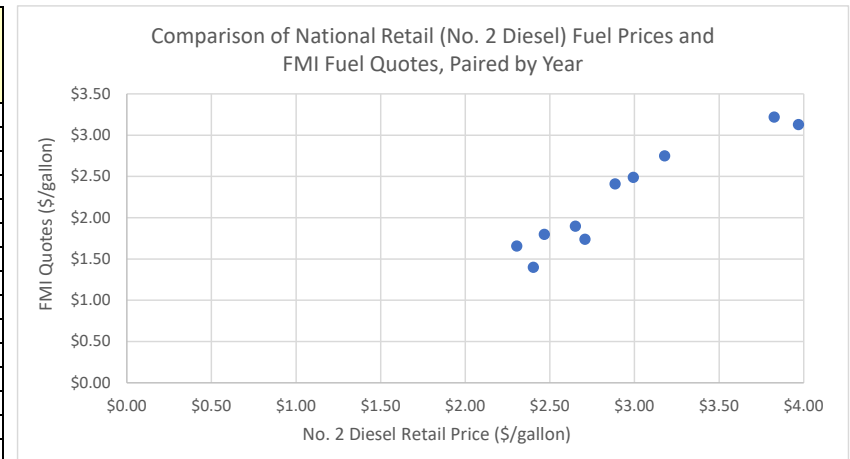
Calculations and Results for Fuel Price Prediction

U.S. No. 2 Diesel Retail Prices ¹	FMI Fuel Quotes ²	Difference Between Retail Prices and FMI Quotes	Calculated FMI Values Based on Average Difference	Calculated FMI Values and Quotes	$y = -0.05904x^3 + 0.450612x^2 - 0.04089x + 0.010713$
\$0.00				\$0.00	\$0.01
\$1.11			\$0.42	\$0.42	\$0.44
\$1.24			\$0.55	\$0.55	\$0.54
\$1.20			\$0.51	\$0.51	\$0.51
\$1.04			\$0.36	\$0.36	\$0.39
\$1.12			\$0.43	\$0.43	\$0.45
\$1.49			\$0.80	\$0.80	\$0.76
\$1.40			\$0.71	\$0.71	\$0.68
\$1.32			\$0.63	\$0.63	\$0.61
\$1.51			\$0.82	\$0.82	\$0.77
\$1.81			\$1.12	\$1.12	\$1.06
\$2.40	\$1.40	\$1.00		\$1.40	\$1.69
\$2.71			\$2.02	\$2.02	\$2.03
\$2.89	\$2.41	\$0.47		\$2.41	\$2.23
\$3.80			\$3.11	\$3.11	\$3.13
\$2.47	\$1.80	\$0.67		\$1.80	\$1.77
\$2.99	\$2.49	\$0.50		\$2.49	\$2.34
\$3.84			\$3.15	\$3.15	\$3.16
\$3.97	\$3.13	\$0.84		\$3.13	\$3.25
\$3.92			\$3.23	\$3.23	\$3.22
\$3.83	\$3.22	\$0.61		\$3.22	\$3.14
\$2.71	\$1.74	\$0.97		\$1.74	\$2.03
\$2.30	\$1.66	\$0.65		\$1.66	\$1.59
\$2.65	\$1.90	\$0.75		\$1.90	\$1.97
\$3.18	\$2.75	\$0.43		\$2.75	\$2.54
\$3.06			\$2.37	\$2.37	\$2.41
\$2.55			\$1.86	\$1.86	\$1.86
\$3.13			\$2.44	\$2.44	\$2.48

Average \$0.69

Correlations

Between No. 2 Retail Price and FMI Quotes	0.95
Between No. 2 Retail Price and 3rd order polynomial FMI Quotes	0.99
Between New FMI quotes and 3rd order polynomial FMI Quotes	0.96
Between FMI quotes and 3rd order polynomial FMI Quotes	0.99



New Fuel Rate	U.S. No 2 Diesel Retail Prices ¹	Proposed Fuel Quote
	Jul-25	\$3.60
		\$2.95

1. U.S. Energy Information Administration

<https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=EMD EPD2D PTE NUS DPG&f=M>

2. Quotes obtained from Freeport-McMoRan (FMI)

Labor Rates

NMDOL Type H Operator Group	Base rate	Fringe rate	Apprenticeship	Total 2025 Rate (\$/hr)
Equipment Operator IV	27.27	6.95	0.6	\$ 34.82
Equipment Operator V	27.39	6.95	0.6	\$ 34.94
Equipment Operator VI	27.65	6.95	0.6	\$ 35.20
Equipment Operator VII	27.67	6.95	0.6	\$ 35.22
Equipment Operator VIII	30.56	6.95	0.6	\$ 38.11
Laborer I	19.74	7.51	0.6	\$ 27.85
Laborer II	21.19	7.51	0.6	\$ 29.30
Truck Driver III	20.55	9.40	0.60	\$ 30.55
Truck Driver V	20.55	9.40	0.60	\$ 30.55
Truck Driver VIII	20.55	9.40	0.60	\$ 30.55

Labor rates based on NM Department of Labor Type H (Heavy Engineering) 2025 labor rates. Rates include base hourly wage,
https://www.dws.state.nm.us/Portals/0/DM/LaborRelations/Prevailing_Wage_Poster_H_2025_4.10.2025.pdf

Occupational Employment and Wages Statistics Dashboard

Table	Visualizations	Area Comparison	Definitions
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Occupational Employment & Wages Table

Select Geography

- ☒ New Mexico
- ☐ Central Region
- ☐ Eastern Region
- ☐ Northern Region
- ☐ Southwestern Region
- ☐ Albuquerque

Annual or Hourly?

- ☐ Annual
- ☒ Hourly

Select Occupational Level

All

Major Occupational Group

All

Detailed Occupation

Mobile Heavy Equipment Mechanics, Ex..

2024 Hourly Wages for New Mexico						
SOC	Occupation Title	Employment	Entry	Average	Experienced	10th Pctl 25th Pctl
493042	Mobile Heavy Equipment Mechanics, Except Engines	1,290	\$21.61	\$29.78	\$33.81	\$21.00

Entry and experienced wage data are not available for the U.S.

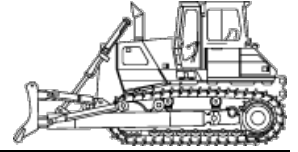
Adjustments for WalterNiccoli88 in Chino RCE Equipment List

July 24, 2025

Caterpillar D11T CD (disc. 2018)

Standard Crawler Dozers

Size Class:
520 hp & Over
 Weight:
N/A



Configuration for D11T CD (disc. 2018)

Dozer Type	U Blade	Horsepower	850.0 hp
Operator Protection	EROPS	Power Mode	Diesel

Hourly Ownership Costs

	Standard Value	User Adjusted Value	Variance
Depreciation	USD \$83.80/hr	USD \$85.04/hr	+1.5%
Cost of Facilities Capital (CFC)	USD \$30.40/hr	USD \$25.03/hr	-17.7%
Overhead	USD \$53.30/hr	USD \$43.25/hr	-18.9%
Overhaul Labor	USD \$20.01/hr	USD \$8.26/hr	-58.8%
Overhaul Parts	USD \$87.07/hr	USD \$70.64/hr	-18.9%
Total Hourly Ownership Cost:	USD \$274.58/hr	USD \$232.21/hr	-15.4%
User Defined Adjustments: Discount (6% -> 0%) Sales Tax (5.1% -> 0%) Annual Use Hours (1,200hrs -> 1,479hrs)			

Hourly Operating Costs

	Standard Value	User Adjusted Value	Variance
Field Labor	USD \$19.33/hr	USD \$7.97/hr	-58.8%
Field Parts	USD \$84.80/hr	USD \$22.93/hr	-73%
Ground Engaging Component (GEC)	USD \$14.13/hr	USD \$0.00/hr	-100%
Tire	USD \$0.00/hr	-	-
Electrical/Fuel	USD \$93.86/hr	USD \$26.54/hr	-71.7%
Lube	USD \$18.66/hr	USD \$0.00/hr	-100%
Total Operating Ownership Cost:	USD \$230.79/hr	USD \$57.45/hr	-75.1%
User Defined Adjustments: Fuel (USD \$3.54 -> USD \$1.00) Annual Ground Engaging Component (USD \$16,959.92 -> USD \$0.00) Mechanics Wage (USD \$58.58 -> USD \$29.78) Hourly Lube Costs (USD \$18.66 -> USD \$0.00) Annual Misc Supply Parts (USD \$16,959.92 -> USD \$0.00) Annual Field Repair Parts Cost (USD \$84,799.58 -> USD \$33,919.84)			

Total

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD \$274.58/hr	USD \$232.21/hr	-15.4%
Hourly Operating Costs	USD \$230.79/hr	USD \$57.45/hr	-75.1%
Total Hourly Cost	USD \$505.37	USD \$289.66/hr	-42.7%

Non-active use rates

	Standard Value	User Adjusted Value	Variance
Standby	USD \$167.50/hr	USD \$153.31/hr	-8.5%
Idle	USD \$368.44/hr	USD \$258.76/hr	-29.8%

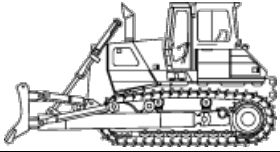
Revised Date: 3rd quarter 2025

The equipment represented in this report has been exclusively prepared for (wniccoli@telesto-inc.com)

Adjustments for WalterNiccoli88 in Chino RCE Equipment List

July 24, 2025

Caterpillar D11T CD (disc. 2018)
Standard Crawler Dozers



Size Class:
520 hp & Over
Weight:
N/A

Configuration for D11T CD (disc. 2018)

Dozer Type	U Blade	Horsepower	850.0 hp
Operator Protection	EROPS	Power Mode	Diesel

AED Rental Rates

These rental rates reflect an average for equipment of this type and size. Rates shown for specific brands or models are provided for convenience only. Rates charged by rental companies for specific brands or models will vary depending on many factors

	Monthly	Weekly	Daily
Published Rates	USD \$46,054.00	USD \$17,639.00	USD \$6,625.00
Adjustments			
Region (New Mexico: 111.96%)	USD \$5,508.87	USD \$2,109.94	USD \$792.47
User Defined			
Rental Rates (100%)	-	-	-
Total:	USD \$51,562.88	USD \$19,748.94	USD \$7,417.47
Date Last Updated: Jun 01, 2025			

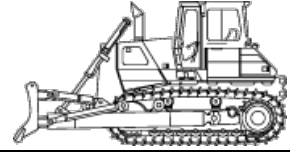
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Adjustments for WalterNiccoli89 in Chino RCE Equipment List

July 24, 2025

Caterpillar D6 Standard Crawler Dozers

Size Class:
190 - 259 hp
Weight:
N/A



Configuration for D6

Horsepower **215.0 hp**

Hourly Ownership Costs

	Standard Value	User Adjusted Value	Variance
Depreciation	USD \$27.17/hr	USD \$28.40/hr	+4.5%
Cost of Facilities Capital (CFC)	USD \$11.40/hr	USD \$9.18/hr	-19.5%
Overhead	USD \$19.14/hr	USD \$15.19/hr	-20.6%
Overhaul Labor	USD \$10.50/hr	USD \$4.23/hr	-59.7%
Overhaul Parts	USD \$19.72/hr	USD \$15.65/hr	-20.6%
Total Hourly Ownership Cost:	USD \$87.93/hr	USD \$72.66/hr	-17.4%
User Defined Adjustments: Discount (8% -> 0%) Sales Tax (5.1% -> 0%) Annual Use Hours (1,200hrs -> 1,512hrs)			

Hourly Operating Costs

	Standard Value	User Adjusted Value	Variance
Field Labor	USD \$12.94/hr	USD \$5.22/hr	-59.7%
Field Parts	USD \$19.11/hr	USD \$5.06/hr	-73.5%
Ground Engaging Component (GEC)	USD \$3.19/hr	USD \$0.00/hr	-100%
Tire	USD \$0.00/hr	-	-
Electrical/Fuel	USD \$24.48/hr	USD \$6.92/hr	-71.7%
Lube	USD \$5.26/hr	USD \$0.00/hr	-100%
Total Operating Ownership Cost:	USD \$64.98/hr	USD \$17.20/hr	-73.5%
User Defined Adjustments: Fuel (USD \$3.54 -> USD \$1.00) Annual Ground Engaging Component (USD \$3,822.90 -> USD \$0.00) Mechanics Wage (USD \$58.58 -> USD \$29.78) Hourly Lube Costs (USD \$5.26 -> USD \$0.00) Annual Misc Supply Parts (USD \$3,822.90 -> USD \$0.00) Annual Field Repair Parts Cost (USD \$19,114.52 -> USD \$7,645.80)			

Total

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD \$87.93/hr	USD \$72.66/hr	-17.4%
Hourly Operating Costs	USD \$64.98/hr	USD \$17.20/hr	-73.5%
Total Hourly Cost	USD \$152.91	USD \$89.86/hr	-41.2%

Non-active use rates

	Standard Value	User Adjusted Value	Variance
Standby	USD \$57.71/hr	USD \$52.77/hr	-8.6%
Idle	USD \$112.41/hr	USD \$79.58/hr	-29.2%

