Rico Board of Trustee's Memorandum

Date: July 31st, 2021

TO:	Town of Rico Board of Trustees
FROM:	Kari Distefano, Rico Town Manager
SUBJECT:	August 4th Board of Trustee's meeting

#### Voluntary Cleanup Agreement with ARCO.

I have included in this packet documents that address the potential voluntary cleanup agreement with ARCO. These documents include the following:

- 2020 Rico VCUP Funding Agreement Term Sheet
- The Draft VCUP Application
- The Draft Appendix D Work Plan
- Proposed Rico Land Use Code Appendix D

These documents include comments from myself, the two attorneys that have been working on these documents for the Town, Tom Bloomfield and Samantha Caravello, and ARCO. The comments from all parties can been seen in the sidebars of the documents. Members of the Board of Trustees have had a number of conversations about the funding agreement and are familiar with it.

The Draft VCUP Application is what will be submitted to the Colorado Department of Health and Environment (CDPHE) for their review and approval. Without CDPHE approval, cleanup cannot go forward.

Section 1 is a summary of work that has been performed since the 2004 VCUP application, the status of soil sampling, remediation and a summary of the proposed work.

Section 2 covers general information such as parcel ownership, property locations and sources of contamination.

Program inclusion is covered in Section 3. This section limits the VCUP to properties within the Town of Rico.

Section 4 describes the Environmental Assessment that was performed by Formation Environmental, L.L.C. Section 4 also describes existing soil conditions and geological characteristics that contribute to background lead levels which, are discussed in Section 4.5.2. In that section, there is also a list of previously conducted studies. Sampling methods that must conform with CDPHE standard are described in Section 4.5.3.

Section 5 describes the process by which the EPA and the CDPHE assess health risks that occur from ingesting lead. From that information they determined the remediation levels that are currently set at 1100ppm for residential uses and 1700ppm for non-residential uses. These level determinations are under review by the CDPHE since the EPA and CDC have updated levels of concern in blood from 10 micrograms per deciliter to 5 micrograms per deciliter.

Section 6 describes the proposed cleanup activities both on parcels and roads. I have included in this package a graphic depiction of the proposed cleanup on parcels. As detailed in the funding agreement, ARCO has agreed to provide technical and monetary support for landowners who own parcels with elevated lead levels. Section 6 also describes the record keeping that will be associated with the cleanup program.

Section 7 discusses scheduling. The hope is that agreement will be in place prior to the 2022 building season.

Specifics of the work described in the VCUP application are described in the work plan, which includes step by step documentation of work that will be conducted in this clean up effort.

As part of the VCUP, Institutional Controls will be adopted by the Town as a portion of the Town's Land Use Code. A copy of the proposed institutional controls is included in this packet as well as a graphic depiction of how they will work. Section 6 has a more detailed description of the soils management program that will ensure safe and responsible handling of contaminated soils. Section 6 also makes provisions for public outreach.

I have been involved in two conversations with representatives and consulting scientists from ARCO, the EPA and the CDPHE regarding remediation levels. They are in the process of reviewing remediation action levels, but it may be some time before the CDPHE, who will have the final say in this matter, have come to a conclusion. The Town's attorney has proposed that the VCUP application be submitted to the CDPHE without explicitly stating remediation levels. That would allow the State to review the application while remediation levels are being determined and thus expedite the process.

"Appendix D – Phase 1 VCUP Work Plan (Version 1.4) details work that will take place during cleanup activities including sampling methodologies and remediation activities on parcels and roadways. This document is relatively easy to read and provides a roadmap to the Soil Management Program described in the VCUP application.

Rico Land Use Code Appendix D is what the Town would adopt into the Rico Land Use Code should the VCUP be approved by the Board of Trustees. It reflects the Appendix D – Phase 1 VCUP Work Plan (Version 1.4) that detailed the way contaminated lots are remediated. An item that is still open for discussion is D, page 20 regarding P.U.D.s. ARCO has expressed reluctance to commit to funding remediation of large-scale developments but P.U.D.s can be designated on small parcels that are within the more developed areas of Town. The environmental officers that are mentioned in this document would be a contractor(s) funded by ARCO to oversee individual work plans and soil management.

A letter from concerned citizens was sent on July 1<sup>st</sup>, 2021, to Scott Sudweeks of the Agency for Toxic Substances and Disease Registry, Region 8 requesting investigation of soil contamination in Rico from that agency. The agency is involved, and they are in the process of investigating the claim. While it is difficult at this point to determine the outcome of this investigation, the immediate result is increased scrutiny from the EPA that will likely lead to pressure on both the Town and ARCO to engage in a cleanup agreement.

#### Consideration of a Multi-year Agreement between the Town of Rico and the Rico Center.

The Town is in the process of negotiating an agreement with the Rico Center regarding multi-year funding. This has been discussed by the Board in a prior meeting.

#### TERM SHEET FOR 2020 RICO TOWNSITE SOILS VCUP IMPLEMENTATION, FUNDING, AND SETTLEMENT AGREEMENT

#### **RECITALS**

- Restate applicable recitals from 2013 draft agreement.
- Summarize past VCUP work, new VCUP Application, and VCUP Work Plan, with Town and AR as applicants.
- Town and Atlantic Richfield (AR) desire to avoid listing of the Town on the <u>NPLNational Priorities List as a Superfund Site</u>.
- Town and AR desire to foster responsible development in Town, without compromising public health and the environment.
- Town and AR intend for AR to fund the administrative cleanup costs contemplated by this VCUP, including the costs incurred by the Town in implementing and overseeing the program, and the incremental costs incurred by property owners for remediation.
- Acknowledge that Town is adoptingwill initiate such actions as may be required to adopt LUC Appendix D (the "ICs Regulations") as an ICs program concurrently with execution of this Agreement.
- Describe objectives for this Agreement: AR has completed or will complete yard cleanups for developed properties and will assist Town with development in the River Corridor as set forth herein; Town to implement ICs program with AR support to ensure future developments within Town boundaries protect the integrity of VCUP work and meet VCUP requirements to protect human health; and resolve all claims against the Town.
- Also describe role of CDPHE in enforcing ICs if Town fails or is unable to do so, which will be addressed through a separate Inter-governmental Agreement (IGA).
- Agreement not effective until Town adopts ICs Regulations and executes the IGA. AR will not begin any VCUP related activities until the ICs Regulations, IGA, and this Agreement are finalized, executed, and in full force, and CDPHE has approved the VCUP Application and Work Plan.

#### **ARTICLE 1: DEFINITIONS AND EXHIBITS**

Examples of terms to be defined in the Agreement include:

- Atlantic Richfield (AR)
- Consumer Price Index
- Development
- Developer
- Developed Lot
- Environmental Officer
- Incremental Costs
- Institutional Controls
- Inter-governmental Agreement
- Open Space

**Commented [KKR1]:** Town seeks funding for a master plan as part of this funding agreement, some crusher fines for bicycle/pedestrian trail, and remediation of any trail work. Would be open to a not-to-exceed amount for this component

Commented [KKR2]: AR: What is scope of this restriction?

Error! Unknown document property name.

#### Property Owner

- Public Facilities
- Road Maintenance
- Soil Lead Repository
- Soils Management Program (SMP)
- SMP Contractor
- Town
- Town Representatives
- Town Roads
- VCUP Application
- VCUP NAD and NFAD
- VCUP Work Plan

#### Exhibits will include:

- Map of Town Boundaries
- Unpaved Roads and Alleys Eligible for Remediation in Phase 1
- Schematic Drawing of Roadways Removal and Replacement Plan
- Reimbursement Cost Schedule

#### ARTICLE 2: GENERAL REPRESENTATIONS AND COVENANTS

- Each party has authority to enter this Agreement.
- Entry and execution of this Agreement does not violate or breach any other commitments or obligations of the parties.
- No self-interest.
- No pending suits or proceedings that could affect this Agreement.

#### **ARTICLE 3: ADOPTION AND IMPLEMENTATION OF ICS REGULATIONS**

- Town will take initiate such actions as may be required to adopt the ICs Regulations within 14 days of execution of this Agreement by the Town.
- During the term of this Agreement, Town shall implement, comply with, and enforce the
  provisions of the ICs Regulations.
- During the term of this agreement, AR shall provide funding to support the Town's implementation of, compliance with, and enforcement of the ICs Regulations, as set forth in this Agreement, as well as provide funding to compensate developers for incremental costs associated with compliance with the ICs Regulations, as set forth herein.
- Town may propose amendments to the ICs Regulations, as may be necessary from time to time, that are consistent with the VCUP Application, VCUP Work Plan, this Agreement, and the IGA. Town shall provide AR and CDPHE with a copy of any such proposed amendments at least 4530 days before the notice of public hearing is provided to the public and shall provide AR and CDPHE with an opportunity to review and comment on all such proposed amendments, with any comments submitted to Town within 30 days of receipt of proposed amendment. Town shall give due consideration to any comments that AR or CDPHE provides before adopting any amendments to the ICs

**Commented [KKR3]:** Town can only commit to initiating action to adopt ICs Regulations, and can't commit to adopting.

**Commented [SC4]:** See comments below about Town Board members' varying opinions on how payments should be made. We would like to discuss the approach.

To Joe and Nicole: The approach previously discussed was to have fixed amounts based on property size or other some metric based on the activity to minimize disputes and the difficulty of implementing the program. Regulations. Amending or terminating the ICs Regulations without <u>ARdue consideration</u> for <u>AR</u> comments and CDPHE consent shall be an event of default under this Agreement.

 If the IC Ordinance becomes effective, the Town will implement and enforce the IC Ordinance, subject to the other provisions of the Funding Agreement, further subject to the Town's reasonable enforcement discretion, available resources, and its discretionary policy powers as allowed under the Rico Land Use Code.

#### ARTICLE 4: PHASE 1 – VCUP SOIL SAMPLING AND REMEDIATION BY ATLANTIC RICHFIELD

(Phase 1 to be defined as the period commencing with Effective Date of Agreement and continuing through (i) completion of sampling of all in-Town lots where access is granted,
(ii) remediation of all developed lots where access is granted and soil exceeds the action level, and (iii) remediation of Town road and alley segments where lead action level is exceeded)

#### 4.1 Phase 1 Soil Sampling and Soil Remediation

- AR will complete soil sampling and analysis (for total lead), at AR's expense, at all previously unsampled lots in Town where access is permitted by owner under a signed access agreement; sampling and analysis to be performed as described in the CDPHE-approved VCUP Work Plan.
- AR will conduct soil sampling and analysis (for total lead), at AR's expense, at
  previously remediated lots in Town that may since have been subject to soil disturbance
  by excavation or construction activities, as well as at five additional properties with
  existing clean soil covers that do not appear disturbed, for quality control purposes and to
  confirm the assumption that lead concentrations in clean soil covers do not exceed 100
  ppm. AR will seek access from the property owner under a signed access agreement.
  AR will determine which properties require re-sampling based on a review of the
  available excavation or construction records documenting the extent of soil disturbance
  and a review of current versus historic aerial photographs. The review will be performed
  and funded by AR with assistance from the Town of Rico. Sampling and analysis to be
  performed as described in the CDPHE-approved VCUP Work Plan.
- AR will complete remediation, at AR's cost, of all developed lots in Town where (i) lead concentrations in soils exceed 1,100 ppm (where residential use is not prohibited by zoning) or 1,700 ppm (for lots zoned as Public Facilities), and (ii) access is permitted by owner under a separate signed access agreement for remediation.
- Remediation, including soil management and disposal, will be performed as described in the CDPHE-approved VCUP Work Plan.
- NoPhase 1 does not include remediation in Phase 1 of undeveloped lots, including Townowned properties zoned as open space. [Undeveloped lots, including Town-owned Open Space, will be remediated at the time of development by the Developer in accordance with the ICs Regulations as part of Phase 2 and Phase 3.]
- AR's Phase 1 obligations for soil sampling and yard remediation will be limited to properties located within the Town boundary as it exists on the effective date of the Agreement (map to be included as an exhibit). <u>AR's Phase 1 obligations will also include properties covered by minor adjustments to Town boundaries that do not materially change the obligations of AR under this agreement.</u>

**Commented [SC5]:** Some Town Board members previously expressed a desire to have the entire town sampled (or re-sampled). (April) but in June members indicated agreement with this approad of resampling 5 previously remediated lots. This document is drafted to reflect the June board member consensus position.

**Commented [TAB6]:** ARC says this should be cleanup levels – if below cleanup levels, no action should be required even if above 100.

**Commented [SC7]:** Issues regarding the cleanup number still need to be resolved, with some board members indicating 400 ppm should be the cleanup number.

Regardless, sounds like there is consensus that these numbers will be reevaluated over the next six months and only if both sides agree will VCUP proceed. Application would not contain cleanup numbers but that would be approved as part of the VCUP implementation. That would also affect the timing of when the ordinance would be adopted since the ordinance would need to contain cleanup numbers.

**Commented [SC8]:** Town would like to have AR remediate the Town Park and right-of-way serving the park.

• Town will use <u>bestreasonable</u> efforts to assist AR in obtaining access agreements if property owners are not responsive or cooperative; <u>Town"reasonable</u> efforts-<u>will" by the Town</u> include communications with property owners to encourage participation and public outreach and education in concert with AR and CDPHE.

#### 4.2 Phase 1 Remediation of Roads and Alleys

- AR will complete, at AR's expense, soil sampling and lead analysis for certain road and alley surfaces in Town as described in the CDPHE-approved VCUP Work Plan.
- Roads and alleys eligible for sampling and remediation will be identified on a map attached as an exhibit. The eligible unpaved roads and alleys within the Town are those that experience regular vehicle traffic (*i.e.*, not walking paths or bike trails). including any public right-of-way that is used by landowners to access their property.
- AR will identify the road and alley segments targeted for remediation where lead concentrations exceed 1,700 ppm, based on the results of the soil sampling performed by AR before 2015 and during Phase 1.
- AR will assist the Town in preparing a scope of work, bid package, and request-for proposals (if required by Town procurement rules) for designing and conducting the remediation of road segments where sampling results confirm lead concentrations in the top 2 inches of road-surface material or right-of-way soil exceed 1,700 ppm. AR will also assist and provide input to the Town on review of bids and selection of in developing a Work Plan for the road remediation work. The Town is responsible for the selection of the contractor. Final contractor selection, including bid acceptance, will be subject to AR approval, not to be unreasonably withheld. for the road remediation work.
- <u>Town'sUpon acceptance of the bid, AR shall pay to the Town the amount of the bid, plus an additional 10% of the bid amount to cover contingencies. These funds shall be maintained by Town in a dedicated bank account for use by the Town only to pay the invoiced fees and expenses of the Town Roads contractor for services rendered. The account may be the same account used to maintain funds for the Soils Management Program Contractor (see Section 6.3).</u>
- In the event of change orders in excess of 10% from circumstances that might arise from unexpected conditions, AR shall pay to the Town the cost of the changes. All change orders must be approved by Town and discussed with AR prior to approval.
- Town Roads contractor will submit invoices to Town and Town will review to verify the work completed, consistency with budget, and adherence to scope of work, design, and specifications. Once Town approves the invoices, Town will pay invoices within 45 days of receipt.
- Town shall maintain and/or require its banking institution to maintain reasonably detailed accounting records for all deposits and withdrawals from the account. The Town shall provide such records to AR upon request with 5 business days' notice during Town Hall business hours (Monday-Thursday, 9am-4pm), or no more frequently than quarterly.
- If at any time the balance in the account dedicated to funding road remediation becomes
  depleted or at risk of being depleted, the Town may submit a request to AR to replenish
  the account in an amount that will cover the projected costs for completion of the road
  remediation work. Subject to its right to review the Town's records of payments made
  from the account, AR shall submit the replenishment payment within 30 days of
  receiving the request.

Commented [SC9]: Some Town Board members have previously expressed a desire to have roads re-sampled (rather than relying on prior sampling efforts).

Board members have also suggested that the right-of-way beyond the edge of the traveled way be tested and that AR work with the Town to determine which lots need to be re-sampled.

We would like to discuss what this document should reflect before sending back to ARC.

**Commented [SC10]:** Some Town Board members request a lower road remediation action level (so that more road segments are remediated) since roads are used by town residents for playing, etc.

See note above about cleanup levels generally.

Commented [TAB11]: See note above about cleanup levels generally.

**Commented [SC12]:** Three Board members would like this to

- If there are funds dedicated to road remediation remaining in the account following completion of the Phase 1 road remediation work, the Town shall return those funds to AR within 30 days of the date of completion of the Phase 1 road remediation work. Alternatively, at AR's selection, the funds may be kept in the account and made available for the Soils Management Program contractor, in which case the following year's deposit into the fund for the Soils Management Program contractor shall be adjusted downward by the amount of road remediation funds remaining in the account.
- AR shall separately provide the Town with a stipend equal to 15% of the bid amount, to be used by the Town to cover expenses incurred by the Town in coordinating and administering the roads remediation program.
- <u>Town Roads</u> contractor will perform road remediation design and construction, which will include development of engineering and construction specifications, traffic management, excavation, transporting excavated materials to the Soil Lead Repository, importing clean replacement material, surface grading, and stormwater management. Contractor must ensure and certify that replacement material used on remediated roads meets the requirements for placement of Non-Native Fill under the ICs Regulations.
- As specified in the VCUP Application, remediation will <u>be limited toinvolve</u> excavation
  of the upper 12 inches of surface material from the roadbed (including traveled way and
  shoulder) and adjacent unvegetated Town-owned right of way where lead concentrations
  exceed 1,700 ppm (a schematic drawing defining the extent of the excavation will be
  included as an exhibit). <u>The unvegetated right-of-way area includes the road shoulders</u>,
  drainage swales, ditches, berms, parking area, and other bare ground next to the traveled
  roadway.
- Road remediation will only-include work necessary to remove and replace the surface materials. Road remediation tasks reimbursable by AR will not include changes or improvements to address existing and ensure that the current street grade, drainage, and any other characteristics of the roads to be remediated are maintained. Improvement of grade, lane width, curvature, sight distance, or similar roadway construction/engineering issues that are or may be locally present on Town of Rico streets- will not be included in the scope of the road remediation work, but all tasks necessary to ensure that these characteristics are maintained as they existed at the start of the work will be reimbursable. Additionally, road remediation will include the cost of engineering, materials, and installation, not to exceed 20% of the road remediation work, for drainage improvements in portions of remediated road areas known to have runoff that would wash away road surface material, to avoid excessive maintenance of the remediated road portions over time.
- Excavated road surface material and right-of-way soil will be accepted by AR at the Soil Lead Repository. AR may elect to place the excavated material in the Soil Lead Repository or otherwise use the material as borrow/fill in accordance with State and Federal regulations and requirements, as applicable.
- Contractor will submit invoices to Town. Town will review invoices to verify the work completed, consistency with budget, and adherence to scope of work, design, and specifications. Once Town approves the invoices, Town will submit them to AR for payment. AR will pay invoices within 45 days of receipt, subject to AR's right to dispute any invoiced costs as having been incurred inconsistent with the Agreement (c.g., for work other than road surface replacement).

Following completion of the Phase 1 road remediation work, AR will not be responsible
for the funding or performance of any future road-related work or routine maintenance
expenses <u>pursuant to the Agreement</u>, including surface regrading, replacement or
maintenance of road surface material or road-base, signage, guardrails, stormwater
management, dust control, etc. <u>AR will be responsible for assisting Town with the
development of specifications and procedures for future maintenance and dust control as
necessary to satisfy AR and Town's obligations under the VCUP Application, including
but not limited to makingpurchasing a water truck availablefor to-Town and allowing
Town use of AR's water filling station near the entrance of the mine for dust control.
Town will ensure any road surfacing material placed on remediated road segments after
the initial remediation is completed meets the requirements for placement of Non-Native
Fill under the ICs Regulations.
</u>

#### 4.3 Permits

Phase 1 sampling and remediation work by AR will not be-be done on the Town's behalf, and therefore will be subject to the ICs Regulations, and no-Town building permits permitting requirements only to the extent the same work done by the Town itself would be subject to the IC Regulations and Town permitting requirements, except that AR must obtain a Residential or other local permits will be required Non-Residential No Action Determination and/or a Cleanup Completion Certification for Phase 1 properties sampled and/or remediated to ensure the maintenance of accurate records of soil sampling and remediation or sampling performed by ARwork.

#### 4.4 Phase 1 VCUP NADs and NFADs

- AR and Town will jointly request Town-wide general <u>VCUP</u> NFAD (or an equivalent acknowledgement) from CDPHE upon adoption of the ICs Regulations.
- AR, as authorized representative of property owner (per access agreement), will request parcel-specific <u>NAD'sVCUP NADs</u> for all lots where Phase 1 or prior sampling shows lead concentrations are below action levels, and Town will cooperate and assist in these requests, with funding from AR.
- AR, as authorized representative of property owner (per access agreement), will request parcel-specific <u>NFAD'sVCUP NFADs</u> for all lots remediated by AR in Phase 1 or during prior VCUP efforts, and Town will cooperate and assist in these requests, with funding from AR.
- Town and AR will jointly seek <u>a VCUP</u>NFAD for Town roads upon completion of road remediation, with funding from AR.

#### 4.5 Phase 1 Establishment of GIS System

- Results of sampling and remediation work to be tracked via GIS system created and maintained by AR during Phase 1 in accordance with requirements in the VCUP Work Plan, with <u>AR to provide and pay for electronic access</u>, <u>license</u>, <u>providedand training</u> to Town.
- AR will prepare and provide other reports and records, as specified by the VCUP Work Plan.

Commented [SC13]: Need to confirm AR has a water source available – is this correct? Commented [t14R13]: I don't think so. Copper Environmental uses Town water.

**Commented [KKR15]:** We are doubtful CDPHE will issue a town-wide NFAD based on the adoption of the regulations before any work is done.

#### 4.6 Phase 1 Schedule/Timing

• AR will use best efforts to complete Phase 1 sampling by the end of 2022 and Phase 1 soil remediation by the end of 2023 (assuming Agreement and ICs Regulations are effective by <u>September[DATE]</u> 1, <u>20202021</u> and Town property owners are cooperative in Phase 1 program implementation).

#### ARTICLE 5: PHASE 2 – IC's ADOPTION AND AR ADMINISTRATION OF RICO SOILS MANAGEMENT PROGRAM

(Phase 2 to be defined as the period commencing with adoption of the ICs Regulations and continuing for three years following completion of Phase 1 <u>or the time it takes to complete</u> <u>remediation of fifteen previously undeveloped properties</u>, whichever is later; AR and Town will confer at the end of the three-year <u>or fifteen-undeveloped-property</u> period to confirm Town is prepared to transition to Phase 3 [see Article 6])

#### 5.1 Phase 2 Soils Management Program

("Soils Management Program" to be defined as program providing for the testing, management, and disposal of action level soils required in connection with development projects permitted and performed in accordance with the ICs Regulations. Soil Lead Repository and clean soils supply oversight is addressed separately below in Article 7.)

- During Phase 2, AR will fund, manage, and implement the Soils Management Program (SMP) using the services of a qualified contractor retained and paid by AR. AR will consult with Town in the selection of the SMP contractor, but AR will have sole discretion in selecting the contractor. If the SMP contractor is not responsive to the development schedules of property owners and developers, such that the effective functioning of the SMP is impeded, or the SMP is otherwise not performing in a manner that is reasonably satisfactory to the Town, AR shall promptly replace the SMP contractor at the Town's request.
- As specified by the VCUP Application, Phase 2 SMP services for development projects subject to the ICs Regulations will include:
  - <u>Providing technical support to Developers needing assistance to comply with</u> requirements of the ICs Regulations, including assistance with preparation of development permit applications and ISWPs.
  - Confirmation testing of Mine Waste (as defined in the ICs Regulations).
  - Testing of Excavated Soils (as defined in the ICs Regulations) generated in connection with development projects and that cannot be returned to the excavation to verify suitability for disposal at the Soil Lead Repository.
  - Supervising the excavation and sorting of soils with lead concentrations above
     1,100 mg/kg to ensure soils are properly segregated during the development
     activity and that soils not suitable for disposal at the Soil Lead Repository are not
     transported to the Repository.
  - Providing technical support to Developers needing assistance to comply with requirements of the ICs Regulations, including assistance with preparation of development permit applications and ISWPs.

Commented [TAB16]: See note above about clean up levels

#### o Providing clean fill soil.

- Providing materials needed for compliance with ICs Regulations to Developers, which may include geotextile fabric, plastic sheeting, and containers for hauling soil to the Soil Lead Repository. The SMP may refuse to provide these materials to owners of properties who failedfail to give access toauthorize AR to perform soil sampling in Phase 1 (including authorization to act as owner's representative for purposes of obtaining a <u>VCUP</u>NAD or NFAD)-, until the owner representative provides such authorization.
- Inspections of development sites required under the ICs Regulations, if requested by the Environmental Officer.
- Ongoing management of GIS system and other record keeping requirements.
- The SMP will not be responsible for performing soil removal, clean soil placement, grading, landscaping, or other on-site activities required for proper performance of development projects in accordance with the ICs Regulations, which tasks shall be the responsibility of the Developer. <u>AR will be responsible for paying the incremental costs incurred by Developers to complete these tasks in accordance with the ICs Regulations.</u>
- <u>AR will retain responsibility for operation and maintenance of the Soil Lead Repository</u> for all time (and a replacement repository, if required) and the clean fill stockpile throughout Phase 2 and Phase 3 (*see* Article 7). The SMP will be responsible for supervising the excavation and sorting of soils to ensure that soils with lead concentrations above and below 1,100 mg/kg are properly segregated from each other.</u> The SMP will be responsible for determining and verifying the suitability of Excavated Soils for disposal at the Soil Lead Repository. However, the SMP will not be responsible for transporting Excavated Soils from the development project site to the Soil Lead Repository (responsibility of the Developer) or managing soils at the Soil Lead Repository (responsibility of AR) (*see* Article 8). AR will be responsible for paying the incremental costs of Developers who must transport Excavated Soils to the Soil Lead Repository. If travel mileage or time from the Town to a future replacement repository location exceeds travel mileage or time to the current Soil Lead Repository location by more than [1]%, AR will pay increased incremental costs for Developers transporting materials to the replacement repository.

#### 5.2 Phase 2 VCUP NFADs and NADs

- For development projects at previously undeveloped properties where testing has confirmed soil lead concentrations exceed the action level (*i.e.*, properties not remediated in Phase 1), Town, with funding from AR, will assist AR in working with the Developer to obtain a <u>VCUP</u> NFAD for the property upon completion of the development project.
- For development projects at previously undeveloped properties where Phase 1 testing did not occur and testing by the Developer confirms soil lead concentrations are below the action level, Town, with funding from AR, will assist AR in working with the Developer to obtain a <u>VCUP</u> NAD.
- For open space parcels remediated in Phase 2, Town will obtain <u>VCUP</u>NFAD for the remediated area<u>with funding provided by AR</u>.

#### 5.3 Phase 2 Maintenance of Roads and Alleys

**Commented [SC17]:** However, Town Board preference is for expansion of current Repository rather than construction of new repository. • Town will be responsible during Phase 2 for ongoing maintenance of clean cover materials on remediated roadways, adjacent Town-owned rights-of-way, and alleys, including proper management of utility excavations and road construction work in accordance with the ICs Regulations within the roadways and road construction work in accordance with the ICs Regulations. AR will fund incremental costs associated with utility excavations and road construction work. On an annual basis (or less frequently if used less frequently than annually), AR shall fund testing of roadbase materials to be used on portions of the remediated roadways, adjacent Town-owned rights-of-way, and alleys for lead. If such materials exceed 100 ppm lead and the Town is required to obtain such roadbase from a location that is more expensive than its standard source, AR shall pay the incremental costs of obtaining such roadbase for maintaining remediated roadways.

#### 5.4 Phase 2 Maintenance of GIS System

 During Phase 2, AR will continue to maintain the searchable GIS database system created by AR in Phase 1, including sampling and analysis records, property remediation records, status of completed VCUP work, and any <u>VCUP</u> NADs and NFADs for a given property. <u>AR will continue to provide and pay for electronic access, license, and training to Town.</u>

#### 5.5 Phase 2 Funding for Town Manager Administration of Soils Management Program

• During Phase 2, AR shall provide Town with an annual stipend, to be paid by January 31 of each year, equal to one-fourth (25%) of the Town Manager's annual salary, with such funds to be used by the Town to cover expenses incurred by the Town in coordinating and managing the SMP and performing community outreach and education. <u>This stipend is separate from AR's funding of the SMP and SMP contractor.</u>

#### 5.6 Phase 2 Community Outreach and Education

- During Phase 2, the Town will implement a community outreach and information program to inform and educate property owners about the purposes of and requirements under the ICs regulations and the soil sampling and remediation program.
- Outreach program components may include an informational website, fact sheets, mailings, and public meetings, as described in the VCUP Application (Section 6.1.2).
- AR will pay for the costs of this outreach and education program, including any consultant, design, and printing or mailing costs.

#### 5.7 Phase 2 Administrative Reporting

- AR's SMP contractor will provide an annual report to the Town Manager summarizing the tasks performed and expenses incurred by the SMP.
- Town or Town Manager will provide an annual report to AR of its Phase 2 tasks performed, labor expended, and costs incurred.

**Commented [KKR18]:** To address Town concern that its standard road base will meet this standard, we have added terms that AR will pay for testing and if town needs to get road fill from somewhere else, AR will pay the incremental costs.

#### ARTICLE 6: PHASE 3 – TOWN ADMINISTRATION OF SOILS MANAGEMENT PROGRAM

(Phase 3 to be defined as period commencing with termination of Phase 2 and continuing for a period of 15 years, unless earlier terminated or extended by mutual agreement of the Parties)until all lots in Town are remediated pursuant to the VCUP (other than lots receiving a VCUP NAD))

#### 6.1 Phase 3 Soils Management Program

- During Phase 3, Town will manage and implement the SMP using the services of a SMP contractor retained by Town with funding provided by AR (*see* details below about contractor retention and funding).
- Phase 3 SMP services will generally be the same as for Phase 2, with the same limitations as stated above under Phase 2.
- AR will retain responsibility for operation and maintenance of the Rico Soil Lead Repository and the clean fill stockpile throughout Phase 3 and at all times thereafter (see Article 7)-), and access to same.

#### 6.2 Selection and Retention of Phase 3 SMP Contractor

- At least 6 months before scheduled completion of Phase 2, Town will retain a SMP contractor qualified to implement the SMP following the completion of Phase 2. The initial SMP contract will have a term of 5 years. AR shall not be a party to or have any obligations under the agreement between the Town and its SMP contractor.
- AR will work with the Town to develop a set of qualifications and a retention agreement for the SMP contractor. <u>The Town is responsible for selection of the SMP contractor.</u>
- Town's SMP contractor may, but need not, be the same contractor used by AR to manage the SMP-<u>during Phase 2.</u> Town and AR will waive any conflicts of interest if the same SMP contractor is used.
- Town shall renew the SMP contractor agreement or retain the services of a new SMP contractor for each subsequent 5-year period during Phase 3, or so shorter terms if Town replaces SMP contractor. Town shall have right to terminate and replace SMP contractor if the SMP contractor is not responsive to the development schedules of property owners and developers, such that the effective functioning of the SMP is impeded, or the SMP is otherwise not performing in a manner that is reasonably satisfactory to the Town.
- Selection and replacement of Town's SMP contractor shall be subject to approval by AR, which approval shall not be unreasonably withheld.

#### 6.3 Budget and Funding for Town's SMP Contractor

- Town shall require, pursuant to the SMP contractor agreement, that the Town's SMP contractor provide an annual budget each year for the costs and expenses associated with the SMP services to be performed.
- The SMP contractor's budget shall be subject to approval by AR, which approval shall not be unreasonably withheld. AR will provide information to the Town on expenses incurred by AR's SMP contractor during Phase 2 to assist in developing and reviewing the SMP contractor's Phase 3 budgets. AR may disapprove an annual budget if it projects expenses that materially exceed actual expenses incurred during the prior year

without a good-cause basis (*e.g.*, a projected need to purchase new capital equipment or a significant increase in planned development activity).

- By January 31 of each year, AR shall pay to the Town the annual SMP contractor's budget estimate for that calendar year, which funds shall be maintained by Town in a dedicated bank account for use by the Town only to pay the invoiced fees and expenses of the SMP contractor for the SMP services rendered.
- Town shall maintain and/or require its banking institution to maintain reasonably detailed accounting records or<u>for</u> all deposits and withdrawals from the account, including the name and address of any payment recipient and the amount paid to the recipient. The Town shall provide such records to AR upon request <u>with 5 business days' notice during Town Hall business hours (Monday-Thursday, 9am-4pm), or no lessmore frequently than quarterly.</u>
- If any funds are left over from the prior year's payment, the amount of the annual payment for the next year will be adjusted downward by that amount.
- Either AR or the Town may propose adjustments to the annual amount paid by AR to address actual or anticipated material changes (increases or decreases) to the scope or costs of the SMP services. Such proposals may be made either prior to the commencement or during the course of the calendar year for which the payment is due and shall be accompanied by a reasonably detailed explanation of the reasons for the proposed adjustment. Proposed adjustments shall not be effective unless approved in writing by the other Party, which approval shall not be unreasonably withheld.
- If an agreement is reached during the course of a year to increase the total amount of the funding for SMP services for that year, AR shall pay to the Town the amount of the agreed upon increase within sixty (60) days of the Parties' agreement. If agreement cannot be reached with respect to any proposed adjustment, the Parties shall proceed with dispute resolution (*see* Article 13). <u>Pending dispute resolution and the deposit of SMP funding with the Town, the Town has no responsibility to administer the SMP. Requests for reimbursement submitted by property owners or developers will be reserved until AR deposits SMP funding with the Town.
  </u>

#### 6.4 Phase 3 VCUP NFADs

- As with Phase 2, for development projects completed in Phase 3 at previously undeveloped properties where testing has confirmed soil lead concentrations exceed the action level (*i.e.*, properties not remediated in Phase 1), Town, with funding from AR, will assist AR in working with the Developer to obtain a <u>VCUP</u> NFAD for the property upon completion of the development project.
- For development projects at previously undeveloped properties where Phase 1 testing did
  not occur and testing by the Developer confirms soil lead concentrations are below the
  action level, Town, with funding from AR, will assist AR in working with the Developer
  to obtain a <u>VCUP</u> NAD.
- For open space parcels remediated in Phase 3, Town will obtain an<u>a VCUP</u> NFAD for the remediated area with funding provided by AR.

#### 6.5 Phase 3 Maintenance of Roads and Alleys

• Town will continue during Phase 3 to be responsible for ongoing maintenance of clean cover materials on remediated roadways, adjacent Town-owned rights-of-way, and

alleys, including proper management of utility excavations and road construction work in accordance with the ICs Regulations within the roadways and road construction work in accordance with the ICs Regulations. AR will fund incremental costs associated with utility excavations and road construction work. On an annual basis (or less frequently if used less frequently than annually), AR shall fund testing of roadbase materials to be used on portions of the remediated roadways, adjacent Town-owned rights-of-way, and alleys for lead. If such materials exceed 100 ppm lead and the Town is required to obtain such roadbase from a location that is more expensive than its standard source, AR shall pay the incremental costs of obtaining such roadbase for maintaining remediated roadways.

#### 6.6 Phase 3 Maintenance of GIS System

During Phase 3, Town Manager or Town's Environmental Officer will assume responsibility for and continue to maintain the searchable GIS database system created by AR in Phase 1, including sampling and analysis records, property remediation records, status of completed VCUP work, and any <u>VCUP</u> NADs and NFADs for a given property. <u>AR will continue to fund the maintenance of the GIS database system and any GIS training need for the Town Manager or Town's Environmental Officer during Phase 3.</u> <u>AR will also pay for electronic access and the-a GIS license for Town</u>. AR representatives will be provided full access to the GIS database during Phase 3.

#### 6.7 Phase 3 Funding for Town ManagerAdministration of Soils Management Program

• During Phase 3, AR shall continue to provide Town with an annual stipend, to be paid by January 31 of each year, equal to one-fourth (25%) of the Town Manager's annual salary, with such funds to be used by the Town to cover expenses incurred by the Town in coordinating and managing the SMP and performing community outreach and education.

#### 6.8 Phase 3 Community Outreach and Education

• During Phase 3, the Town will continue to implement the community outreach program implemented in Phase 2.

#### 6.9 Phase 3 Administrative Reporting

- Town shall require its SMP contractor to provide an annual report to the Town Manager and AR summarizing the tasks performed and expenses incurred by the SMP contractor.
- Town or Town Manager will provide an annual report to AR of its Phase 3 tasks performed, labor expended, and costs incurred.

#### ARTICLE 7 REPOSITORY & CLEAN SOIL SUPPLY

#### 7.1 Soil Lead Repository.

• In Phases 1-3<u>, and at all times thereafter</u>, AR shall maintain and operate the existing Soil Lead Repository to accept action-level soils and mine waste that are (i) removed from remediated properties and roads and (ii) managed and delivered to the Soil Lead Repository, both in accordance with the VCUP Work Plan (Phase 1) and ICs Regulations (Phases 2 and 3). If, at some point, capacity in the Soil Lead Repository is no longer available, AR shall have <u>full responsibility for and reasonable</u> discretion in determining how to continue to manage ongoing deliveries of such action-level soils and mine waste in accordance with applicable state and federal law, including expansion of the Soil Lead Repository, construction of a new repository at a distance and location reasonably acceptable to the Town, beneficial use of the material, and/or off-site transport and disposal. If travel mileage or time from the Town to the new repository location exceeds travel mileage or time to the current Soil Lead Repository location by more than [\_\_]%, AR will pay increased incremental costs for Developers transporting materials to the Soil Lead Repositorynew repository.

 AR may rejectIf a Developer transports materials to the Soil Lead Repository that the SMP contractor has designated as unsuitable for disposal, AR may reject those materials at the Soil Lead Repository if they have not been generated or managed in accordance with the ICs Regulations and/or if they are inconsistent with the repository's Certificate of Designation, including (i) materials containing boulders, debris, and other non-soil materials, or (ii) soils in excess of 5 cubic yards with lead concentrations below 1,100 ppm. Soils approved for disposal by the SMP shall presumed to be appropriate for disposal at the repository.

#### 7.2 Clean Soil Supply

- Within ninety (90) days after the Effective Date, AR shall deliver a quantity of one hundred (100) cubic yards of clean soil to a secure location on AR property located near the Soil Lead Repository, which will be made available to Developers for use as Soils Cover (as defined in the ICs Regulations) in connection with Phase 2 and Phase 3 development projects performed in accordance with the ICs Regulations.
- The stockpiled clean soil shall meet the requirements for cover material specified in the VCUP Work Plan (Section 3.5.1.2).
- AR shall replenish the stockpile on a periodic basis as necessary to ensure an adequate supply is available for use by Developers, including where Developers or the Town inform AR of the need for larger volumes in the event of an anticipated large remedial project.
- AR shall not be responsible for delivery of clean soil to development sites.
- AR shall not use or permit the use of the stockpiled soil for any purpose other than the replacement of, in an equivalent amount, contaminated material removed by Developers from their respective properties and disposed of at the Repository in accordance with the ICs Regulations.
- The clean soil stockpile shall not be available for use by the Town for road maintenance or replacement of road and alley surface materials. <u>The clean soil stockpile shall be</u> otherwise available for use by the Town for remediation of and Development Activities consistent with the ICs Regulations on Public Facilities, Open Space, or other Town-owned properties.

#### ARTICLE 8 FUNDING OF INCREMENTAL DEVELOPMENT COSTS AND TOWN LEGAL FEES

#### 8.1 AR Payments for Incremental Costs

• Within 30 days after the Effective Date, AR will pay \$5075,000 (amount to be pro-rated depending on timing of the Agreement) to the Town for use in issuing payments to

**Commented [SC19]:** However, Town Board preference is for expansion of current Repository rather than construction of new repository. Developers as an offset for incremental development costs incurred to comply with the requirements of the ICs Regulations, using the payment process described below. <u>These</u> funds may also be used as an offset for incremental development costs incurred by the Town to comply with the requirements of the ICs Regulations, when development activities occur on Public Facilities, Open Space, or other Town-owned properties. If planned Development Activities are anticipated to have greater incremental costs (e.g., for the installation of a central sewer system), the Town will provide an estimate of such costs to AR and AR will deposit such funds into the Town account used for incremental cost payments.

- Payments will be made by the Town to Developers (using the funds provided by AR) in accordance with a prescribed costs schedule, which will be an exhibit to the Agreement. The schedule will establish uniform payment amounts based on tiered quantities of the excess soil removed in connection with a given development project. If the payment amounts are developed based on the assumption that OSHA does not apply to the removal and transport of excavated soil by Developers, the schedule will state that assumption, and the payment amounts will be increased to include the cost of OSHA compliance if it is identified for disposal at the Soil Lead Repositorylater determined that OSHA does apply. The payment amounts will be adjusted annually for inflation using the CPI. The quantity of soil removalremoved and the payment amount will be determined based on the area(s) and depthsdepth(s) of the planned excavation(s) specified in a Developer's development permit application submitted in accordance with Section D.4.E of the ICs Regulations.
- Payments will be made by the Town to the Town to offset incremental development costs incurred by the Town to comply with the requirements of the ICs Requirements, when development activities occur on Public Facilities, Open Space, or other Town-owned properties, including but not limited to incremental costs associated with central sewer systems that the Town may install in the future.
- Town shall maintain these funds in a dedicated bank account and not use them for any other purpose, except that the account may be the same account used for the road remediation and SMP contractor funding, and the funds may be comingled. Town shall maintain and/or require its banking institution to maintain reasonably detailed accounting records for all deposits and withdrawals from the account, including the name and address of any incremental costs payment recipient, the amount of soil removed in connection with the recipient's development project, and the amount paid to the recipient. The Town shall provide such records to AR upon request with 5 business days' notice during Town Hall business hours (Monday-Thursday, 9am-4pm), or no lessmore frequently than quarterly.
- On or before January 31 of each subsequent year during the term of the Agreement, AR shall pay an additional amount to the Town sufficient to replenish the balance in the account to \$50,000.-75,000. Every five years, the base amount of the balance in the account, initially set at \$75,000, shall be adjusted for inflation using the CPI, except that in no event shall the base amount be less than \$75,000.
- If at any time during a calendar year the balance in the Town's incremental costs account falls below \$1015,000, the Town may submit a request to AR to replenish the amount in the account to \$5075,000 at that time. Subject to its right to review and audit the Town's

Commented [SC20]: Can we discuss preferred approach per the

Town Board members have expressed varying opinions about how this should be done; whether a lump sum should be provided or property owners (or Town) should submit invoices. records of payments made from the account, AR shall submit the replenishment payment within 30 days of receiving the request.

#### 8.2 AR Payments for Town Legal Fees.

 In addition to other amounts, AR will reimburse the Town's reasonable costs, expenses, and attorneys' fees related to (i) the Town's adoption, enforcement, and implementation of the ICs Regulations and this Agreement; (ii) legal or administrative actions filed or threatened against the Town or Town Representatives arising from the Town's adoption, implementation, and enforcement of the ICs regulations and this Agreement; and (iii) disputes arising under this Agreement.

#### **8.3 Option for Lump Sum Payment.**

• If at any time the Town and AR are able to reach agreement on a lump sum payment to cover some or all of AR's funding obligations under this Agreement, then AR shall pay this amount to the Town, and after making such payment AR shall have no further obligation pursuant to the VCUP to pay for the obligations to be covered by the lump sum payment.

#### 8.4 Other Considerations

- Assignment and/or transfer of all minerals and mineral rights owned by AR within the Town's boundaries to Town (including but not limited to geothermal, gas, oil, gravel, fractured mineral claims, etc.).
- Recreational easement on land purchased from U.S. Forest Service.

#### **ARTICLE 9: INDEMNIFICATION AND RELEASES AND COVENANTS NOT TO SUE**

#### 9.1 Indemnities.

- Town will indemnify AR for claims arising from Town's performance of or failure to perform its obligations under the Agreement, including road remediation and any exacerbation of pre-existing environmental conditions by Town or Town's contractors, except to the extent claims are caused by AR and its contractors. Town will waive any qualified immunity with respect to such claims.
- Notwithstanding any other provision of this Agreement or any related document, no implied, express, equitable, or other indemnity exists from the Town or Town Representatives in favor of (i) AR (including AR, its directors, officers, employees, attorneys, contractors, subsidiaries, affiliates, parents, agents, successors, and assigns) or (ii) any other person or entity. Nothing in this Agreement is intended to affect the rights of third-party persons or entities.
- AR will indemnify, defend, and hold harmless Town for third-party claims arising from AR's performance of or failure to perform its obligations under the Agreement, including remediation of contaminated soils, management and maintenance of the Soil Lead Repository, and any exacerbation of pre-existing environmental conditions by AR or AR's contractors, except to the extent claims are caused by the gross negligence, recklessness, or willful misconduct of the Town and/or its contractors.

#### 9.2 Releases and Covenants not to Sue.

- Town will release and covenant not to sue AR for all environmentallead in soil conditions, and all matters addressed in this Agreement, and past VCUP work in Town. The release will prevent Town from joining AR as a third-party defendant in an action brought by a Town resident against the Town alleging claims arising from adoption and implementation of the ICs Regulations or the Town's oversight of the Soils Management Program. The release and covenant not to sue will not apply if and to the extent: EPA or the State bring civil or administrative action against the Town foralleging claims arising from adoption and implementation of the ICs Regulations or the Town's oversight of the Soils Management Program, or related to environmental conditions arising from past mining activity or work performed by AR under this Agreement (i.e., Town can join AR in action in which Town is sued by EPA or State); AR materially exacerbates environmental conditions in the Town; or AR acts with gross negligence, recklessness, or willful misconduct in (a) performing its obligations under the Agreement or (b) in materially exacerbating lead in soil conditions in the Town. The release and covenant not to sue will not apply to, and Town reserves all rights with respect to claims that arise out of or relate to: the incremental costs of remediation or compliance with the ICs Regulations after AR has terminated funding for incremental costs; past VCUP work in the Town; and water quality issues, which are not addressed under the VCUP, ICs Regulations, or this Agreement.
- AR will release and covenant not to sue Town for environmentallead in soil conditions, and all matters addressed in this Agreement, and past VCUP work in Town. The release and covenant not to sue will not apply if and to the extent: EPA or the State bring civil or administrative action against AR for environmental conditions arising from work performed by Town under this Agreement; Town materially exacerbates environmental conditions in the Town; or Town acts with gross\_negligence, recklessness, or willful misconduct in (a) performing its obligations under the Agreement or (b) in materially exacerbating lead in soil conditions in the Town. The release and covenant not to sue will not apply to, and AR reserves all rights with respect to claims that arise out of or relate to: past VCUP work in the Town; and water quality issues, which are not addressed under the VCUP, ICs Regulations, or this Agreement.
- The <u>releases</u> and <u>covenantcovenants</u> not to sue will not prevent an action to enforce the Agreement.

#### **ARTICLE 10: DILIGENT PERFORMANCE AND SUPPORT OF VCUP**

#### 10.1 Diligent Performance of VCUP Work.

- AR and Town agree to diligently perform VCUP work implement the work described in the VCUP Application and VCUP Work Plan and to implement the soils management program in accordance with the IC Ordinance. AR and Town agree to remain applicants on the VCUP Application until CDPHE confirms the work required under the VCUP Application is complete.
- Town's participation in Agreement is subject to annual appropriations, to the extent Town is not being reimbursed by AR.

**Commented [KKR21]:** AR: Is this intended to trigger the end of Phase 3 and termination of the Agreement?

10.2 Support of VCUP Completion

- As long as AR is diligently implementing the work described in the VCUP Application and VCUP Work Plan and otherwise meeting its obligations under this Agreement, the Town shall support the cleanup work described in the VCUP Application and VCUP Work Plan and not seek different or more extensive remedies from EPA or CDPHE<u>with</u> respect to lead in soil. Nothing in this section shall be binding on or restrict the rights of Town residents who are not parties to this Agreement.
- Town will support and cooperate with AR in completing all work described in the VCUP Application and VCUP Work Plan and obtaining verification of same and all applicable <u>VCUP</u> NFADs and NADs from CDPHE.

#### ARTICLE 11: EVENTS OF DEFAULT

#### 11.1 Events of Default Defined.

- The following shall be "Events of Default" under this Agreement:
- Failure by AR or Town to perform any material duty or obligation under this Agreement for a period of thirty (30) days after written notice specifying such failure and requesting that it be remedied has been given to the party failing to perform, unless otherwise agreed. If the failure stated in the notice cannot be corrected within the applicable period, such cure period shall be extended if corrective action is instituted by AR or Town within the thirty (30) day period and diligently pursued until the default is corrected. This opportunity to cure does not apply to breaches that are not capable of being cured.
- Repeal by the Town of the ICs Regulations in their entirety, or amendment of the ICs Regulations inconsistent with the VCUP Application, VCUP Work Plan, this Agreement, and the IGA, if such repeal or amendment results in CDPHE withdrawing the VCUP approvals.

#### 11.2 Remedies for Default

- If either party defaults and fails to timely cure, other party may elect to terminate the Agreement.
- Indemnities and covenants not to sue shall survive termination with respect to claims that accrued prior to the termination.
- If a non-defaulting party incurs legal fees and expenses for the collection of moneys or the enforcement or performance of any obligation owed by the defaulting party, the defaulting party will pay the non-defaulting party's reasonable fees and expenses incurred as a result of the default.
- Force Majeure shall excuse default.
- No claims for consequential damages if agreement is terminated.

#### **ARTICLE 12: INSURANCE**

- Town and AR to maintain and/or to require their contractors to maintain adequate insurance for the work performed under this Agreement, including:
  - $\circ$   $\;$  Workers' Compensation Insurance in compliance with all statutory limits;
  - Employer's Liability Insurance with a limit of not less than \$1,000,000 per accident

- Commercial or General Liability Insurance, including coverage for premises and operations, contractual liability, completed operations, with limits as required by law or with a combined single limit of not less than \$1,000,000 per occurrence, whichever is greater;
- Automobile Liability Insurance (including owned, non-owned, and hired vehicles) with limits as required by law or with a combined single limit for bodily injury, death, and property damage of not less than \$1,000,000 per occurrence, whichever is greater,
- Excess Liability Insurance above said employer's liability, commercial, or general liability, and automobile liability insurance with a combined single limit for bodily injury, death, and property damage of not less than \$2,000,000 per occurrence/aggregate; and
- Professional Liability Insurance, including Environmental Impairment Coverage or Pollution Coverage Endorsement, with limits of at least \$3,000,000 per claim and \$3,000,000 annual aggregate.
- The SMP Contractor selected by AR and the SMP Contractor selected by the Town shall be required to maintain the above-listed coverages, and shall be required to list each property owner as an additional insured for the duration of the SMP Contractor's involvement in the development activity on the property owners' property.
- If Town does not presently maintain the insurance policies listed above but becomes required to maintain those insurance policies as a result of this Agreement, AR will pay for the cost of those insurance policies during the term of this Agreement.
- Each party's policies shall name the other party and the property owner as an additional named insured for the duration of the development activity on the property owner's property.

#### **ARTICLE 13: DISPUTE RESOLUTION**

- Parties will first attempt to resolve a dispute through informal negotiations.
- If informal negotiations are not successful, the parties will attempt to resolve the dispute through mediation using a mutually acceptable professional mediator <u>funded by AR</u>.
- If mediation is not successful, disputes will be resolved through arbitration, to be held in Denver, Colorado.
- The prevailing Party in any dispute resolved by arbitration shall be entitled to an award of its reasonable legal fees and expenses incurred in the arbitration, including attorneys' fees, expert fees, other professional fees, and fees of arbitration. If mediation is not successful, the Parties shall submit the dispute to binding arbitration in Telluride, Durango, Cortez, or in another place agreed upon by the parties. However, if the amount in dispute exceeds \$10,000 dollars or if the remedy being sought includes specific performance, either party may elect to forgo mediation and file its claim in state court. Venue for legal proceedings to resolve a dispute under this Agreement shall be in Dolores County or a neighboring county.
- AR shall reimburse the Town's reasonable attorney's fees, costs, and expenses related to such dispute, on a monthly basis. If the Town does not prevail in the dispute, AR may be entitled to be reimbursed by the Town for the reasonable attorney's fees, costs, and

expenses paid to the Town by AR (but not AR's own attorney's fees, costs, and expenses), but only to the extent permitted by law.

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#### ARTICLE 14: MISCELLANEOUS PROVISIONS

- Access Town will provide access to AR for any work to be performed by AR under this Agreement on Town-owned property, upon reasonable terms.
- Term of the Agreement 20 years unless earlier terminated or extended by mutual 
   agreement
- Term of the Agreement Agreement will terminate when work required under the VCUP
   Application is complete. Upon termination on this basis, owners of property, including
   Town as the owner of Town properties and Open Space, shall retain claims for the
   incremental costs of remediation. Alternatively, the Agreement may be terminated prior
   to completion of the work required under the VCUP Application if the parties agree on a
   lump sum payment to cover all of AR's funding obligations under this Agreement.
- Town to provide advance notice to AR of any pending Town dissolution
- If Town expands and annexes property, a small change (25 acres) does not alter this Agreement; a larger expansion, if such expanded area is covered by the VCUP or to be covered by this Agreement, requires revisiting this Agreement.
- Notices
- Entire Agreement
- Negation of Agency Relationship
- No admission of liability
- Governing Law Colorado
- Binding Effect; Assignment
- No Third-Party Beneficiary
- Modification of Agreement
- Severability
- Counterparts
- Non-waiver Provision
- Financial assurances to be made by AR in the form of a bond, letter of credit, or trust fund

### **DRAFT (Version 1.4)**

### RICO TOWNSITE SOILS VOLUNTARY CLEANUP PROGRAM (VCUP) APPLICATION Rico, Colorado

Submitted to: Colorado Department of Public Health and Environment

Submitted by: Atlantic Richfield Company and Town of Rico

Prepared by:

Formation Environmental, LLC 2500 55<sup>th</sup> Street, Suite 200 Boulder, Colorado 80301 and

Copper Environmental Consulting 406 E. Park Ave. Anaconda, MT 59711

February 2021

RICO TOWNSITE SOILS	DRAFT
VCUP APPLICATION	VERSION 1.4, FEBRUARY 2021

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### LIST OF ACRONYMS AND ABBREVIATIONS

AMSL	Above Mean Sea Level	
AR	Atlantic Richfield Company	
<u>bgs</u>	below ground surface	
CDPHE	Colorado Department of Public Health and Environment	
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act	
cfs	cubic feet per second	
су	cubic yards	
EPA	US Environmental Protection Agency	
EROZ	Environmental Remediation Overlay Zone	
ESA	Environmental Site Assessment	
<u>FAQ</u>	Frequently Asked Question	
GCL	Geo-composite Liner	
<u>GIS</u>	Geographic Information System	
gpm	Gallons per minute	
ICP	Inductively Coupled Plasma	
ICs	Institutional Controls	
ISWP	Individual Site Work Plan	
mg/kg	milligrams per kilogram	
NA	Not Applicable	
NAD	No Action determination	
NAFD <u>NFA</u>	No Further Action determination	Commented [AR1]: State requested that we change this term
0&M	Operation and Maintenance	from NFAD to NFA.
PUD	Planned Unit Development	
PVC	Polyvinyl Chloride	
QC	Quality Control	
RCRA	Resource Conservation and Recovery Act	
RLUC	Rico Land Use Code	
RSOZ	Rico Soils Overlay Zone	
SAP	Sampling and Analysis Plan	
<u>TEC</u>	Titan Environmental Corporation	
VCUP	Voluntary Cleanup Program	
XRF	X-Ray Fluorescence	

### 1 PREFACE

This Rico Townsite Soils Voluntary Cleanup Program (VCUP) Application is submitted for review under the State of Colorado Voluntary Cleanup Program. The Applicants submitting this VCUP Application are:

- the Atlantic Richfield Company (AR), which refers to Atlantic Richfield and its affiliates) and
- Town of Rico, a current landowner.

This application follows a<u>n earlier</u> 2004-Rico Townsite Soils VCUP Application (AR 2004a) submitted to the Colorado Department of Public Health and Environment (CDPHE) on June 24, 2004. The 2004 VCUP Application proposed a phased investigation and cleanup approach to address lead-contaminated soil within the Town of Rico, Dolores County, Colorado. The additional cleanup work proposed in this Application will be performed to complete the work initiated in 2004 and will address <u>certain</u> additional properties within the current Town boundaries where soil-lead concentrations exceed the applicable, site-specific, action level.

#### 1.1 SUMMARY OF WORK PERFORMED SINCE 2004 VCUP APPLICATION

The Town of Rico ("the Town") is located in southwestern Colorado, as shown on Figure 1, "Rico Townsite Location Map." The Town boundary is depicted on Figure 2, "Town of Rico Boundary and Vicinity Map."

Investigations, cleanup activities, and document submittals completed under the 2004 VCUP Application were performed by AR with the cooperation of the Town of Rico. Since June 2004, AR has conducted the following VCUP activities:

- Assessment of known environmental conditions, and sampling and analysis of soil within the Town of Rico, including soil sampling at over 400 individual properties, to document the concentrations of lead in soil.
- Determination of human health risk and development of site-specific, risk-based action levels for lead in soil in cooperation with CDPHE.
- Completion of the following phased remedial actions:
  - Construction of the Rico Soil Lead Repository in 2005 for disposal of soil removed from Town properties and having lead concentrations above a site-specific action level;
  - Cleanup of 75 properties, each consisting of one or more parcels, that were determined by VCUP sampling activities to have soil that contained lead above the applicable, CDPHE-accepted, risk-based action level; and
  - Reclamation of the Van Winkle Mine site in 2008.
- Results of VCUP investigation activities and the site-specific risk assessment were provided in the following reports that were prepared for and accepted by CDPHE:
  - Phase I Work Plan and Preliminary Data Report (September 23, 2004)

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- Phase II Work Plan (May 25, 2005)
- o Lead Health Risk Assessment for Rico Townsite Soils (April 6, 2006)
- Blood Lead and Environmental Monitoring Study for Rico Townsite, Phase 1 Data Summary Report (September 15, 2006)
- Final Data Report and Data Evaluation (June 7, 2006)
- Rico Railroad Corridor Sampling and Analysis Report (February 2, 2007)
- Blood Lead and Environmental Monitoring Study for Rico Townsite, Phase II Data Summary Report and Trend Analysis (February 13, 2007)
- Alley Sampling Results (October 7, 2008)
- Sampling and Analysis Plan, Rico Soils Voluntary Cleanup Program, Rico, Colorado, including Appendix A – Evaluation of Background Lead Concentrations (Revision 1, July 2014)
- Rico Town Soil Sampling Project, 2014–2015 Data Summary Report (December 11, 2015).

As documented in the reports listed above, AR conducted soil sampling in the Town of Rico at various times beginning in 2004 and continuing to 2015. Soil sampling was performed at both developed and undeveloped properties, as allowed by access agreements with the property owners. In total, soil samples were collected for analyses of lead from 348 residential parcels (216 developed and 132 undeveloped), 73 non-residential parcels, unpaved roads and alleys, proposed sewer-line corridors, and the Dolores River corridor. Soil samples were analyzed for lead concentration. <u>Pre-2006 Ss</u>oil sampling data were used to support a site-specific, human health risk assessment that evaluated residents' exposures to lead in soil and identified levels of lead in soil of potential health concern.

Based on information provided by the risk assessment, two risk-based action levels were identified for lead in soil: a residential-soil action level of 1,100 milligrams per kilogram (mg/kg) and a commercial soil action level of 1,700 mg/kg. These action levels were selected and adopted by CDPHE, in consultation with concurrence from the U.S. Environmental Protection Agency (EPA), in 2006 and 2007 for soil remediation performed as part of this VCUP project.

In 2005, AR constructed the Rico Soil Lead Repository, located approximately one mile north of the Town limit on property now owned by AR, for disposal of <u>action-level</u> soil removed from locations within the Town of Rico<u>with elevated lead levels</u>. The location of the repository is shown on Figure 2. AR has continued to maintain the repository since that time in accordance with the repository's Operations and Maintenance Plan (SEH 2004) and a Certificate of Designation issued by Dolores County. The soil repository remains available for future disposal of soil containing lead <u>at concentrations above one of the site specific exceeding approved action levels</u>. As of January 2021, the repository has a remaining capacity of <u>fixe</u> <u>approximately 30,800</u> cubic yards (cy), or <u>fixe</u> <u>77</u> percent of the original capacity.

AR conducted soil remediation at individual properties in the Town of Rico from 2005 to 2007. The details of that work are summarized in Appendix C. The locations of previously sampled and remediated

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**Commented [AR5R4]:** In accordance with Colorado's Voluntary Cleanup and Redevelopment Act and the related Memorandum of Understanding between CDPHE and EPA, EPA does not provide formal approvals of VCUP remediation plans. CDPHE sought and received EPA's technical input on the sitespecific human health risk assessment (prepared by Atlantic Richfield), and CDPHE considered that input in selecting the soil cleanup levels for the Rico Townsite Soils VCUP project.