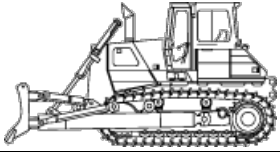
Revised Date: 3rd quarter 2025

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Adjustments for WalterNiccoli89 in Chino RCE Equipment List

July 24, 2025

Caterpillar D6
Standard Crawler Dozers



Size Class:
190 - 259 hp
Weight:
N/A

Configuration for D6

Horsepower 215.0 hp

AED Rental Rates

These rental rates reflect an average for equipment of this type and size. Rates shown for specific brands or models are provided for convenience only. Rates charged by rental companies for specific brands or models will vary depending on many factors

	Monthly	Weekly	Daily
Published Rates	USD \$12,285.00	USD \$4,433.00	USD \$1,586.00
Adjustments			
Region (New Mexico: 111.96%)	USD \$1,469.50	USD \$530.27	USD \$189.71
User Defined			
Rental Rates (100%)	-	-	-
Total:	USD \$13,754.50	USD \$4,963.27	USD \$1,775.71
Date Last Updated: Jun 01, 2025			

The equipment represented in this report has been exclusively prepared for (wniccoli@telesto-inc.com)

Custom Cost Evaluator

July 24, 2025

Caterpillar 986K

4-Wd Articulated Wheel Loaders

Size Class:
350 - 499 hp
 Weight:
 N/A



Configuration for 986K

Horsepower **378.0 hp**

Hourly Ownership Costs

	Standard Value	User Adjusted Value	Variance
Depreciation	USD \$29.30/hr	USD \$34.71/hr	+18.5%
Cost of Facilities Capital (CFC)	USD \$14.05/hr	USD \$11.38/hr	-19%
Overhead	USD \$24.60/hr	USD \$19.65/hr	-20.1%
Overhaul Labor	USD \$12.05/hr	USD \$4.89/hr	-59.4%
Overhaul Parts	USD \$9.83/hr	USD \$7.85/hr	-20.1%
Total Hourly Ownership Cost:	USD \$89.83/hr	USD \$78.49/hr	-12.6%
User Defined Adjustments: Discount (16% -> 0%) Sales Tax (5.1% -> 0%) Annual Use Hours (1,215hrs -> 1,521hrs)			

Hourly Operating Costs

	Standard Value	User Adjusted Value	Variance
Field Labor	USD \$14.71/hr	USD \$5.97/hr	-59.4%
Field Parts	USD \$10.85/hr	USD \$2.47/hr	-77.2%
Ground Engaging Component (GEC)	USD \$1.48/hr	USD \$0.00/hr	-100%
Tire	USD \$8.04/hr	-	-
Electrical/Fuel	USD \$25.68/hr	USD \$7.26/hr	-71.7%
Lube	USD \$6.10/hr	USD \$0.00/hr	-100%
Total Operating Ownership Cost:	USD \$66.84/hr	USD \$23.74/hr	-64.5%

User Defined Adjustments: Fuel (USD \$3.54 -> USD \$1.00) Annual Ground Engaging Component (USD \$1,794.40 -> USD \$0.00) Mechanics Wage (USD \$58.58 -> USD \$29.78) Hourly Lube Costs (USD \$6.10 -> USD \$0.00) Annual Misc Supply Parts (USD \$1,962.62 -> USD \$0.00) Annual Field Repair Parts Cost (USD \$11,214.98 -> USD \$3,757.02)

Total

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD \$89.83/hr	USD \$78.49/hr	-12.6%
Hourly Operating Costs	USD \$66.84/hr	USD \$23.74/hr	-64.5%
Total Hourly Cost	USD \$156.68	USD \$102.23/hr	-34.7%

Non-active use rates

	Standard Value	User Adjusted Value	Variance
Standby	USD \$67.95/hr	USD \$65.74/hr	-3.2%
Idle	USD \$115.51/hr	USD \$85.75/hr	-25.8%

Revised Date: 3rd quarter 2025

The equipment represented in this report has been exclusively prepared for (wniccoli@telesto-inc.com)

Caterpillar 986K
4-Wd Articulated Wheel Loaders

Size Class:
350 - 499 hp
Weight:
N/A



Configuration for 986K

Horsepower378.0 hp

AED Rental Rates
These rental rates reflect an average for equipment of this type and size. Rates shown for specific brands or models are provided for convenience only. Rates charged by rental companies for specific brands or models will vary depending on many factors

	Monthly	Weekly	Daily
Published Rates	USD \$16,713.00	USD \$6,161.00	USD \$2,321.00
Adjustments			
Region (New Mexico: 98.87%)	(USD \$188.06)	(USD \$69.33)	(USD \$26.12)
User Defined			
Rental Rates (100%)	-	-	-
Total:	USD \$16,524.94	USD \$6,091.67	USD \$2,294.88
Date Last Updated: Jun 01, 2025			

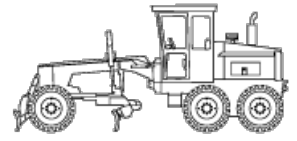
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Adjustments for WalterNiccoli96 in Chino RCE Equipment List

July 24, 2025

Caterpillar 14M3 (disc. 2019)

Articulated Frame Graders

 Size Class:
200 - 249 hp
 Weight:
N/A


Configuration for 14M3 (disc. 2019)

Moldboard Size	14 ft	Horsepower	238 hp
Operator Protection	ROPS/FOPS	Power Mode	Diesel

Hourly Ownership Costs

	Standard Value	User Adjusted Value	Variance
Depreciation	USD \$24.37/hr	USD \$24.43/hr	+0.2%
Cost of Facilities Capital (CFC)	USD \$11.02/hr	USD \$8.72/hr	-20.8%
Overhead	USD \$15.42/hr	USD \$12.03/hr	-22%
Overhaul Labor	USD \$2.44/hr	USD \$0.97/hr	-60.4%
Overhaul Parts	USD \$18.56/hr	USD \$14.47/hr	-22%
Total Hourly Ownership Cost:	USD \$71.82/hr	USD \$60.62/hr	-15.6%
User Defined Adjustments: Discount (5% -> 0%) Sales Tax (5.1% -> 0%) Annual Use Hours (1,200hrs -> 1,539hrs)			

Hourly Operating Costs

	Standard Value	User Adjusted Value	Variance
Field Labor	USD \$1.46/hr	USD \$0.58/hr	-60.4%
Field Parts	USD \$18.00/hr	USD \$3.51/hr	-80.5%
Ground Engaging Component (GEC)	USD \$1.50/hr	USD \$0.00/hr	-100%
Tire	USD \$8.93/hr	-	-
Electrical/Fuel	USD \$26.93/hr	USD \$7.62/hr	-71.7%
Lube	USD \$5.48/hr	USD \$0.00/hr	-100%
Total Operating Ownership Cost:	USD \$62.31/hr	USD \$20.63/hr	-66.9%
User Defined Adjustments: Fuel (USD \$3.54 -> USD \$1.00) Annual Ground Engaging Component (USD \$1,800.22 -> USD \$0.00) Mechanics Wage (USD \$58.58 -> USD \$29.78) Hourly Lube Costs (USD \$5.48 -> USD \$0.00) Annual Misc Supply Parts (USD \$3,600.45 -> USD \$0.00) Annual Field Repair Parts Cost (USD \$18,002.23 -> USD \$5,400.67)			

Total

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD \$71.82/hr	USD \$60.62/hr	-15.6%
Hourly Operating Costs	USD \$62.31/hr	USD \$20.63/hr	-66.9%
Total Hourly Cost	USD \$134.12	USD \$81.25/hr	-39.4%

Non-active use rates

	Standard Value	User Adjusted Value	Variance
Standby	USD \$50.82/hr	USD \$45.18/hr	-11.1%
Idle	USD \$98.75/hr	USD \$68.23/hr	-30.9%

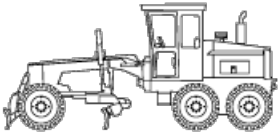
Revised Date: 3rd quarter 2025

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Adjustments for WalterNiccoli96 in Chino RCE Equipment List

July 24, 2025

Caterpillar 14M3 (disc. 2019)
Articulated Frame Graders



Size Class:
200 - 249 hp
Weight:
N/A

Configuration for 14M3 (disc. 2019)

Moldboard Size	14 ft	Horsepower	238 hp
Operator Protection	ROPS/FOPS	Power Mode	Diesel

AED Rental Rates
These rental rates reflect an average for equipment of this type and size. Rates shown for specific brands or models are provided for convenience only. Rates charged by rental companies for specific brands or models will vary depending on many factors

	Monthly	Weekly	Daily
Published Rates	USD \$11,594.00	USD \$4,575.00	USD \$1,612.00
Adjustments			
Region (New Mexico: 89.59%)	(USD \$1,207.40)	(USD \$476.44)	(USD \$167.87)
User Defined			
Rental Rates (100%)	-	-	-
Total:	USD \$10,386.60	USD \$4,098.56	USD \$1,444.13
Date Last Updated: Jun 01, 2025			

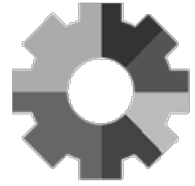
The equipment represented in this report has been exclusively prepared for (wniccoli@telesto-inc.com)

Adjustments for WalterNiccoli97 in Chino RCE Equipment List

July 24, 2025

Miscellaneous MSR-189H
Crawler Tractor Multi-Shank Rippers

Size Class:
To 260 hp
Weight:
3557 lbs



Configuration for MSR-189H

Horsepower
Ripper Type

130.0 hp
Parallelogram

Number Of Shanks
Power Mode

3.0
Hydraulic

Hourly Ownership Costs

	Standard Value	User Adjusted Value	Variance
Depreciation	USD \$2.64/hr	USD \$2.72/hr	+3%
Cost of Facilities Capital (CFC)	USD \$0.51/hr	USD \$0.41/hr	-18.5%
Overhead	USD \$0.66/hr	USD \$0.52/hr	-21.1%
Overhaul Labor	USD \$1.09/hr	USD \$0.44/hr	-59.9%
Overhaul Parts	USD \$0.95/hr	USD \$0.75/hr	-21.1%
Total Hourly Ownership Cost:	USD \$5.85/hr	USD \$4.84/hr	-17.3%
User Defined Adjustments: Discount (7.5% -> 0%) Sales Tax (5.1% -> 0%) Annual Use Hours (1,285hrs -> 1,629hrs)			

Hourly Operating Costs

	Standard Value	User Adjusted Value	Variance
Field Labor	USD \$1.82/hr	USD \$0.73/hr	-59.9%
Field Parts	USD \$1.18/hr	USD \$0.93/hr	-21.1%
Ground Engaging Component (GEC)	USD \$0.99/hr	USD \$0.00/hr	-100%
Tire	USD \$0.00/hr	-	-
Electrical/Fuel	USD \$0.00/hr	-	-
Lube	USD \$0.15/hr	USD \$0.00/hr	-100%
Total Operating Ownership Cost:	USD \$4.14/hr	USD \$1.67/hr	-59.8%
User Defined Adjustments: Annual Ground Engaging Component (USD \$1,268.16 -> USD \$0.00) Mechanics Wage (USD \$58.58 -> USD \$29.78) Hourly Lube Costs (USD \$0.15 -> USD \$0.00) Annual Misc Supply Parts (USD \$253.63 -> USD \$0.00) Annual Field Repair Parts Cost (USD \$1,268.16 -> USD \$1,521.79)			

Total

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD \$5.85/hr	USD \$4.84/hr	-17.3%
Hourly Operating Costs	USD \$4.14/hr	USD \$1.67/hr	-59.8%
Total Hourly Cost	USD \$9.99	USD \$6.50/hr	-34.9%

Non-active use rates

	Standard Value	User Adjusted Value	Variance
Standby	USD \$3.81/hr	USD \$3.65/hr	-4.1%
Idle	USD \$5.85/hr	USD \$4.84/hr	-17.3%

Revised Date: 3rd quarter 2025

The equipment represented in this report has been exclusively prepared for (wniccoli@telesto-inc.com)

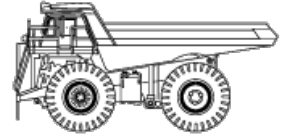
Custom Cost Evaluator

July 24, 2025

Caterpillar 770G

Mechanical Drive Rear Dumps

Size Class:
39.5 - 54.4 mt
 Weight:
 N/A



Configuration for 770G

Horsepower **477 hp**

Hourly Ownership Costs

	Standard Value	User Adjusted Value	Variance
Depreciation	USD \$25.57/hr	USD \$29.23/hr	+14.3%
Cost of Facilities Capital (CFC)	USD \$9.63/hr	USD \$8.02/hr	-16.7%
Overhead	USD \$16.50/hr	USD \$13.53/hr	-18%
Overhaul Labor	USD \$2.48/hr	USD \$1.03/hr	-58.3%
Overhaul Parts	USD \$10.82/hr	USD \$8.87/hr	-18%
Total Hourly Ownership Cost:	USD \$65.00/hr	USD \$60.69/hr	-6.6%
User Defined Adjustments: Discount (15% -> 0%) Sales Tax (5.1% -> 0%) Annual Use Hours (1,534hrs -> 1,871hrs)			

Hourly Operating Costs

	Standard Value	User Adjusted Value	Variance
Field Labor	USD \$3.06/hr	USD \$1.27/hr	-58.3%
Field Parts	USD \$6.68/hr	USD \$0.91/hr	-86.3%
Ground Engaging Component (GEC)	USD \$0.00/hr	-	-
Tire	USD \$7.40/hr	-	-
Electrical/Fuel	USD \$24.15/hr	USD \$6.83/hr	-71.7%
Lube	USD \$6.63/hr	USD \$0.00/hr	-100%
Total Operating Ownership Cost:	USD \$47.91/hr	USD \$16.41/hr	-65.7%
User Defined Adjustments: Fuel (USD \$3.54 -> USD \$1.00) Mechanics Wage (USD \$58.58 -> USD \$29.78) Hourly Lube Costs (USD \$6.63 -> USD \$0.00) Annual Misc Supply Parts (USD \$1,707.26 -> USD \$0.00) Annual Field Repair Parts Cost (USD \$8,536.28 -> USD \$1,707.26)			

Total

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD \$65.00/hr	USD \$60.69/hr	-6.6%
Hourly Operating Costs	USD \$47.91/hr	USD \$16.41/hr	-65.7%
Total Hourly Cost	USD \$112.91	USD \$77.10/hr	-31.7%

Non-active use rates

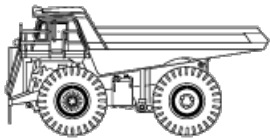
	Standard Value	User Adjusted Value	Variance
Standby	USD \$51.70/hr	USD \$50.78/hr	-1.8%
Idle	USD \$89.15/hr	USD \$67.52/hr	-24.3%

Revised Date: 3rd quarter 2025

The equipment represented in this report has been exclusively prepared for (wniccoli@telesto-inc.com)

Caterpillar 770G
Mechanical Drive Rear Dumps

Size Class:
39.5 - 54.4 mt
Weight:
N/A



Configuration for 770G

Horsepower 477 hp

AED Rental Rates
These rental rates reflect an average for equipment of this type and size. Rates shown for specific brands or models are provided for convenience only. Rates charged by rental companies for specific brands or models will vary depending on many factors

	Monthly	Weekly	Daily
Published Rates	USD \$6,400.00	USD \$2,516.00	USD \$878.00
Adjustments			
Region (New Mexico: 109.11%)	USD \$583.04	USD \$229.21	USD \$79.99
User Defined			
Rental Rates (100%)	-	-	-
Total:	USD \$6,983.04	USD \$2,745.21	USD \$957.99
Date Last Updated: Sep 01, 2023			

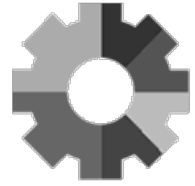
The equipment represented in this report has been exclusively prepared for (wniccoli@telesto-inc.com)

Adjustments for WalterNiccoli104 in Chino RCE Equipment List

July 24, 2025

Miscellaneous 6000 330
Off-Highway Water Tanker Trucks

Size Class:
300 - 399 hp
Weight:
54400 lbs



Configuration for 6000 330

Horsepower	330.0 hp	Power Mode	Diesel
Tank Capacity	6000.0 gal		

Hourly Ownership Costs

	Standard Value	User Adjusted Value	Variance
Depreciation	USD \$22.90/hr	USD \$26.54/hr	+15.9%
Cost of Facilities Capital (CFC)	USD \$15.68/hr	USD \$10.83/hr	-31%
Overhead	USD \$15.43/hr	USD \$10.45/hr	-32.3%
Overhaul Labor	USD \$4.12/hr	USD \$1.42/hr	-65.6%
Overhaul Parts	USD \$11.96/hr	USD \$8.10/hr	-32.3%
Total Hourly Ownership Cost:	USD \$70.09/hr	USD \$57.32/hr	-18.2%
User Defined Adjustments: Discount (15% -> 0%) Sales Tax (5.1% -> 0%) Annual Use Hours (711hrs -> 1,050hrs)			

Hourly Operating Costs

	Standard Value	User Adjusted Value	Variance
Field Labor	USD \$2.06/hr	USD \$0.71/hr	-65.6%
Field Parts	USD \$22.55/hr	USD \$2.54/hr	-88.7%
Ground Engaging Component (GEC)	USD \$0.00/hr	-	-
Tire	USD \$6.42/hr	-	-
Electrical/Fuel	USD \$39.79/hr	USD \$11.25/hr	-71.7%
Lube	USD \$6.45/hr	USD \$0.00/hr	-100%
Total Operating Ownership Cost:	USD \$77.27/hr	USD \$20.93/hr	-72.9%
User Defined Adjustments: Fuel (USD \$3.54 -> USD \$1.00) Mechanics Wage (USD \$58.58 -> USD \$29.78) Hourly Lube Costs (USD \$6.45 -> USD \$0.00) Annual Misc Supply Parts (USD \$2,671.74 -> USD \$0.00) Annual Field Repair Parts Cost (USD \$13,358.67 -> USD \$2,671.74)			

Total

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD \$70.09/hr	USD \$57.32/hr	-18.2%
Hourly Operating Costs	USD \$77.27/hr	USD \$20.93/hr	-72.9%
Total Hourly Cost	USD \$147.36	USD \$78.26/hr	-46.9%

Non-active use rates

	Standard Value	User Adjusted Value	Variance
Standby	USD \$54.01/hr	USD \$47.81/hr	-11.5%
Idle	USD \$109.88/hr	USD \$68.58/hr	-37.6%

Revised Date: 3rd quarter 2025

The equipment represented in this report has been exclusively prepared for (wniccoli@telesto-inc.com)

Adjustments for WalterNiccoli104 in Chino RCE Equipment List

July 24, 2025

Miscellaneous 6000 330
Off-Highway Water Tanker Trucks

Size Class:
300 - 399 hp
Weight:
54400 lbs



Configuration for 6000 330

Horsepower	330.0 hp	Power Mode	Diesel
Tank Capacity	6000.0 gal		

AED Rental Rates

These rental rates reflect an average for equipment of this type and size. Rates shown for specific brands or models are provided for convenience only. Rates charged by rental companies for specific brands or models will vary depending on many factors

	Monthly	Weekly	Daily
Published Rates	USD \$13,888.00	USD \$4,893.00	USD \$2,414.00
Adjustments			
Region (New Mexico: 99.97%)	(USD \$3.72)	(USD \$1.31)	(USD \$0.65)
User Defined			
Rental Rates (100%)	-	-	-
Total:	USD \$13,884.28	USD \$4,891.69	USD \$2,413.35
Date Last Updated: Jun 01, 2025			

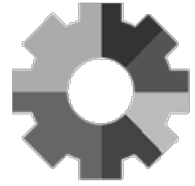
The equipment represented in this report has been exclusively prepared for (wniccoli@telesto-inc.com)

Custom Cost Evaluator

July 24, 2025

Miscellaneous 48 X 60' - 516
Single Deck Portable Screening Plants

Size Class:
37 in & Over
Weight:
24800 lbs



Configuration for 48 X 60' - 516

Conveyor Size	48' X 60'	Horsepower	132.0
Power Mode	Gasoline	Screen Size	5' X 16'

Hourly Ownership Costs

	Standard Value	User Adjusted Value	Variance
Depreciation	USD \$10.08/hr	USD \$10.87/hr	+7.8%
Cost of Facilities Capital (CFC)	USD \$3.25/hr	USD \$2.53/hr	-22.3%
Overhead	USD \$4.13/hr	USD \$3.13/hr	-24.2%
Overhaul Labor	USD \$5.84/hr	USD \$2.25/hr	-61.5%
Overhaul Parts	USD \$9.45/hr	USD \$7.16/hr	-24.2%
Total Hourly Ownership Cost:	USD \$32.75/hr	USD \$25.94/hr	-20.8%
User Defined Adjustments: Discount (11% -> 0%) Sales Tax (5.1% -> 0%) Annual Use Hours (1,033hrs -> 1,363hrs)			

Hourly Operating Costs

	Standard Value	User Adjusted Value	Variance
Field Labor	USD \$2.89/hr	USD \$1.11/hr	-61.5%
Field Parts	USD \$8.88/hr	USD \$1.35/hr	-84.8%
Ground Engaging Component (GEC)	USD \$0.00/hr	-	-
Tire	USD \$0.41/hr	-	-
Electrical/Fuel	USD \$29.28/hr	USD \$9.23/hr	-68.5%
Lube	USD \$3.70/hr	USD \$0.00/hr	-100%
Total Operating Ownership Cost:	USD \$45.15/hr	USD \$12.09/hr	-73.2%
User Defined Adjustments: Fuel (USD \$3.17 -> USD \$1.00) Mechanics Wage (USD \$58.58 -> USD \$29.78) Hourly Lube Costs (USD \$3.70 -> USD \$0.00) Annual Misc Supply Parts (USD \$1,833.84 -> USD \$0.00) Annual Field Repair Parts Cost (USD \$7,335.37 -> USD \$1,833.84)			

Total

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD \$32.75/hr	USD \$25.94/hr	-20.8%
Hourly Operating Costs	USD \$45.15/hr	USD \$12.09/hr	-73.2%
Total Hourly Cost	USD \$77.90	USD \$38.03/hr	-51.2%

Non-active use rates

	Standard Value	User Adjusted Value	Variance
Standby	USD \$17.46/hr	USD \$16.53/hr	-5.4%
Idle	USD \$62.03/hr	USD \$35.16/hr	-43.3%

Revised Date: 3rd quarter 2025

The equipment represented in this report has been exclusively prepared for (wniccoli@telesto-inc.com)

Miscellaneous 48 X 60' - 516
Single Deck Portable Screening Plants

Size Class:
37 in & Over
Weight:
24800 lbs



Configuration for 48 X 60' - 516

Conveyor Size	48' X 60'	Horsepower	132.0
Power Mode	Gasoline	Screen Size	5' X 16'

AED Rental Rates
These rental rates reflect an average for equipment of this type and size. Rates shown for specific brands or models are provided for convenience only. Rates charged by rental companies for specific brands or models will vary depending on many factors

	Monthly	Weekly	Daily
Published Rates	USD \$11,333.00	USD \$3,778.00	USD \$1,194.00
Adjustments			
Region (New Mexico: 102.1%)	USD \$238.09	USD \$79.37	USD \$25.08
User Defined			
Rental Rates (100%)	-	-	-
Total:	USD \$11,571.09	USD \$3,857.37	USD \$1,219.08
Date Last Updated: Jun 01, 2025			

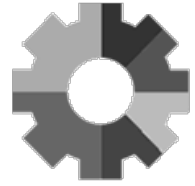
The equipment represented in this report has been exclusively prepared for (wniccoli@telesto-inc.com)

Custom Cost Evaluator

July 24, 2025

Miscellaneous 42 X 60' - 516
Triple Deck Portable Screening Plants

Size Class:
37 in & Over
Weight:
27600 lbs



Configuration for 42 X 60' - 516

Conveyor Size	42' X 60'	Horsepower	84.0
Power Mode	Gasoline	Screen Size	5' X 16'

Hourly Ownership Costs

	Standard Value	User Adjusted Value	Variance
Depreciation	USD \$9.90/hr	USD \$10.68/hr	+7.8%
Cost of Facilities Capital (CFC)	USD \$2.74/hr	USD \$2.22/hr	-18.9%
Overhead	USD \$3.42/hr	USD \$2.71/hr	-20.7%
Overhaul Labor	USD \$5.86/hr	USD \$2.36/hr	-59.7%
Overhaul Parts	USD \$7.83/hr	USD \$6.21/hr	-20.7%
Total Hourly Ownership Cost:	USD \$29.75/hr	USD \$24.18/hr	-18.7%
User Defined Adjustments: Discount (11% -> 0%) Sales Tax (5.1% -> 0%) Annual Use Hours (1,250hrs -> 1,577hrs)			

Hourly Operating Costs

	Standard Value	User Adjusted Value	Variance
Field Labor	USD \$2.95/hr	USD \$1.19/hr	-59.7%
Field Parts	USD \$7.36/hr	USD \$1.17/hr	-84.1%
Ground Engaging Component (GEC)	USD \$0.00/hr	-	-
Tire	USD \$0.36/hr	-	-
Electrical/Fuel	USD \$18.63/hr	USD \$5.87/hr	-68.5%
Lube	USD \$2.63/hr	USD \$0.00/hr	-100%
Total Operating Ownership Cost:	USD \$31.93/hr	USD \$8.58/hr	-73.1%
User Defined Adjustments: Fuel (USD \$3.17 -> USD \$1.00) Mechanics Wage (USD \$58.58 -> USD \$29.78) Hourly Lube Costs (USD \$2.63 -> USD \$0.00) Annual Misc Supply Parts (USD \$1,839.73 -> USD \$0.00) Annual Field Repair Parts Cost (USD \$7,358.91 -> USD \$1,839.73)			

Total

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD \$29.75/hr	USD \$24.18/hr	-18.7%
Hourly Operating Costs	USD \$31.93/hr	USD \$8.58/hr	-73.1%
Total Hourly Cost	USD \$61.69	USD \$32.76/hr	-46.9%

Non-active use rates

	Standard Value	User Adjusted Value	Variance
Standby	USD \$16.06/hr	USD \$15.61/hr	-2.8%
Idle	USD \$48.38/hr	USD \$30.05/hr	-37.9%

Revised Date: 3rd quarter 2025

The equipment represented in this report has been exclusively prepared for (wniccoli@telesto-inc.com)

Miscellaneous 42 X 60' - 516
Triple Deck Portable Screening Plants

Size Class:
37 in & Over
Weight:
27600 lbs



Configuration for 42 X 60' - 516

Conveyor Size	42' X 60'	Horsepower	84.0
Power Mode	Gasoline	Screen Size	5' X 16'

AED Rental Rates
These rental rates reflect an average for equipment of this type and size. Rates shown for specific brands or models are provided for convenience only. Rates charged by rental companies for specific brands or models will vary depending on many factors

	Monthly	Weekly	Daily
Published Rates	USD \$16,005.00	USD \$5,336.00	USD \$1,756.00
Adjustments			
Region (New Mexico: 101.91%)	USD \$305.01	USD \$101.69	USD \$33.46
User Defined			
Rental Rates (100%)	-	-	-
Total:	USD \$16,310.01	USD \$5,437.69	USD \$1,789.46
Date Last Updated: Jun 01, 2025			

The equipment represented in this report has been exclusively prepared for (wniccoli@telesto-inc.com)

Attachment 3
Cost Spreadsheet

General Information

Applicant Chino Mines Company
 Hurley, New Mexico 88043

Disturbed Surface Area (acres) 808

Type of Operation Existing/Surface/Copper

*Current value of earthwork and
 O&M before escalation and
 discounting* **\$21,891,056**

Ultimate Kessel Build Out

Stockpile and RCM Material

Demolition

Building Demolition costs are calculated in "1 BuildingDemo", "2 BuildingCover", "3 BuildingVeg", and "4BuildingWaste" and summarized on the last line of this table.