CDPHE can provide the State's and EPA's comments on the risk assessment if requested.

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<b>RICO TOWNSITE SOILS</b>
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parcels are shown on a map of the Town in Figure 3 and lists of those properties are attached (refer to Attachments 1 and 2). At the properties remediated by AR, soil with lead concentrations exceeding the applicable action levels was removed to a depth of approximately 12 inches, a <u>landscape</u> fabric layer was placed at the bottom of the excavation to mark the extent of soil replacement, and then clean soil (e.g., soil with lead concentrations less than 100 mg/kg) was used to backfill the excavated area. The excavated soil was transported from each parcel to the Rico Soil Lead Repository. AR conducted remediation of the waste rock pile at the Van Winkle Mine site in 2008. Soil removed from that site was also disposed of in the Rico Soil Lead Repository.

#### 1.2 CURRENT STATUS OF VCUP SOIL SAMPLING AND REMEDIATION

Most All but a few of the parcels sampled in 2004-2005 with soil lead concentrations above the VCUP action levels were remediated in 2005-2007 (refer to Appendix C for additional information regarding past work under the VCUP). Most of the remediated parcels were developed properties with an existing residential use. Parcels sampled in 2014 and 2015 that were found to have soil lead concentrations above a soil action level have not been remediated at this time. Unpaved roads with lead concentrations previously measured in surface soil above the commercial action level (1,700 mg/kg) also have not been addressed. In addition, approximately 100 remaining parcels within the Town limits, most of which are undeveloped, have not been sampled to characterize lead concentrations in soil.

#### 1.3 SUMMARY OF ADDITIONAL PROPOSED WORK

Soil removal to a depth of approximately 12 inches and replacement with clean soil is the response action that will be taken at locations where lead concentrations in soil are greater than the applicable site-specific action level. This approach is consistent with the VCUP soil remediation that has already been conducted as part of the Rico Townsite Soils VCUP project, with CDPHE's oversight. In addition, Institutional Controls (ICs) will be implemented to protect remediated areas from disturbance during future development within the Town of Rico.

AR and the Town of Rico (the "Applicants") propose to complete the following additional VCUP tasks:

- Characterize soil lead concentrations at parcels that remain to be sampled (approximately 100 total) in the Town of Rico where an access agreement can be obtained from the property owner.
- Complete soil remediation at developed properties where residential use is permitted by the Rico Land Use Code and where lead concentrations in surface soil exceed the residential action level (1,100 mg/kg). For the purpose of the Rico Townsite Soils VCUP project, a developed property is defined as an improved property with a structure that is in a condition suitable for commercial or residential use and occupation.
- Complete soil remediation at developed properties subject to zoning restrictions
   againstprohibiting residential use (i.e., Public Facilities and Open Space parcels) where lead
   concentrations in surface soil exceed the commercial action level (1,700 mg/kg).
- Perform surface soil remediation on unpaved road and alley segments where lead concentrations exceed <u>1,700 mg/kg</u>.

**Commented [TAB9]:** This section used to discuss the Delores River corridor. Where is discussion of work within this corridor?

**Commented [AR10R9]:** We added reference to Appendix C, which provides a summary of past VCUP work including a description of work in the river corridor.

**Commented [TAB11R9]:** Discuss with town whether any wor will be completed by river corridor by ARC as part of this program.

**Commented [SC12]:** It would be helpful to add a "Status of Sampled Properties and Roads" map. There is a figure that shows the status of sampled developed properties, but that may not capture everything.

**Commented [AR13R12]:** Figure 10 indicates the status of all parcels in the Town, including undeveloped lots. No roads or alleys have been remediated, and Figure 9 identifies all of the road/alley segments where samples were collected prior to summer 2020.

<b>Commented [114]:</b> This will be subject to revision depending on the outcome of a revised model using 5 mg per deciliter rather than 10		
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<b>Commented [AR15]:</b> State comment – for consistency with term in 5.2.		
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- Establish ICs to (a) preserve and protect remediated soil conditions, (b) provide protocols for managing soil disturbed during future development activities, and (c) provide community outreach and education.
- Provide for a soil management program consistent with ICs Program.
- Provide for long-term maintenance of remediated road segments.
- Provide for community outreach and education.
- Obtain No Action determinations (NADs) from CDPHE for the individual properties where lead in soil does not exceed the applicable site-specific action level.
- Submit property-specific Cleanup Completion Reports to obtain No Further Action (NFA) determinations (NFADs) from CDPHE for the properties where soil remediation has been performed.

These tasks would be implemented in accordance with specifications included in Section 6 of this Application and the <u>2021</u>2020 Phase 1 VCUP Work Plan (Appendix D). The projected schedule for implementation and completion of the proposed work is included in Section 7.

#### **1.4 ORGANIZATION OF VCUP APPLICATION**

The Colorado VCUP requirements and CDPHE's online VCUP Checklist were consulted in the preparation of this VCUP Application (CDPHE 2008). Because this VCUP Application is for a site that has no current industrial operations, certain requirements on the VCUP checklist are not applicable. The completed VCUP Checklist is included as Appendix A. Information requirements that are not applicable (NA) to the Rico Townsite Soils VCUP project are designated as such in the checklist.

**Commented [SC16]:** Unclear if this bullet is being intentionally combined with the previous bullet or if it is a typo.

**Commented [AR17R16]:** The VCUP program will provide for road surface replacement, but not long-term road maintenance.

**Commented [DF18R16]:** This should still be addressed by the VCUP remedy even if part of normal town maintenance activities. See page 30, 4<sup>th</sup> bullet that actually provides for this.

Commented [AR19]: State comment.

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### 2 GENERAL INFORMATION

#### 2.1 OWNER OF SITE PROPERTY

Property ownership within the VCUP project area is indicated on Figure 4, "Town of Rico Site Boundary and Property Ownership Map."

AR owns one parcel, the reclaimed Van Winkle Mine <u>subdivision Lot 2</u>site (Dolores County property identification number [PIN] 504736200012), within the Town of Rico. The only other local properties owned by AR are to the north and outside of the Town boundary in the vicinity of the St. Louis Tunnel, including the land on which the Rico Soil Lead Repository is located. The Town of Rico owns multiple parcels within the Town boundary (as shown on the parcel-ownership map in Figure 4), but most of the land in the Town of Rico is privately owned by others.

Properties owned by the Applicants and various other individuals and private entities are to be addressed under this VCUP Application. For properties not owned by the Applicants, authorization for the Applicants to proceed with the work described in this VCUP Application and to request a NFA\_D-after the work is completed will be obtained from the owner of each individual parcel through an access agreement or as part of the Institutional Controls program (refer to Section 6.2). When AR performs soil sampling or soil cleanup, the access agreement entered into by the property owner will establish that AR is acting as the property owner's designated VCUP representative. Where the property owner or developer acting on behalf of the owner performs future soil cleanup (*i.e.*, on currently undeveloped parcels), the property owner has the option of opting in to the VCUP program at the time of remediation, including the potential for AR to obtain authorization at the time a development permit is issued to act on the property owner's behalf in obtaining an NAD or NFAD when the cleanup is complete.

#### 2.2 APPLICANT CONTACT PERSONS, ADDRESSES, AND PHONE NUMBERS

Atlantic Richfield:	Anthony Brown Brian S. Johnson, Project Manager
	Atlantic Richfield Company
	4 Centerpointe Drive, Suite 200201 Helios Way
	La Palma, CA 90623Houston, TX 77079
	<del>657-529-4537<u>832-239-2711</u></del>
	anthony.brown@bp.comBrian.S.Johnson@bp.com
Town of Rico:	<del>Kari Distefano,</del> Town Manager
	PO Box 9
	2 Commercial Street
	Rico, CO 81332

(970) 967-2863 townmanager@ricocolorado.gov

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Commented [SC20]: Not sure what this contemplates that would not also be an access agreement, just obtained at a different time

**Commented [AR21R20]:** The IC's program will not replace access agreements, but it does address the process for obtaining authorizations for the Town and AR to act as VCUP representative for the purposes of obtaining a VCUP NFA from CDPHE. LUC Appendix D, Section D.4.F, states that a developer may provide the authorization in the apolication for a development permit

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#### 2.3 LOCATION OF PROPERTY

The Rico Townsite Soils VCUP project area (the "Site") is located in southwestern Colorado and consists of lands within the present boundaries of the Town of Rico. Figure 1, "Rico Townsite Location Map," indicates the general location of the Town of Rico, and Figure 4, "Town of Rico Site Boundary and Property Ownership Map," identifies the area within the current Town limits, which comprises the VCUP project area.

The parcels identified on Figure 4 are the individual lots existing as of January 2021. The lots shown on Figure 4 (and listed in Attachment 3) are the properties addressed by this VCUP Application. Any additional lots created by subdivision of these existing lots or in areas annexed by Town after January 2021 will not be identified for Phase 1 soil remediation by the Applicants.

#### 2.4 Type and Source of Contamination

The contamination to be addressed under the VCUP is lead in soil. The source of the lead in soil may be attributable to mining and mineral processing activities, lead-based paint, other anthropogenic sources, or high naturally occurring levels of lead associated with local bedrock. A site-specific risk assessment completed in 2006 (Integral 2006a) supported development of a risk-based cleanup approach for Rico Townsite Soils.

Most of the data available to characterize lead concentrations in soil originates from the 2004 VCUP investigations. These data typically characterize the lead content of surface soil (i.e., top 0 to 2 inches of soil cover) with additional data collected to characterize lead concentrations in soil at greater depth. Additional lead-concentration data are available from soil sampling and analyses conducted within the Site by others, including the US Environmental Protection Agency (EPA), CDPHE, and environmental consultants working on behalf of individual landowners (e.g., Walsh 1995).

Figure 5, "Pre-Remediation Spatial Distribution of Lead in Soil," is a map of lead concentrations in soil samples collected from depths of 0 to 2 inches. The lead concentrations mapped on Figure 5 were obtained from samples collected in advance of any soil remediation activities, and therefore, Figure 5 represents the pre-remediation distribution of lead in surface soil. In general, the highest lead concentrations were present in the river corridor and in the northeast part of Rico along the Silver Creek drainage.

#### 2.5 VOLUNTARY CLEANUP OR NO ACTION DETERMINATION

This application is being submitted for a Voluntary Cleanup pursuant to Colorado's Voluntary Cleanup and Redevelopment Act. C.R.S. § 25-16-301 et seq.

#### 2.6 CURRENT AND PROPOSED LAND USES

The Town of Rico has adopted its Rico Land Use Code (RLUC) to guide regulation and management of land use and development within and around Rico. The Town's land-use zones are depicted in Figure 6, "Town of Rico Zoning Map." Most of the Town is zoned for residential use with commercial use allowed

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Commented [DF22]: Will these properties be addressed by future phases, or not at all?
Commented [SC23]: Need to discuss with town

**Commented [SC24]:** The 2019 version of Figure 5 indicates 0-12" in the title. If it only contains 0-2" data then the figure title should be corrected. If the figure was changed to remove data below 0-2", we would like to see it.

**Commented [AR25R24]:** Figure 5 from the 2019 version shows soil lead from 0-12".

Figure 5 in the current version of the VCUP Application shows soil lead concentrations from 0 to  $2^{\prime\prime}$ .

## RICO TOWNSITE SOILS VCUP APPLICATION

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at some locations along State Highway 145, the main road passing through Rico (Glasgow Avenue). Residential uses are currently allowed in all zoning districts except for "Public Facilities" and "Open Space." Since adoption of the zoning shown in Figure 6, the reclaimed Van Winkle Mine site (see Figure 3 for location) was rezoned to allow for residential, open space, and historical preservation uses following the Town's approval of the Van Winkle Subdivision.

Land along the river corridor is a mix of Town-owned and private parcels. This area is currently zoned for residential uses. The expected future uses of land within the river corridor include limited recreational, residential, commercial, and public facilities. For the Town-owned land parcels within the river corridor that are considered <u>more difficult to develop undevelopable</u> more difficult to develop (due to floodplain, avalanche, or other hazardous risk) and which have value for open space use and recreation, the Town plans to protect such areas for future recreational use and preservation as open space. Parcels located on steep slopes and in avalanche hazard zones have also been identified by the Town as more difficult to develop undevelopable more difficult to develop.

In general, future land uses are expected to be consistent with existing zoning; however, the Town has the authority to modify zoning and related land uses.

Commented [AR26]: Before changing this text, the Town needs to clarify what "more difficult to develop," as opposed to "undevelopable" means. The proposed change in terminology adds unnecessary ambiguity. These areas were identified as "undevelopable" on prior maps prepared by Town and in discussions with Kari. Why is this change being proposed?

**Commented [SC27R26]:** This change is being proposed because "more difficult to develop" is more accurate. The Town can't prevent privately owned parcels from being developed, though the Town can make certain areas "more difficult to develop" through LUC requirements. *See* RLUC Sec. 804 (classifying avalanche, floodplain, and steep slope areas as Areas of State Interest and requiring a permit before development).

### **3 PROGRAM INCLUSION**

Based on criteria identified in CDPHE's VCUP Application Guidance Document (CDPHE 2008), the Rico Townsite Soils Site is eligible for inclusion in the Colorado VCUP Program under the Voluntary Clean-Up and Redevelopment Act, C.R.S. § 25-16-301 et seq., as follows:

- The Town of Rico and AR own certain properties within the Town's boundaries, and the Town has municipal jurisdiction over other properties addressed under this VCUP Application.
- By agreement with individual property owners, AR serves or will serve as the designated VCUP representative for soil characterization and soil cleanup work on parcels not owned by the Town. For properties where AR has not obtained VCUP representation via agreements with individual property owners, VCUP representation will be requested when development occurs under the ICs program. If the property owner does not so consent, the property will remain subject to the requirements of the <u>LUC</u>-ICs program as set forth in the <u>Rico Land Use CodeRLUC</u>.
- The properties addressed under this VCUP Application are not the subject of corrective action under orders or agreements issued pursuant to provisions of C.R.S. § 25-15-301 et seq. or the federal Resource Conservation and Recovery Act of 1976 (RCRA), as amended.
- The properties addressed under this VCUP Application are not subject to an order issued by or an agreement with the Water Quality Control Division pursuant to C.R.S. § 25-8-601 et seq.
- The properties addressed under this VCUP Application do not have or should not have a permit or interim status pursuant to C.R.S. § 25-15-301 et seq. (RCRA Subtitle C) for treatment, storage, or disposal of hazardous waste.
- The properties addressed under this VCUP Application are not subject to the provisions of C.R.S.
   § 8-20-50120.5-201 et seq. (Underground Storage Tanks).
- The properties addressed under this VCUP Application are not listed or proposed for listing on the National Priorities List of Superfund sites established under the Comprehensive Environmental Response, Compensation and Recovery Act (CERCLA).

**Commented [SC28]:** § 8-20-501 has been repealed; I think this is the correct citation.

Commented [DF29]: Does the gas station in town have USTs?

Commented [SC30R29]: Yes, it does.

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### 4 ENVIRONMENTAL ASSESSMENT

This environmental assessment was prepared by qualified environmental professionals from Formation Environmental, L.L.C. (Formation) in Boulder, Colorado and Copper Environmental Consulting <del>(CEC)</del>, in Anaconda, Montana. A Statement of Qualifications for each firm is provided as Appendix B.

#### 4.1 LEGAL DESCRIPTION OF SITE

The Site covers an area of approximately 450 acres in the S½SW¼ Section 25 T40N R11W, SE¼SE¼ Section 26 T40N R11W, W½ Section 36 T40N R11W, E½ Section 35 T40N R11W, NW¼NW¼ Section 1 T39N R11W, and NE¼NE¼ Section 2 T39N R11W, as shown on Figure 7 "Location and Size of Site with Township and Range."

#### 4.2 HISTORY OF MINING ACTIVITIES IN RICO

The following information on the operational history of the Site that resulted in the release of lead to the environment is based on descriptions of mining history in Ransome (1901) and McKnight (1974). Figure 8, "Historical Mines and Smelters in the Town of Rico" shows the locations of historical mining features in the vicinity of the Town of Rico.

Mining-related operations started in and around the Rico Mining District in the 1860s, and sporadic surface and near-surface exploration followed, with limited success, until 1879, when high-grade silver ores were discovered. That same year, the Town of Rico was incorporated, and a 320-acre townsite with streets and alleys was platted. Much of the high-grade silver mined during this period was processed through milling and smelting operations at the Grand View Smelter, constructed at the north end of town in 1880, and the Pasadena Smelter, constructed at the south end of town in approximately 1882.

During this same period, the Rio Grande Southern Railroad operated facilities within the Town, including a station house, fueling areas, a turnaround spur, a water tower (still standing), and side spurs up Silver Creek and to Newman Hill (Enterprise Mine). The railroad's presence is primarily evidenced today by the old railroad grade along the Dolores River, which remains as a dirt road and trail.

The Pro Patria Mill was constructed near the center of Rico (see Figure 8) in 1900 and began operations in 1902. An aerial tram transported ore down from the Newman Hill area to the Pro Patria Mill. In addition, a small mill using magnetic separation technology was developed at the nearby Atlantic Cable Mine. The Pro Patria Mill was converted to a 250-ton per day flotation mill in 1926 and processed most of the ore produced in the Rico Mining District between November 1926 and July 1928. The mill was permanently closed in 1928. The major mining areas active at this time included the Shamrock and Atlantic Cable Mines. Tailings from the Pro Patria Mill are thought to be impounded mostly at the Columbia Tailings site. Major in-town mine operations from this era came to an end in 1929.

In 1939, the Rico Argentine Mining Company built a 135-ton per day flotation mill up the Silver Creek drainage, northeast of Rico, and ore from most mines in the area was processed there in subsequent years. The Rico Argentine Mining Company sunk the Van Winkle mine shaft in 1942, which provided

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significant ore to the Argentine Mill for several years. Most lead production in the district occurred during the period from 1939 to 1971, and production came to a close in 1971 when the Rico Argentine mines and mill were shutdown. Significant mining activity in the area has not occurred since that time.

In June 1978, the Anaconda Company (Anaconda) entered into an agreement with Rico Argentine Mining Company, a division of Crystal Exploration and Production Company, under which Anaconda obtained exclusive possession of Rico Argentine Mining Company's mineral properties in the Rico vicinity for exploration purposes. Pursuant to a June 1980 Letter Agreement and an August 1980 Closing Agreement with Crystal Exploration and Production Company, a subsidiary of Crystal Oil Company, Anaconda acquired Rico Argentine Mining Company's surface and mineral properties in the Rico area. The Atlantic Richfield Company, a successor to Anaconda, subsequently sold these properties to Rico Development Corporation under a Purchase and Sale Agreement executed in May 1988.

#### 4.3 MINE SITE CLEANUP PROJECTS

Between 1995 and 1997, AR completed the following mine-site cleanup projects in the Town of Rico in accordance with the State of Colorado's VCUP:

- Silver Swan Mine Area
- Columbia and Old Pro Patria Mill Tailings and Silver Swan East Waste Rock Pile
- Santa Cruz Mine Area
- Grand View Smelter Site

The locations of each of these sites are indicated on Figure 8. Each of these remediation projects was completed under an individual VCUP Application (AR et al. 1996a, 1996b, 1996c, 1996d).

An engineering evaluation/cost analysis was conducted to evaluate removal action alternatives for tailings, waste rock, and other mining-related materials at these sites (AR 1996). Remediation work was performed by AR, and the cleanup approach for each site was similar and included: regrading, waste consolidation, treatment with lime, capping of waste rock and/or tailings with growth media, and protection from erosion through construction of run-on and run-off controls. Confirmation soil samples were collected following remediation (ESA 1996). AR received NFADs from CDPHE for these VCUP projects on December 10, 1999.

Additional details for cleanup conducted at the separate mine sites are as follows:

<u>Silver Swan Mine Area</u> – The Silver Swan Mine area is located on the west side of the Dolores River at the south end of Rico (see Figure 8). The mine features present include a rock-filled adit, a 2.3-acre waste rock pile adjacent to the Silver Swan Mine on the west bank of the Dolores River, and 1.5-acre wetlands. Prior to cleanup, the adit drainage flowed over and through the waste rock pile before reaching the Dolores River. Under the VCUP, the waste rock pile was treated with lime and covered with 1 foot of soil and revegetated (AR et al. 1996b). Nearby slopes were covered with riprap to prevent

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**Commented [SC31]:** The Town would like to review the documents referenced in this paragraph.
erosion by the river during periods of high flow. The adit discharge (50 gallons per minute [gpm]) was redirected to a lined pond at the head end of the wetlands area. The natural wetlands were enhanced by addition of an aerobic treatment step (the pond).

<u>Columbia and Old Pro Patria Mill Tailings and Silver Swan East Waste Rock Pile</u> – Both the Columbia tailings and Pro Patria tailings were produced by the Pro Patria mill (Falcon mill) in Rico. The Silver Swan Mine was the source of the Silver Swan East waste rock pile. The mine waste cleanup involved removal of tailings and waste rock from two areas on the east bank and floodplain of the Dolores River -- the Silver Swan East (600 cy) and Pro Patria sites (3,300 cy) -- and consolidation with the regraded Columbia Tailings (45,000 cy) in a single repository at the Columbia Tailings location. The consolidated tailings and waste rock were surface graded, compacted, treated with lime, covered with 2 feet of growth material to minimize infiltration, and run-on and run-off controls were installed (AR et al. 1996a).

Santa Cruz Mine Area – The Santa Cruz Mine area, on the west boundary of Rico and west of the Dolores River (see Figure 8), included patented mining claims covering the Santa Cruz, Iron Clad, and Rico Boy mines. Cleanup under the VCUP consisted of consolidating an estimated 6,000 cy of material with the remainder of the waste rock, regrading and compaction of waste rock to reduce infiltration and impacts to surface water, treating the pile with lime, covering the waste rock with 12 inches of growth media, and revegetating (AR et al. 1996c). Combined flows from four adits were conveyed in lined channels around the waste rock pile to a wetlands complex.

<u>Grand View Smelter Site</u> – Soil sampling at the former Grand View Smelter location showed elevated lead and other metals concentrations, along with some exposed slag. The VCUP cleanup included placement of growth media and revegetation over approximately 1 acre of disturbed slopes and mine waste, installation of run-on and run-off controls, and stabilization of an area adjacent to the Dolores River by covering with riprap (AR et al. 1996d).

## 4.4 PHYSICAL CHARACTERISTICS OF SITE

## 4.4.1 TOPOGRAPHY

Rico is located in the southwest part of the San Juan Mountains where very steep to steep mountain slopes and steep to moderate sloping tributary stream valleys abruptly descend upon the gently to moderately sloping and relatively narrow Dolores River valley. Many of the steep draws and gulches formed on the hillsides on both sides of the Dolores River, and its Silver Creek tributary, are snow avalanche chutes. Elevations in the Rico area generally range from over 12,000 feet above mean sea level (AMSL) at the crest of surrounding mountain peaks, such as Telescope Mountain (12,201 feet AMSL) and Dolores Mountain (12,112 feet AMSL), to approximately 8,700 feet AMSL in the Dolores River valley. The intersection of Glasgow Avenue (State Highway 145) and Mantz Street in the Town of Rico is at an elevation of about 8,800 feet AMSL.

Most of present-day Rico is built on moderate to low slopes developed where tributaries to the Dolores River deposit alluvial fans on the river's flood plain. These low slopes continue to be preferred for

development, but because of their limited area, future residential development may expand onto steeper slopes rising above the river valley.

### 4.4.2 SURFACE WATER BODIES AND WASTEWATER DISCHARGE POINTS

The Dolores River below the Town of Rico has a mean annual flow of 129 cubic feet per second (cfs) with a typical seasonal flow range between approximately 15 and 650 cfs, depending on annual precipitation and snowmelt patterns.<sup>1</sup> Annual high flows occur during late spring and early summer snowmelt runoff. The annual low-flow period occurs in November through March, with February having the lowest average monthly flow of 18 cfs. The 100-year-flood peak flow for the Dolores River is estimated at approximately 2,700 cfs (Dames and Moore 1981).

Silver Creek is the principal tributary to the Dolores River in this area. Silver Creek flows through the northern part of Rico before entering the river. The gradient of the relatively narrow cobble- and boulder-lined channel is moderate where it passes through Town. Historical instantaneous measurements of Silver Creek flow below the Argentine Tailings ponds (located to the northeast and upstream of the Site) ranged from about 0.06 cfs to 23 cfs. Most annual high flows occur during snowmelt runoff in the spring and early summer months (April-July). Infrequent floods result from high-intensity rainfall during the summer months. The 100-year-flood peak flow for Silver Creek is estimated at 525 cfs (Dames and Moore 1981). In Rico, the channel is locally incised and confined by flood control banks.

### 4.4.3 GROUNDWATER MONITORING AND SUPPLY WELLS

The Town of Rico obtains drinking water from a water supply located upgradient of the Town of Rico and VCUP project area. There are no known groundwater monitoring or supply wells within the Town of Rico.

Colorado Division of Water Resources records were searched for all registered water-supply wells in the eastern end of Dolores County. Most of the wells on record are in the Dunton area within the West Dolores River Basin. There are three registered supply wells in the vicinity of Rico, but none of these wells currently supplies water used within the project area. Two of the wells supply water for private domestic use and are located one mile upstream of Town. The third well was used historically by the Colorado Department of Transportation. This well has been plugged and abandoned.

Three piezometers constructed of perforated polyvinyl chloride [PVC] pipe were installed within the Town of Rico in 1995. The piezometers were used to determine the depth to water in alluvium on the perimeter of the Columbia Tailings pile. These piezometers have since been abandoned. At present, there are no known unregistered water wells within the townsite or along the Dolores River in the immediate vicinity of the Site.

I

Commented [TAB32]: What is the basis for this change?

Commented [AR33R32]: This range of flows is based on public data. A reference to the source of these values has been provided.

<sup>&</sup>lt;sup>1</sup> https://waterdata.usgs.gov/nwis/inventory/?site\_no=09165000&agency\_cd=USGS DRAFT\_VCUPApplication\_Rev\_2\_19\_21\_AR rec\_d 3.2.21\_AR

Several groundwater samples were collected in the fall of 2002 as part of a CDPHE Brownfields study (CDPHE 2003). These samples were collected at the Dolores County Maintenance Barn site, which is located within the Town boundary. Lead concentrations in these groundwater samples were not detectable.

## 4.5 CHEMICAL NATURE AND EXTENT

The distribution and concentrations of metals, including lead, in the exposed bedrock and surface soil in the Town of Rico reflect the influence of the area's geologic setting and the presence of hydrothermally altered and metals-enriched bedrock, as well as mining, milling, and metals-processing activities that have contributed to surface soil lead concentrations. The bedrock in the townsite has the highest overall metal content (AECOM 2014), and the colluvium derived from weathering and erosion of this bedrock is nearly as high. The townsite was developed on these natural materials. Fugitive emissions and other releases related to historical mining activities resulted in elevated metals concentrations in some surface and near-surface soils. Subsequent development activities in the Town likely reduced lead concentrations in surface soils on some properties to some extent. However, development of the Town did not eliminate the spatial distribution of natural and anthropogenic lead and other metals in surface soil (AR et al. 1996d). A map of the pre-remediation soil lead concentrations (see Figure 5) indicates relatively high lead in areas of natural colluvial and alluvial deposits, such as the Silver Creek drainage. Specific areas of mining-related impacts, such as waste rock and tailings piles, can be readily identified from the shape of these features and the distinctive color and texture of mine wastes compared to surrounding natural soil (AR 2006).

## 4.5.1 SITE GROUNDWATER CONDITIONS

Based on the groundwater data from a 2002 Brownfields study (CDPHE 2003), the potential for transport of lead from soil to groundwater appears low. Lead values from five groundwater sampling locations in the vicinity of the County Maintenance Barn were all reported as non-detects. These groundwater sampling locations were in the same area as four surficial soil sampling sites for which lead values were reported to range from 620 to 4,500 mg/kg, with an average concentration of 2,580 mg/kg. There are no known water supply wells within the Town of Rico.

<u>Groundwater Depth</u> - No existing groundwater monitoring or water supply wells are known to be located within the Town of Rico. Therefore, no data exist to document water table elevations or groundwater movement across the townsite. Short-term measurement of the piezometers at the Columbia Tailings site indicated a local groundwater gradient downstream and toward the Dolores River, as would be expected in the shallow alluvial aquifer being monitored. A generally similar pattern of downslope (toward the Dolores River) and downstream groundwater flow would be expected within the alluvial and colluvial deposits underlying much of the Town of Rico.

<u>Hydraulic Tests</u> - No hydraulic tests of aquifers are known to have been performed within the Town of Rico.

### 4.5.2 SITE SOIL CONDITIONS

### 4.5.2.1 Previous Investigations

The prior Rico Townsite Soils VCUP investigations have included extensive soil characterization efforts, and the results of those investigations have been reported to CDPHE previously (refer to list of reports provided in Section 1.1). Appendix C of this Application also provides a summary of the past VCUP activities. In addition, several other investigations in the Rico area have included the sampling and analysis of soil for lead, and those other investigations are briefly described below.

<u>Walsh (1995)</u> – Walsh Environmental Scientists and Engineers, Inc. conducted Phase I and Phase II Environmental Site Assessments (ESAs) for Rico Renaissance, the owner of several parcels in and around the Town of Rico. The Phase II ESA included limited sampling of waste rock piles, mine tailings, and fill material. Forty-eight samples were collected, targeting areas of interest to Rico Renaissance. Thirteen of the samples were in commercial/residential areas and seven were from locations where soil was considered representative of natural background. Samples were generally collected from depths of 0 to 2 inches, but in some cases, samples were collected to depths of up to 8 inches.

<u>AR (1996e)</u> – As part of the VCUP Application for the Grand View Smelter Site, AR incorporated data from the PTI Environmental Services sampling performed in 1995. The PTI study included 73 soil sampling locations. Of those, 32 were residential surface samples, 20 were background surface samples, and 20 characterized residential soil at greater depth (PTI 1995). One sample was also collected from mine waste at the Van Winkle Mine Site.

<u>TEC (1996)</u> – Titan Environmental Corporation (TEC) contracted with Michael Russ to perform geological and geochemical mapping of soils in the <u>Rico area\_Town of Rico</u> to characterize metals concentrations in relation to the mineralogy of the source material and historical mining and processing operations. As part of this study, 24 rock outcrops and 22 surficial deposits (alluvium, colluvium, and slope wash) were sampled and analyzed for metals. The <u>TEC</u> study concluded that concentrations of selected metals (including lead) in surficial deposits are derived predominantly from geologic processes acting on natural sources.