Item	Material	Quantity	Unit	Unit Cost (\$/unit)	Direct Item Cost (\$)	Reference	Means Line Item	Description
Building Demolition	See Building Demo Sheets	N/A	N/A	N/A	\$0	See Building Demo Sheets	N/A	No demolitions are planned with Kessel Ultimate Stockpile

Total Direct Cost: \$0

Material Handling Plan Summary Sheet

All activities are listed on this sheet and carried through the succeeding worksheets of the RCE. The column labeled ID contains the codes for the facility location, activity, material and equipment used for that particular row of work. The description lists the activity, top or outslope (if applicable), and the material. The source location lists the stockpile name (or sub-area) for the location of the activity. If borrow material is involved, it is transported from a borrow stockpile to a destination stockpile. Blank cells indicate that that column is not relevant to a particular activity.

Notes and Assumptions:

- 1 - Haul/Push Distance based on CCP drawings
- 2 - Haul Grades based on CCP drawings
- 3 - Grade Factors from CCP drawings

Item	Activity	Material	Eq	ID	Description	Source Location 1	Destination Location 2	Total Haul/Push Distance (ft) ¹	Grade (%) ^{2,3}	Equipment
1201 A		a	Dz4	1201-A-a-Dz4	Grade-Outslope-Existing Ground	Kessel	-	100	-28.6%	Cat D6, SU Blade
1201 E		c	Rp1	1201-E-c-Rp1	Rip-Outslope-Rough Graded Material	Kessel	-	100	-28.6%	Cat D11T CD Multi-shank (w/ MSR-359H)
1202 A		a	Dz4	1202-A-a-Dz4	Grade-Outslope-Existing Ground	Kessel	-	100	-28.6%	Cat D6, SU Blade
1202 E		c	Rp1	1202-E-c-Rp1	Rip-Outslope-Rough Graded Material	Kessel	-	100	-28.6%	Cat D11T CD Multi-shank (w/ MSR-359H)
1203 A		a	Dz4	1203-A-a-Dz4	Grade-Outslope-Existing Ground	Kessel	-	100	-28.6%	Cat D6, SU Blade
1203 E		c	Rp1	1203-E-c-Rp1	Rip-Outslope-Rough Graded Material	Kessel	-	100	-28.6%	Cat D11T CD Multi-shank (w/ MSR-359H)
1200 B		b	Dz4	1200-B-b-Dz4	Dozer Assist-Cover	Rubio Peak Conglomerate	Kessel Stockpile	-	0.0%	Cat D6, SU Blade
1200 C		b	Sh1	1200-C-b-Sh1	Load-Cover	Rubio Peak Conglomerate	Kessel Stockpile	-	0.0%	Hitachi EX3600-5
1200 D		b	Tk1	1200-D-b-Tk1	Haul-Cover	Rubio Peak Conglomerate	Kessel Stockpile	3,279	4.8%	Cat 770G
1200 A		d	Mg2	1200-A-d-Mg2	Grade-Kessel Stockpile-Placed Cover	Kessel Stockpile	-	-	0.0%	Cat 14M3
1200 F		e	U3	1200-F-e-U3	Grade Benches-Kessel Stockpile-Final Grade	Kessel Stockpile	-	-	0.0%	-
1200 G		e	U6	1200-G-e-U6	Construct Downdrains-Kessel Stockpile-Final Grade	Kessel Stockpile	-	-	0.0%	-
1200 Gb		e	U7	1200-Gb-e-U7	Construct Downdrain Dissipators-Kessel Stockpile-Final Grade	Kessel Stockpile	-	-	0.0%	-
1200 J		e	U2a	1200-J-e-U2a	Revegetate-Kessel Stockpile-Final Grade	Kessel Stockpile	-	-	0.0%	-
1200 M		e	U9	1200-M-e-U9	Post-Closure O&M-Kessel Stockpile-Final Grade	Kessel Stockpile	-	-	0.0%	-
1200 P		e	Comb1	1200-P-e-Com	Road Maintenance-Kessel Stockpile	Kessel Stockpile	-	-	0.0%	vl, Off-Hwy Water Tanker Truck,6,000-gal.
1300 E		a	Rp1	1300-E-a-Rp1	Rip-Rubio Peak-Existing Ground	RP Conglomerate	-	-	0.0%	Cat D11T CD Multi-shank (w/ MSR-359H)
1300 J		e	U2a	1300-J-e-U2a	Revegetate-Rubio Peak-Final Grade	RP Conglomerate	-	-	0.0%	-
1301 E		a	Rp1	1301-E-a-Rp1	Rip-Rubio Peak Stockpile-Existing Ground	RP Stockpile	-	-	0.0%	Cat D11T CD Multi-shank (w/ MSR-359H)
1301 J		e	U2a	1301-J-e-U2a	Revegetate-Rubio Peak Stockpile-Final Grade	RP Stockpile	-	-	0.0%	-

Earthwork Quantity Worksheet

Notes and Assumptions:

- 1 - Acres and volumes based on 3CCP drawings
- 2 - Cover Material Swell: The 'Loose Volume' is calculated based on the acreage to be covered, cover depth, and accounts for appropriate swell factor.
- 3 - Has been agreed upon with State agencies that swell occurs when cover material is moved from source to haul truck but not from the truck to placement on stockpile

ID	Description	Source Location 1	Destination Location 2	Area (ac) ¹	Cover Depth (in)	Bank/Stockpile Volume (bcy) ¹	Swell Factor (%) ³	Loose/Stockpile Volume (lcy) ²
1201-A-a-Dz4	Grade-Outslope-Existing Ground	Kessel	-	124.5	-	334,983	0%	334,983
1201-E-c-Rp1	Rip-Outslope-Rough Graded Material	Kessel	-	124.5	-	-	0%	-
1202-A-a-Dz4	Grade-Outslope-Existing Ground	Kessel	-	396.1	-	1,600,857	0%	1,600,857
1202-E-c-Rp1	Rip-Outslope-Rough Graded Material	Kessel	-	396.1	-	-	0%	-
1203-A-a-Dz4	Grade-Outslope-Existing Ground	Kessel	-	287.6	-	1,230,959	0%	1,230,959
1203-E-c-Rp1	Rip-Outslope-Rough Graded Material	Kessel	-	287.6	-	-	0%	-
1200-B-b-Dz4	Dozer Assist-Cover	Rubio Peak Conglorr Kessel Stockpile		808.2	36.0	3,621,889	8%	3,911,640
1200-C-b-Sh1	Load-Cover	Rubio Peak Conglorr Kessel Stockpile		808.2	36.0	3,621,889	8%	3,911,640
1200-D-b-Tk1	Haul-Cover	Rubio Peak Conglorr Kessel Stockpile		808.2	36.0	3,621,889	8%	3,911,640
1200-A-d-Mg2	Grade-Kessel Stockpile-Placed Cover	Kessel Stockpile	-	808.2	36.0	3,911,640	0%	3,911,640
1200-F-e-U3	Grade Benches-Kessel Stockpile-Final Grade	Kessel Stockpile	-	808.2	-	-	0%	-
1200-G-e-U6	Construct Downdrains-Kessel Stockpile-Final Grade	Kessel Stockpile	-	808.2	-	-	0%	-
1200-Gb-e-U7	Construct Downdrain Dissipators-Kessel Stockpile-Final Grade	Kessel Stockpile	-	808.2	-	-	0%	-
1200-J-e-U2a	Revegetate-Kessel Stockpile-Final Grade	Kessel Stockpile	-	808.2	-	-	0%	-
1200-M-e-U9	Post-Closure O&M-Kessel Stockpile-Final Grade	Kessel Stockpile	-	808.2	-	-	0%	-
1200-P-e-Comb1	Road Maintenance-Kessel Stockpile	Kessel Stockpile	-	-	-	-	-	-
1300-E-a-Rp1	Rip-Rubio Peak-Existing Ground	RP Conglomerate	-	806.7	-	-	0%	-
1300-J-e-U2a	Revegetate-Rubio Peak-Final Grade	RP Conglomerate	-	806.7	-	1	0%	1
1301-E-a-Rp1	Rip-Rubio Peak Stockpile-Existing Ground	RP Stockpile	-	1.5	-	-	0%	-
1301-J-e-U2a	Revegetate-Rubio Peak Stockpile-Final Grade	RP Stockpile	-	1.5	-	2	0%	2

Productivity and Hours Required for Dozer Use---Earthmoving

Notes and Assumptions:
Uses volumes of outslope sections and dam breaches to calculate productivity
Uses push distances of outslope sections for grading productivity
Uses scraper push cycle time for dozer assist with scraper
Uses loader cycle time for dozer assist with loader at cover stockpiles
Grade Factor = -0.02(Grade %) + 1
May filter on equipment (D14) to show pertinent rows

Number of
Dozers per

1

PERFORMANCE FACTORS																											
ID	Task Description	Source Location 1	Destination Location 2	Equipment	Type of Equipment to Assist (ID)	Type of Equipment to Assist (Name)	Number of Dozers per Assist	Loose /Stockpile Volume (cy)	Area (ac)	Productivity (cy/hr)	Productivity (ac/hr)	Total Task Time (hrs)	Material Factor	Grade Factor	Material Weight (lb/cy)	Production Method/ Blade	Centroid to Centroid Push Distance (ft)	Normal Production (cy/hr)	Effective Blade Width (ft)	Speed (mph)	Operator Factor	Work Hour (min/hr)	Visibility Factor	Elevation Factor	Direct Drive Trans.	Cut to Fill Haul Grade (%)	
1201-A-a-Dz4	Grade-Outslope-Existing Ground	Kessel	-	Cat D6, SU Blade	--	--	--	334,983	124	442	-	758	1.2	2	3,300	1	100	335.93	11	2.3	1.0	50.0	100%	1.0	1.0	-29%	
1201-E-c-Rp1	Rip-Outslope-Rough Graded Materi	Kessel	-	Cat D11T CD Multi-shank	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	0%	
1202-A-a-Dz4	Grade-Outslope-Existing Ground	Kessel	-	Cat D6, SU Blade	--	--	--	1,600,857	396	442	-	3,625	1.2	2	3,300	1	100	335.93	11	2.3	1.0	50.0	100%	1.0	1.0	-29%	
1202-E-c-Rp1	Rip-Outslope-Rough Graded Materi	Kessel	-	Cat D11T CD Multi-shank	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	0%	
1203-A-a-Dz4	Grade-Outslope-Existing Ground	Kessel	-	Cat D6, SU Blade	--	--	--	1,230,959	288	442	-	2,787	1.2	2	3,300	1	100	335.93	11	2.3	1.0	50.0	100%	1.0	1.0	-29%	
1203-E-c-Rp1	Rip-Outslope-Rough Graded Materi	Kessel	-	Cat D11T CD Multi-shank	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	0%	
1200-B-b-Dz4	Dozer Assist-Cover	Rubio Peak Con	Kessel Stockpile	Cat D6, SU Blade	Sh1	Hitachi EX3600-5	1	3,911,640	808	-	-	1,293	-	-	-	-	-	-	-	-	-	50.0	0%	-	-	0%	
1200-C-b-Sh1	Load-Cover	Rubio Peak Con	Kessel Stockpile	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	0%	
1200-D-b-Tk1	Haul-Cover	Rubio Peak Con	Kessel Stockpile	Cat 770G	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	0%	
1200-A-d-Mg2	Grade-Kessel Stockpile-Placed Cov	Kessel Stockpile	-	Cat 14M3	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	0%	
1200-F-e-U3	Grade Benches-Kessel Stockpile-Fil	Kessel Stockpile	-	-	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	0%	
1200-G-e-U6	Construct Downdrains-Kessel Stock	Kessel Stockpile	-	-	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	0%	
1200-Gb-e-U7	Construct Downdrain Dissipators-Ke	Kessel Stockpile	-	-	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	0%	
1200-J-e-U2a	Revegetate-Kessel Stockpile-Final C	Kessel Stockpile	-	-	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	0%	
1200-M-e-U9	Post-Closure O&M-Kessel Stockpile	Kessel Stockpile	-	-	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	0%	
1200-P-e-Comb1	Road Maintenance-Kessel Stockpile	Kessel Stockpile	-	Cat 14M, Off-Hwy Water	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	0%	
1300-E-a-Rp1	Rip-Rubio Peak-Existing Ground	RP Conglomerat	-	Cat D11T CD Multi-shank	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	0%	
1300-J-e-U2a	Revegetate-Rubio Peak-Final Grade	RP Conglomerat	-	-	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	0%	
1301-E-a-Rp1	Rip-Rubio Peak Stockpile-Existing C	RP Stockpile	-	Cat D11T CD Multi-shank	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	0%	
1301-J-e-U2a	Revegetate-Rubio Peak Stockpile-F	RP Stockpile	-	-	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	0%	

Productivity and Hours Required for Water Truck Use

Kessel Ultimate Earthwork Closure
Stockpile Spreadsheet Worksheet #6
07/25/25

Notes and Assumptions:

6,000 gal water truck for compaction (water truck hours tied to 1/3 of grading time for fill material)
May filter on equipment (D14) to show pertinent rows
Compaction volume assumed to 1/3 of fill material

Sheet to which to tie hrs 12 Scrapers
Equipment for hrs Sc2

ID	Task Description	Source Location 1	Destination Location 2	Equipment	Operational Maintenance Time (hrs)
1201-A-a-Dz4	Grade-Outslope-Existing Ground	Kessel	-	Cat D6, SU Blade	-
1201-E-c-Rp1	Rip-Outslope-Rough Graded Material	Kessel	-	Cat D11T CD Multi-shank (w/ MSR-359H)	-
1202-A-a-Dz4	Grade-Outslope-Existing Ground	Kessel	-	Cat D6, SU Blade	-
1202-E-c-Rp1	Rip-Outslope-Rough Graded Material	Kessel	-	Cat D11T CD Multi-shank (w/ MSR-359H)	-
1203-A-a-Dz4	Grade-Outslope-Existing Ground	Kessel	-	Cat D6, SU Blade	-
1203-E-c-Rp1	Rip-Outslope-Rough Graded Material	Kessel	-	Cat D11T CD Multi-shank (w/ MSR-359H)	-
1200-B-b-Dz4	Dozer Assist-Cover	Rubio Peak Conglomerate	Kessel Stockpile	Cat D6, SU Blade	-
1200-C-b-Sh1	Load-Cover	Rubio Peak Conglomerate	Kessel Stockpile	Hitachi EX3600-5	-
1200-D-b-Tk1	Haul-Cover	Rubio Peak Conglomerate	Kessel Stockpile	Cat 770G	-
1200-A-d-Mg2	Grade-Kessel Stockpile-Placed Cover	Kessel Stockpile	-	Cat 14M3	-
1200-F-e-U3	Grade Benches-Kessel Stockpile-Final Grade	Kessel Stockpile	-	-	-
1200-G-e-U6	Construct Downdrains-Kessel Stockpile-Final Grade	Kessel Stockpile	-	-	-
1200-Gb-e-U7	Construct Downdrain Dissipators-Kessel Stockpile-Final Grade	Kessel Stockpile	-	-	-
1200-J-e-U2a	Revegetate-Kessel Stockpile-Final Grade	Kessel Stockpile	-	-	-
1200-M-e-U9	Post-Closure O&M-Kessel Stockpile-Final Grade	Kessel Stockpile	-	-	-
1200-P-e-Comb1	Road Maintenance-Kessel Stockpile	Kessel Stockpile	-	Cat 14M, Off-Hwy Water Tanker Truck, 6.0	-
1300-E-a-Rp1	Rip-Rubio Peak-Existing Ground	RP Conglomerate	-	Cat D11T CD Multi-shank (w/ MSR-359H)	-
1300-J-e-U2a	Revegetate-Rubio Peak-Final Grade	RP Conglomerate	-	-	-
1301-E-a-Rp1	Rip-Rubio Peak Stockpile-Existing Ground	RP Stockpile	-	Cat D11T CD Multi-shank (w/ MSR-359H)	-
1301-J-e-U2a	Revegetate-Rubio Peak Stockpile-Final Grade	RP Stockpile	-	-	-

Productivity and Hours Required for Dust Suppression and Road Maintenance

Kessel Ultimate Earthwork Closure
Stockpile Spreadsheet Worksheet #7
07/25/25

Notes and Assumptions:

6,000 gal water truck and 14M motor grader for dust suppression and site maintenance (water truck hours and 14M hours tied to loading time for cover material)
May filter on equipment (D14) to show pertinent rows

Sheet to which to tie hrs 11 Loader Shovel
Equipment for hrs Sh1
Equipment for hrs Ld1

ID	Task Description	Source Location 1	Destination Location 2	Equipment	Operational Maintenance Time (hrs)
1201-A-a-Dz4	Grade-Outslope-Existing Ground	Kessel	-	Cat D6, SU Blade	-
1201-E-c-Rp1	Rip-Outslope-Rough Graded Material	Kessel	-	Cat D11T CD Multi-shank (w/ MSR-359H)	-
1202-A-a-Dz4	Grade-Outslope-Existing Ground	Kessel	-	Cat D6, SU Blade	-
1202-E-c-Rp1	Rip-Outslope-Rough Graded Material	Kessel	-	Cat D11T CD Multi-shank (w/ MSR-359H)	-
1203-A-a-Dz4	Grade-Outslope-Existing Ground	Kessel	-	Cat D6, SU Blade	-
1203-E-c-Rp1	Rip-Outslope-Rough Graded Material	Kessel	-	Cat D11T CD Multi-shank (w/ MSR-359H)	-
1200-B-b-Dz4	Dozer Assist-Cover	Kessel	-	Cat D6, SU Blade	-
1200-C-b-Sh1	Load-Cover	Rubio Peak Conglomerate	Kessel Stockpile	Hitachi EX3600-5	-
1200-D-b-Tk1	Haul-Cover	Rubio Peak Conglomerate	Kessel Stockpile	Cat 770G	-
1200-A-d-Mg2	Grade-Kessel Stockpile-Placed Cover	Kessel Stockpile	-	Cat 14M3	-
1200-F-e-U3	Grade Benches-Kessel Stockpile-Final Grade	Kessel Stockpile	-	-	-
1200-G-e-U6	Construct Downdrains-Kessel Stockpile-Final Grade	Kessel Stockpile	-	-	-
1200-Gb-e-U7	Construct Downdrains Dissipators-Kessel Stockpile-Final Grade	Kessel Stockpile	-	-	-
1200-J-e-U2a	Revegetate-Kessel Stockpile-Final Grade	Kessel Stockpile	-	-	-
1200-M-e-U9	Post-Closure O&M-Kessel Stockpile-Final Grade	Kessel Stockpile	-	-	-
1200-P-e-Comb1	Road Maintenance-Kessel Stockpile	Kessel Stockpile	-	Cat 14M, Off-Hwy Water Tanker Truck,6,000	1,293
1300-E-a-Rp1	Rip-Rubio Peak-Existing Ground	RP Conglomerate	-	Cat D11T CD Multi-shank (w/ MSR-359H)	-
1300-J-e-U2a	Revegetate-Rubio Peak-Final Grade	RP Conglomerate	-	-	-
1301-E-a-Rp1	Rip-Rubio Peak Stockpile-Existing Ground	RP Stockpile	-	Cat D11T CD Multi-shank (w/ MSR-359H)	-
1301-J-e-U2a	Revegetate-Rubio Peak Stockpile-Final Grade	RP Stockpile	-	-	-

Productivity and Hours Required for Ripper---Equipped Dozer Use

Notes and Assumptions:

Uses area to calculate task time

88 ft/min = 1 mph

May filter on equipment (D14) to show pertinent rows

PERFORMANCE FACTORS																	
ID	Task Description	Source Location 1	Destination Location 2	Equipment	Area (ac)	Productivity (ac/hr)	Task Time (hrs)	Ripping Length (ft)	Ripper Penetration (in)	Pocket Spacing (in)	Distance b/n Passes (in)	Number of Shank Pockets	Turn Time (min/pass)	Work Hour (min/hr)	Speed (mph)	1000 Ft Passes /Acre	Ripped Width Plus Distance b/n Passes (ft)
1201-A-a-Dz4	Grade-Outslope-Existing Ground	Kessel	-	Cat D6, SU Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
1201-E-c-Rp1	Rip-Outslope-Rough Graded Material	Kessel	-	Cat D11T CD Multi-shank (w	124.49	2.9	42.7	1,000	18	59	59	3	0.25	50	1.0	1.5	30
1202-A-a-Dz4	Grade-Outslope-Existing Ground	Kessel	-	Cat D6, SU Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
1202-E-c-Rp1	Rip-Outslope-Rough Graded Material	Kessel	-	Cat D11T CD Multi-shank (w	396.10	2.9	135.9	1,000	18	59	59	3	0.25	50	1.0	1.5	30
1203-A-a-Dz4	Grade-Outslope-Existing Ground	Kessel	-	Cat D6, SU Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
1203-E-c-Rp1	Rip-Outslope-Rough Graded Material	Kessel	-	Cat D11T CD Multi-shank (w	287.60	2.9	98.6	1,000	18	59	59	3	0.25	50	1.0	1.5	30
1200-B-b-Dz4	Dozer Assist-Cover	Rubio Peak Con	Kessel Stockpile	Cat D6, SU Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
1200-C-b-Sh1	Load-Cover	Rubio Peak Con	Kessel Stockpile	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
1200-D-b-Tk1	Haul-Cover	Rubio Peak Con	Kessel Stockpile	Cat 770G	-	-	-	-	-	-	-	-	-	-	-	-	-
1200-A-d-Mg2	Grade-Kessel Stockpile-Placed Cover	Kessel Stockpile	-	Cat 14M3	-	-	-	-	-	-	-	-	-	-	-	-	-
1200-F-e-U3	Grade Benches-Kessel Stockpile-Fina	Kessel Stockpile	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1200-G-e-U6	Construct Downdrains-Kessel Stockpil	Kessel Stockpile	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1200-Gb-e-U7	Construct Downdrain Dissipators-Kess	Kessel Stockpile	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1200-J-e-U2a	Revegetate-Kessel Stockpile-Final Gr	Kessel Stockpile	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1200-M-e-U9	Post-Closure O&M-Kessel Stockpile-F	Kessel Stockpile	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1200-P-e-Com	Road Maintenance-Kessel Stockpile	Kessel Stockpile	-	Cat 14M, Off-Hwy Water Tar	-	-	-	-	-	-	-	-	-	-	-	-	-
1300-E-a-Rp1	Rip-Rubio Peak-Existing Ground	RP Conglomerate	-	Cat D11T CD Multi-shank (w	806.70	2.9	276.7	1,000	18	59	59	3	0.25	50	1.0	1.5	30
1300-J-e-U2a	Revegetate-Rubio Peak-Final Grade	RP Conglomerate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1301-E-a-Rp1	Rip-Rubio Peak Stockpile-Existino Gr	RP Stockpile	-	Cat D11T CD Multi-shank (w	1.49	2.9	0.5	1,000	18	59	59	3	0.25	50	1.0	1.5	30
1301-J-e-U2a	Revegetate-Rubio Peak Stockpile-Fini	RP Stockpile	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Productivity and Hours Required for Hydraulic Excavator

Notes and Assumptions:

Uses area to calculate time for perforating liners

3' sheepfoot roller

Can be used for excavating and loading, or sheepfoot compaction using a roller

May filter on equipment (D14) to show pertinent rows

5	6	7	8	9	10	11	12	13	14			
ID	Task Description	Source Location 1	Destination Location 2	Equipment	Area (ac) or Volume (lcy)	Unit (ac or lcy)	Sheepsfoot Roller Width (ft) or Bucket Capacity (cy)	Unit (ft or cy)	Maximum Reach at Ground Level (ft)	Cycle Time (min)	Work Hour (min/hr)	Task Time (hr)
1201-A-a-Dz4	Grade-Outslope-Existing Ground	Kessel	-	Cat D6, SU Blade	-	-	-	-	-	-	-	-
1201-E-c-Rp1	Rip-Outslope-Rough Graded Material	Kessel	-	Cat D11T CD Multi-shank (w/ MSR-359H)	-	-	-	-	-	-	-	-
1202-A-a-Dz4	Grade-Outslope-Existing Ground	Kessel	-	Cat D6, SU Blade	-	-	-	-	-	-	-	-
1202-E-c-Rp1	Rip-Outslope-Rough Graded Material	Kessel	-	Cat D11T CD Multi-shank (w/ MSR-359H)	-	-	-	-	-	-	-	-
1203-A-a-Dz4	Grade-Outslope-Existing Ground	Kessel	-	Cat D6, SU Blade	-	-	-	-	-	-	-	-
1203-E-c-Rp1	Rip-Outslope-Rough Graded Material	Kessel	-	Cat D11T CD Multi-shank (w/ MSR-359H)	-	-	-	-	-	-	-	-
1200-B-b-Dz4	Dozer Assist-Cover	Rubio Peak Conglomerate	Kessel Stockpile	Cat D6, SU Blade	-	-	-	-	-	-	-	-
1200-C-b-Sh1	Load-Cover	Rubio Peak Conglomerate	Kessel Stockpile	Hitachi EX3600-5	-	-	-	-	-	-	-	-
1200-D-b-Tk1	Haul-Cover	Rubio Peak Conglomerate	Kessel Stockpile	Cat 770G	-	-	-	-	-	-	-	-
1200-A-d-Mg2	Grade-Kessel Stockpile-Placed Cover	Kessel Stockpile	-	Cat 14M3	-	-	-	-	-	-	-	-
1200-F-e-U3	Grade Benches-Kessel Stockpile-Final G	Kessel Stockpile	-	-	-	-	-	-	-	-	-	-
1200-G-e-U6	Construct Downdrains-Kessel Stockpile-F	Kessel Stockpile	-	-	-	-	-	-	-	-	-	-
1200-Gb-e-U7	Construct Downdrain Dissipators-Kessel	Kessel Stockpile	-	-	-	-	-	-	-	-	-	-
1200-J-e-U2a	Revegetate-Kessel Stockpile-Final Grade	Kessel Stockpile	-	-	-	-	-	-	-	-	-	-
1200-M-e-U9	Post-Closure O&M-Kessel Stockpile-Fina	Kessel Stockpile	-	-	-	-	-	-	-	-	-	-
1200-P-e-Comb1	Road Maintenance-Kessel Stockpile	Kessel Stockpile	-	Cat 14M, Off-Hwy Water Tanker Truck, 6,000	-	-	-	-	-	-	-	-
1300-E-a-Rp1	Rip-Rubio Peak-Existing Ground	RP Conglomerate	-	Cat D11T CD Multi-shank (w/ MSR-359H)	-	-	-	-	-	-	-	-
1300-J-e-U2a	Revegetate-Rubio Peak-Final Grade	RP Conglomerate	-	-	-	-	-	-	-	-	-	-
1301-E-a-Rp1	Rip-Rubio Peak Stockpile-Existing Groun	RP Stockpile	-	Cat D11T CD Multi-shank (w/ MSR-359H)	-	-	-	-	-	-	-	-
1301-J-e-U2a	Revegetate-Rubio Peak Stockpile-Final C	RP Stockpile	-	-	-	-	-	-	-	-	-	-

Productivity and Hours Required for Truck Use

Notes and Assumptions:
 Uses haul distance to calculate haul and return time (total task time includes loading, maneuvering, dumping, hauling and return time) - moves from cover stockpile to destination stockpile
 Volume of cover material based on area of destination
 Cycles per truck = greater of Heaped capacity or Struck capacity divided by Loader's per bucket capacity
 1 m/min = 98 ft/min
 1 m/min = 0.03728227153424 mph
 See Truck Optimization optimum number of trucks per loader
 Haul Grade (%) assumes positive is uphill while the Effective Haul Grade (%) and Effective Return Grade (%) are positive for downhill and uphill
 May filter on equipment (D14) to show pertinent rows

[illegible]

Productivity and Hours Required for Front End Loader Use or Hydraulic Shovel Use

Kessel Ultimate Earthwork Closure
Stockpile Spreadsheet Worksheet #11
7/25/2025

Assumptions:

Uses cover volume to calculate loading time of cover material
May filter on equipment (D14) to show pertinent rows

					PERFORMANCE FACTORS							
5	6	7	8	9	10	11	12	13	14	15	16	17
ID	Task Description	Source Location 1	Destination Location 2	Equipment	Hauling Equipment ID	Loose/ Stockpile Volume (cy)	Loader/ Shovel Cycle Time (min)	Per Loader/ Shovel Productivity (cy/hr)	Loader/ Shovel Task Time (hrs)	Max of Loader/ Shovel or Truck Task Time (hrs)	Net Bucket Capacity (cy)	Work Hour (min/hr)
1201-A-a-Dz4	Grade-Outslope-Existing Ground	Kessel	-	Cat D6, SU Blade	--	-	-	-	-	-	-	-
1201-E-c-Rp1	Rip-Outslope-Rough Graded Material	Kessel	-	Cat D11T CD Multi-shank (w/ MSR-359H)	--	-	-	-	-	-	-	-
1202-A-a-Dz4	Grade-Outslope-Existing Ground	Kessel	-	Cat D6, SU Blade	--	-	-	-	-	-	-	-
1202-E-c-Rp1	Rip-Outslope-Rough Graded Material	Kessel	-	Cat D11T CD Multi-shank (w/ MSR-359H)	--	-	-	-	-	-	-	-
1203-A-a-Dz4	Grade-Outslope-Existing Ground	Kessel	-	Cat D6, SU Blade	--	-	-	-	-	-	-	-
1203-E-c-Rp1	Rip-Outslope-Rough Graded Material	Kessel	-	Cat D11T CD Multi-shank (w/ MSR-359H)	--	-	-	-	-	-	-	-
1200-B-b-Dz4	Dozer Assist-Cover	Rubio Peak Conglomerate Kessel Stockpile	-	Cat D6, SU Blade	--	-	-	-	-	-	-	-
1200-C-b-Sh1	Load-Cover	Rubio Peak Conglomerate Kessel Stockpile	-	Hitachi EX3600-5	Tk1	3,911,640	0.45	3,044.4	1,284.8	1,293.0	27.4	50
1200-D-b-Tk1	Haul-Cover	Rubio Peak Conglomerate Kessel Stockpile	-	Cat 770G	--	-	-	-	-	-	-	-
1200-A-d-Mg2	Grade-Kessel Stockpile-Placed Cover	Kessel Stockpile	-	Cat 14M3	--	-	-	-	-	-	-	-
1200-F-e-U3	Grade Benches-Kessel Stockpile-Final Gr	Kessel Stockpile	-	-	--	-	-	-	-	-	-	-
1200-G-e-U6	Construct Downdrains-Kessel Stockpile-F	Kessel Stockpile	-	-	--	-	-	-	-	-	-	-
1200-Gb-e-U7	Construct Downdrain Dissipators-Kessel	Kessel Stockpile	-	-	--	-	-	-	-	-	-	-
1200-J-e-U2a	Revegetate-Kessel Stockpile-Final Grade	Kessel Stockpile	-	-	--	-	-	-	-	-	-	-
1200-M-e-U9	Post-Closure O&M-Kessel Stockpile-Final	Kessel Stockpile	-	-	--	-	-	-	-	-	-	-
1200-P-e-Comb1	Road Maintenance-Kessel Stockpile	Kessel Stockpile	-	Cat 14M, Off-Hwy Water Tanker Truck 6,000	--	-	-	-	-	-	-	-
1300-E-a-Rp1	Rip-Rubio Peak-Existing Ground	RP Conglomerate	-	Cat D11T CD Multi-shank (w/ MSR-359H)	--	-	-	-	-	-	-	-
1300-J-e-U2a	Revegetate-Rubio Peak-Final Grade	RP Conglomerate	-	-	--	-	-	-	-	-	-	-
1301-E-a-Rp1	Rip-Rubio Peak Stockpile-Existing Ground	RP Stockpile	-	Cat D11T CD Multi-shank (w/ MSR-359H)	--	-	-	-	-	-	-	-
1301-J-e-U2a	Revegetate-Rubio Peak Stockpile-Final GRP Stockpile	-	-	-	--	-	-	-	-	-	-	-

Productivity for Scrapers

Notes and Assumptions:
Uses volumes of stockpile or cover for hauling and grading times
Haul & Scrape Grade (%) assumes positive is downhill
May filter on equipment (D14) to show pertinent rows

Number of scrapers used for grading cover = 1
1609.344 meters/mile

5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
ID	Task Description	Source Location 1	Destination Location 2	Equipment	Loose/ Stockpile Volume (cy)	Total Haul Distance One Way (feet)	Haul & Scrape Grade (%)	Rolling Resistance (%)	Effective Grade Uphill (%)	Effective Grade Downhill (%)	Load Time (min)	Maneuver & Spread Time (min)	Full Scraper Haul Speed (mph)	Empty Scraper Return Speed (mph)	Scraper R/T Cycle Task Time (min)	Pusher Cycle Time (min/cycle)	Rated Load (lb)	Soil Weight (lbs/cy)	Heaped Capacity (cy)	Work Hour (min/hr)	Cycles per Scraper per Hr	Productivity per Heaped Scraper (cy/hr)	Total Task Time (hrs)	Number of Scrapers	Task Time w All Scrapers (hrs)
1201-A-a-Dz4	Grade-Outslope-Existing Ground	Kessel	-	Cat D6, SU Blade	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1201-E-c-Rp1	Rip-Outslope-Rough Graded Material	Kessel	-	Cat D11T CD Multi-shank (w/ MSR-359H)	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1202-A-a-Dz4	Grade-Outslope-Existing Ground	Kessel	-	Cat D6, SU Blade	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1202-E-c-Rp1	Rip-Outslope-Rough Graded Material	Kessel	-	Cat D11T CD Multi-shank (w/ MSR-359H)	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1203-A-a-Dz4	Grade-Outslope-Existing Ground	Kessel	-	Cat D6, SU Blade	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1203-E-c-Rp1	Rip-Outslope-Rough Graded Material	Kessel	-	Cat D11T CD Multi-shank (w/ MSR-359H)	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1200-B-b-Dz4	Dozer Assist-Cover	Rubio Peak Conglom	Kessel Stockpile	Cat D6, SU Blade	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1200-C-b-SH1	Load-Cover	Rubio Peak Conglom	Kessel Stockpile	Hitachi EX3600-5	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1200-D-b-Tk1	Haul-Cover	Rubio Peak Conglom	Kessel Stockpile	Cat 770G	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1200-A-d-Mq2	Grade-Kessel Stockpile-Placed Cover	Kessel Stockpile	-	Cat 14M3	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1200-F-e-U3	Grade Benches-Kessel Stockpile-Final Gr	Kessel Stockpile	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1200-G-e-U6	Construct Downdrains-Kessel Stockpile-F	Kessel Stockpile	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1200-Gb-e-U7	Construct Downdrain Dissipators-Kessel S	Kessel Stockpile	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1200-J-e-U2a	Revegetate-Kessel Stockpile-Final Grade	Kessel Stockpile	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1200-M-e-U9	Post-Closure O&M-Kessel Stockpile-Fina	Kessel Stockpile	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1200-P-e-Comb1	Road Maintenance-Kessel Stockpile	Kessel Stockpile	-	Cat 14M, Off-Hwy Water Tanker Truck.6.0	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1300-E-a-Rp1	Rip-Rubio Peak-Existing Ground	RP Conglomerate	-	Cat D11T CD Multi-shank (w/ MSR-359H)	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1300-J-e-U2a	Revegetate-Rubio Peak-Final Grade	RP Conglomerate	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1301-E-a-Rp1	Rip-Rubio Peak Stockpile-Existing Groun	RP Stockpile	-	Cat D11T CD Multi-shank (w/ MSR-359H)	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1301-J-e-U2a	Revegetate-Rubio Peak Stockpile-Final G	RP Stockpile	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Productivity and Hours Required for Motorgrader Use---Grading

Notes and Assumptions:

Productivity (based on area of overall stockpile) = Sq.ft per hour = Speed x (Eff. Blade L -Blade Overlap) x Efficiency (Cat. Handbook Edition 47 pg 11-27)
Max. safe slope for motor graders is 2:1 (50%), proposed final grade for Tyrone cover grading on stockpiles is 33%, therefore use of graders an option (Cat. Handbook Edition 46 pg 11-30)
Grade Factor = -0.02(Grade %) + 1
May filter on equipment (D14) to show pertinent rows