Walker (CDPHE 1996) – Following submittal of the Grand View Smelter VCUP Application (AR et al. 1996d), CDPHE collaborated with AR in a study to "confirm or refute" the conclusions in the Grand View Smelter VCUP Application. Thirty-one soil samples were collected for lead analysis from various depths, and several samples were submitted for mineral speciation. The study concluded that both natural and anthropogenic sources of lead were present at the Site. Natural sources of lead are related to exposure and weathering of mineralized bedrock. Anthropogenic sources of lead include mine waste rock, mill tailings, and smelter slag, which can be observed at the ground surface at locations of historical mining, milling, and smelter operations.

<u>State of Colorado Brownfields (2003)</u> – The CDPHE conducted limited groundwater and surface soil sampling as part of Brownfields assessment fieldwork in late 2002. Four surface soil samples were collected at the Dolores County Maintenance Barn site within the Town of Rico. Lead concentrations in these samples ranged from 620 to 4,500 mg/kg and averaged 2,580 mg/kg.

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**Commented [SC34]:** Does this conclusion pertain to the Town itself, or more generally in the larger area?

**Commented [AR35R34]:** The study referred to in the Titan Environmental report, and in this paragraph, focused on the geologic materials within the Town of Rico.

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EPA (2004) – The EPA sampled soil at numerous locations within the Town of Rico in October 2003. Data from this sampling event were included in the 2004 VCUP Application for Rico Townsite Soils.

### 4.5.2.2 KNOWN SOIL-LEAD CONDITIONS

This VCUP Application addresses the presence of lead in soil within the Town of Rico. Table 1 provides a summary of the lead concentrations measured in the top 2 inches of soil during past sampling activities associated with the 2004 VCUP Application. For each of the different parcel types listed, the soil-lead concentrations vary widely.

### Table 1 SUMMARY OF SOIL LEAD CONCENTRATIONS (Depth = 0-2 inches) MEASURED IN THE TOWN OF RICO

Parcel Type	I Type Number of		Lead Concentrations (mg/kg) in Samples Collected from Top 2 Inches of Soil			
	<u>Samples</u>	<u>Minimum</u>	Maximum	Median	Geometric Mean	
Residential - Developed	<u>864</u>	<u>7.8</u>	86,600	<u>640</u>	<u>573</u>	
Residential - Undeveloped	<u>941</u>	<u>6.3</u>	<u>70,329</u>	<u>465</u>	<u>513</u>	
Non-Residential – Developed and Undeveloped	<u>159</u>	<u>44</u>	<u>11,100</u>	<u>647</u>	<u>648</u>	

The spatial distribution of lead in near-surface soil samples (i.e., soil from depths of 0 to 2 inches below the ground surface [bgs]) from the Town of Rico is shown in a map view on Figure 5. The lead concentrations presented in Figure 5 include the lead data available from previous studies as well as soil data collected for the 2004 VCUP project; collectively, these data represent the near-surface distribution of lead before any of the VCUP remediation projects were conducted. As shown in Figure 5, the lead concentrations appear highly variable across the Site, with relatively higher concentrations in the northeast part of Town, especially north of Silver Creek and east of Highway 145. Colluvial and alluvial deposits were shown (AR 2006) to have relatively higher lead concentrations than other natural geologic materials, and these types of deposits are present in the areas of Rico with the highest lead concentrations in soil. Relatively higher lead concentrations also appear in the vicinity of the Pro Patria Mill site, Van Winkle Mine, Grand View Smelter, and some other localized areas west of the highway and north of Mantz Street.

#### **Field Code Changed**

Commented [AR36]: DFolkes comment: "We usually use the geometric mean for metals concentrations in soil (e.g., USGS background metals studies) as a more representative measure of the central tendency. The arithmetic average usually overestimates the median concentration (i.e., the concentration that half the samples are above or below)."

Commented [AR37R36]: Table has been revised to update property counts, add medians and geometric means, and delete averages.

Commented [DF38]: Is there a practicable way to filter the data to separate mine waste from soils? Perhaps the data indicate two different populations (e.g., on a probability plot)? Assuming that mine waste is visually obvious and therefore can be avoided/addressed based on appearance, the risks associated with impacted soils, in which contamination is not visually evident, would be lower than for mine waste.

Commented [SC39]: The 2019 version of Figure 5 indicates 0-12" in the title. If it only contains 0-2" data then the figure title should be corrected. If the figure was changed to remove data below 0-2", we would like to see it.

Commented [AR40R39]: See AR's response to this comment in Section 2.4



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Soil-lead data collected by AR during prior VCUP soil investigations are also useful for evaluating the vertical distribution o15

f lead in soil, Soil samples were collected from more than one depth at 581 different sample locations in the project area. The lead concentrations reported for samples collected at distinct depths are compared on the x-y plot-below above. Each data point on the plot represents a pair of samples collected at the same location: one sample collected at a depth of 0-2 inches (lead concentration plotted on the y axis) and one collected at a depth greater than 2 inches (lead concentration plotted on the x axis). As shown in the figure, lead concentrations in soil collected from 0-2 inches generally correlate with lead concentrations in deeper soil. With the risk-based action level for lead of 1,100 mg/kg serving as a key decision criteria for evaluating the results of the VCUP soil samples (refer to Section 5.2), this plot illustrates that only about 5 percent of the paired samples (25 of 581) had lead concentrations <1,100 mg/kg in surface soil (0-2 inches) but lead >1,100 mg/kg at greater depth. Therefore, within the Town of Rico soil lead concentrations that are greater than 1,100 mg/kg at a depth of 0-2 inches indicate that lead concentrations are most likely also greater than 1,100 mg/kg at greater depth. In other words, when the surface soil lead concentration is greater than 1,100 mg/kg, the lead concentration in the underlying soil is also expected to be greater than 1,100 mg/kg; and, conversely, when the surface soil lead concentration is less than 1,100 mg/kg, the lead concentration in the underlying soil is also expected to be less than 1,100 mg/kg.

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Commented [t41]: Not sure what happened here.

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**Commented [DF42]:** It's still fair to say that when lead in surface soils (0-2") are less than 1100 ppm, the concentrations in deeper soils were also less than 1100 ppm at most locations.

**Commented [DF43]:** The plot supports this conclusion, although we can't count the exact number of samples in the upper left quadrant (0-2" <1100 but deeper samples >1100). This depth profile is consistent with surface deposition of lead via airborne emissions or surface water.

Note, however, that this depth profile may not be true if the native soil has been significantly disturbed, i.e., if clean fill and/or deeper clean soils have been placed on top of the native soil). In most cases, this should be fairly obvious and could be addressed on a case-by-case basis (e.g., if the fil is at least 12" deep, then the results of sampling should be reasonably representative of the upper 12". If only a few inches deep, e.g., a small area of landscaping material, the sample should be collected from the underlying native soil.)

**Commented [DF44]:** We don't think this is correct – the plot indicates that when the 0-2" concentration is .1100, the deeper concentration is often below 1100, perhaps 50% or more of the time (can't tell exactly just looking at the plot). But the deeper concentration is not >1100 most of the time. This is not a concern, however, it just means that excavating more than 0-2" may be conservative in many cases.

The converse is true, however, which is the important point, as also discussed on the previous page.

This entire paragraph could be deleted.

**Commented [AR45R44]:** The conclusions in these paragraphs have been deleted.

### 4.5.3 Environmental Sampling Methods - 2004 VCUP

The rationale and methods for sampling and analysis of soil and other materials during characterization efforts related to the 2004 VCUP Application are summarized below.

<u>Investigation Boundaries</u> – The 2004 VCUP soil investigation was limited to areas within and immediately contiguous to the Town of Rico. Emphasis was given to residential, commercial, public and open space (recreational) parcels in the existing developed portions of Town.

<u>Types of Properties</u> – The Town of Rico official zoning map (Figure 6) identifies a number of different land uses, each of which presents its own considerations for exposure and abatement that was considered in formulating the sampling plan. Sampling of any parcel was subject to obtaining access from the owner. The current zoning in the areas sampled included: Residential, Residential <u>Planned Unit</u> <u>Development (PUD)</u>, Commercial, Historic Commercial, Commercial PUD, Mixed Use, and Open Space/Public Facilities.

<u>Soil Sampling Protocols</u> – Soil sampling protocols applicable to properties in currently developed areas (Zone 1) versus areas of potential future development and/or open space/recreational use (Zone 2) and the specific sampling protocols applied to each of the property types previously identified were specified in the Sampling and Analysis Plan (SAP) in Appendix C of the 2004 VCUP Application.

In summary, at each property in currently developed areas (and at any dispersed developed residential or commercial properties that fell outside the Zone 1 boundaries) the property was subdivided into yard areas, and within each yard area soil samples were collected from a depth of 0 to 2 inches at five randomly selected locations at each of up to several sampling sections on each property (i.e., a parcel or contiguous parcels combined under the same ownership). These five samples were collected in driveways, vegetable gardens, and bare play areas on residential parcels, and on properties zoned as open space/public facilities (including playgrounds).

Surface soil in undeveloped areas of potential future development and areas designated for future open space/recreational use contiguous to the current Town limits (i.e., within what is designated as Sampling Zone 2) was also sampled. Approximately one discrete grab sample was collected per 10-acre area. The specific location and density of samples was based upon the availability and quality of previous sampling data (described in Section 4.5.2), geology/geomorphology, and near-term future land use plans.

Approximately 30 discrete-depth sampling locations were selected to characterize lead distribution in soil with depth. Sampling at each location involved collecting 2 composite samples over depth intervals of 2 to 12 inches and 12 to 18 inches.

Additional sampling targeted identifiable mine waste deposits and soils in the Dolores River east overbank corridor, background soil and bedrock, unpaved roads, and locations along the planned sanitary sewer system within the Site (AR 2006). The rationale for these additional sampling efforts can be summarized as follows:

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Mine Waste Deposits – Additional data were identifiable and typically has elevated lead co	obtained to confirm that mine waste is visually ncentrations compared to surrounding soil.	Commented [DF46]: Can this be illustrated in Table 1?
<ul> <li>identifiable and typically has elevated lead co</li> <li>Dolores River east overbank corridor - Samplin mill/tailings site and the Columbia Tailings sit mine waste as well as semi-random sampling levels in this area. The higher density of samp support decisions regarding cleanup for proper Background soil and rock – Previous studies in lead levels in both bedrock and surficial depo adjacent areas. These locally elevated lead levels shallow to outcropping ore bodies in the town. The background sampling and associated geo were intended to identify soils at the Site with elevated lead levels. This information was us levels for cleanup. The sewer background sampling of surficial soil on the potential for exposure by children playing in the characterized by low traffic volumes. These recontamination of remediated yards from de Sanitary sewer system – Subsurface sampling streets in Town) was performed to evaluate the in excavated soil during construction of a sew sampling to a maximum depth of 4 feet.</li> <li>Analytical Procedures – All soil samples collected in su dried and sieved through the U.S. Standard No. 10 sie using laboratory-grade x-ray fluorescence (XRF) (AR 2 were also submitted for laboratory analysis of lead us spectrometry to establish a valid correlation between</li> </ul>	ncentrations compared to surrounding soil. Ing at and between the historical Pro Patria e (including both sampling of discrete, identifiable ) was performed to more fully characterize lead oling in the east overbank area was undertaken to osed future open space/recreational use areas. Indicated that naturally occurring (i.e., background) sits were locally elevated in the Rico Townsite and vels reflect the geologic processes that formed the nsite and subsequent alteration and weathering. logic mapping and mineral speciation analyses In naturally occurring versus mining-impacted ed, along with health risk information, to set action inpling involved sampling at depths up to a unpaved Town streets supported evaluation of the the streets in residential neighborhoods esults were also used to assess the potential for ust and/or stormwater run on-runoff. of the sewer system alignment (primarily along the potential for encountering elevated lead levels er system. The sewer system sampling involved upport of the 2004 Rico Townsite Soils VCUP were ve per standard protocols and analyzed for lead 006). A subset of these samples (minimum of 20%) ing inductively coupled plasma (ICP) mass the results of the two methods.	Commented [DF46]: Can this be illustrated in Table 1? Commented [DF47]: Please reference where this information can be found – I believe referenced earlier as being an attachment to the SAP? Commented [DF48]: I assume this is referring the residual risk assessment, which it would be helpful to reference here

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## 5 APPLICABLE STANDARDS/RISK DETERMINATION

EPA and CDPHE assess the health risk from lead in soil on a site-specific basis and identify lead concentrations that will protect the health of the populations potentially exposed. These "risk-based action levels" are derived by determining the acceptable dose of lead from the soil, and then calculating the soil concentration of lead that will ensure that people do not receive a dose higher than the acceptable dose. Regulatory agencies such as EPA also calculate generic risk-based action levels that are very conservative. The generic risk-based levels are based on much higher exposures than are likely to occur in a community. Regulatory agencies recognize that the factors contributing to exposures for each individual community are variable and should be relied upon to derive site-specific or community-specific action levels.

### 5.1 RICO TOWNSITE SOILS LEAD HEALTH RISK ASSESSMENT

The primary goal of Rico Townsite VCUP investigations and cleanup actions is to reduce the community's exposure to lead in soil to levels that are protective of public health. Understanding health risk from metals such as lead in soil first requires an understanding of the potential dose of lead for people who may contact the soil. The potential dose from exposure to lead from soil is then compared to acceptable, health protective exposure doses. People may be exposed to lead in soil by dermal contact, ingestion, or inhalation of lead in dust. Some of the lead in the soil may then be absorbed into their bodies. It is the absorbed dose of lead that is estimated to assess potential health risks.

Potential lead doses in Rico were estimated using methods and assumptions developed by EPA for human health risk assessment, the details of which were provided in the Lead Health Risk Assessment prepared for the Rico Townsite Soils Site (Integral 2006a). Based on the The Risk Assessment, AR concluded that "[w]ith the use of action levels and the Rico blood lead study, . . . the Rico community is not being exposed to unacceptable risk from lead in soil, even where lead in soil in locations around town exceeds the residential or commercial action levels." Development of the site-specific, risk-based action levels ultimately selected by CDPHE, and approved by EPA, for use at the Site is explained below.

### 5.2 SITE-SPECIFIC VCUP ACTION LEVELS FOR LEAD IN SOIL

Of primary concern in selecting risk-based action levels is protection of young children, who are defined by risk assessment scientists as children ages six and under. Young children are both the most sensitive to the effects of lead and the most likely to have substantial exposure to soil. Very young children are assumed to spend most of their outdoor time playing in residential yards around homes. Consequently, derivation of appropriate risk-based action levels for residential soil was based on potential exposures for children playing regularly in the soil of the home where they live or spend the day. For areas where children are not likely to regularly play in the soil, exposure estimates for adults were used.

Risk-based action levels are based on a series of assumptions about exposures. Site-specific exposure assumptions for different land uses and laboratory testing performed to characterize the bioavailability of lead in Rico soil were considered in the development of risk-based action levels for the Rico Townsite Soils VCUP project area. The State selected two risk-based action levels for Rico: an action level of 1,100

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**Commented [SC49]:** This language appears to be pulled from the 2010 Residual Risk Analysis, which presented the quoted language as AR's conclusion, not a conclusion of the Risk Assessment itself. We have revised accordingly.

**Commented [AR50R49]:** The State did not concur with the Town's suggested edits here.

Commented [DF51R49]: If text is quoted, the reference it comes from should be cited – what does "Risk Assessment" refer to? Has this term been defined (e.g., as including both the 2006 RA and 2010 RRA studies?)

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mg/kg for residential yards and an action level of 1,700 mg/kg for commercial sites. These action levels were selected by CDPHE in 2006 and 2007, respectively, and adopted for future VCUP soil remediation. The 1,100 mg/kg action level <u>approved selected</u> by the State and with input provided by EPA for residential soil is intended to be protective for young children, including exposure to soil in their yard and other locations where lead may exist. Similarly, the 1,700 mg/kg action level for commercial sites is intended to be protective for soil in areas where someone works.

The action levels are used to guide the cleanup of soil at properties in Rico, and selection of the applicable action level for any property in the project area is based on the allowed land uses defined by the Town's zoning designations and the Overlay Zone Regulations incorporated into the Rico Land use CodeRLUC ("Overlay Zone Regulations") (included as Appendix E to this Application). The residential action level (1,100 mg/kg) guides cleanup of soil at any property where current Town zoning allows residential use. The commercial action level (1,700 mg/kg) guides cleanup of soil at any property where zoning prohibits residential use (e.g., Public Facilities).

The Overlay Zone Regulations categorize properties as "Residential Use" and "Non-Residential Use<sub>s</sub>" The residential action level (1,100 mg/kg) applies to properties in the "Residential Use" category, which are properties that currently have a residential use and to reflect that some properties maythat currently have a commercial use but are zoned to allow residential use and could in the future have a residential use. The commercial action level (1,700 mg/kg) applies only to properties in the "Non-Residential Use" category, which are properties where zoning prohibits residential use.

## 5.3 RICO BLOOD LEAD STUDY

Independent of the process used to develop risk-based action levels for Rico soil, AR commissioned a blood lead study to more directly measure lead exposures in the community (Integral 2006b, 2007). For lead, actual exposure can be assessed directly by measuring the amount of lead in the blood. The Rico blood lead study included both children and adults. The study was performed in 2006, prior to AR's completion of many of the yard cleanups. The study was conducted in two phases, during the spring and during late summer when exposure to soil was expected to be greatest due to lack of snow cover and potentially drier soil conditions.

The study conducted in Rico found that residents' blood lead levels were comparable to, though slightly higher than, average blood lead levels nationwide. Blood lead levels for all of the young children (0 to 6 years old) tested were below the Centers for Disease Control and CDPHE level of concern in place at the time of testing (Integral 2007). The findings of the blood lead study supported the conclusion that the risk-based action levels selected by CDPHE are health protective for Rico residents.

## 5.4 RESIDUAL RISK ANALYSIS

In 2010, AR completed a follow-up evaluation (Integral 2010) to evaluate whether the residual risk for residents living next to non-remediated vacant properties is likely to exceed the risk-based residential action level for the site if reclamation decisions for those existing vacant parcels are deferred until further development takes place on neighboring parcels in the future. Potential exposures to areas

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**Commented [SC52]:** Is it accurate to say that there have been no changes to underlying science since then, so these levels are still appropriate?

**Commented [AR53R52]:** The conclusions of the Risk Assessment remain valid, and AR and the State do not believe anything further needs to be said on this topic in the Application.

**Commented [SC54R52]:** The Town would like to discuss whether this is still accurate given the change in the CDC blood lead reference value.

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**Commented [SC55]:** We do not have documentation of EPA selection or concurrence. Please provide.

**Commented [AR56R55]:** See response to similar comment from T. Bloomfield on page 2 of this file. Wording here has been revised to be consistent.

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Commented [t57]: This needs to be revisited.

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**Commented [DF58]:** It's not crystal clear to me what action level applies here – 1100 or 1700? I believe 1100 unless zoning prohibits residential use – however, do all properties categorized as "non-residential" still permit residential use? That's what this sentence implies.

Commented [SC59R58]: I have made edits to try to clarify.

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**Commented [DF60]:** It seems the fact that this level has decreased from 10 to 5, and that some levels were higher than 5, should be stated here, to be transparent. Then a statement that CDPHE still considers the action levels to be appropriate would be helpful, if true.

Commented [t61R60]: Agreed

along the Dolores River corridor that are visited for recreational purposes (e.g., walking or fishing) were also considered, as were influences of soil on surrounding undeveloped property (i.e., Forest Service land), unpaved streets and alleys, and non-remediated vegetated rights-of-way.

This analysis was accomplished by selecting a subset of properties judged to have the greatest exposure potential and compiling data for lead in surface materials on these properties. A weighted-average concentration for each subject property and adjacent off-property areas was then calculated. The sum of these weighted-average concentrations (i.e., the final weighted-average concentration for each subject property) was then compared to risk-based action levels.

The analysis identified one location in the Town that could pose potential residual risk (Lot 45) due to the presence of mine wastes on the adjacent Forest Service land and in the right-of way for the road adjacent to this lot. In addition, the residual risk assessment indicated that children spending an unusual amount of time (i.e., 50%) on a vacant lot adjacent to two parcels designated as VCUP Lots 35 and 53 could potentially be exposed to weighted average lead concentrations greater than the residential action level.

The Residual Risk Analysis (Integral 2010) also demonstrated that the possible future recreational use of the Dolores River corridor open space areas by Rico residents is not expected to result in unacceptable residual risks due to exposure to lead in soil in that area.

## 6 CLEANUP PROPOSAL

The 2004 VCUP project involved extensive site characterization and follow-up soil remediation that was conducted over a multi-year period beginning in 2004 and ending in 2015. Figure 10 "Residential Parcel Status (2019)" is a parcel map that indicates the current soil-sampling and soil-remediation status for each individual parcel within the Town boundaries. The following VCUP proposal focuses on completion of the soil sampling and soil remediation tasks initiated by the Applicants in 2004 and subsequent, long-term maintenance of the remediated soil conditions within the VCUP project area.

This cleanup proposal is designed to be implemented in three phases.

**Phase 1** addresses the need for (a) soil sampling and analysis at individual properties, as needed to define the scope of remaining soil remediation; (b) soil remediation at developed properties where the soil lead concentration is greater than 1,100 mg/kg and current zoning allows for residential use; (c) soil remediation at developed properties where zoning prohibits residential use (e.g., Public Facilities) and the soil lead concentration is greater than 1,700 mg/kg; and (d) remediation of soil on unpaved roads and alleys where the soil lead concentration is greater than 1,700 mg/kg; and (d) remediation of soil on unpaved roads and alleys where the soil lead concentration is greater than 1,700 mg/kg, including the adjacent Townowned, unvegetated, right-of-way areas that also have surface-soil lead contents greater than 1,700 mg/kg. Phase 1 will begin following CDPHE's acceptance of this Application and when the proposed Institutional Controls have been established through the Town of Rico's adoption of the Overlay Zone Regulations that establish two overlay zoning districts into the RLUC. The anticipated duration of Phase 1 is 3 to 4 years. The separate tasks that will be performed to complete Phase 1 are described in Section 6.1.

**Phase 2** is to be initiated upon adoption of the Overlay Zone Regulations, which will establish two new overlay zoning districts – the Rico Soils Overlay Zone District (RSOZ) and the Environmental Remediation Overlay Zone District (EROZ), and related requirements for the management of soil disturbed by excavation or other property-development activities. During Phase 2, AR will establish and implement the VCUP project's ICs program, which is referred to herein as the "Rico Soils Management Program." Phase 2 will continue for at least 3 years or until ten (10) fifteen (15) previously undeveloped properties have been processed through the VCUP program as part of Phase 2, whichever period is longer. The early period of Phase 2 will commence run concurrently with Phase 1.

In Phase 3 t The Town of Rico will be responsible for implementing the Rico Soils Management Program during Phase 3, with the financial assistance of funding from AR. The Rico Soils Management Program, which will be implemented during both Phases 2 and 3, is described in greater detail in Section 6.2.

Cleanup work conducted during Phases 2 and 3 will be subject to the Overlay Zone Regulations. Property development within the EROZ is not addressed by this VCUP. <u>UnderPer the soils management</u> requirements and the Overlay Zone Regulations, development within the EROZ will be prohibited unless approved by CDPHE pursuant to the State VCUP program or other written approval from CDPHE. A draft of the proposed Overlay Zone Regulations that defines the new zoning overlay districts and specifies related soil-management requirements is included herein as Appendix E. The draft included in Appendix E is scheduled for a first reading at the Town of Rico Board of Trustees meeting on <u>May 20, 1</u>, 20201. DRAFT\_VCUPApplication\_Rev\_2\_19\_21\_AR rec\_d 3.2.21\_AR Formatted: Highlight

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Commented [TAB62]: This concept is important to the town

Commented [AR63R62]: Atlantic Richfield can agree to either: 1) 3 years or 10 projects, whichever is longer OR 2) 3 years or 15 projects, whichever is shorter. 3 years or 15 projects is too long. After 3 years or 10 projects, the Town should be fully integrated into the program and prepared for the transition to Phase 3.

Commented [SC64R62]: The Town would like to discuss this issue further. Per Town Board members, the period should be at least the longer of 3 years or 15 projects.

**Commented [AR65]:** References to sources of funding are not necessary in the VCUP Application. Atlantic Richfield proposes to remove funding details from this application and rely instead on the Funding Agreement established with the Town.

The State agrees with this approach.

**Commented [AR66]:** AR is unclear what "per the soils management requirements" means.

**Commented [AR67]:** To be updated at the time that Draft VCUP Application is submitted to CDPHE.

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The existing Rico Soil Lead Repository will be utilized for disposal of qualifying soil removed from locations within the VCUP project area during Phases 1, 2, and 3. The Rico Soil Lead Repository is operated by AR in accordance with the Certificate of Designation issued by Dolores County (SEH 2004). Section 6.3 of this Application provides additional information about the Rico Soil Lead Repository.\_If the capacity of the existing Rico Soil Lead Repository is exhausted, AR will construct a replacement repository located a similar distance from the Town of Rico as the existing repository to be used for the VCUP remediation activities.\_determine how to continue to manage ongoing deliveries of such action-level soils and mine waste in accordance with applicable state and federal law, including expansion of the Soil Lead Repository, construction of a new repository a comparable distance from the Town of Rico as the existing repository, beneficial use of the material, and/or off-site transport and disposal.

### 6.1 PHASE 1 - SOIL CHARACTERIZATION AND SOIL REMEDIATION

During Phase 1, the Applicants' scope of work will include the following tasks. Responsibility for implementing these the following Phase 1 tasks is allocated between AR and the Town of Rico in a separate agreement, with the tasks being performed by (i) AR or (ii) the Town of Rico and generally being funding by AR):

- ensuring consistency with past VCUP work;
- community outreach and education;
- soil sampling, and analysis of soil for lead, at the parcels that remain to be sampled in the Town
  of Rico;
- verification of clean soil cover by re-sampling surface soil at previously remediated properties that have been more recently disturbed by Town-permitted excavation or building activities; and five additional properties where the clean soil cover appears undisturbed;
- soil remediation of <u>developed</u> properties in the Town of Rico with soil-lead concentrations above the applicable action level for the allowed land uses associated with each property, which typically include residential use (for the purpose of the VCUP project, a <u>developed</u> property is an improved property with a structure that is in a condition suitable for commercial or residential use and occupation);
- soil remediation along unpaved road and alley segments where lead concentrations are above 1,700 mg/kg, including the adjacent Town-owned, unvegetated right-of-way areas that also have surface-soil lead contents greater than 1,700 mg/kg;
- operation and maintenance (O&M) of the Rico Soil Lead Repository; and
- data management and record keeping to -support the project's Institutional Controls program.

Commented [TAB68]: New

**Commented [AR69]:** As long as soil is properly managed, AR should be able to elect other alternatives besides a replacement repository if existing repository capacity is exceeded.

Commented [TAB70R69]: OK with the qualifier shown.

**Commented [SC71R69]:** However, Town Board preference is for expansion of current Repository rather than construction of new repository.

**Commented [AR72]:** Refer to prior comment (page 22) regarding removal of funding details from this application.

**Commented [AR73]:** Added to align with first subsection below.

**Commented [AR74]:** AR is not opposed to conducting confirmation soil sampling at 5 previously remediated properties, but the criterion for evaluating the soil lead results from these properties should be the soil cleanup level, 1,100 mg/kg, rather than 100 mg/kg as indicated by Town on pages 26 and 27.

Commented [TAB75R74]: Discuss with town.

**Commented [DF76R74]:** What was the clean fill criterion under the 2004 VCUP governing this work?

Each of the proposed Phase 1 VCUP tasks is described below. More detailed specifications for soil sampling and analysis and performance of soil remediation during Phase 1 are provided in Appendix D, the 2020-2021 Phase 1 VCUP Work Plan.

### 6.1.1 CONSISTENCY WITH PAST VCUP WORK

Phase 1 is intended to complete several cleanup tasks that were initiated with the 2004 VCUP Application. As such, the proposed work in Phase 1 adopts the procedures previously used to:

- perform soil sampling at individual parcels (or adjacent parcels under the same ownership) and along unpaved roads and alleys,
- identify parcels, and the areas within parcels, where soil remediation is warranted,
- perform soil removal and replacement where soil lead concentrations are above the applicable, site-specific action level,
- handle and dispose of soil removed from remediated parcels, and
- communicate with property owners and community members.

A high priority for the original (2004) VCUP soil investigation and cleanup efforts was to obtain access to a high percentage of Rico properties for soil sampling and soil remediation. To achieve this goal, the following general communication and coordination protocols were followed to ensure that owners and residents were well informed about the VCUP investigation and cleanup efforts. Similar notification practices and communications with property owners will be adopted for the proposed Phase 1 VCUP tasks.

- Identification of Property Ownership Using Town and/or County records, a map was prepared identifying ownership of all parcels within the Site boundaries for use in planning of sampling and cleanup activities.
- Notification of Property Owners General information was provided to all property owners
  regarding Rico's mining history; exposure to lead in soil; the role of the Applicants, including the
  Town, in VCUP activities; the proposed sampling program; possible remedial actions; and the
  project's schedule.
- Access Agreements Signed access agreements were obtained from property owners prior to collection of samples or performance of cleanup activities.
- Notification of Sampling Property owners were pre-notified of the estimated date and time of sampling.
- Notification of Results –Owners of properties with soil lead above an action level were individually notified of the results for their properties.

- Development of Property-Specific Cleanup Activities Representatives of the Applicants met with each property owner to discuss the specific cleanup actions for their property. Individual Site Work Plans (ISWPs) were developed to document the cleanup plan designed for each specific property.
- Public Information The Applicants provided regular progress updates to the community and other interested parties.

### 6.1.2 COMMUNITY OUTREACH AND EDUCATION

A community outreach program and informational materials will be developed by the Applicants to explain and communicate the purpose of the VCUP soil-sampling and soil-remediation efforts. This information will be made available to targeted property owners and Rico residents using several different approaches:

- 1. An informational website will be established by the Applicants for the Rico Townsite Soils VCUP Project. The website will provide general information about the objectives of the Rico VCUP project, descriptions of the VCUP soil sampling and remediation activities, explanation of the potential health risks from exposure to lead in soil and ways to reduce exposure to lead (with links to relevant websites for additional public health information), and explanation of the benefits for property owners who participate in the project by granting the Applicants access to their properties for soil sampling and/or remediation work. The address of the project website will be included on mailings to property owners (refer to item 3 below), and the Town of Rico website will also include a direct link to the Rico Townsite Soils VCUP website.
- 2. "Fact Sheets" summarizing the information on the Rico Townsite Soils VCUP Project website will be made available to local property owners and residents from the Rico Town Manager's office and at Rico's Town Library.
- 3. Informational materials and requests for access will be mailed to the owners of the individual properties identified for soil sampling and/or soil remediation during Phase 1. Requests for property access will be supplemented with phone calls and/or electronic mail, whenever possible, and may be followed up with in-person meetings with owners residing in Rico (refer to 2020-2021 Phase 1 VCUP Work Plan, Appendix D, for additional details regarding requests for property access).
- 4. In-person<sub>7</sub> information sessions may be organized in Rico to provide property owners and residents an opportunity to address questions or concerns directly to VCUP project representatives.

Community outreach efforts will begin as soon as [Date] and no later than with acceptance of this VCUP Application by CDPHE. Community outreach and education efforts will continue for the duration of the Phase 1 cleanup activities and will be coordinated with similar outreach activities related to the ICs program that is implemented as Phase 2 (refer to Section 6.2.2).

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### 6.1.3 SOIL SAMPLING AND ANALYSIS

Approximately 100 parcels located within the Town boundaries, most of those undeveloped, remain to be sampled in order to characterize lead concentrations in soil. A list of those parcels is attached to this Application (Attachment <u>34</u>). Locations of the parcels that remain to be sampled are indicated on Figure 11. Attachment <u>34</u> does not include the undeveloped parcels in high avalanche areas or flood zones that will not be sampled as part of the initial sampling program in Phase 1. However, if an owner of such a parcel <u>obtains approval elects</u> to develop the parcel, <u>sampling of</u> the area of the proposed disturbance <u>will occur in accordance with will be sampled pursuant to</u> the requirements of the <u>Institutional Controls regulations</u>.

Proposed soil-characterization tasks that will be completed in Phase 1 include:

- Requesting new or modified access agreements from owners of the parcels where AR plans to collect soil samples.
- Collecting soil samples at parcels where access has been granted to AR.
- Collecting soil samples at previously remediated properties where the clean soil cover may have been more recently disturbed by later excavation or construction activities, and at five additional properties with existing clean soil covers that do not appear disturbed, for quality control purposes and to confirm the assumption in the residual risk analysis (see Section 5.4) that lead concentrations in clean soil covers do not exceed 100 ppm.
- Collecting soil samples on unpaved roads to better define the extent of soil remediation for roads and alleys.
- Analyzing all soil samples for lead concentration.
- Reporting soil data to property owners and compiling and managing soil data and records of VCUP soil remediation to support the ICs program implemented during Phases 2 and 3 (as explained in Section 6.2).

In addition to soil sampling at the estimated 100 parcels for which soil sampling has not been performed, Phase 1 will also include soil sampling at a number of the properties that were remediated before 2008. The purpose of sampling at these properties is to evaluate whether more recent soil disturbance, by excavations or other property improvement, has reduced or eliminated the clean soil cover that was placed during VCUP soil remediation. The Town of Rico has issued permits for excavations and/or construction projects on some of the previously remediated properties, and those properties have been identified through a review of the building permits issued by the Town from 2008 through 2019. Sixteen previously remediated properties of this type have been identified, and those properties are listed in Attachment 45, and their locations are shown on the parcel map in Figure 12.

For these 16 properties, the Applicants propose to review the location and extent of soil disturbance since 2008 relative to the previously remediated areas of the property, and based on the results of that

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**Commented [SC77]:** Some Town Board members previously expressed a desire to have the entire town sampled (or resampled). The June document from the board suggests an approach consistent with what is outlined here, which uses some existing data.

**Commented [AR78]:** AR's position is that the criterion for evaluating the soil lead results from these properties should be the soil cleanup level, 1,100 mg/kg, rather than 100 mg/kg. Although the Residual Risk Analysis states that borrow material from off-site will have less than 100 ppm lead, this was not a consideration in analyzing residual risk.

**Commented [DF79R78]:** The last statement is not correct. The Pb concentrations in remediated areas of the properties evaluated in the RRA were necessary to calculate the area and time-weighted average Pb concentrations that children might be exposed to on and off their property. The RRA either used actual topsoil concentrations, which were less than 100 (15 in the example given in the text) or 100 ppm (see pp. 5-6 of RRA). I suggest AR evaluate the significance of the cover soil sample data on a case by case basis, without setting a specific pass/fail criterion.

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review, the Applicants would identify the properties warranting re-sampling and analysis of soil. For the properties where re-sampling is needed to confirm soil-lead concentrations, soil samples would be collected during Phase 1, once-provided access agreements have been are obtained from the property owners. The re-sampling results would be relied on to decide whether additional soil remediation needs to be performed to improve or replace the soil cover to achieve 12 inches of clean cover over the remediated area. In addition, for quality control purposes and to confirm the assumption in the residual risk analysis (see Section 5.4) that lead concentrations in clean soil covers do not exceed 100 ppm, cover soil at five previously remediated properties where the soil cover appears to be undisturbed will be sampled and analyzed for lead concentrations.

The overall approach and methods to be applied for collection and analysis of soil samples from the parcels sampled in Phase 1 will be consistent with those adopted for the 2004 VCUP (as described in AR 2004b and Section 4.5.3). The <u>2020-2021 Phase 1 VCUP</u> Work Plan (Appendix D) provides specific field and laboratory procedures for the collection and analysis of soil samples.

AR will request that property owners grant AR access to their property for the collection of soil samples; those requests will be made during the first 3 years of Phase 1. If an owner does not provide AR with access to the property during Phase 1, the VCUP ICs program (Section 6.2) may later require that the owner collect soil samples for lead analysis in order to receive the necessary permit for <u>proposed</u> development activities under the Overlay Zone Regulations.

## 6.1.4 Soil Remediation at Developed Properties

Soil remediation will be performed during Phase 1 at the individual developed properties where soil lead concentrations are greater than the applicable, site-specific action level and for which the property owner provides AR access to the property for that work.

The proposed tasks associated with soil remediation at individual properties during Phase 1 include:

- Requesting and obtaining access for soil remediation from owners of the targeted properties.
- Soil removal and replacement at developed parcels where residential use is allowed, lead in soil exceeds 1,100 mg/kg, and access for remediation has been provided by the owner.
- Soil removal and replacement at previously remediated, developed parcels where <u>the</u> soil <u>cap</u> has since been disturbed and Phase 1 soil data indicate lead in <u>surface</u> soil exceeds 1,100 mg/kg, and where access for remediation has been provided by the owner. The disturbed and undisturbed areas will be sampled prior to remediation to confirm the area warranting remediation. Based on this confirmation, soil remediation may generally be limited to areas of a parcel that have been affected by the disturbance.
- Soil removal and replacement on unpaved roads and alleys, including the non-vegetated portion
  of the right-of-way owned by the Town (Section 6.1.5) (including existing ditches present within
  the right-of-way), where lead in soil exceeds 1,700 mg/kg.

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Commented [AR80]: State comments.

Commented [DF81]: I would expect the data to be evaluated in the following manner: are the concentrations consistent with what we would expect based on concentrations measured in the borrow soil, if they exist, or what we might expect to see based on the source of soil used and the lack of disturbance noted for these 5 properties. If Pb concentrations are significantly higher than expected, then the reasons for this should be evaluated, even if still below 1100 ppm, so that we can remain confident that the remedy design is still reliable. For example, are the higher concentrations due to use of soil from a location other than expected? Are they due to run-on of stormwater from an adjacent property? Was the area not actually covered (perhaps as indicated by lack of a marker laver)?

**Commented [SC82]:** Town would like to discuss having AR remediate the Town Park and the road serving the park.

**Commented [SC83]:** Issues regarding the cleanup number still need to be resolved, with some board members indicating 400 ppm should be the cleanup number.

Commented [SC84]: Issues regarding the cleanup number still need to be resolved, with some board members indicating 400 ppm should be the cleanup number.

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- Soil removal and replacement to address lead-containing soil in the Town-owned right of way adjacent to VCUP lot 45, as identified and recommended through the Residual Risk Analysis (Integral 2010; also refer to Section 5.4).
  - Soil removal and replacement in ditches along and downstream of remediated sections of unpaved roads and alleys and non-vegetated rights-of-way.
- Maintenance and operation of the Rico Soil Lead Repository for disposal of soil containing lead above 1,100 mg/kg (refer to Section 6.3), or alternative means for managing deliveries of actionlevel soils, <u>If if</u> the capacity of the existing Rico Soil Lead Repository is exhausted, <u>AR will</u> construct a replacement repository a similar distance from the Town of Rico as the existing repository to be used for the VCUP remediation activities.

### 6.1.4.1 SCOPE OF WORK

Fourteen previously sampled, developed properties (i.e., improved properties where a structure is present and in a condition suitable for commercial or residential use and occupation) with soil lead concentrations greater than the appropriate action level have been identified, to date, for soil remediation during Phase 1; this includes parcels where the current zoning is commercial but residential use is allowed. A list of the previously sampled, developed properties that have already been identified for remediation is attached to this Application (Attachment 56). The locations of these properties are indicated on the parcel map in Figure 13.

Additional properties will be identified for remediation on the basis of the soil-lead data collected during the following Phase 1 soil sampling efforts:

- Soil sampling at the approximately 100 parcels that remain to be sampled (refer to Attachment 34 for a list of the properties that will be sampled during Phase 1).
- Soil sampling at previously remediated properties where soil has since been disturbed by
  excavations and/or new construction permitted by the Town since 2008. The need for reremediation of a more recently disturbed property will be verified on a case-by-case basis, as
  indicated through resampling and reanalysis of soil and other site-specific factors (Section 6.1.3).
- —Sampling of cover soil at five previously remediated properties where the soil cover appears to be undisturbed for quality control purposes-<u>and to confirm the assumption in the residual risk</u> analysis (see Section 5.4) that lead concentrations in clean soil covers do not exceed 100 ppm.
- <u>AR will also complete remediation of soils disturbed by the installation of a sewer system in the</u> Town, either through its own contractor or through a funding agreement with the Town, if elevated lead levels exist in such soils, when that system is installed.

AR will request that property owners grant AR access to their developed property for soil remediation; those requests will be made during the first 3 years of Phase 1.

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**Commented [AR85]:** This is already covered by the 4<sup>th</sup> bullet above.

Commented [AR86]: See prior comment on this point. Commented [TAB87R86]: If this is far from town, not OK. This is a major concern.

**Commented [SC88R86]:** Additionally, Town Board preference is for expansion of current Repository rather than construction of new repository.

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**Commented [TAB89]:** We do not agree with this change unless it is merely moving from Phase 1 to Phase 2 or 3.

**Commented [AR90]:** Soil remediation associated with installation of a Town sewer system is outside the scope of the VCUP, which is focused on exposure to lead in soils on developed residential and commercial properties. Soils disturbed during future sewer installation should be managed similarly to soils disturbed during other development projects in Town.

Commented [DF91R90]: The LUCs address future development activities, not past, so I'm not sure how impacts like this that have already occurred would be addressed, unless part of a road being addressed under Phase 1, or part of a property that will be addressed under Phase 2 or 3.

Phase 1 soil remediation will be completed during the summer months (roughly June through mid-September) over a 3- to 4-year period. Thereafter, soil remediation (removal/replacement) will be an element of the VCUP ICs program, and properties where remediation is performed will be identified in accordance with the new Overlay Zone Regulations adopted by the Town, as explained in Section 6.2.

### 6.1.4.2 SOIL REMEDIATION PLAN

Soil remediation during Phase 1 will follow the same basic design as the VCUP soil remediation performed in 2005-2007. In the areas of the parcel where the 0-2-inch soil lead concentrations exceed the applicable action levels, soil will be removed to a depth of approximately 12 inches bgs and then clean soil will be placed to backfill the excavated area and restore the original surface grade. For properties with a total area of less than or equal to 5,000 sq ft, the entire yard area (excluding areas that are paved or covered by structures or other permanent cover materials) will be remediated. For properties larger than 5,000 sq ft, soil remediation will be performed in the yard areas within a 100-foot radius of the primary occupied structure where the action level is exceeded. Before backfilling, a barrier/marker material will be placed at the bottom of the excavation (i.e., typically 12 inches bgs) to mark depth of soil replacement. The excavated soil will be transported to the Rico Soil Lead Repository for disposal.

Before initiating cleanup activities at any individual property, AR will request that the owner provide an access agreement for the work, and AR will develop an Individual Site Work Plan (ISWP) for review by the property owner. The ISWP will include a brief narrative and an annotated map that presents a description of the areas where soil will be removed, the final cover type (e.g., native species, sod, aggregate or rock mulch), a list of features (e.g., trees, shrubs, fences), that will be remain, if any, and steps that will be taken to minimize damage to other features at the property. The map or site-plan drawing will show the property boundaries, key features present in the parcel area, and any features that will be disturbed or modified by soil removal. The ISWP will also identify AR's contractor(s) and key personnel responsible for on-site construction activities, with their contact information. Finally, the ISWP will include photographic documentation of the condition of the property prior to remediation, including structures and any concrete pads, fencing, or other landscaping improvements.

AR will prepare the ISWPs in accordance with the remedial design and construction specifications included in the 2020-2021 Phase 1 VCUP Work Plan (Appendix D). The 2020-2021 Phase 1 VCUP Work Plan also provides geotechnical, nutrient, and lead concentration specifications for the clean soil used to backfill the areas where soil was removed.

### 6.1.5 REMEDIATION OF ROAD AND ALLEY SEGMENTS

Previous sampling of surface soil on unpaved roads and alleys in the Town of Rico indicates that certain road segments have lead concentrations greater than 1,700 mg/kg. Those segments are the roads and alleys that are targeted for VCUP remediation during Phase 1. Figure 9, "Lead Concentrations in Unpaved Road and Alley Samples 0-2" Depth," indicates lead concentrations in samples collected from the surface materials of roadways and alleys.

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Commented [DF92]: Not just those yard areas above the

action level

**Commented [DF93]:** Check LUC – I thought there were a few criteria used to define the residential use area around homes on larger lots. For example, if a play area is more than feet away from the home, it should still be remediated.

**Commented [SC94R93]:** The Phase 1 Work Plan provides: For properties with a total area of less than or equal to 5,000 sq ft, the entire yard area (i.e., areas of the property that are unpaved and clear of structures or other permanent cover materials) will be remediated. For properties with a total area greater than 5,000 sq ft, soil remediation will be performed in the yard areas within a 100-foot radius of the structure where the action level is exceeded rather than across the entire property. Decisions to remediate unpaved driveways, play areas, and vegetable gardens will be based on the individual sample results associated with each such area present.

**Commented [SC95]:** Town Board members have indicated the road remediation should be sequenced so that drainage can be maintained and so that it comes after utility installation work. But what if roads are ready to go before utility work is ready?

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Lead concentrations in road surface materials may have changed since the time that some of these samples were collected due to water-line replacement or other utilities and road-maintenance work. To address uncertainty regarding the current lead concentrations on road surfaces in areas disturbed since sampling, the Town of Rico will assist AR in a review of road-disturbing activities since 2004 and, based on this, AR will identify road segments where additional soil characterization is needed to finalize the scope of work for road remediation. Soil sampling may also be performed during Phase 1 if needed to better define the final scope of work for remediation of unpaved roads and alleys.

Sampling and analysis of soil from unpaved roads will be conducted in accordance with procedures in the 2020-2021 Phase 1 VCUP Work Plan, and the lead concentrations from the additional samples will be considered with older road/alley soil data collected for the VCUP project to identify the final road segments for remediation. A soil sampling and analysis report will be prepared by AR summarizing the results of testing for each of the road segments, including a figure showing areas above the action level.

Road remediation will be focused on unpaved roads within the Town of Rico that experience regular vehicular traffic, such as roads that service the Town's existing residential neighborhoods. The project area does not include former mining-claim access roads, roads currently used only for recreation (mountain biking, hiking, skiing, etc.), or any other roads that do not currently serve developed residential parcels. The Town of Rico will conduct the road-remediation work proposed under this VCUP Application., to be funded by AP, pursuant to a road remediation work plan-ISWP to be prepared by AP.

The proposed road remediation work includes:

- Removal of the top 12 inches of the surface/bedding materials on the road segments with lead concentrations greater than 1,700 mg/kg and replacement with clean road base and gravel surface cover. Within each road/alley segment identified for remediation, the extent of removal and replacement will include the traveled road surface and adjacent, unvegetated, Town-owned right of way.
- <u>The surface of</u> <u>Eexisting drainage features along the remediated road segments will be remediated and, if necessary, replaced in kind to the substantially pre-remediated condition and/or improved as needed to limit future erosion of the clean replacement surface materials.
  </u>
- Testing for the lead concentration of the road base materials and gravel used to cover surface materials along the remediated road segments.
- Development of specifications for future surface maintenance of unpaved roads by the Town; specifications will be developed to limit exposure of the materials containing lead that underlie cover materials placed during VCUP remediation.
- Development of procedures that the Town of Rico may use to control dust generated by vehicle traffic along the Town's unpaved roads.

The <u>2020-2021</u> Phase 1 VCUP Work Plan (Appendix D) provides additional details regarding the planned Phase 1 roadway sampling and the remediation design for unpaved roads and alleys.

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# Commented [SC96]: Some Town Board members have

previously expressed a desire to have roads re-sampled (rather than relying on old samples). Commented [SC97]: Town Board members have suggested that the right-of-way beyond the edge of the traveled way be

tested and that AR work with the Town to determine which lots

need to be re-sampled.

repository.

Commented [DF98]: This work plan at a minimum should show what segments require remediation and provide procedures for proper removal and transport of the excavated materials to the

**Commented [AR99R98]:** AR agrees that these and other details should be included in the road remediation work plan.

**Commented [SC100]:** Some Town Board members request a lower road remediation action level (so that more road segments are remediated)

**Commented [AR101]:** Civil engineering improvements to the Town's road and drainage system are outside the scope of the VCUP. If drainage features are damaged during the Phase 1 road remediation, they will be repaired to the condition existing prior to remediation.

**Commented [DF102R101]:** If existing drainage features or conditions observed at the time of the above review have the potential to result in future damage to the remedy or new contamination of road, AR and the town should identify reasonable enhancements or actions that the town could take to prevent this.

Commented [SC103R101]: The Town does not agree that drainage improvements are outside the scope of the VCUP; this topic requires more discussion among the parties.

### 6.1.6 RECORD KEEPING AND DATA MANAGEMENT

The soil sampling and soil remediation records generated during Phase 1 cleanup tasks will be maintained for use by the ICs program that is implemented as Phases 2 and 3 of the proposed cleanup. The records to be maintained include:

- Property-owner access agreements for soil sampling and soil remediation by AR;
- Soil sample collection and analysis records and Soil Sampling Reports provided to property owners;
- ISWPs prepared for each of the remediated properties, including records documenting any changes made during remediation;
- Statements of completion from owners of properties where soil was remediated;
- Photographs and any other documentation of the property condition before and after soil remediation; and
- Property-specific documentation of CDPHE's VCUP determination, as described in Section 6.1.7.

In addition, AR will maintain the existing Rico Townsite Soils VCUP database by incorporating the Phase 1 soil-sample information and results of soil-sample analyses for lead. The database also stores data describing the development status and VCUP sampling and remediation status of each property. The VCUP database will be routinely updated and continuously maintained by AR during the cleanup work to complete Phases 1 and 2. During Phase 3, the Rico Soils Management Program will maintain the database, as funded by AR.

### 6.1.7 COMPLETION OF VCUP ACTIONS, BY PROPERTY

### 6.1.7.1 Soil SAMPLING REPORTS AND VCUP NO ACTION DETERMINATIONS (VCUP NADS)

A soil sampling and analysis report will be prepared by AR for each of the sampled properties within the VCUP project area. The sampling and analysis report will be provided to the property owner for their records, and a copy of the report will also be included in the Rico Townsite Soils VCUP records maintained for reference during the ICs program implemented in Phases 2 and 3.

The sampling and analysis report prepared for each property will document the sample locations, depths, and lead concentrations. The report will also include a copy of the access agreement signed by the property owner and by AR's representative, and that agreement will indicate that AR received the property owner's permission to act as their agent under the VCUP to investigate soil conditions on the property and report those results to CDPHE in accordance with requirements of Colorado's VCUP.

For the properties where the lead in soil concentrations were reported less than 1,100 mg/kg, the sampling and analysis report will also be provided by AR to CDPHE with a formal request for a VCUP NAD. With Following CDPHE's acceptance of the sampling and analysis report, CDPHE a request will be submitted to CDPHE forprovide a VCUP NAD for the property. The VCUP NAD will be addressed to AR

Commented [AR104]: State comment.

**Commented [DF105R104]:** These two sentences seem redundant – will a NAD be requested twice?

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with a copy to the property owner and a copy for the property records maintained by the VCUP ICs Program (refer to 2020-2021 Phase 1 VCUP Work Plan for additional details). AR will inform the property owner of the option to record a deed notice (Title Notice) in the Office of the Dolores County Clerk and Recorder that identifies the existence of the Soil Sampling Report and VCUP NAD in property records maintained by the VCUP ICs program (refer to 2020-2021 Phase 1 VCUP Work Plan for additional details regarding the program's record keeping practices).

# 6.1.7.2 CLEANUP COMPLETION REPORTS AND VCUP NO FURTHER ACTION DETERMINATIONS (VCUP NFADS)

A Cleanup Completion Report will be prepared by AR upon completion of VCUP soil remediation at each property addressed during Phase 1 as well as for each of the properties where soil remediation was performed under the original 2004 VCUP Application (2005-2007 VCUP soil remediation). Each Cleanup Completion Report will document the work performed in accordance with this VCUP Application <u>or the</u> 2004 VCUP Application and demonstrate compliance with all applicable VCUP requirements. The report will include a copy of the soil-remediation access agreement, signed by the property owner and AR, indicating that AR received the property owner's permission to act as their agent under the VCUP in the performance of soil remediation and to request a VCUP NFAD from CDPHE. Each Cleanup Completion Report will also include a copy of the ISWP prepared for the property, with any changes to that plan identified, and a statement of completion signed by the property owner and AR's representative. The Cleanup Completion Report will be submitted to CDPHE with a request for a VCUP NFAD.

With Following\_CDPHE's acceptance of the Cleanup Completion Report, <u>a requestCDPHE</u> will <u>be</u> <u>submitted to CDPHE forprovide</u> a VCUP NFAD for the property. The VCUP NFAD will be addressed to <u>the</u> <u>property owner and</u> AR with a copy provided to the property owner and a copy</u> for the property records maintained by the VCUP ICs Program (refer to <u>20202021 Phase 1</u> VCUP Work Plan for additional details). AR will inform the property owner of the option to record a deed notice (Title Notice) in the Office of Dolores County Clerk and Recorder to identify the existence of the Cleanup Completion Report and VCUP NFAD in property records maintained by the VCUP ICs program (refer to <del>2020\_2021 Phase 1</del> VCUP Work Plan for additional details regarding the program's record keeping practices). The VCUP NFAD will state <del>, and AR will inform the property owners, that future development activities on the property must comply with the Overlay Zone Regulations.</del>

For each of the road and alley segments and ditches remediated under Phase 1, the Town, funded by AR, will complete a Cleanup Completion Report For each of the road and alley segments and ditches remediated under Phase 1. The Town and AR will jointly submit the se Cleanup Completion Reports to CDPHE with a request for a VCUP NFAD.

## 6.2 PHASES 2 AND 3 – INSTITUTIONAL CONTROLS

ICs are non-engineered administrative and/or legal controls that either achieve or support attainment of environmental cleanup objectives. ICs will be implemented at this Site to maintain the protectiveness of VCUP soil remediation completed by AR. The Rico Townsite Soils VCUP ICs are designed to ensure appropriate long-term management of lead-containing soil by providing enforceable soil-handling and

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**Commented [AR106]:** For consistency with State comments in 6.1.7.1.

**Commented [DF107R106]:** Same comment as above – seems like AR will be making two requests for a NFA.

soil-disposal requirements for future excavations, new construction, and road maintenance and utilities work. The ICs selected for the Site include (1) governmental controls, in the form of new land-use regulations and a related permitting process for development activities (i.e., the Overlay Zone Regulations), and (2) informational resources such as a soil sampling-and-analysis database, a mapbased property-remediation tracking system, and community outreach and education. The proposed governmental controls developed for the Rico Townsite Soils VCUP project include additions to the RLUC, subject to formal adoption by the Town Board of Trustees.

The objectives of the VCUP ICs are to:

- Ensure long-term protection of clean soil covers placed on remediated properties;
- Ensure clean soil covers are placed on properties developed in the future where applicable soil action levels are exceeded;
- Specify requirements for managing and/or remediating soil when soil covers are disturbed during future development activities; and
- Require appropriate handling and disposal of soil with elevated lead concentrations when such soil is removed from a location of potential environmental concern.

The planned elements of the ICs program include:

- The Town of Rico will establish two new overlay zoning districts, the RSOZ and EROZ, in the RLUC.
- The Town of Rico will adopt, administer, and enforce the Overlay Zone Regulations as part of the RLUC to specify soil-management requirements, including permit requirements, for development activities that will disturb soil within the RSOZ and require CDPHE approval for any development activity within the EROZ.
- AR will operate and maintain a local disposal facility, the Rico Soil Lead Repository, for soil
  originating from the VCUP project area with lead concentrations greater than 1,100 mg/kg.
- AR will establish a source of clean replacement soil that can be used, as needed, to establish a
  clean soil cover over areas where soil-lead concentrations are greater than the applicable, sitespecific action level.
- Proper handling (and if needed, disposal) of excavated soil during routine maintenance of unpaved roads and subsurface utility installation and maintenance.
- AR and the Town will engage in community outreach and education.
- AR and the Town will maintain data management systems and record keeping by an electronic database with linked, GIS-based spatial information, as funded by AR.

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Commented [DF108]: Seems like this should be an objective too

**Commented [AR109]:** Routine maintenance of unpaved roads that have been remediated should not extend below the cleancover cap and so should not require "proper handling" under the VCUP. Routine maintenance of unpaved roads that test below the action level also should not require "proper handling." Utility installation should be handled like other development projects in Town.

**Commented [SC110R109]:** The Town would like to discuss this. There may be situations in which the Town has to handle leadcontaminated soil for these purposes.

### 6.2.1 GOVERNMENTAL CONTROLS - OVERLAY ZONE REGULATIONS

The Town will adopt, by a Town ordinance, the Overlay Zone Regulations into the RLUC that establish two overlay zoning districts within the current Town boundaries as defined areas of environmental concern. A draft of the proposed Town ordinance and the Overlay Zone Regulations is provided in Appendix E for reference. The proposed Overlay Zone Regulations (Appendix E) specify the requirements for soil testing, handling, stockpiling, remediation, and disposal when soil that contains lead above an action level or a soil cover on previously remediated properties is disturbed by excavations, construction, or other development activities. Properties in the EROZ (formerly remediated VCUP mine sites) and properties within the RSOZ (all other properties) are managed differently under the proposed regulations.

The Overlay Zone Regulations are-will be enforceable by both the Town and CDPHE. Prior to or simultaneously with the Town's adoption of the Overlay Zone Regulations, the Town and CDPHE will enter into an intergovernmental agreement (IGA) pursuant to C.R.S. § 25-15-320(3). The IGA will authorize CDPHE to oversee the Town's implementation of the Overlay Zone Regulations and to enforce the regulations separately.

### 6.2.1.1 RICO SOILS OVERLAY ZONE (RSOZ)

The RSOZ is defined as the area within the current Town boundaries, excluding the area delineated as the EROZ.

Once the proposed Overlay Zone Regulations have been adopted into the RLUC, the Town will administer and enforce the requirements of those regulations by issuing Stoils Eexcavation Ppermits for excavation and construction projects that will disturb soil at locations within the RSOZ. Soils Eexcavation Ppermits issued for work at properties where VCUP soil remediation was performed will include property-specific requirements for managing and disposing excavated soil and instructions to preserve and/or replace the original clean soil cover in areas of the property where soil-lead concentrations are above the applicable site-specific action level. The RSOZ requirements for soil sampling and analysis, soil remediation by removal and replacement, and disposal of soil with lead concentrations above the 1,100 mg/kg action level are generally consistent with the procedures specified for Phase 1 of the VCUP project (refer to Section 6.1). <u>AR will fund administrative, technical and legal assistance as needed for the Town to oversee and manage this program in all phases, pursuant to a separate agreement between the Town and AR.</u>

#### 6.2.1.2 Environmental Remediation Overlay Zone (EROZ)

The EROZ covers certain properties within the Town boundaries that have been remediated by AR and other parties pursuant to separate VCUP plans and NFAĐs approved by CDPHE, or that have been otherwise remediated under the oversight of CDPHE. Development activities within the EROZ which are not covered under this VCUP will be conducted by are prohibited unless the landowner entering into a separate VCUP with obtains approval from CDPHE pursuant to the VCUP program or other written approval from CDPHE for the development activity, as specified in the Overlay Zone Regulations. The Town is not responsible for overseeing or managing development in the EROZ, other than directing

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**Commented [AR111]:** State comment: the RLUC Appendix D revisions use the term "Soils Excavation Permit" – should use the same term in both docs.

Commented [AR112]: State comment.

owners who intend to conduct development activities to CDPHE and enforcing the prohibition in the Town Land Use Code.

### 6.2.2 RICO SOILS MANAGEMENT PROGRAM

Upon adoption of the Overlay Zone Regulations pertaining to the RSOZ, AR will establish an administrative program, the "Rico Soils Management Program," to assist the Town of Rico in its management and enforcement of the new governmental controls. The Rico Soils Management Program (the "Program") will provide qualified personnel, information, and technical resources to ensure that the ICs are effectively implemented.

The primary functions of the Rico Soils Management Program are to:

- Provide information resources for community members and for tracking the soil-lead concentrations and soil-cleanup status of individual properties. The Rico Soils Management Program will be tasked with –
  - Preparing and distributing information to community members regarding the potential health risks from lead exposure and how to reduce exposure to lead, requirements associated with the new overlay zone districts, and the rationale for those requirements, and assistance available from the Rico Soils Management Program when applying for a s<u>S</u>oils e<u>E</u>xcavation <u>pP</u>ermit.
  - Managing and maintaining property-specific soil-testing data, soil-remediation records, and VCUP NADs and NFA<sub>P</sub>s, as available, in a searchable environmental database and Geographic Information System (GIS).
- **Provide technical resources** to assist the Town and community in meeting the requirements of the RSOZ, including
  - Evaluating soil testing results, as available for individual properties, and any conditions indicating the presence of mine waste, to identify the need for remediation on a property-by-property basis.
  - Preparing soil handling and disposal procedures and soil remediation plans for individual properties, and reviewing plans for consistency with VCUP project objectives.
  - Reviewing excavation, soil handling, and soil removal/disposal/replacement plans prepared for utilities installations and maintenance in public and Town right of ways for consistency with VCUP project objectives.
  - Supervising Providing technical consultation on excavation, soil handling, and soil removal/disposal/replacement as needed to ensure proper segregation of soils and determine whether soils are eligible for disposal at the Rico Soil Lead Repository.