ID	Task Description	Source Location 1	Destination Location 2	Grading Equipment	Area (ac)	Grading Shaping Productivity (ac/hr)	Task Time (hrs)	Grade Factor	Material Factor	Material Weight (lb/cy)	Production Method/ Blade	Effective Blade Width (ft)	Pass Overlap (ft)	Speed (mph)	Work Hour (min/hr)	Operator Factor
1201-A-a-Dz4	Grade-Outslope-Existing Ground	Kessel	-	Cat D6, SU Blade	-	-	-	-	-	-	-	-	-	-	-	-
1201-E-c-Rp1	Rip-Outslope-Rough Graded Material	Kessel	-	Cat D11T CD Multi-shank (w/ MSR-359H)	-	-	-	-	-	-	-	-	-	-	-	-
1202-A-a-Dz4	Grade-Outslope-Existing Ground	Kessel	-	Cat D6, SU Blade	-	-	-	-	-	-	-	-	-	-	-	-
1202-E-c-Rp1	Rip-Outslope-Rough Graded Material	Kessel	-	Cat D11T CD Multi-shank (w/ MSR-359H)	-	-	-	-	-	-	-	-	-	-	-	-
1203-A-a-Dz4	Grade-Outslope-Existing Ground	Kessel	-	Cat D6, SU Blade	-	-	-	-	-	-	-	-	-	-	-	-
1203-E-c-Rp1	Rip-Outslope-Rough Graded Material	Kessel	-	Cat D11T CD Multi-shank (w/ MSR-359H)	-	-	-	-	-	-	-	-	-	-	-	-
1200-B-b-Dz4	Dozer Assist-Cover	Rubio Peak Conglon	Kessel Stockpile	Cat D6, SU Blade	-	-	-	-	-	-	-	-	-	-	-	-
1200-C-b-Sh1	Load-Cover	Rubio Peak Conglon	Kessel Stockpile	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
1200-D-b-Tk1	Haul-Cover	Rubio Peak Conglon	Kessel Stockpile	Cat 770G	-	-	-	-	-	-	-	-	-	-	-	-
1200-A-d-Mg2	Grade-Kessel Stockpile-Placed Cover	Kessel Stockpile	-	Cat 14M3	808	4	210.4	1.0	1.2	2,900	1.20	14.00	2.00	3.70	50	0.75
1200-F-e-U3	Grade Benches-Kessel Stockpile-Final Gr	Kessel Stockpile	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1200-G-e-U6	Construct Downdrains-Kessel Stockpile-F	Kessel Stockpile	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1200-Gb-e-U7	Construct Downdrain Dissipators-Kessel S	Kessel Stockpile	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1200-J-e-U2a	Revegetate-Kessel Stockpile-Final Grade	Kessel Stockpile	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1200-M-e-U9	Post-Closure O&M-Kessel Stockpile-Final	Kessel Stockpile	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1200-P-e-Comt	Road Maintenance-Kessel Stockpile	Kessel Stockpile	-	Cat 14M, Off-Hwy Water Tanker Truck,6,0	-	-	-	-	-	-	-	-	-	-	-	-
1300-E-a-Rp1	Rip-Rubio Peak-Existing Ground	RP Conglomerate	-	Cat D11T CD Multi-shank (w/ MSR-359H)	-	-	-	-	-	-	-	-	-	-	-	-
1300-J-e-U2a	Revegetate-Rubio Peak-Final Grade	RP Conglomerate	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1301-E-a-Rp1	Rip-Rubio Peak Stockpile-Existing Groun	RP Stockpile	-	Cat D11T CD Multi-shank (w/ MSR-359H)	-	-	-	-	-	-	-	-	-	-	-	-
1301-J-e-U2a	Revegetate-Rubio Peak Stockpile-Final G	RP Stockpile	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Summary Calculation of Earthmoving Costs

Summarizes costs for line items involving earthworks

Notes and Assumptions:

Productivity (based on area of overall stockpile) = Sq.ft per hour = Speed x (Eff. Blade L -Blade Overlap) x Efficiency (Cat. Handbook Edition 47 pg 11-27)
Max. safe slope for motor graders is 2:1 (50%), proposed final grade for cover grading on stockpiles is 33%, therefore use of graders an option (Cat. Handbook Edition 46 pg 11-30)
Grade Factor = -0.02(Grade %) + 1
May filter on equipement (D14) to show pertinent rows

ID	Description	Source Location 1	Destination Location 2	Equipment	Fuel Cost (\$/hr)	Lube, Tires, GEC, & Field Parts Adjusted Rental Cost (w/o fuel) (\$/hr)	Labor Cost (\$/hr)	Number of Units (Equipment)	Time Req'd Per Unit (hrs)	Direct Fuel Cost (\$)	Direct Lube, Tires, GEC, & Field Parts Adjusted Rental Cost (w/o fuel) (\$)	Direct Labor Cost (\$)	Total Equipment Cost (\$)	Total Production Volume (CY)	Total Production Area (AC)
1201-A-a-Dz4	Grade-Outslope-Existing Ground	Kessel	-	Cat D6, SU Blade	\$20.41	\$95.78	\$34.82	1	758.5	\$15,483	\$72,645	\$26,410	\$114,538	334,983	-
1201-E-c-Rp1	Rip-Outslope-Rough Graded Material	Kessel	-	Cat D11T CD Multi-shank (w/ MSR-359H)	\$78.29	\$338.74	\$34.82	1	42.7	\$3,343	\$14,463	\$1,487	\$19,293	-	124.5
1202-A-a-Dz4	Grade-Outslope-Existing Ground	Kessel	-	Cat D6, SU Blade	\$20.41	\$95.78	\$34.82	1	3,624.6	\$73,993	\$347,167	\$126,209	\$547,369	1,600,857	-
1202-E-c-Rp1	Rip-Outslope-Rough Graded Material	Kessel	-	Cat D11T CD Multi-shank (w/ MSR-359H)	\$78.29	\$338.74	\$34.82	1	135.9	\$10,636	\$46,019	\$4,730	\$61,385	-	396.1
1203-A-a-Dz4	Grade-Outslope-Existing Ground	Kessel	-	Cat D6, SU Blade	\$20.41	\$95.78	\$34.82	1	2,787.1	\$56,896	\$266,949	\$97,047	\$420,892	1,230,959	-
1203-E-c-Rp1	Rip-Outslope-Rough Graded Material	Kessel	-	Cat D11T CD Multi-shank (w/ MSR-359H)	\$78.29	\$338.74	\$34.82	1	98.6	\$7,723	\$33,413	\$3,435	\$44,571	-	287.6
1200-B-b-Dz4	Dozer Assist-Cover	Rubio Peak Conglome	Kessel Stockpile	Cat D6, SU Blade	\$20.41	\$95.78	\$34.82	1	1,293.0	\$26,395	\$123,842	\$45,022	\$195,258	3,911,640	-
1200-C-b-Sh1	Load-Cover	Rubio Peak Conglome	Kessel Stockpile	Hitachi EX3600-5	#####	\$529.14	\$35.20	1	1,293.0	\$315,518	\$684,168	\$45,513	\$1,045,198	3,911,640	-
1200-D-b-Tk1	Haul-Cover	Rubio Peak Conglome	Kessel Stockpile	Cat 770G	\$20.15	\$56.02	\$30.55	13	1,293.0	\$338,671	\$941,564	\$513,507	\$1,793,741	3,911,640	-
1200-A-d-Mg2	Grade-Kessel Stockpile-Placed Cover	Kessel Stockpile	-	Cat 14M3	\$22.48	\$75.61	\$34.82	1	210.4	\$4,729	\$15,907	\$7,326	\$27,962	-	808.2
1200-F-e-U3	Grade Benches-Kessel Stockpile-Final Gr	Kessel Stockpile	-	-	\$0.00	\$0.00	\$0.00	1	-	\$0	\$0	\$0	\$0	-	-
1200-G-e-U6	Construct Downdrains-Kessel Stockpile-F	Kessel Stockpile	-	-	\$0.00	\$0.00	\$0.00	1	-	\$0	\$0	\$0	\$0	-	-
1200-Gb-e-U7	Construct Downdrain Dissipators-Kessel S	Kessel Stockpile	-	-	\$0.00	\$0.00	\$0.00	1	-	\$0	\$0	\$0	\$0	-	-
1200-J-e-U2a	Revegetate-Kessel Stockpile-Final Grade	Kessel Stockpile	-	-	\$0.00	\$0.00	\$0.00	1	-	\$0	\$0	\$0	\$0	-	-
1200-M-e-U9	Post-Closure O&M-Kessel Stockpile-Final	Kessel Stockpile	-	-	\$0.00	\$0.00	\$0.00	1	-	\$0	\$0	\$0	\$0	-	-
1200-P-e-Coml	Road Maintenance-Kessel Stockpile	Kessel Stockpile	-	Cat 14M, Off-Hwy Water Tanker Truck,6,1	\$55.67	\$172.05	\$65.37	1	1,293.0	\$71,976	\$222,462	\$84,522	\$378,959	-	-
1300-E-a-Rp1	Rip-Rubio Peak-Existing Ground	RP Conglomerate	-	Cat D11T CD Multi-shank (w/ MSR-359H)	\$78.29	\$338.74	\$34.82	1	276.7	\$21,662	\$93,722	\$9,634	\$125,019	-	806.7
1300-J-e-U2a	Revegetate-Rubio Peak-Final Grade	RP Conglomerate	-	-	\$0.00	\$0.00	\$0.00	1	-	\$0	\$0	\$0	\$0	-	-
1301-E-a-Rp1	Rip-Rubio Peak Stockpile-Existing Groun	RP Stockpile	-	Cat D11T CD Multi-shank (w/ MSR-359H)	\$78.29	\$338.74	\$34.82	1	0.5	\$40	\$173	\$18	\$230	-	1.5
1301-J-e-U2a	Revegetate-Rubio Peak Stockpile-Final G	RP Stockpile	-	-	\$0.00	\$0.00	\$0.00	1	-	\$0	\$0	\$0	\$0	-	-
TOTAL										\$947,064	\$2,862,493	\$964,858	\$4,774,415	\$14,901,719	\$2,425

Revegetation Costs

Description:

Includes scarifying (ripping), discing, rangeland drill seeding, mulching, crimping, and daily per diem
May filter on equipment (D14) to show pertinent rows

Item	Activity	Material	Eq	ID	Description	Source Location 1	Destination Location 2	Area (ac)	Fuel Unit Cost (\$/ac)	Reveg w/o Fuel Unit Cost (\$/ac)	Fuel Direct Cost (\$)	Reveg w/o Fuel Direct Cost (\$)
1201 A	A	a	Dz4	1201-A-a-Dz4	Grade-Outslope-Existing Ground	Kessel	-	0.0	\$ -	\$ -	\$ -	\$ -
1201 E	E	c	Rp1	1201-E-c-Rp1	Rip-Outslope-Rough Graded Material	Kessel	-	0.0	\$ -	\$ -	\$ -	\$ -
1202 A	A	a	Dz4	1202-A-a-Dz4	Grade-Outslope-Existing Ground	Kessel	-	0.0	\$ -	\$ -	\$ -	\$ -
1202 E	E	c	Rp1	1202-E-c-Rp1	Rip-Outslope-Rough Graded Material	Kessel	-	0.0	\$ -	\$ -	\$ -	\$ -
1203 A	A	a	Dz4	1203-A-a-Dz4	Grade-Outslope-Existing Ground	Kessel	-	0.0	\$ -	\$ -	\$ -	\$ -
1203 E	E	c	Rp1	1203-E-c-Rp1	Rip-Outslope-Rough Graded Material	Kessel	-	0.0	\$ -	\$ -	\$ -	\$ -
1200 B	B	b	Dz4	1200-B-b-Dz4	Dozer Assist-Cover	Rubio Peak Conglomerate Kessel Stockpile		0.0	\$ -	\$ -	\$ -	\$ -
1200 C	C	b	Sh1	1200-C-b-Sh1	Load-Cover	Rubio Peak Conglomerate Kessel Stockpile		0.0	\$ -	\$ -	\$ -	\$ -
1200 D	D	b	Tk1	1200-D-b-Tk1	Haul-Cover	Rubio Peak Conglomerate Kessel Stockpile		0.0	\$ -	\$ -	\$ -	\$ -
1200 A	A	d	Mg2	1200-A-d-Mg2	Grade-Kessel Stockpile-Placed Cover	Kessel Stockpile	-	0.0	\$ -	\$ -	\$ -	\$ -
1200 F	F	e	U3	1200-F-e-U3	Grade Benches-Kessel Stockpile-Final Gr	Kessel Stockpile	-	0.0	\$ -	\$ -	\$ -	\$ -
1200 G	G	e	U6	1200-G-e-U6	Construct Downdrains-Kessel Stockpile-F	Kessel Stockpile	-	0.0	\$ -	\$ -	\$ -	\$ -
1200 Gb	Gb	e	U7	1200-Gb-e-U7	Construct Downdrain Dissipators-Kessel S	Kessel Stockpile	-	0.0	\$ -	\$ -	\$ -	\$ -
1200 J	J	e	U2a	1200-J-e-U2a	Revegetate-Kessel Stockpile-Final Grade	Kessel Stockpile	-	808.2	\$ 4.38	\$ 1,697.67	\$ 3,540	\$ 1,372,039
1200 M	M	e	U9	1200-M-e-U9	Post-Closure O&M-Kessel Stockpile-Final	Kessel Stockpile	-	0.0	\$ -	\$ -	\$ -	\$ -
1200 P	P	e	Comb1	1200-P-e-Comb	Road Maintenance-Kessel Stockpile	Kessel Stockpile	-	0.0	\$ -	\$ -	\$ -	\$ -
1300 E	E	a	Rp1	1300-E-a-Rp1	Rip-Rubio Peak-Existing Ground	RP Conglomerate	-	0.0	\$ -	\$ -	\$ -	\$ -
1300 J	J	e	U2a	1300-J-e-U2a	Revegetate-Rubio Peak-Final Grade	RP Conglomerate	-	806.7	\$ 4.38	\$ 1,697.67	\$ 3,534	\$ 1,369,518
1301 E	E	a	Rp1	1301-E-a-Rp1	Rip-Rubio Peak Stockpile-Existing Ground	RP Stockpile	-	0.0	\$ -	\$ -	\$ -	\$ -
1301 J	J	e	U2a	1301-J-e-U2a	Revegetate-Rubio Peak Stockpile-Final G	RP Stockpile	-	1.5	\$ 4.38	\$ 1,697.67	\$ 7	\$ 2,521
TOTAL								1,616			\$ 7,081	\$ 2,744,079

Other Reclamation Activity Costs

Assumptions:

- 1 - Cost to construct drain or channel on re-graded stockpile
 - 2 - The down drain, ACB, well plug & abandon, and well replacement costs include fuel
- May filter on equipment (D14) to show pertinent rows