- Coordinating with AR, as the owner and operator of the Rico Soil Lead Repository, for disposal of soil with lead concentrations above 1,100 mg/kg.
- Provide materials to assist the community in meeting the requirements of the RSOZ, including-
  - Maintaining a clean soil stockpile (includes soil testing to confirm soil-lead concentrations <100 mg/kg) suitable for use in the performance of soil remediation.</li>
  - Maintaining a supply of <u>geotextile landscape</u> fabric to be used <u>by the property</u> <u>owner/developer</u> as a marker for soils covers, <u>plastic sheeting</u>, and <u>suitable containers</u> for soil management and transport-<u>bins for hauling soil</u>, and other materials as needed.

VCUP Phase 2 will start when the Town adopts the Overlay Zone Regulations into the RLUC. During Phase 2, AR will be responsible for implementing the Rico Soils Management Program, in coordination with the Town. AR will implement the program until <u>ten (10)</u> fifteen (15) previously undeveloped properties have been processed through the VCUP program or at least 3 years following completion of VCUP Phase 1, whichever is longer, and until the various protocols put in place to manage Program operations have been demonstrated as fully functional-and the Town confirms it is prepared to take over the Program.

VCUP Phase 3 will start when the Town of Rico takes over the Rico Soils Management Program when Phase 2 terminates, and the Town will be responsible for operating the Program throughout Phase 3. During Phase 3, AR will provide financial support, in accordance with a legally binding funding agreement, -as necessary to the Town to ensure that the Program continues as intended. The amount of funding provided by AR to the Town will be in accordance with a legally binding funding agreement between the two parties.

Key elements of the proposed Rico Soils Management Program are described separately below.

#### 6.2.2.1 INFORMATION RESOURCES

### **Community Outreach and Education**

The purpose of the community outreach program is to increase awareness of requirements associated with the new overlay zone districts and provide educational information to explain the rationale for those requirements. This program will target property owners, real estate professionals, construction contractors, and real estate developers. The notification methods and education materials will be designed to reach these target groups. A combination of direct and passive outreach methods will be utilized, including:

 Annual mailings for the first 5 years of the Rico Soils Management Program that provide summary information about and instructions for compliance with the overlay zone regulations. These materials will also provide internet addresses for additional information resources provided on the Rico Townsite Soils VCUP Project website (see Section 6.1.2).

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# Commented [AR113]: See comment on p. 22.

**Commented [SC114R113]:** See response to this comment above (3 years/15 projects, whichever is longer).

- Presentations during public meetings and open information sessions convened by either the Town of Rico and/or the Rico Soils Management Program and advertised to the local community.
- Explanatory materials and forms/checklists to guide users through the steps needed to obtain a <u>S</u>eoils <u>E</u>excavation <u>P</u>permit for work within the RSOZ. These materials would be available to download from the Rico Townsite Soils VCUP Project/Rico Soils Management Program website but also in paper copy at the local office for Rico Soils Management Program personnel, the Town Manager's office, and Rico Public Library.
- Answers to Frequently Asked Questions (FAQs) would be available at the Rico Townsite Soils VCUP Project/Rico Soils Management Program website and in hard-copy format from the Town of Rico at the Town Manager's office, Rico Public Library, and a local business office for AR onsite personnel.

### Data Management and Record Keeping

The Rico Soils Management Program will maintain an internet-accessible database and map-based userinterface (GIS) for up-to-date, property-specific, soil-sampling results and soil-remediation status. The Program will utilize the same database as maintained by AR during Phase 1 of the VCUP project (refer to Section 6.1.6). VCUP soil and property data compiled prior to the start of Phase 1 for the historical VCUP activities (2004-2015) and data collected, compiled, and maintained during Phase 1 will be included in the database transferred to the Rico Soils Management Program at the end of Phase 1. The database will be maintained by the Rico Soils Management Program through Phases 2 and 3<mark>- to be funded by AR.</mark> The Program will periodically update the database's property ownership information using records maintained by Dolores County. Any changes in the Town's zoning classifications and land uses will also be captured in routine updates to the database's property information and GIS layers. <u>These updates</u> will be funded by AR.

The scope of the property records available through this system will be limited to properties within the RSOZ and the EROZ. For each property in the overlay district, the Program will maintain the following records, as is applicable and relevant for any individual parcel:

- Dated VCUP correspondence with property owner(s), including property access agreements and letters transmitting soil sampling result reports;
- Soil sample-collection records (e.g., location coordinates, sample depth, sample type [composite/grab]) and the results from analyses of the soil samples for lead;
- Soil Sampling Report;
- Individual Site Work Plan(s) prepared to guide soil remediation on a map of the property, including any photographs associated with remediation at the property and records indicating any changes made during construction activities;

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### Commented [SC115]: Confirm intent of town for GIS.

Commented [AR116]: State comment.

- Cleanup Completion Report for VCUP soil remediation;
- Documentation of CDPHE NAD or NFAD;
- Soils <u>Eexcavation Ppermit application materials and Soils Eexcavation Ppermit(s) issued by the</u> Town of Rico;
- The Cleanup Completion Report filed with the Rico Soils Management Program and Cleanup Completion Report Certification issued by the program upon satisfactory completion of work performed in accordance with a Ssoils Eexcavation Ppermit; and
- Documentation of Town-issued NADs or NFADs, issued pursuant to the Town's Overlay Zone Regulations provide clarity to property owners regarding the ongoing obligations to comply with the Overlay Zone Regulations.

These records will be maintained in electronic format, and they will be hyperlinked to the parcel record in the VCUP project GIS to allow searching and viewing records associated with any individual property. With ongoing updates and maintenance of the database, GIS, and VCUP records, the Rico Soils Management Program will be able to provide soil sampling and analysis results and other information related to VCUP property remediation to current and future property owners (or their authorized representatives).

The <u>2020-2021 Phase 1</u> VCUP Work Plan provides additional information about the VCUP database and GIS and maintenance of those systems.

### 6.2.2.2 TECHNICAL RESOURCES

The Rico Soils Management Program is designed to assist members of the community, including property owners, contractors, and developers, in meeting the various requirements adopted for the RSOZ. The technical resources that the Program would provide during each stage of a development project are explained in the following paragraphs.

### Pre-Disturbance Soil Sampling and Analysis

Most of the parcels located in the RSOZ will have already had soil sampling and analysis performed, either during the original VCUP sampling activities or during Phase 1 of the work proposed in this application. The VCUP soil sampling results for any parcel will be available to the parcel's owner from the electronic database maintained by the Rico Soils Management Program.

If development is planned on a property for which VCUP soil lead data are not available, due to a failure of the property owner (past or current owner) to provide AR with access for sampling in the past, then soil sampling will be required. In these cases, the permit applicant will be responsible for collecting the soil samples and submitting them to a laboratory for analysis of lead content. The required soil sample collection and analysis procedures will be consistent with those included the 2020-2021 Phase 1 VCUP Work Plan (Appendix D) as well as any additional relevant requirements included in the RLUC.

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**Commented [SC117]:** Who pays the cost of this activity still under discussion.

**Commented [AR118R117]:** This question should be addressed in the funding agreement. It is AR's position that costs for Phase 2-3 sampling would be borne by the property owner if the original owner refused Phase 1 sampling. Such refusal would be recorded in the public database.

Commented [TAB119R117]: This is an open issue.

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Preparation and Review of Environmental Development-Soils Excavation Permit Applications	Commented [AR120]: State comment.
The Rico Soils Management Program will review lead concentrations reported from the pre-disturbation soil samples to determine whether planned development activities are subject to the requirements of the RSOZ. If the property has a VCUP NAD on record or if lead concentrations in samples collected in accordance with the VCUP procedures are all less than 1,100 mg/kg and the town has issued a town specific Residential NADConfirmation (as defined in the Overlay Zone Regulations), then the overlay district requirements will not apply and an environmental development permit Soils Excavation Pewill not be necessary.	nce of n vn- vmit Commented [AR121]: State comment.
When development activities are planned at properties within the overlay district where either soil liconcentrations are greater than 1,100 mg/kg or VCUP soil remediation was performed in the past, the Town will require an application for a Secoils Eexcavation Permit. The Rico Soils Management Prograwill be available to assist the permit applicants by identifying the documents and information needer for the permit application and assisting with the Town's review of the application.	ead ne am d Commented [AR122]: State comment
Identification Handling and Disposal of Mine Waste	
Mine wastes are distinct in color and texture from the surrounding soil, and they may be present at a ground surface or within shallow subsurface soil at various locations in Rico. When mine waste is suspected at a property and an environmental development permit a Soils Excavation Permit has be issued, the Rico Soils Management Program can confirm the presence or absence of such material	en Commented [AR123]: State comment.
In accordance with the Overlay Zone Regulations that pertain to the RSOZ, when mine waste is confirmed present, AR will allow any mine waste removed from a depth of 0 to 12 inches bgs and the excess mine waste that cannot be returned to removed from the planned excavation (as defined in a Ssoils Eexcavation Permit) below 12 inches as backfill will be eligible for disposal to be disposed in the Rico Soil Lead Repository.	e
Soil Management and Soil Remediation	
Applicants for <u>S</u> soils <u>E</u> excavation <u>P</u> permits will need to prepare and provide plans for soil management and possible soil remediation activities for review by the Rico Soils Management Program and Town. Depending on the soil characteristics at the subject property and the scope of the proposed work, a management plan and/or an ISWP will be prepared. Both the soil management plan and the ISWP a property-specific planning documents that explain how the applicant intends to comply with RLUC requirements for the RSOZ. The purpose of a soil management plan is to identify how soil disturbed the permitted project will be stockpiled and managed on site. The Overlay Zone Regulations will spe certain required practices for development activities in the RSOZ, and the soil management plan will consistent with those practices. The purpose of an ISWP is to clearly identify where soil with lead concentrations above the applicable action level are to be excavated, stored, and disposed and when	ent soil- re by ecify be re
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clean soil cover material will be used to limit people's exposure to lead once the permitted project has been completed. The soil management plan and ISWP should be integrated into the same document.

In cases where soil-lead concentrations are above the applicable action level, a 12-inch-thick cover of clean soil will be placed over that soil during final regrading of the site. Placement of soil covers will follow procedures consistent with those used during Phase 1 soil remediation. A barrier/marker material would be placed at a depth of 12 inches and 12 inches of clean soil would be placed directly over that barrier/marker. The clean soil and barrier material would be supplied by the Rico Soils Management Program, if requested by the permit holder.

### Analyses of Excess Soil Before Disposal

Excess soil typically remains following excavation and backfilling. The Overlay Zone Regulations specify how excess soil is to be disposed when the total volume exceeds 1 cy and the soil-lead concentration is greater than 1,100 mg/kg. In accordance with the regulations, soil containing lead at concentrations above 1,100 mg/kg that has been removed from a depth of 0 to 12 inches bgs can be transported to the Rico Soil Lead Repository for disposal. Additional soil excavated from depths greater than 12 inches is to be returned to the excavation, if possible, and then covered with 12 inches of clean soil. If the permitted project generates more than 53 cubic yards of excess soil from depths greater than 12 inches bgs that cannot be used for backfill at depth, that soil must be tested for lead concentration before transport to the repository for disposal. The excess soil will be allowed at the Rico Soil Lead Repository only if an analysis of representative samples from the stockpile indicates lead concentrations greater than 1,100 mg/kg. If the excess soil that cannot be used for backfill is 53 cubic yards or less in volume, it may be disposed of at the repository without testing.

The Rico Soils Management Program will assist with soil testing to determine appropriate disposal options. The Program will provide field XRF analysis of lead in representative samples from a soil stockpile or excavation area and report those results to the permit holder.

#### Preparation and Transport of Excavated Soil for Disposal in Repository

The Rico Soils Management Program will not provide transport of excavated soil to the repository, but it will support sampling and analysis of soil to confirm its soil lead content, if needed, and oversee loading of soil at locations of soil excavation and unloading of soil at the repository. Only soil with lead concentration >-1,100 mg/kg and mine wastes qualify for disposal at the repository. Lead concentration must be confirmed by sampling and analysis in accordance with the Overlay Zone Regulations, and mine wastes must be confirmed by the Rico Soils Management Program before transport to the repository unless removed from an area already determined to have lead concentrations >1,100 mg/kg. Disposal of materials other than soil will not be allowed at the repository, and such materials (e.g., tree roots, large boulders, trash) should not be loaded onto vehicles transporting soil to the repository.

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**Commented [AR124]:** AR and Town previously agreed that RSOZ requirements would apply to excess soil volume greater than 1 cubic yard. In order to address this addition by Town, AR agrees to a 3 cubic yard limit. The 3 cubic yard specification would also be included in the Rico Land Use Code/regulations for the RSOZ.

Commented [SC125R124]: The Town is okay with the 3 cubic vard limit.

**Commented [DF126]:** I assume that the results of the Phase 1 (or earlier) tests of the shallow soil will suffice for this purpose (i.e., the upper 0-12" of soil that is removed if above 1100 ppm based on these tests). I.e., they won't have to be sampled again at the time of development during Phase 2 or 3.

**Commented [AR127]:** Testing should consistently be required to confirm that disposal in the repository is appropriate.

Commented [DF128R127]: Same comment as above – ARs above comment and deletion of text implies that 0-12" soil that is found to be above 1100 ppm during Phase 1 will need to be sampled again prior to transport to the repository.

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### Cleanup Completion Reports

At the completion of the permitted scope of work, a Cleanup Completion Report will be prepared to document that soil management and/or soil remediation specified in the permit application was performed and to record soil-lead conditions existing at the end of the project. The Town will issue a Cleanup Completion Certification when the soil management and/or soil remediation has been adequately performed and may issue a Town specific NFAD. The Report and Certification, and Town specific NAD, will become part of the property record maintained by the Rico Soils Management Program for future reference.

### 6.2.2.3 CLEAN SOIL SUPPLY

AR-The Rico Soils Management Program will be responsible for maintaining a local supply of soil that can be used as clean soil cover at locations where soil-lead concentrations are greater than the applicable site-specific action level. The clean soil supply will be material suitable for revegetation. Detailed geotechnical, nutrient, and lead-content specifications for the clean soil supply are presented in the 2020-2021 Phase 1 VCUP Work Plan (Appendix D). AR-The Program will arrange for testing of the clean soil supply, as needed to demonstrate that it meets the specifications included in the 2021 Phase 1 VCUP Work Plan.

AR-<u>The Program</u> will also be responsible for arranging the transport of clean soil to a secure stockpile location within or proximal to the Town of Rico. The clean-soil stockpile will serve as supply for property owners and their contractors when a clean soil cover is specified in an ISWP prepared and submitted with applications for environmental development\_Soils Excavation Ppermits. In such cases, <u>AR-the Rico</u> Soils Management Program will provide access to the stockpile for loading and transport of clean soil to the subject property.

### 6.2.3 TOWN MAINTENANCE OF REMEDIATED ROAD SEGMENTS

The Town will plan, manage, and perform all road and alley maintenance along the segments remediated during Phase 1. The Town will perform the work in accordance with the materials and construction specifications prepared for the Town by AR during Phase 1 (refer to Section 6.1.5). AR will provide financial support to the Town for maintaining road and alley segments remediated in Phase 1, but AR will not have other involvement in the Town's management, contracting, or performance of remediated roadway and alley maintenance.

### 6.3 RICO SOIL LEAD REPOSITORY OPERATIONS, MAINTENANCE, AND CLOSURE

Throughout the VCUP project (i.e., Phases 1, 2, and 3) AR will operate and maintain the Rico Soil Lead Repository to provide an appropriate location for disposal of soil with lead concentrations above 1,100 mg/kg. AR holds a Certificate of Designation issued by Dolores County for operation of the repository, and the Certificate of Designation permits soil removed from locations within the Town of Rico to be disposed in the repository. As the owner and operator of the repository, AR accepts soil for disposal when the soil-lead concentration is greater than 1,100 mg/kg and that soil has been excavated for the purpose of reducing people's exposure to lead within the Town of Rico.

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**Commented [AR129]:** State comment. There is no Townspecific NFA in the Ordinance.

Commented [AR130]: State comment.

**Commented [AR131]:** The Town requested changing references to "the Rico Soils Management Program" to "AR" at several locations in these paragraphs. AR's position is that specific obligations under the program will be identified in the funding agreement.

Commented [TAB132R131]: Discuss with Town

Commented [AR135]: State comment.

**Commented [DF133]:** This will be helpful, but we still need a figure showing where road remedy is needed.

**Commented [AR134R133]:** A map figure identifying the road and alley segments identified for remediation will be prepared at the completion of Phase 1 soil sampling and analysis. This VCUP Application also includes a map (Figure 9) of the previously sampled road/alley segments where lead was greater than 1,700 mg/kg. The 2004 Engineering Design and Operations Report (SEH 2004) identifies AR's operations and maintenance tasks, which include:

- Controlling access to the repository to prevent vehicular traffic over disposed soil.
- Designing, constructing, and maintaining any drainage controls needed to limit erosion and transport of disposed soil from the repository via surface runoff.

These tasks are currently performed by AR, as needed, and AR will continue routine operations and necessary maintenance tasks for as long as the Rico Soil Lead Repository supports the Rico Soils Management Program.

When the repository is no longer needed or reaches its capacity, AR will complete the closure activities required by the Certificate of Designation, including placement of a permanent cover consisting of an infiltration layer and growth media. The repository closure plan is presented in greater detail in the 2004 Engineering Design and Operations Report (SEH 2004).

After completing soil sampling and analysis in Phase 1 of the VCUP, AR shall provide Town with an estimate of the remaining capacity in the Repository and whether that capacity is sufficient to accept reasonably anticipated volumes of soil with lead concentration greater than 1,100 mg/kg. If the capacity of the existing Rico Soil Lead Repository is exhausted, AR will construct a replacement repository located a similar distance from the Town of Rico as the existing repository to be used for the VCUP remediation activities, as required. If the capacity of the existing Rico Soil Lead Repository is exhausted, AR will determine how to continue to manage ongoing deliveries of such action-level soils and mine waste in accordance with applicable state and federal law, including expansion of the Soil Lead Repository, construction of a new repository a comparable distance from the Town of Rico as the existing repository, beneficial use of the material, and/or off-site transport and disposal.

Commented [TAB136]: New. Discuss with Town.

**Commented [t137R136]:** The Town preference is that existing repository be expanded.

**Commented [AR138]:** Refer to previous comments regarding AR commitment to accept and dispose of soil with lead content above action levels.

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# 7 SCHEDULE FOR COMPLETION OF VCUP ACTIVITIES

The planned duration of the proposed Rico Townsite Soils VCUP is longer than 2 years. The Applicants are requesting that CDPHE grant a 15-year extension to allow for completion of the proposed cleanup through Phases 1 and 2. The VCUP ICs program operating in Phase 3 would provide continued, long-term maintenance of the cleanup work performed during Phases 1 and 2.

Table 2 indicates the projected schedule for Phase 1. The Phase 1 field activities (i.e., soil sampling, verification XRF screening, soil remediation, soil disposal at repository) will be scheduled during summer months, and the rate at which field activities can safely proceed will depend in part on factors that are beyond the Applicants' control. The Town of Rico sits at an elevation of approximately 8,800 feet, and the field season in Rico is short (early June through mid-October) with highly variable weather conditions. In addition, on-site soil sampling and remediation activities are contingent on obtaining written access agreements from property owners, and the process of obtaining access agreements may delay work at some properties. Given these potential scheduling issues, the projected timelines for field work are in Table 2 extending over one or more years.

TABLE 2 PROJECTED SCHEDULE<sup>1</sup> FOR VCUP PHASE 1

ITEM	DATE
Submit 2020-2021 VCUP Application	2nd Quarter <del>2020</del> 2021
VCUP Application Approval by CDPHE	60 days from submittal
Obtain Access Agreements	<u>3<sup>rd</sup> 2<sup>nd</sup>-Quarter <del>2020-2021</del> through <u>3<sup>rd</sup> 2<sup>nd</sup>-Quarter <del>2022</del>-2024</u> (3 years)</u>
Town adopts Overlay Zone Regulations	3 <sup>rd</sup> Quarter <del>2020</del> 2021
Soil Sampling and Analysis for Lead	<del>2020 – 2022<u>2021 - 2023</u> (2-3</del> summers)
Remediation of Developed Parcels	<del>2021 – 2023<u>2022 - 2024</u> (2-3</del> summers)
Remediation of Unpaved Road Segments	<del>2021 – 2023<u>2022 - 2024</u> (2</del> summers)
Prepare sampling and analysis reports and request <b>No Action</b> determinations, by property	<del>2020-2023</del> 2021 - 2024
Prepare Cleanup Completion Reports and request <b>No Further</b> Action determinations, by property	<del>2020 - 2023<u>2</u>021 - 2024</del>

<sup>1</sup> This schedule is based on the assumption that the VCUP Application will be accepted and work can begin during the summer of 20202021.

The anticipated schedule for implementing Phases 2 and 3 is presented in Table 3. Phase 2 begins at the same time as Phase 1 but will extend for at least 3 years after completion of Phase 1 and will continue until at least ten (10) fifteen (15) previously undeveloped properties have been processed through the VCUP program as part of Phase 2, whichever time period is longer. As such, the anticipated duration of

Commented [AR140]: See prior comment.

**Commented [SC141R140]:** The Town would like to discuss this issue further. Town Board members position: should be 3 years/15 projects, whichever is longer.

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Commented [SC139]: All dates need to be updated.

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Phase 2 is at least 7 years. At the end of Phase 2, AR would transfer the management responsibilities associated with the Rico Soils Management Program to the Town. This transfer will take place when AR and the Town agree that the management tools and other resources that the Town will need are in place and have been tested and optimized to achieve an effective and efficient Program for the Town's operation.

### TABLE 3 ANTICIPATED SCHEDULE<sup>1</sup> FOR INSTITUTIONAL CONTROLS PROGRAM – VCUP PHASES 2 AND 3

ITEM	DATE
Submit 20202021 VCUP Application	2 <sup>nd</sup> Quarter 20202021
VCUP Application Approval by CDPHE	60 days from submittal
Town adopts Overlay Zone Regulations	3 <sup>rd</sup> Quarter 20202021
Start of VCUP Phase 2 - Rico Soils Management Program implementation by Atlantic Richfield	Upon Town's adoption of the Overlay Zone Regulations (expected in 3 <sup>rd</sup> Quarter_ <del>2020<u>2</u>021</del> ).
End of VCUP Phase 2 and Start of VCUP Phase 3 - Rico Soils Management Program implementation by Town of Rico	No less than 3 years after the start of Phase 2 or no sooner than <u>10</u> <del>15</del> previously properties have been remediated during Phase 2, whichever is longer, at a time to be agreed upon by AR and Town of Rico.

<sup>1</sup> This schedule is based on the assumption that the VCUP Application will be accepted and work can begin during the summer of <u>-20202021</u>.

**Commented [TAB142]:** This change is important to the Town – should be 15 properties or 3 years.

Commented [AR143R142]: See comments on p. 22, p.36, and p. 43.

# 8 **REFERENCES**

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- Atlantic Richfield Company (AR), Rico Properties, L.L.C., Town of Rico (AR et al.). 1996a. Voluntary Cleanup and Redevelopment Act Application for Columbia and Old Pro Patria Mill Tailings and Silver Swan East Wasterock Pile. Submitted to Colorado Department of Public Health & Environment (CDPHE). Prepared by ESA Consultants, Inc. January 1996.
- AR, Rico Properties, L.L.C., Town of Rico (AR et al.). 1996b. Voluntary Cleanup and Redevelopment Act Application for Silver Swan Mine Area. Submitted to CDPHE. Prepared by ESA Consultants, Inc. February 1996.
- AR, Rico Properties, L.L.C., Town of Rico (AR et al.). 1996c. Voluntary Cleanup and Redevelopment Act Application for Santa Cruz Mine Area. Submitted to CDPHE. Prepared by ESA Consultants, Inc. March 1996.
- AR, Rico Properties, L.L.C., Town of Rico (AR et al.). 1996d. Voluntary Cleanup and Redevelopment Act Application for Grand View Smelter Site. Submitted to CDPHE. Prepared by ESA Consultants, Inc. April 1996.
- AR. 1996. Engineering Evaluation/Cost Analysis for The Santa Cruz Mine area, Columbia Tailings Site, Argentine Tailings Site, Silver Swan Mine Area, and The Grand View Smelter Site. Prepared by Titan Environmental Corporation. May 1996.
- AR. 2004a. Rico Townsite Soils VCUP Application, Rico, Colorado. Submitted to CDPHE. Submitted by Atlantic Richfield Company, Rico Renaissance, LLC, Rico Properties, LLC, Town of Rico. Prepared by Short Elliott Hendrickson Inc. June 24, 2004.
- AR. 2004b. Rico Townsite Soils Phase I Work Plan and Preliminary Data Report, Rico, Colorado.
   Submitted to CDPHE. Submitted by Atlantic Richfield Company, Rico Renaissance, LLC, Rico
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### **FIGURES**

FIGURE 1	RICO TOWNSITE LOCATION MAP
FIGURE 2	TOWN OF RICO BOUNDARY AND VICINITY MAPPARCELS (JANUARY 2020)
FIGURE 3	PREVIOUSLY SAMPLED AND REMEDIATED PARCELS
FIGURE 4	TOWN OF RICO SITE BOUNDARY AND PROPERTY OWNERSHIP (MARCH 2018)
FIGURE 5	PRE-REMEDIATION SPATIAL DISTRIBUTION OF LEAD IN SOIL (0-2 INCHES)
FIGURE 6	TOWN OF RICO ZONING MAP (ADOPTED AUGUST 31, 1999)
FIGURE 7	LOCATION AND SIZE OF SITE WITH TOWNSHIP AND RANGE
FIGURE 8	HISTORICAL MINES AND SMELTERS IN THE TOWN OF RICO
FIGURE 9	LEAD CONCENTRATIONS IN UNPAVED ROAD AND ALLEY SAMPLES 0-2" DEPTH
FIGURE 10	VCUP Project Remediation Status (2019)
FIGURE 11	PROPERTIES TO BE SAMPLED
FIGURE 12	SAMPLED AND DEVELOPED PROPERTIES WITH LEAD > 1,100 MG/KG
FIGURE 13	REMEDIATED PROPERTIES POTENTIALLY DISTURBED SINCE REMEDIATION

## ATTACHMENTS 1-65

Attachment 1	Previously Sampled Properties
Attachment 2	Previously Remediated Properties
Attachment 3	Town of Rico Property Ownership
Attachment 34	Properties Identified for Soil Sampling During Phase 1
Attachment 4 <u>5</u>	VCUP Remediated Properties Identified for Re-Sampling Due to Recent Soil Disturbance
Attachment <del>5</del> 6	Developed Properties Identified for Soil Remediation During Phase 1 (Preliminary)

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### **APPENDIX A – COLORADO VCUP CHECKLIST**

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VOLUNTARY CLEANUP AND REDEVELOPMENT ACT CHECKLIST

INFORMATION REQUIRED	SECTION
I. GENERAL INFORMATION	2
Name and address of owner	2.1
Contact person and phone number	2.2
Location of property	2.3
Type and source of contamination	2.4
Voluntary Cleanup (VC) or No Action Determination (NAD)	2.5
Current Land Use	2.6
Proposed Land Use	2.6
II. PROGRAM INCLUSION	3
Is the applicant the owner of the property for the submitted VC? The Voluntary Clean-up Program requires owner/designated representative to complete the submittal.	3
Is the property submitted for the VC the subject of corrective action under orders or agreements issued pursuant to provisions of Part 3 of Article 15 of this Title or the federal RCRA 1976 as amended? The Voluntary Clean-up Program requires details of a RCRA corrective action for an eligibility determination.	3
Is the property submitted for the VC subject to an order issued by or an agreement with the Water Quality Control Division pursuant to Part 6 of Article 8 of this Title? If Water Quality has issued a permit, the applicant is ineligible.	3
Is the property submitted for the VC a facility that has or should have a permit or interim status pursuant to Part 3 of Article 15 of this Title for treatment, storage or disposal of hazardous waste? For the Voluntary Clean-up Program, details of permits or interim status are necessary for an eligibility determination. Based on the site specifics of the permitted facility, the applicant may qualify for the program.	3
Is the property submitted for the VC subject to the provisions of Part 5 of Article 20 of Title 8 (Underground Storage Tanks) CRS or of Article 18 of this Title (RCRA)? For the Voluntary Clean- up Program details of Underground Storage Tank or RCRA requirements are necessary to make an evaluation. In some cases (e.g., tanks were removed prior to 12/22/88), the applicant may be eligible for the program.	3
Is the property submitted for the VC listed or proposed for listing on the National Priorities List of Superfund sites established under the federal act (CERCLA)? For the Voluntary Clean-up Program, details of CERCLA action are necessary to make an evaluation. In some cases, the applicant may not be eligible for the program.	3
III. ENVIRONMENTAL ASSESSMENT	4
Qualified environmental professionals must submit environmental assessments. The applicant	Appendix B

must submit documentation, in the form of a statement of qualifications or resume.

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INFORMATION REQUIRED	SECTION
The applicant should provide the address and legal description of the site and a map of appropriate scale identifying the locations and size of the property.	4.1
The applicant should describe the operational history of the property in detail, including the most current use of the property.	4.2
A description of all business/activities that occupy or occupied the site as far back as record/knowledge allows.	4.2
A brief description of all operations that may have resulted in the release of hazardous substances or petroleum products at the site, both past and present, including the dates activities occurred at the property and dates during which the contaminants were released into the environment. For the Voluntary Clean-up Program, the exact dates and quantities of activities, releases, etc., of hazardous substances or petroleum products are necessary for an evaluation of eligibility.	4.2
A list of all site-specific notifications made as a result of any management activities of hazardous substances conducted at the site, including any and all Environmental Protection Agency ID numbers obtained for management of hazardous substances at the site from either the state or the Environmental Protection Agency is necessary for a Voluntary Clean-up Program evaluation. Not Applicable - No such activities have been conducted by the Applicants relative to potential sources of lead in soil in the Town of Rico.	NA
A list of all notifications to county emergency response personnel for the storage of reportable quantities of hazardous substances required under Emergency Planning and Community Right-to-Know statutes is necessary for a Voluntary Clean-up Program evaluation. Not Applicable - No such notifications have been made by the Applicants relative to possible sources of lead in soil in the Town of Rico.	NA
A list of all notifications made to state and/or federal agencies, such as reporting of spills and/or accidental releases, including notifications to the State Oil Inspection Section (OIS) required under 8-20-506 and 507 and 25- 18-104 CRS 1989 as amended and 6 CCR 1007-5 subpart 280.50 Part 3 of the OIS regulations, etc. <b>Not Applicable - No such notifications have been made by the Applicants relative to possible sources of lead in soil in the Town of Rico.</b>	NA
A list of all known hazardous substances used at the site with volume estimates and discussion of relative toxicities. The hazardous substances used, volumes and toxicities are important for a VC in the overall evaluation of risk and sampling efforts. <b>Not Applicable - There is no current use of hazardous substances known to the Applicants.</b>	NA
A list of all wastes generated by current activities conducted at the site and manifests for shipment of hazardous wastes off site. The manifest information is important for a VC evaluation, as in the above item. <b>Not Applicable - There are no current activities generating wastes at the site related to lead.</b>	NA
A list of all permits obtained from state or federal agencies required as a result of activities conducted at the site. These are important for the Voluntary Clean-up Program so the Department can evaluate what potential sources may be at the site. Not Applicable - Due to the historical nature of past mining activities, no state or federal permits were required related to mining and processing activities that occurred in and around the Town of Rico.	NA

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INFORMATION REQUIRED	SECTION
A brief description of the current land uses, zoning and zoning restrictions of all areas contiguous to the site.	2.6 and Figure 6
The applicant shall describe the physical characteristics of the site, including a map to scale, and an accompanying narrative showing and describing the following, utilizing historic knowledge as well as current data:	4.4
• Topography	4.4.1
All surface water bodies and waste water discharge points	4.4.2
Ground water monitoring and supply wells	4.4.3
<ul> <li>Facility process units and loading docks Not Applicable to this Rico Townsite Lead VCUP Application.</li> </ul>	NA
Chemical and/or fuel transfer and pumping stations     Not Applicable to this Rico Townsite Lead VCUP Application.	NA
<ul> <li>Railroad tracks and rail car loading areas</li> <li>Not Applicable – There are no railroad tracks within the Town of Rico.</li> </ul>	NA
<ul> <li>Spill collection sumps and/or drainage collection areas Not Applicable - Drainage collection in the Town of Rico has not been documented. Overland flow is toward the Dolores River and Silver Creek, both of which flow continuously year-round.</li> </ul>	NA
<ul> <li>Wastewater treatment units [Need Town to review and update this information] Not Applicable - Currently, no centralized waste-water treatment is available in Rico, and individual disposal systems (septic/leach field) are used to treat waste-water. For all new development in <u>the Sitethe project area</u>, the Town requires compliance with the State of Colorado individual sewage disposal systems rules. Town has prepared a 201-Waste Water Treatment Study, a Preliminary Engineering Report for centralized waste water treatment, and various financing applications for state and federal funding. In November of 2000 the Rico voters approved a 3.939 % property tax increase to be dedicated for the construction, design and operation of a wastewater treatment system. Federal grant money for construction has been obtained, but there is no formal plan or schedule for construction of wastewater treatment facilities at this time.</li> </ul>	NA
<ul> <li>Surface and storm water runoff retention ponds and discharge points Not Applicable - No retention ponds exist within the Town of Rico.</li> </ul>	NA
<ul> <li>Building drainage or wastewater discharge points Not Applicable - Information is not available regarding building drainage. There is no centralized wastewater treatment in the Town of Rico, therefore there is no centralized wastewater discharge point.</li> </ul>	NA
<ul> <li>All above or below ground storage tanks</li> <li>Not Applicable - Storage tanks are not relevant to the soil lead VCUP.</li> </ul>	NA

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	INFORMATION REQUIRED	SECTION
•	Underground or above ground piping Not Applicable - The only known underground or above ground piping would be associated with known tanks and would be localized to the immediate vicinity of the tank system.	NA
•	Air emission control scrubber unit Not Applicable - No air emission control scrubber units exist within the Town of Rico.	NA
•	Water cooling systems or refrigeration units Not Applicable - The Town of Rico has no water-cooling systems or refrigeration units that would affect the presence of lead in soil.	NA
•	Sewer lines Not Applicable - The Town of Rico does not presently have a centralized sewer system. Future plans include the construction of such a system, however.	NA
•	French drain system Not Applicable - No French drain systems are known to exist in the Town of Rico.	NA
•	Water recovery sumps and building foundations Not Applicable - No water recovery sumps or building foundation drains are known to exist that would affect the presence or distribution of lead in soils in the Town of Rico.	NA
•	Surface impoundments Not Applicable - No surface impoundments exist within the Town of Rico.	NA
•	Waste storage and/or disposal areas/pits, landfills Within the Town of Rico, there are several mine sites that have been addressed under separate VCUP applications, including the Columbia/Old Pro Patria Mill tailings, Silver Swan Mine, Grand View Smelter, and Santa Cruz Mine.	4.3
•	Chemical or product storage areas Not Applicable - Other than fuel storage, no significant chemical or product storage areas are known to be present in the Town of Rico.	NA
•	Leach fields In addition to leach fields associated with sanitary septic systems, a septic tank and leach line have been identified at the Assay Building in Rico. This building is located on the east side of Glasgow Avenue, north of the Burley and theater buildings. This building was previously a laboratory used to determine the mineral content of ores. Wastewater generated at the Assay Building was discharged to an individual septic system.	NA
•	Dry wells or waste disposal sumps Not Applicable - The Applicants are not aware of any dry wells or waste disposal sumps that would affect lead in soils in the Town of Rico.	NA
groun he app f the si	d water contamination exists or the release has the potential to impact ground water, licant should provide the following information for areas within a one-half mile radius te:	
•	The state engineer's office listing of all wells within one-half mile radius of the site, together with a map to scale showing the locations of these wells.	4.4.3

RICO TOWNSITE SOILS
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INFORMATION REQUIRED	SECTION
<ul> <li>Documentation of due diligence in verifying the presence or absence of unregistered wells supplying ground water for domestic use, when the potential for such wells is deemed likely as in older residential neighborhoods, or in rural areas.</li> <li>There are no known unregistered wells within the Town of Rico, as described in Section 4.4.3.</li> </ul>	4.4.3
• A statement about each well within the half-mile radius of the site, stating whether the well is used as a water supply well or ground water monitoring well.	4.4.3
• Lithologic logs for all on-site wells; copies of field log notes may be appropriate. There are no known groundwater wells within the Town of Rico.	NA
<ul> <li>Well construction diagrams for all on-site wells showing screened interval, casing type and construction details including gravel pack, interval, bentonite seal thickness and cemented interval.</li> <li>There are no known groundwater wells within the Town of Rico.</li> </ul>	NA
<ul> <li>Description of the current and proposed use of on-site ground water in sufficient detail to evaluate human health and environmental risk pathways. In addition, the applicant will provide a discussion of any state and/or local laws that restrict the use of onsite ground water.</li> <li>Not Applicable – There are no known groundwater wells within the Town of Rico. Groundwater use within the Town of Rico is not restricted. However, there is no current or proposed use of ground water in the Town of Rico, therefore this pathway is not considered further in this application.</li> </ul>	NA
he applicant should provide information concerning the nature and extent of any ontamination and releases of hazardous substances or petroleum products that have occurred t the site, including but not limited to:	4.5
<ul> <li>Identification of the chemical nature and extent, both onsite and offsite, of contamination that has been released into soil, ground water or surface water at the property, and/or releases of substances from each of the source areas identified, including estimated volumes and concentrations of substances discharged at each area, discharge point, or leakage point as per Section 25.16.308(2)(b). Although Phase II assessments identify the nature of contamination, the extent is not always fully defined. For Voluntary Clean-up Program purposes, the source, nature, extent and estimated volumes of the release are important in the overall evaluation of risk and eligibility.</li> </ul>	4.5
<ul> <li>A map to scale showing the depth to ground water across the site, direction and rate of ground water movement across the site using a minimum of three measuring points.</li> <li>No groundwater monitoring or water supply wells are known to exist within the Town of Rico. Therefore, no data are available to prepare a map showing the depth to groundwater or the direction and rate of groundwater movement.</li> </ul>	4.5.1
<ul> <li>A discussion of all hydraulic tests performed at the site to characterize the hydrogeologic properties of any aquifers onsite and in the area.</li> <li>No hydraulic tests are known to have been performed within the Town of Rico.</li> </ul>	4.5.1

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•	All reports and/or correspondence, which detail site soil, ground water and/or surface water conditions at the site, including analytical laboratory reports for all samples and analyses.	4.5.1 4.5.2
•	A discussion of how all environmental samples were collected, including rationale involved in sampling locations, parameters and methodology, a description of sampling locations, sampling methodology and analytical methodology and information on well construction details and lithologic logs. All sample analyses performed and presented as part of the environmental assessment should be appropriate and sufficient to fully characterize all constituents of all contamination that may have impacted soil, air, surface water and/or ground water on the property. The applicant should use Environmental Protection Agency approved analytical methods when characterizing the soil, air, surface water and/or ground water.	4.5.3
IV. APP	LICABLE STANDARDS/RISK DETERMINATION	5
The app or othe ground	plicant should provide a description of any applicable standards/guidance (federal, state, r) establishing acceptable concentrations of constituents in soils, surface water, or water, for the proposed land use.	5.2
The app contam the pro	plicant should provide a description of the human and environmental exposure to ination at the site based on the property's current use and any future use proposed by perty owner, including:	5.1
•	A table or list for site contaminants indicating which media are contaminated and the estimated vertical and areal extent of contamination in each medium.	Integral (2006a)
•	A table or list of site contaminants, indicating the maximum concentrations of each contaminant detected onsite in the area where contaminant was discharged to the environment, and/or where the worst effects of the discharge are believed to exist. The Voluntary Clean-up Program requests this item so that an understanding of the source and nature of the contaminants can be made as it relates to risk.	Section 4.5 and Table 1
•	A table or list for site contaminants indicating whether the contaminant has a promulgated state standard, the promulgated standard and the medium the standard applies to. A comparison of the site contaminants with state standards is important to evaluate whether the remedy will meet risk-based clean-up objectives.	5.1
•	A description and list of potential human and/or environmental exposure pathways pertinent to the present use of the property. The VC will use risk as part of the overall evaluation.	Integral (2006a)
•	A list and map defining all source areas, areas of contamination or contaminant discharge areas. The Voluntary Clean-up Program requires that these areas be defined to indicate the proximity of contaminant with respect to receptors and sampling efforts.	Integral (2006a)
•	A discussion of contaminant mobilities, including estimates of contaminants to be transported by wind, volatilization, or dissolution in water. For those contaminants that are determined to be mobile and have the potential to migrate and contaminate the underlying ground water resources, the applicant should also evaluate the leach ability/mobility of the contaminants. This evaluation should consider, but not be limited to the following: leachability/mobility of the contamination; geological characteristics of the vadose	Integral (2006a)

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INFORMATION REQUIRED	SECTION
zone that would enhance or restrict contaminant migration to ground water, inc but not limited to grain size, fractures and carbon content; and depth to ground This evaluation, and any supporting documentation, should be included in the pl submitted. The Voluntary Clean-up Program will evaluate the risk involved with t proposed clean-up in order to evaluate the application.	luding water. Jan the
The applicant should then provide, using the information contained in the application, a r based analysis of all exposure pathways, which details how the proposed remediation will obtain acceptable risk levels. The Voluntary Clean-up Program requires this analysis to sho that the remediation proposal will attain an acceptable risk or break pathways.	isk- Integral I (2006a) ow
The Voluntary Clean-up Program includes remediation. The following are the requirement the clean-up proposal. The Cleanup Proposal is included in Section 6 of this VCUP Application. Additional details provided in Appendix D, VCUP Work Plan.	ts for 6 and Appendix D Is are
<ul> <li>A detailed description of the remediation alternative, or alternatives selected, wh will be used to remove or stabilize contamination released into the environment threatened to be released into the environment.</li> </ul>	hich <b>6 and</b> : or <b>Appendix D</b>
<ul> <li>A map identifying areas to be remediated, the area where the remediation syste be located if it differs from the contaminated areas, the locations of confirmation samples, the locations of monitoring wells, areas where contaminated media wil temporarily be stores/staged and areas where contamination will not be remedia</li> </ul>	m will Figures 10-13 n and II Attachments ated. 3 and 4
<ul> <li>Remediation system design diagrams showing how the system will be constructe the field.</li> <li>Appendix D provides a general remediation design, and future Individual Site W Plans will document remediation details for each of the individual properties addressed.</li> </ul>	ed in Appendix D Vork
<ul> <li>A remediation system operation and maintenance plan that describes, at a minin how the system will be operated to ensure that it functions as designed without interruptions and a sampling program that will be used to monitor its effectivene achieving the desired goal. Institutional Controls described in Section 6.2 will ensure appropriate managen and disposal of lead containing soils during future development activities, road maintenance, and utilities work.</li> </ul>	num, 6.2 and 6.3 ess in nent f
<ul> <li>The plan should include a schedule of implementation.</li> <li>A schedule for the Cleanup Proposal is included in Section 7.</li> </ul>	7
The clean-up completion report is necessary to demonstrate that the remediation was completed according to the application. The following items should be included in the completion report:	
<ul> <li>A final list of all site contaminants, along with the remaining concentrations, and deviations from the original plan.</li> <li>Lead is the site contaminant. A final list of any deviations from the original clear plan will be provided in the Cleanup Completion Report prepared for each indiv property where VCUP soil remediation has been performed.</li> </ul>	any Future Submittals anup vidual
<ul> <li>A final list defining which media are contaminated and the estimated vertical and extent of contamination to each medium.</li> </ul>	d areal Future Submittals

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#### INFORMATION REQUIRED SECTION Soil is the contaminated medium. The extent of contaminated soil will be provided in the Cleanup Completion Report prepared for each property where VCUP soil remediation has been performed. Future A final list and map defining all source areas, areas of contamination or contaminant Submittals discharge areas A final map defining areas of soil contamination will be provided in the Cleanup Completion Report prepared for each property where VCUP soil remediation has been performed. Soil Contamination: Remediation by Excavation Only One confirmation sample per 500 ft2 as measured at the base on the excavation OR NA two confirmatory samples, whichever method results in the collection of the most samples. One composite sample from each wall of the excavation. In excavations of an irregular NA shape, one composite sample for every 100 lineal feet of wall. For excavations greater than 5000 ft2, preparation of a grid for randomization of sampling. Appendix D Explanation of the sampling method in the narrative as well as any modifications to 1 and 2 above used to better characterize the remedial efforts. If contamination is to be left in place, an additional sample should be collected from Future Submittals the area of the worst contamination, as verified or with a field-sampling device. Documentation of sampling for contamination left in place, if needed, will be provided in the Cleanup Completion Report prepared for each property where VCUP soil remediation has been performed. Depth of samples collected. Future Documentation of sample depths will be provided in the Cleanup Completion Report Submittals prepared for each property. Provision of waste disposal manifests. Future Documentation of soil disposal will be provided in the Cleanup Completion Report Submittal prepared for each property where VCUP soil remediation has been performed. In-Situ Soil Remediation NA NA Completion of a minimum of two soil borings, with at least one completed in the area identified in the site assessment as the area of highest contamination. For larger areas of contamination, one boring per 10,000 ft2 of plume area. Not Applicable - No in-situ soil remediation is planned for the Townsite Soils Site as part of this VCUP Application. Completion of the borings should employ a field-screening device and borings should NA be logged. Not Applicable – No in-situ soil remediation is planned for the Townsite Soils Site as part of this VCUP Application. Soil sample submitted for analysis from each boring would be the sample with the NA highest field screening or one located at the ground water interface for each boring. Not Applicable - No in-situ soil remediation is planned for the Townsite Soils Site as part of this VCUP Application.

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	INFORMATION REQUIRED	SECTION
Ground W	ater Remediation	NA
• F p <b>^</b> <i>a</i>	ield testing should include aquifer and contaminant characteristics such as gradient, artition coefficients, original contaminant levels, etc. Iot Applicable – No groundwater remediation is planned for the Townsite Soils Site s part of this VCUP Application.	NA
• A te <b>A</b> a	t each regular monitoring event, a map showing ground water flow direction, depth o ground water and sampling locations. Iot Applicable – No groundwater remediation is planned for the Townsite Soils Site is part of this VCUP Application.	NA
• T N a	abular presentation of data collected. Iot Applicable – No groundwater remediation is planned for the Townsite Soils Site s part of this VCUP Application.	NA
Summary <b>This requi</b> Reports fo	of Voluntary Clean-up Program participation. rement will be met through preparation and submittal of Cleanup Completion or each property where soil remediation has been performed.	Future Submittals
Summary <b>A summa</b> i <b>be provid</b> e <b>remediati</b>	of field activities, remedial activities, any deviations from original plans. ry of field activities, remedial activities, and any deviations from original plans will ed in the Cleanup Completion Report prepared for each property where soil on has been performed.	Future Submittals
Pertinent Figures ar Completic	figures and drawings of remedial system. In drawings documenting the soil remediation will be provided in the Cleanup In Report prepared for each property where soil remediation has been performed.	Future Submittals

Conclusions made after remedial activities are completed. Future Any conclusions made following completion of remedial activities will be provided in the Submittals Cleanup Completion Report prepared for each property where soil remediation has been performed.

NA = Not Applicable TBD = To Be Determined

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# APPENDIX B – QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONALS

To be included with the VCUP Application formally submitted to CDPHE: SOQs for Formation Environmental, LLC and Copper Environmental Consulting

### APPENDIX C – SUMMARY OF WORK COMPLETED UNDER 2004 VCUP APPLICATION

### **1** SOIL SAMPLING AND ANALYSIS FOR LEAD

The Atlantic Richfield Company (AR) conducted soil sampling at various times from 2004 through 2015, as described in the 2004 Voluntary Cleanup Program (VCUP) Application (AR 2004a). Soil sampling was completed at most of the parcels within the Town boundary, including parcels on undeveloped land in the Dolores River corridor. Access agreements between AR and the property owner were signed prior to implementing the proposed sampling at each property.

For sampling on developed residential parcels, different soil sample types were established based on specific uses and the nature of the material being sampled:

- Yards
- Driveways
- Vegetable gardens
- Play areas.

These sample types were recorded during sample collection, and they are identified in sample-data files. Results of lead analyses from these samples were relied on to identify locations for soil remediation under VCUP.

Additionally, exposed soil on unpaved streets, alleys, and along proposed sewer-line corridors were sampled. All of the roads in the Town, except for the paved highway, are unpaved, and many are covered with gravel. Sample types were defined and identified based on the nature of material.

Open space areas in the Dolores River floodplain were also sampled. The Dolores River east overbank (floodplain) area was specifically broken out as an area for targeted sampling based on the proximity to historical ore-processing operations (Pro Patria mill and tailings disposal area; Columbia tailings area) and former railroad facilities and operations. Most of the Dolores River floodplain sample locations were intentionally focused on areas of visually discernible mine waste and/or areas known to have been disturbed by historical mining- and/or railroad-related activity that could have introduced lead to soil.

The Final Data Report (ARCO 2006) and Data Summary Report (Trec 2015) prepared following soil investigations in 2004-2005 and 2014-2015, respectively, provide detailed descriptions of data collection activities and findings. In total, soil samples were collected for analyses of lead from 348 residential parcels (216 developed and 132 undeveloped) and 73 non-residential parcels.

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<u>2004-2006 Soil Sampling and Analysis</u> – In general, soil samples were collected from the near-surface (0 to 2 inches below ground surface [bgs]) to best represent potential human exposures (AR 2004b, 2005). Residential yard-soil samples consisted of a composite of five sub-samples located randomly within a yard segment (e.g., back yard). Each sampled yard segment was approximately 2,500 to 5,000 square feet in area. Driveway samples consisted of composites of two randomly selected locations. Street samples comprised a composite of two samples taken at locations approximately equally spaced from the center of each block within Zone 1 (developed areas in the Town of Rico). One discrete surface soil grab sample was collected from play areas present on residential parcels. Zone 2 (undeveloped areas) samples were collected as discrete samples from individual locations and were not composited.

Samples were also collected from areas in Zone 1 identified by the sampling crews as possible or likely mine waste or mining/ore processing source material; these samples were collected from a depth of 0 to 2 inches. A minimum of two sub-samples were composited into a single sample for analysis. Sub-samples were collected at a rate of one sub-sample per 100 to 1000 square feet. Samples of waste rock piles and/or other mine waste or ore piles in Zone 2 were collected as discrete grab samples at a frequency of at least one sample per acre, with a minimum of two samples per area or pile.

Discrete-depth samples were collected at various Zone 1 sites at a frequency of one depth sample location per every other block consistent with the SAP criterion of a total of approximately 15-20 depth sample locations in Zone 1. Depth samples were also taken at approximately every third Zone 2 surface sampling location to meet the SAP criterion of approximately 10-15 Zone 2 depth sample locations. Depth samples were collected 2 to 12 inches bgs and 12 to 18 inches bgs at one of the five subsample locations at the selected depth sample site. Thus, a surficial sample taken at 0 to 2 inches bgs is also available at each depth sample site. Garden samples were collected over a depth of 0 to 12 inches to represent typical tilling depths. Samples collected along the proposed sewer lines were collected at depth intervals of approximately 0 to 2 feet bgs and 2 to 4 feet bgs to represent typical excavation depths.

2006 River Corridor Soil Sampling and Analysis – After discussions with CDPHE in June 2006, AR performed additional soil sampling of specific river corridor locations to characterize uncertainties related to soil lead exposure (ARCO 2007). Thirty-five samples were collected along the historical railroad bed, 11 at the East Shamrock Mine waste rock pile, and 11 in the overbank waste area (Anderson 2007). Samples were also collected at two background locations in the river corridor, 5 samples at each location. Soil lead concentrations were measured with a portable XRF and 10 percent of the samples were submitted for laboratory analysis for quality control (QC) purposes.

Soil lead concentrations ranged from 573 to 12,294 milligrams per kilogram (mg/kg) and averaged 3,740 mg/kg along a former rail line within the river corridor. The highest concentrations were in the vicinity of the Rico City yard at River Street and southward, at a location believed to have served as a historical rail equipment work yard. Lead concentrations in samples collected across the East Shamrock Mine waste rock pile ranged from 1,960 to 8,589 mg/kg and averaged 4,988 mg/kg. West Overbank area waste rock samples were collected on the west side of the Dolores River between the Santa Cruz and

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Silver Swan reclamation areas and had lead concentrations that ranged from 3,219 to 6,490 mg/kg and averaged 4,908 mg/kg.

Background Area #1 was located in an open meadow on the west bank of the Dolores River on the southwest side of Rico. Background Area #2 was located in a small meadow on the north side of Rico near the CO Hwy 145 bridge. Samples were collected along a north-south transect every 50 feet. Background soil lead concentrations ranged from 84 to 244 mg/kg and averaged 102 mg/kg at Area #1; background concentrations ranged from 75 to 296 mg/kg and averaged 199 mg/kg at Area #2.

2008 Soil Sampling Along Town Streets – Some unpaved alleys in the Town of Rico were sampled again in 2008 (Anderson 2008, SEH 2008). Samples were collected from 0 to 2 inches at two locations approximately equal distance from the center of the alley segment. Soil lead concentrations were measured with a portable XRF, and 10 percent of the samples were submitted for confirmation analysis by a laboratory. A total of 43 samples were collected. Soil lead concentrations ranged from 158 to 68,400 mg/kg (Mean concentration = 3,080 mg/kg).

<u>2014-2015 Soil Sampling and Analysis</u> – Soil samples were collected in and around the Town of Rico in fall 2014 and spring 2015 at undeveloped residential properties, unpaved roadways, the Dolores River corridor, and at background locations (AECOM 2014). A total of 1,509 soil samples were collected and were either submitted to a laboratory for lead analysis or analyzed by field portable XRF.

- Of these, 924 soil samples were collected within undeveloped properties (vacant parcels) from four depth intervals (0-2, 2-12, 12-24, 24-36 inches).
- Twelve surface soil samples were collected at 12 new locations along unpaved roadways (0-2 inches). A total of 73 samples were collected along previously sampled unpaved roadways at two depth intervals (2-12, 12-24 inches).
- A total of 139 discrete soil samples were collected from previously sampled locations within the Dolores River corridor from the 0 to 2- and 2 to 12-inch depth intervals; 25 percent of the step out locations were sampled from 12 to 24 and 24 to 36 inches. A total of 259 XRF samples were collected within the Dolores River corridor.
- A total of 1-2 background samples were collected from four different geologic material types (undisturbed colluvium, undisturbed talus, undisturbed fan deposits, and undisturbed recent alluvial deposits).

### 2 CONSTRUCTION OF THE RICO SOIL LEAD REPOSITORY

The Rico Soil Lead Repository was constructed pursuant to a Certificate of Designation issued by Dolores County, and approved by CDPHE, in October 2005 for the disposal and management of soil removed during VCUP cleanup (AR 2004c). The Repository was constructed adjacent to the St. Louis Tunnel portal, approximately one mile north of Rico (see Figure 2) on the Martha and Mervin patent claims, and the repository has a total capacity of approximately 40,000 cy.

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Design considerations included (1) selection of liner materials to provide adequate protection of groundwater from repository effluent, (2) proper grading of the repository subgrade and final grade to provide adequate slope stability and drainage of the effluent, (3) selection and placement of adequate cover materials to minimize long-term infiltration and erosion, and (4) surface water controls (ARCO 2004c). The liner consists of graded and compacted subgrade, a 6-inch thick cushion layer, a geo-composite liner (GCL), and a minimally compacted 12-inch thick drainage layer. Soil placed in the repository for permanent disposal is compacted. When the repository has been filled to capacity, disposed soil will be covered with a permanent cap consisting of an infiltration layer and growth media.

The total volume of lead-containing soil disposed in the Rico Soil Lead Repository (the Repository) through 2008-2019 is listed in Table C-1. It is estimated that the cleanup under this VCUP project will generate additional soil requiring disposal in the Repository, but the volume of soil to be disposed in the future is not expected to fill the Repository to its 40,000-cy capacity. To ensure future capacity and avoid other complications, the repository is intended solely for use to support Rico Townsite Soil VCUP projects. Subject to satisfaction of the foregoing commitment of Repository capacity for VCUP related purposes, the Repository may accept soils from properties annexed into the Town, at the sole discretion of the Repository operator. Properties annexed into the Town from which such soils are accepted must be remediated pursuant to a plan approved by CDPHE.

AR currently manages the Repository in compliance with the Certificate of Designation and applicable State of Colorado regulations. Currently, run-on-runoff controls are maintained to prevent erosion and dispersal of disposed soils. Recent inspection and maintenance reports have been provided to CDPHE.

#### TABLE C-1. SOIL VOLUME CURRENTLY DISPOSED IN RICO SOIL LEAD REPOSITORY

YEAR	QUANTITY OF SOIL (cy)	SOURCE OF SOIL
2005	3,787	Residential yards
2006	2,653	Residential yards
2007	1,561	Residential yards
2008	565	Van Winkle Mine site
2019	<u>662</u>	Residential Yards
TOTAL	<del>8,566</del> 9,228	Town of Rico

Notes: cy = cubic yards

### **3** REMEDIATION OF INDIVIDUAL PARCELS

An Individual Site Work Plan (ISWP) was developed to guide soil remediation at each of the sampled residential parcels (and including one school property) where soil contained lead above the action level for residential land use (1,100 mg/kg) and at each of the sampled non-residential parcels where soil lead was above the action level for commercial land use (1,700 mg/kg). A key specification for each of the ISWPs was the establishment of a minimum of 12 inches of clean surface soil at the subject property.

**Commented [AR144]:** This can be addressed in the funding agreement if appropriate. It does not belong here.

### RICO TOWNSITE SOILS VCUP APPLICATION

This specification was addressed through a combination of existing-soil removal, as needed from the individually sampled areas within the property (e.g., yard area, driveway, etc.) followed by placement of clean soil over the excavated area(s).

The soil removed from each property was transported to the Rico Soil Lead Repository for final disposal. Borrow areas used as a source of clean soils were first sampled to verify low metals concentrations (all were below 100 mg/kg). Final reclamation of the clean soil surface depended on the pre-disturbance nature of the original surface and cover. The final surface was comprised mainly of revegetated soil consistent with the original conditions. Existing lawns were replaced with sod. Lawn watering and maintenance following sod placement were the responsibilities of the property owner. Properties with pre-existing native vegetation were seeded with native vegetation species, fertilized, and mulched. Unpaved driveways and any erosion-prone areas of the yard were capped with gravel or rock mulch.

Special consideration was given to protection of septic systems, propane tanks and service lines, other utilities, fences, retaining walls, concrete features (e.g., patios, sidewalks) and sub-surface irrigation systems during all on-site VCUP activities. In order to protect existing utilities, the location of buried public utilities was depicted on a scaled lot map based on locates arranged through the Utility Notification Center of Colorado. The locations of private buried utilities were based on the owner's description and site observations and confirmed as necessary by probing/test pits during excavation. Soil removal terminated at the drip line of established trees and shrubs to preserve these high value plantings. Damage to such features that occurred in the course of the work was repaired or replaced in kind. Also, standard construction controls were implemented during all excavation and grading operations to control fugitive dust.

Soil remediation was completed, except for some open issues regarding post-remediation landscaping concerns, at a total of 75 properties (each property includes one or more parcels recorded by Douglas County). Attachment 2 is a list of the previously remediated properties. AR was unable to address eight parcels with lead levels above the action level because access for remediation was denied by the owners. As part of the VCUP, AR obtained releases that the work was acceptable from the property owners of the majority (approximately 80 percent) of the remediated parcels. Approximately 10 percent of the property owners did not respond regarding completed work, and another 10 percent of the property owners refused to sign the releases for various reasons.

### **4** VAN WINKLE MINE SITE REMEDIATION

The Van Winkle Mine site encompasses less than 2 acres and is the location of the historical Van Winkle head frame and associated waste rock pile. A site-specific plan for the Van Winkle property was submitted with the Phase I Work Plan and Preliminary Data Report (ARCO 2004b). Pursuant to the Van Winkle Conceptual Plan and the Van Winkle Subdivision Plan approved by the Town in 2007, exchanges and conveyance of properties or portions of properties comprising or surrounding the Van Winkle Mine site were completed to consolidate the mine site into a single parcel for future ownership by a single entity. AR is the current owner of the remediated Van Winkle Mine site.

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Given the size of the mine site and its similarity to other waste rock sites in the area, the cleanup consisted of techniques to limit human exposure to the existing waste rock, reduce the potential release of dissolved-phase metals to surface water, and provide for the long-term stability of the remediated area. Specific measures incorporated as part of the cleanup were designed to reduce infiltration, control run-on and runoff, and limit direct human contact. Waste materials were consolidated and shaped to achieve reduced grades and to minimize the size of the area to be remediated. Lead-impacted soils removed from the site were transported to the Rico Soil Lead Repository for disposal. The mine site property now contains a pocket park for Town use. The Van Winkle headframe structure was preserved as an historically significant feature.