Item	Activity	Material	Eq	ID	Description	Source Location 1	Destination Location 2	Quantity	Unit	Fuel Unit Cost (\$/unit)	Unit Cost w/o Fuel (\$/unit) ^{1,2}	Fuel Direct Cost (\$)	Direct w/o Fuel Cost (\$)				
1201 A	a	Dz4		1201-A-a-Dz4	Grade-Outslope-Existing Ground	Kessel	-	-	-	\$	-	\$	-				
1201 E	c	Rp1		1201-E-c-Rp1	Rip-Outslope-Rough Graded Material	Kessel	-	-	-	\$	-	\$	-				
1202 A	a	Dz4		1202-A-a-Dz4	Grade-Outslope-Existing Ground	Kessel	-	-	-	\$	-	\$	-				
1202 E	c	Rp1		1202-E-c-Rp1	Rip-Outslope-Rough Graded Material	Kessel	-	-	-	\$	-	\$	-				
1203 A	a	Dz4		1203-A-a-Dz4	Grade-Outslope-Existing Ground	Kessel	-	-	-	\$	-	\$	-				
1203 E	c	Rp1		1203-E-c-Rp1	Rip-Outslope-Rough Graded Material	Kessel	-	-	-	\$	-	\$	-				
1200 B	b	Dz4		1200-B-b-Dz4	Dozer Assist-Cover	Rubio Peak Conglomerate	Kessel Stockpile	-	-	\$	-	\$	-				
1200 C	b	Sh1		1200-C-b-Sh1	Load-Cover	Rubio Peak Conglomerate	Kessel Stockpile	-	-	\$	-	\$	-				
1200 D	b	Tk1		1200-D-b-Tk1	Haul-Cover	Rubio Peak Conglomerate	Kessel Stockpile	-	-	\$	-	\$	-				
1200 A	d	Mg2		1200-A-d-Mg2	Grade-Kessel Stockpile-Placed Cover	Kessel Stockpile	-	-	-	\$	-	\$	-				
1200 F	e	U3		1200-F-e-U3	Grade Benches-Kessel Stockpile-Final Gr	Kessel Stockpile	-	129,093	ft	\$	0.43	\$	2.04	\$	55,876.62	\$	263,618
1200 G	e	U6		1200-G-e-U6	Construct Downdrains-Kessel Stockpile-F	Kessel Stockpile	-	11,495	ft	\$	-	\$	471.94	\$	-	\$	5,424,894
1200 Gb	e	U7		1200-Gb-e-U7	Construct Downdrain Dissipators-Kessel S	Kessel Stockpile	-	3	ea	\$	-	\$	18,862.91	\$	-	\$	56,589
1200 J	e	U2a		1200-J-e-U2a	Revegetate-Kessel Stockpile-Final Grade	Kessel Stockpile	-	-	-	\$	4.38	\$	1,697.67	\$	-	\$	-
1200 M	e	U9		1200-M-e-U9	Post-Closure O&M-Kessel Stockpile-Final	Kessel Stockpile	-	-	-	\$	1,751.36	\$	7,320.77	\$	-	\$	-
1200 P	e	Comb1		1200-P-e-Comb1	Road Maintenance-Kessel Stockpile	Kessel Stockpile	-	-	-	\$	-	\$	-	\$	-	\$	-
1300 E	a	Rp1		1300-E-a-Rp1	Rip-Rubio Peak-Existing Ground	RP Conglomerate	-	-	-	\$	-	\$	-	\$	-	\$	-
1300 J	e	U2a		1300-J-e-U2a	Revegetate-Rubio Peak-Final Grade	RP Conglomerate	-	-	-	\$	4.38	\$	1,697.67	\$	-	\$	-
1301 E	a	Rp1		1301-E-a-Rp1	Rip-Rubio Peak Stockpile-Existing Ground	RP Stockpile	-	-	-	\$	-	\$	-	\$	-	\$	-
1301 J	e	U2a		1301-J-e-U2a	Revegetate-Rubio Peak Stockpile-Final G	RP Stockpile	-	-	-	\$	4.38	\$	1,697.67	\$	-	\$	-
TOTAL												\$	55.877	\$	5,745,101		

Kessel Stockpile

Reclamation Summary Stockpiles, Haul Roads, Reservoirs, and Disturbed Areas

		Current Value	
DIRECT COSTS	Facility and Structure Removal		\$0
	Earthmoving		\$4,774,415
	Revegetation		\$2,751,160
	Other		\$5,800,978
	Subtotal, Direct Costs		\$13,326,553
INDIRECT COSTS	Subtotal, Indirect Costs	30.0%	\$3,997,966
TOTAL COST			\$17,324,519

Notes:

Indirect costs are based on 2019 agreement between FMI and agencies

Indirect costs include but are not limited to mobilization and demobilization, engineering redesign fee, contingencies, contractor profit and overhead, project management fee, and state procurement cost

Reclamation Summary

Notes and Assumptions
Used to summarize costs for Sheet 17b Facility Characteristics

ID	Description	Source Location 1	Destination Location 2	Area (ac)	Cover Material Excav, Haul, Grade (\$)	Cover Material Excav, Haul, Grade Fuel (\$)	Cover Material Excav, Haul, Grade Indirects (\$)	Pullback and Backfill (\$)	Pullback and Backfill Fuel (\$)	Pullback and Backfill Indirects (\$)	Top/ Outslope Adjustment Grading w/o Fuel (\$)	Top/ Outslope Adjustment Grading Fuel (\$)	Top/ Outslope Adjustment Grading Indirects (\$)	Scarify, Seed & Mulch, Reveg w/o Fuel (\$)	Scarify, Seed & Mulch, Reveg Fuel (\$)	Scarify, Seed & Mulch, Reveg Indirects (\$)	Channels & Benches (\$)	Channels & Benches Fuel (\$)	Channels & Benches Indirects (\$)	Other (\$)	Other Fuel (\$)	Other Indirects (\$)	Capital Cost Totals (\$)	Capital Cost/Acre (\$)
1201-A-a-Dz4	Grade-Outslope-Existing Ground	Kessel	-	124.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 99,055	\$ 15,483	\$ 34,361	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 114,538	\$ 920
1201-E-c-Rp1	Rip-Outslope-Rough Graded Material	Kessel	-	124.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 15,950	\$ 3,343	\$ 5,788	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 19,293	\$ 155
1202-A-a-Dz4	Grade-Outslope-Existing Ground	Kessel	-	396.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 473,376	\$ 73,993	\$ 164,211	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 547,369	\$ 1,382
1202-E-c-Rp1	Rip-Outslope-Rough Graded Material	Kessel	-	396.1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 50,749	\$ 10,636	\$ 18,416	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 61,385	\$ 155
1203-A-a-Dz4	Grade-Outslope-Existing Ground	Kessel	-	287.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 363,996	\$ 56,896	\$ 126,268	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 420,892	\$ 1,463
1203-E-c-Rp1	Rip-Outslope-Rough Graded Material	Kessel	-	287.6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 36,848	\$ 7,723	\$ 13,371	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 44,571	\$ 155
1200-B-b-Dz4	Dozer Assist-Cover	Rubio Peak Conglor Kessel Stockpile	-	808.2	\$ 168,863	\$ 26,395	\$ 58,577	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 195,258	\$ 242
1200-C-b-Sh1	Load-Cover	Rubio Peak Conglor Kessel Stockpile	-	808.2	\$ 729,680	\$ 315,518	\$ 313,560	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,045,198	\$ 1,293
1200-D-b-Tk1	Haul-Cover	Rubio Peak Conglor Kessel Stockpile	-	808.2	\$ 1,455,070	\$ 338,671	\$ 538,122	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,793,741	\$ 2,219
1200-A-d-Mg2	Grade-Kessel Stockpile-Placed Cover	Kessel Stockpile	-	808.2	\$ 23,233	\$ 4,729	\$ 8,389	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 27,962	\$ 35
1200-F-e-U3	Grade Benches-Kessel Stockpile-Final Grade	Kessel Stockpile	-	808.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	263,618	\$ 55,877	\$ 95,848	\$ -	\$ -	\$ -	\$ 319,495	\$ 395
1200-G-e-U6	Construct Downdrains-Kessel Stockpile-Final Grade	Kessel Stockpile	-	808.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	5,424,894	\$ -	\$ 1,627,468	\$ -	\$ -	\$ -	\$ 5,424,894	\$ 6,712
1200-Gb-e-U7	Construct Downdrain Dissipators-Kessel Stockpile	Kessel Stockpile	-	808.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	56,589	\$ -	\$ 16,977	\$ -	\$ -	\$ -	\$ 56,589	\$ 70
1200-J-e-U2a	Revegetate-Kessel Stockpile-Final Grade	Kessel Stockpile	-	808.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	1,372,039	\$ 3,540	\$ 412,674	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,375,580	\$ 1,702
1200-M-e-U9	Post-Closure O&M-Kessel Stockpile-Final Grade	Kessel Stockpile	-	808.2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1200-P-e-Com1	Road Maintenance-Kessel Stockpile	Kessel Stockpile	-	808.2	\$ 306,984	\$ 71,976	\$ 113,688	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 378,959	\$ 469
1300-E-a-Rp1	Rip-Rubio Peak-Existing Ground	RP Conglomerate	-	806.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 103,356	\$ 21,662	\$ 37,506	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 125,019	\$ 155
1300-J-e-U2a	Revegetate-Rubio Peak-Final Grade	RP Conglomerate	-	806.7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	1,369,518	\$ 3,534	\$ 411,916	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,373,052	\$ 1,702
1301-E-a-Rp1	Rip-Rubio Peak Stockpile-Existing Ground	RP Stockpile	-	1.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 190	\$ 40	\$ 69	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 230	\$ 155
1301-J-e-U2a	Revegetate-Rubio Peak Stockpile-Final Grade	RP Stockpile	-	1.5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	2,521	\$ 7	\$ 758	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,528	\$ 1,702
Total:					\$ 2,683,831	\$ 757,288	\$ 1,032,336	\$ -	\$ -	\$ -	\$ 1,143,520	\$ 189,776	\$ 399,989	\$ 2,744,079	\$ 7,081	\$ 825,348	\$ 5,745,101	\$ 55,877	\$ 1,740,293	\$ -	\$ -	\$ -	\$ 13,326,553	\$ 21,082

Kessel Ultimate Earthwork Closure
Stockpile Spreadsheet Worksheet #18
7/25/2025

Facility Characteristics
Facilities are categorized in this

Facility	1200	1300	
	Kessel Stockpile	Rubio Peak	Total
Reclaimed Acres⁶	808.19		808.19
Item	Capital Cost	Capital Cost	
Cover Material Excav, Haul, Grade ¹	\$3,441,119	\$0	\$3,441,119
Pullback or Backfill	\$0	\$0	\$0
Top/Outslope Adjustment Grading ²	\$1,208,048	\$125,249	\$1,333,296
Scarify, Seed & Mulch, Reveg ³	\$1,375,580	\$1,375,580	\$2,751,160
Channels & Benches ⁴	\$5,800,978	\$0	\$5,800,978
Demolition	-	-	\$0
Other ⁵	\$0	\$0	\$0
Capital Cost Totals	\$11,825,724	\$1,500,829	\$13,326,553
Capital Cost/Acre	\$14,632	-	\$14,632
Cover Material Excav, Haul, Grade ¹	\$1,032,336	\$0	\$1,032,336
Pullback or Backfill	\$0	\$0	\$0
Top/Outslope Adjustment Grading ²	\$362,414	\$37,575	\$399,989
Scarify, Seed & Mulch, Reveg ³	\$412,674	\$412,674	\$825,348
Channels & Benches ⁴	\$1,740,293	\$0	\$1,740,293
Demolition	-	-	\$0
Other ⁵	\$0	\$0	\$0
Indirect Cost Totals	\$3,547,717	\$450,249	\$3,997,966
Indirect Cost/Acre	\$4,390	-	\$4,390
Total Cost	\$15,373,441	\$1,951,077	\$17,324,519
Total Cost Cover	\$4,473,454	\$0	\$4,473,454
Pullback or Backfill	\$0	\$0	\$0
Total Cost Top/Outslope Adjustment	\$1,570,462	\$162,823	\$1,733,285
Total Cost Earthwork	\$6,043,916	\$162,823	\$6,206,740
Capital Cost Re-Veg	\$1,788,254	\$1,788,254	\$3,576,508
Capital Cost Other ⁵	\$0	\$0	\$0
Total Cost/Acre	\$19,022	-	\$19,022
Total Cost/Acre Cover	\$5,535	-	\$5,535
Pullback or Backfill	\$0	-	\$0
Total Cost/Acre Top/Outslope Adjustment	\$1,943	-	\$1,943
Total Cost/Acre Earthwork	\$7,478	-	\$7,478
Capital Cost/Acre Re-Veg	\$2,213	-	\$2,213
Capital Cost/Acre Other ⁵	\$0	-	\$0

1 Cover Material includes dozer assist, load, haul, grade cover, and water truck and motor grader for road maintenance and du

2 Top/Outslope Adjustment Grading includes rough grading and ripping before placing cover

3 Revegetation includes scarifying, discing, drill speeding, mulching, crimping, per diem, mobilization, seeding, and mulching

4 Channels & Benches includes channels, downdrains, benches

5 Other includes well installation/closure, well replacement, berm construction, fencing and signage, and seepage collection/int

6 Capital costs before O&M