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## APPENDIX D – RICO TOWNSITE SOILS 2021 PHASE 1 VCUP WORK PLAN

Refer to the separate document files for the Draft 2021 Phase 1 VCUP Work Plan.

# APPENDIX E – DRAFT TOWN OF RICO OVERLAY ZONE REGULATIONS

The draft Rico Land Use Code agreed upon by Town and AR will be included here.

# RICO TOWNSITE SOILS 2021 VOLUNTARY CLEANUP PROGRAM (VCUP) APPLICATION

### DRAFT

### APPENDIX D – PHASE 1 VCUP WORK PLAN (Version 1.4)

Prepared for: Atlantic Richfield Company and Town of Rico, Colorado

Prepared by: Formation Environmental, LLC 2500 55<sup>th</sup> Street, Suite 200 Boulder, Colorado 80301

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Figure D-1 Previously Sampled and Remediated Properties

Figure D-2 Schematic Sampling Plans for Properties ≤ 5,000 sq ft

Figure D-3 Schematic Sampling Plan for Properties > 5,000 sq ft and  $\leq$  0.5 Acre

Figure D-4 Schematic Sampling Plan for an Undeveloped Property > 5,000 sq ft and ≤ 0.5 Acre

Figure D-5 Example Soil Remediation Conceptual Design For A Residential Property

### LIST OF ATTACHMENTS

ATTACHMENT 1. PROPERTY ACCESS AGREEMENTS

ATTACHMENT 2. STANDARD OPERATING PROCEDURES

RICO TOWNSITE SOILS VCUP APPLICATION APPENDIX D: PHASE 1 VCUP WORK PLAN

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LIST OF ABBREVIATIONS				
AR	Atlantic Richfield Company			
bgs	below ground surface			
CDOT	Colorado Department of Transportation			
CDPHE	Colorado Department of Public Health and Environment			
CLP	Contract Laboratory Program			
су	cubic yard(s)			
EPA	U.S. Environmental Protection Agency			
FAQ	Frequently Asked Questions			
GIS	Geographic Information System			
GPS	Global Positioning System			
ICP	Inductively Coupled Plasma			
ICs	Institutional Controls			
IDW	Investigation Derived Waste			
ISWP	Individual Site Work Plan			
LCS	Laboratory Control Sample			
mg/kg	milligrams/kilogram (parts per million)			
MS	Matrix Spike			
PPE	Personal Protective Equipment			
PUD	Planned Unit Development			
QC	Quality Control			
RPD	relative percent difference			
RL	reporting limit			
SOP	Standard Operating Procedure			
sq ft	square feet			
VCUP	Voluntary Cleanup Program			
XRF	X-Ray Fluorescence			

### **1** INTRODUCTION

This Work Plan describes work to be performed during Phase 1 (Soil Characterization and Soil Remediation) of the Rico Townsite Soils Voluntary Cleanup (VCUP) project in accordance with the 2021 Rico Townsite Soils Voluntary Cleanup Program (VCUP) Application. The work described in this Work Plan is an extension of the work previously completed under the 2004 VCUP Application and related plans approved by the Colorado Department of Public Health and Environment (CDPHE) for the Rico Townsite Soils VCUP project. As noted in the 2021 VCUP Application, the objective of the Rico Townsite Soils VCUP is to address the presence of lead in surface soil in the Town of Rico (Dolores County), Colorado.

The <u>2020-2021</u> VCUP Application and this Work Plan are based on the same soil-remediation objectives and plans that were presented in the 2004 Rico Townsite Soils VCUP Application (AR et al. 2004a), <u>as</u> well as and they also refer to the same soil-remediation plans presented in the 2004 VCUP Application and\_subsequent Rico Townsite Soils VCUP Work Plans and Sampling and Analysis Plans (AR et al. 2004b; AR et al. 2005; AECOM 2014)<del>, as</del> approved by CDPHE.

### 1.1 VCUP PROJECT BACKGROUND

The Atlantic Richfield Company (AR, which for the purpose of this Work Plan refers to Atlantic Richfield and its affiliates, consultants, and contractors) previously conducted investigations of soil in the Town of Rico (the Town) as part of the Rico Townsite Soils VCUP project. Soil sampling and analysis were performed at various times beginning in 2004 and continuing through 2015. The prior investigations included collection of soil samples from developed and undeveloped residential and non-residential properties; along unpaved roadways and proposed sewer alignments; and within the Dolores River corridor, which included sampling along an historical railroad corridor (AEC 2007). Soil samples have been collected for analyses of lead from over 400 properties.

AR also previously conducted soil remediation at individual properties in Rico to address soil lead concentrations above the risk-based action levels for lead that were approved by CDPHE and EPA for use by the Rico Townsite Soils VCUP project. Soil remediation was completed at all but a few of the properties that were sampled in 2004-2005 and found to have soil lead concentrations above the Rico Townsite Soils VCUP action levels. To date, soil remediation has not been completed under VCUP at properties sampled in 2014-2015, unpaved roads, or land parcels along the Dolores River.

AR's past VCUP activities also included the design, construction, and operation of a soil repository for disposal of lead-containing soil removed from Rico properties during soil remediation. The operations plan, closure plan, and post-closure plan for the Rico Soil Lead Repository were provided in the 2004 Engineering Design and Operations Report that accompanied the Application for Certificate of Designation for the Soil Lead Repository at the North Rico (St. Louis Ponds) Site (SEH 2004). The operations plan was prepared pursuant to the requirements of 6 CCR 1007-2, Part 1, Regulations Pertaining to Solid Waste Sites and Facilities (Section 3.3 - Operating Criteria and Section 3.4 - Recordkeeping).

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The Rico Soil Lead Repository was constructed in October 2005 approximately 1 mile north of the Town of Rico on property now owned by AR on the east side of the Dolores River. The repository covers an area of approximately 1.5 acres and has the capacity to accept [40,000 cubic yards (cy) of soil. The repository is operated by AR and accepts only lead-containing soil exceeding the approved action levels. To date, approximately 10,000 cy of soil excavated from locations in the Town of Rico have been disposed at the repository. As of- December 31, 2020, the repository has a remaining capacity of approximately 30,800 cubic yards (cy), or 77 percent of the original capacity. The repository is available to accept qualifying soil removed during the additional soil remediation that will be conducted in accordance with this Work Plan.

### 1.2 ORGANIZATION OF THE WORK PLAN

The purpose of this 20202021 VCUP Work Plan is to describe the approach for completing Phase 1 soil characterization and soil remediation described in the 2021 Rico Townsite Soils VCUP Application. Section 2 of this Work Plan identifies the sampling and analysis methods that will be adopted to complete soil characterization in the VCUP project area. The sampling and analysis methods specified in Section 2 are generally consistent with those used during previous VCUP sampling efforts in 2004-2005, 2006, 2008 and 2014-2015, as described in the 2004 VCUP Application (AR et al. 2004a, 2004b). Section 3 of this Work Plan presents the approaches that will be adopted for soil remediation at the various types of <u>developed</u> properties present in Rico, including instructions for preparation of the Individual Site Work Plans (ISWPs) that will serve as the property-specific design document at each of the properties where AR conducts <u>Phase 1</u> soil remediation. Plans for remediation of soil on unpaved road segments and management of VCUP soil data and soil-remediation records are described in Sections 4 and 5. The Institutional Controls (ICs), including the Overlay Zone Regulations, that will be implemented following the <u>Phase 1</u> soil sampling and analysis and the soil remediation activities described in this Work Plan and the overall schedule for the Rico Townsite Soils VCUP project are provided in the 2020201 VCUP Application (refer to Sections 6 and 7 of the Application).

Commented [SC1]: Are these still current? Commented [AR2R1]: Please see new text.

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#### **COMPLETION OF SOIL SAMPLING** 2

The primary purpose of soil sampling and soil analyses performed for the Rico Townsite Soils VCUP project is to provide data describing the lead concentrations in soil at individual properties in a manner that can be used to determine whether, and where, soil remediation is needed to address surface soil with lead concentrations greater than the site-specific action levels.

The Rico Townsite Soils VCUP project area is defined as the land within the boundaries of the Town of Rico, which has been divided into multiple land parcels or Town lots. For the purpose of this Work Plan, each individual parcel/lot and each group of contiguous parcels/lots under the same ownership will be described as a single "property." The properties in the VCUP project area, as defined by the 20201 VCUP Application, have a range of different land uses. The Town of Rico zoning map (see Figure 6 of the 20210 VCUP Application) identifies the different land uses, each of which has distinct considerations for collection of soil samples that will be used to evaluate the need for remediation.

Data collected in accordance with this plan will fill the data gaps remaining for the Rico Townsite Soils VCUP project. The new data will ultimately be used along with other available VCUP-project data for the following purposes:

- Identify locations within the project area where surface soil-lead concentrations are above the applicable, site-specific action level and determine the scope of soil remediation at individual properties and on unpaved roadways within the project area;
- Guide AR's preparation of the engineering design documents for soil remediation at individual properties (ISWPsndividual Site Work Plans) and on unpaved road segments (Road Remediation Work Plan);
- Provide additional data as needed to support requests to CDPHE for No Action determinations and No Further Action determinations (NFAs); and
- Provide additional data to support the <u>ICsInstitutional Controls (ICs</u>) program that will be established to specify appropriate requirements for handling and remediating soil at individual properties when land uses change or new development takes place in VCUP Phases 2 and 3.

This section of the Work Plan provides the soil sampling and analysis procedures that will be followed to complete the VCUP soil investigations in the Rico Townsite Soils project area.

#### 2.1 SCOPE OF REMAINING SOIL SAMPLING ACTIVITIES

The soil-sampling status and soil-remediation status of each individual property within the project area are indicated on the map in Figure D-1. Approximately 100 properties remain to be sampled in order to characterize lead concentrations in surface soil (refer to VCUP Application Attachment 3 for the list of properties identified for sampling during Phase 1).

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#### RICO TOWNSITE SOILS VCUP APPLICATION APPENDIX D: VCUP PHASE 1 WORK PLAN

#### DRAFT VERSION 1.4, FEBRUARY 2021

Based on records maintained by the Town of Rico, approximately 16 of the properties remediated by AR in 2005-2007 may have since been subject to soil disturbance by excavation or construction activities permitted by the Town of Rico (refer to Attachment 4 of the VCUP Application). The clean cover soil placed on these properties during soil remediation may have been partially removed, substantially disturbed, or covered by other soil in a manner that has changed the lead concentration in surface soil. For this reason, resampling the surface soil <u>at these properties</u> is warranted to confirm that existing conditions are consistent with the goals of the Rico Townsite Soils VCUP project. Resampling will also occur at five additional properties with existing clean soil covers that do not appear disturbed, for quality control purposes and to confirm the assumption that lead concentrations in clean soil covers do not exceed 100 ppm.

Collection of new soil samples at any previously remediated properties will be contingent on the findings of a review of the available excavation or construction records documenting the extent of soil disturbance and a review of current versus historic aerial photographs. The review will be performed and funded by AR with assistance from the Town of Rico. If that review indicates that previously remediated areas were disturbed (or likely disturbed) to depths of more than 12 inches below the ground surface (bgs), or if no documentation of the disturbance is available, then the lead concentrations in soil will need to be verified through resampling and analysis, and the property will be included in the soil sampling efforts completed in accordance with this Work Plan. As noted above, resampling will also occur at five additional properties with existing clean soil covers that do not appear disturbed.

Road-surfacing materials on unpaved roads within the project area have already been sampled. However, some of the previously sampled roads have been disturbed since the original samples were collected in 2004 and 2008. As a result, re-sampling of the traveled surface of some road segments may be needed, pending consultation with the Town of Rico regarding the extent of recent disturbance activities and approval by CDPHE. Additional sampling may also be conducted to better define the extent of planned remediation of unpaved roads and support development of a final remedial design for unpaved roads (refer to Section 4).

### 2.2 ACCESS AGREEMENTS FOR SOIL SAMPLING

Before sampling, including but not limited to verification sampling, at any property, AR must obtain agreement, in writing, from the current owner (or an authorized representative) allowing access to the property for that purpose. AR will request property owners to provide access to properties for collection of soil samples within 3 years of upon CDPHE acceptance of the 20202021 VCUP Application and 20201 VCUP Work Plan. Each request for sampling access will be accompanied by written explanation of the objective of the VCUP program, the rationale for and benefits of soil characterization (and soil remediation) services offered by the VCUP Program, the purpose of sampling and analysis for lead, and a general timeline for conducting the sampling and analysis and then reporting results to the property owner. Requests for access will also provide internet addresses for public-health websites that

DRAFTAppxD\_Ph1\_WorkPlan\_Rev\_02\_22\_21\_AR rec\_d from AR 3.2.2021 July 31, 2021 Commented [SC4]: VCUP Application says 16; there may also have been additional disturbances since this was written. Commented [AR5R4]: 16 is the correct count.

**Commented [TAB6]:** Open for discussion. State indicating a desire to retest some previously remediated lots.

**Commented [AR7R6]:** See comment on this point in the 2021 VCUP Application.

**Commented [SC8R6]:** Response to this point in the 2021 VCUP Application, from Dave Folkes: The last statement is not correct. The Pb concentrations in remediated areas of the properties evaluated in the RRA were necessary to calculate the area and time-weighted average Pb concentrations that children might be exposed to on and off their property. The RRA either used actual topsoil concentrations, which were less than 100 (15 in the example given in the text) or 100 ppm (see pp. 5-6 of RRA). I suggest AR evaluate the significance of the cover soil sample data on a case by case basis, without setting a specific pass/fail criterion.

**Commented [AR9]:** References to sources of funding are not necessary in the Work Plan. AR proposes to remove funding details from this Work Plan and rely instead on the Funding Agreement established with the Town.

The State agrees with this approach.

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### **Commented [AR10]:** No need to repeat this here since it appears in the prior paragraph.

**Commented [SC11]:** What document identifies what road sections need to be remediated? Does state need to approve decision?

**Commented [AR12R11]:** Additional road/alley sampling is planned during Phase 1 to complete the identification of road/alley segments for remediation. See Sec. 6.1.5 of the 2021 VCUP Annication

**Commented [AR13]:** Unnecessary and in some cases incorrect. Existing access agreements already provide access for re-entry to perform follow-up sampling, with proper notice to property owner.

**Commented [TAB14]:** Why 3 years for the request? Should this be 1 year for initial request? Open for discussion.

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provide additional information regarding the potential health risks related to exposure to lead in the environment.<sup>1</sup>

AR will mail out or hand deliver an initial written request for sampling access to the owners of the approximately 100 properties that remain to be sampled, with instructions to sign the enclosed access agreement (refer to Attachment 1 for an example access agreement) and return it to AR. AR will also mail out or hand deliver requests for access to the owners of the 1621 properties previously remediated by AR that will be resampled to determine current soil lead concentrations (See Section 2.1). In addition, AR will make at least three attempts (using at least two of these methods: via telephone, in person (by going door to door), or by other available means (e.g., email or text message)) to contact the property owners who do not respond to the mailing. Efforts to obtain access agreements from property owners will extend for no more than 1 year following the initial mailing described above. As appropriate, If these outreach efforts are not successful, AR may request assistance from the Town of Rico will assist AR in contacting owners or otherwise addressing property owners' specific concerns regarding collection and analyses of soil samples.

### 2.3 PROPERTY TYPES

Soil sampling will be conducted at three general types of properties, which are defined based on their current land use. Distinct sampling plans will be used to characterize lead in soil within each of the three property types.

The three property types and their current zoning designations are as follows:

1. Residential, Residential Planned Unit Development (PUD), Historical Commercial, Commercial, Commercial, Commercial PUD, and Mixed Use

Properties with these zoning classifications (Residential, Residential PUD, Historical Commercial, Commercial, Commercial PUD, and Mixed Use) allow residential use. AR will collect soil samples at all properties zoned to allow residential use, including currently vacant and undeveloped properties. Parcels in high avalanche areas or flood zones in high avalanche areas or flood zones that the Town considers nondevelopablemore difficult to develop (see Figure 11 of the 2021) VCUP Application) will not be sampled as part of the initial sampling program for 2020 to 20232021 to 2024; provided, however, if an owner of such parcels elects to develop the parcel, the area of the proposed disturbance will be sampled pursuant to the requirements of the Institutional Controls regulations.

2. Town of Rico Open Space and Public Facilities

**Commented [AR15]:** 16 previously disturbed properties + 5 undisturbed remediated properties for QC.

**Commented [SC16]:** This change is being proposed because "more difficult to develop" is more accurate. The Town can't prevent privately owned parcels from being developed, though the Town can make certain areas "more difficult to develop" through LUC requirements. *See* RLUC Sec. 804 (classifying avalanche, floodplain, and steep slope areas as Areas of State Interest and requiring a permit before development).

**Commented [AR17]:** Language deleted because this Work Plan addresses only Phase 1 of the VCUP.

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<sup>&</sup>lt;sup>1</sup> For example: U.S. Environmental Protection Agency's "Learn About Lead" website. <u>https://www.epa.gov/lead/learn-about-lead</u>

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Soil samples will be collected from open space parcels that allow public access and at public facilities such as government buildings, schools, cemeteries, and common areas.

### 3. Town of Rico's Unpaved Roads

This area includes all of the Town of Rico's unpaved roads and routinely traveled alleys, including non-vegetated rights of way. Alleys that provide access to developed residential properties are considered "routinely traveled." The non-vegetated right-of-way area includes the road shoulders, drainage swales, ditches, berms, parking area, and other bare ground next to the traveled roadway within the Town-owned right-of-way.

Both developed and undeveloped properties are targeted for sampling under this 20192021 VCUP Work Plan to provide a consistent database of soil-characterization data that will ultimately support the VCUP project's ICs in Phases 2-3. If sampled properties are developed (or redeveloped) in the future as part of Phases 2-3, re-sampling by the property owner may be necessary to characterize the post-development soil lead concentrations. The need for future resampling in conjunction with development (or redevelopment) of the property will be determined performed by the property owner in accordance with Town of Rico land use regulations the Overlay Zone Regulations adopted as an ICInstitutional Control (refer to Section 6 of the 2021 VCUP Application).

### 2.4 SOIL SAMPLING AND ANALYSIS PLAN

The general sampling designs and sampling and analysis methods used during prior Rico Townsite Soils VCUP sampling efforts (i.e., from 2004 through 2015) have been adopted for completion of soil characterization within the VCUP project area to ensure consistency in the type and amount of data available for guiding VCUP soil remediation at individual properties. <u>Sampling and analysis will be done consistent with the VCUP Application and Institutional Controls regulations</u>.

The following sections describe the numbers and types of samples that will be collected at each of the three property types in the project area.

## 2.4.1 Soil Sampling At Residential, Residential PUD, Historical Commercial, Commercial, Commercial PUD, and Mixed Use Properties

The sampling plans for properties where residential use is allowed are based on the recommendations provided in EPA's Superfund Lead-Contaminated Residential Sites Handbook (EPA 2003), which is the current version of this document. Figures D-2, D-3, and D-4 are schematic drawings that illustrate some example sampling designs based on the residential-property sampling requirements described below.

### 2.4.1.1 DEVELOPED PROPERTIES

For the purpose of the Rico Townsite Soils VCUP project, a developed property is defined as an improved property with a structure that is in a condition suitable for commercial or residential use and occupation. The minimum number of soil samples required at each developed property varies depending on the following conditions:

DRAFTAppxD\_Ph1\_WorkPlan\_Rev\_02\_22\_21\_AR rec\_d from AR 3.2.2021 July 31, 2021 Commented [AR18]: This sentence is unnecessary because the Work Plan sets forth the Phase 1 soil sampling and analysis requirements, not the 2021 VCUP Application or the ICs regulations.

- Developed properties ≤5,000 square feet (sq ft) in total area Properties less than or equal to
  5,000 sq ft in total area will be divided into at least two sampling areas, excluding buildings,
  pavement, or other permanent caps over the soil. A minimum of two composite samples
  (comprised of five subsamples each), one each from the front yard and back yard (and side yard
  if substantial), plus a separate sample for each distinct driveway, vegetable garden, and play
  area, if present, will be collected.
- Developed properties >5,000 sq ft and < 0.5 acres in total area Properties greater than 5,000 sq ft and less than 0.5 acres in total area will be divided into at least four sampling sectors, with each one not exceeding 5,000 sq ft (excluding buildings, pavement or other permanent caps). A minimum of four composite samples (comprised of five subsamples each), one from each sampling sector, plus a separate sample for each driveway, vegetable garden, and play area, if present, will be collected. ≤</li>
- Properties ≥ 0.5 acres in total area Properties greater than or equal to 0.5 acres in total area will be divided into sampling areas of less than or equal to ¼ acre each, and one five-point composite sample will be collected from each sampling area of the property. All sampling areas will be from the area within a 100-foot radius of the primary structure unless a property or natural boundary (i.e., fence, hedge, tree line, abrupt change in grade, etc.) is encountered at a distance less than 100 feet. In addition, separate samples will be collected from each distinct driveway, vegetable garden, and play area, if any such areas are present.

The five subsamples will be collected at five discrete locations within each composite-sample sector and composited into one composite sample for each separate area for a total of two or more composite samples for each property, based on the property size described above. The locations of the subsamples will be selected by the sampling personnel to represent soil conditions within the area of the yard that the composite is from. All subsamples will be collected from locations that are outside the drip zone of buildings (4 feet from the edge of a building) in order to avoid possible lead paint contamination.

If identifiable mine waste deposits are observed at the surface, a separate sample of those materials will be collected for analysis of lead concentration. One grab sample of the distinct material will be collected from a depth of 0 to 2 inches-below sod, vegetation, or other landscape materials such as mulch or decorative stone measured from the top of the soil column, at each location where such materials are observed on the property. The grab sample will be prepared and analyzed for lead using the same procedures as other soil samples. Those procedures are described in Sections 2.4.6 and 2.4.7.

For developed properties of any size, additional samples will be collected from unpaved driveways, vegetable gardens, and bare play areas (see example sampling plans in Figures D-2 and D-3), if they are present, as follows:

- Unpaved driveways Surface soil samples will be collected from a depth of 0 to 2 inches at two
  randomly selected locations in each unpaved driveway. These two samples will be combined
  into a single composite sample.
- Vegetable gardens Soil samples will be collected from each vegetable garden at a sample density of one sample per 100 sq ft with a minimum of two samples per garden. Samples from vegetable gardens will be collected across the depth of 0 to 12 inches to reflect the typical tilling

DRAFTAppxD\_Ph1\_WorkPlan\_Rev\_02\_22\_21\_AR rec\_d from AR 3.2.2021 July 31, 2021 depth of a garden. These two or more subsamples will be combined into a single composite sample.

• Play areas for children – Additional samples will be collected of bare soil in play areas, if present. For relatively small play areas (swing sets, sand lots, etc.), one discrete surface soil grab sample will be collected within the play area. For larger play areas, surface soil samples will be collected from 0 to 2 inches at five randomly selected locations. These five samples will be combined into a single composite sample.

#### 2.4.1.2 UNDEVELOPED PROPERTIES

Soil sampling will be completed at currently undeveloped properties that have the potential for future development (as determined by the Town of Rico). The required number of soil samples collected at these properties will be at least two-one five-point composite samples from each 5,000 sq ft of land (see example sampling plan in Figure D-4). If a building site, or sites, has already been established for a property, then at least two-one five-point composite samples will be collected from the proposed building site of 5,000 sq ft or less. An additional five-point composite sample will be collected for each additional 5,000 sq ft of undeveloped property or building site.

Each soil sample will be a composite of five subsamples, each collected from a depth of 0 to 2 inches. The locations of the discrete subsamples will be selected by the sampling personnel to represent the soil across the subject area (e.g., front, middle, and back areas of the property). The five subsamples will be combined to form a single composite sample representing the average lead concentration in soil across the sampled area.

If identifiable mine waste deposits are observed at the surface, those materials will be sampled for separate analysis for lead concentration. One grab sample will be collected from a depth of 0 to 2 inches in any such areas of the property. The grab sample will be prepared and analyzed for lead using the same procedures as all other samples. Those procedures are described in Section 2.4.6.

### 2.4.2 SOIL SAMPLING PLAN FOR OPEN SPACE AND PUBLIC FACILITIES

For open space parcels, at least one five-point composite sample will be collected from a depth of 0 to 2 inches per <u>\*\*</u> acre of land, with a minimum of two samples per parcel. The five subsample locations will be selected by the sampling personnel with efforts made to collect the five subsamples from soil that is representative of the subject sample area. The five subsamples will be composited into a single sample representing that half-acre portion of the parcel.

If identifiable mine waste deposits are observed at the surface, those materials can be sampled for separate analysis of lead concentration. One or more grab samples may be collected from any such areas on the property, from a depth of 0 to 2 inches. The grab sample will be prepared and analyzed for lead using the same procedures as for the composite soil samples; those procedures are described in Section 2.4.6.

At properties of this type that include developed play areas for young children (e.g., designated playgrounds) additional samples will be collected from that area.

DRAFTAppxD\_Ph1\_WorkPlan\_Rev\_02\_22\_21\_AR rec\_d from AR 3.2.2021 July 31, 2021 **Commented [SC19]:** We don't see why this should be different from the procedure for developed properties with respect to this point.

**Commented [AR20R19]:** The reason developed properties have two composite samples is because there are distinct front yards and backyards, which is not the case for undeveloped properties.

**Commented [SC21]:** This is consistent with what we have recommended previously.

Commented [AR22R21]: See AR's previous responses.

- **Children's play areas that are less than 5,000 sq ft** Surface soil samples will be collected from 0 to 2 inches at five locations. These five samples will be composited into a single sample to represent that play area.
- Children's play areas greater than approximately 5,000 sq ft The play area will be divided into two or more sections, each with an area no greater than 5,000 sq ft, and the composite sampling procedure will be applied to each section. For each section of the play area, surface soil samples will be collected from 0 to 2 inches at five locations and composited into a single sample representing that section.

Because property uses in the open space/public facilities category vary widely, plans for soil sampling may be developed on a property-by-property basis. For example, schools and common areas that may be frequented by children may warrant sampling in a similar manner to residential properties. Such variations from the general sampling plan described above will not require specific approval by CDPHE as long as the minimum sampling requirements for the property type are met.

### 2.4.3 SOIL SAMPLING PLAN FOR TOWN OF RICO'S UNPAVED ROADS

AR will collect composite samples of the road surfacing materials from any unpaved road segments not previously sampled, unpaved road segments where the scope of planned remediation needs to be better defined, and where previously sampled unpaved roads are known or suspected to that have been disturbed since the prior VCUP sampling or where road segments are at risk from runoff from areas with elevated lead. Analyses of these additional samples will augment the previous data collected for the Rico roadways.

AR will collect the soil samples based on previous sampling locations from the Rico Townsite Soils Investigation, Final Data Report (AR et al. 2006), 2008 road and alley sampling activities, and any information concerning new alleyways or roadways established since 2008. Refer to Figure 9 of the VCUP Application for a map of the road and alley sample locations in 2004 and 2008.

For each road segment identified for sampling, AR will collect one composite sample from the traveled surface of the road from a depth of 0 to 2 inches at two discrete locations-within the designated road segment. The composite will be comprised of two subsamples will be collected from each segment. Each segment shall be approximately one block, or the length of a road between two cross-streets, including alleys, not to exceed [X] feet. One subsample is to be taken at a point approximately ¼ of the way along the length of the segment, and another subsample from approximately ¾ of the way along length. Both subsamples will be from near the center line running the length of the road. These two subsamples will be composited into a single sample to represent the entire unpaved road segment. In addition to the road samples, JA

### 2.4.4 COLLECTION OF SOIL SAMPLES

Collection of soil samples will be consistent with sample collection, preparation, and handling procedures used for previous Rico Townsite Soils VCUP investigations.

DRAFTAppxD\_Ph1\_WorkPlan\_Rev\_02\_22\_21\_AR rec\_d from AR 3.2.2021 July 31, 2021 Commented [SC23]: Some Town Board members have previously expressed a desire to have roads re-sampled (rather than relying on old samples).

**Commented [DF24R23]:** I assume that "disturbed" would include observed impacts due to erosion or sedimentation due to run-on from areas with elevated lead. This could be determined by observation during the road sampling work.

**Commented [SC25]:** Town Board members have suggested that the right-of-way beyond the edge of the traveled way be tested and that AR work with the Town to determine which lots need to be re-sampled.

**Commented [DF26R25]:** The ROWs will be remediated along with the road segment – however, if mine waste is suspected along segments not being remediated, this should be addressed (i.e., either sampled or flagged for targeted removal).

**Commented [DF27]:** Why just two subsamples for a composite sample? The time required for additional subsamples is minimal.

**Commented [AR28R27]:** This plan is based on the sampling plan used during prior VCUP sampling along roads and alleys. The intent is to provide samples, and lead results, that are comparable to analytical results from past road samples.

**Commented [DF29]:** Why? Less likely to be impacted if the crown.

**Commented [AR30R29]:** This plan is based on the sampling plan used during prior VCUP sampling along roads and alleys.

**Commented [DF31R29]:** For road segments being re-sampled due to known disturbance, it would make more sense to sample the disturbed areas (or at least include subsamples from these areas in the composite sample). Otherwise the new samples won't be addressing the question (i.e., DQO)..

**Commented [DF32]:** Just to confirm, this sentence limiting additional ROW sampling to visual evidence of mine waste is just referring to sampling – with respect to remediation, the VCUP indicates that "Within each road/alley segment identified for remediation, the extent of removal and replacement will include the traveled road surface and adjacent, unvegetated, Town-owned right of way."
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#### 2.4.4.1 **COLLECTION METHODS**

Soil will be collected at each sample location using hand tools to excavate soil from 0 to 2 inches bgs. The soil samples will be collected from below the base of any sod or root mat that may be present and beyond the drip zone of buildings present on or adjacent to the subject property to avoid possible contamination by deteriorating lead-based paint. In some cases, material other than vegetation will be encountered at a sample location, e.g., wood chips and sand are often found in recreational areas of day-care and school playgrounds. In such cases, the top 2 inches of soil below the cover material should be collected instead of the non-soil cover.

#### 2.4.4.2 **COMPOSITING SOIL SAMPLES**

For the purposes of this VCUP project, a composite soil sample will consist of the discrete subsamples of roughly equal volumes of soil collected from two or more separate locations within the subject sample area. The soil from each of the subsamples is to be collected into one clean container, such as a stainless-steel bowl or plastic bag, and then thoroughly mixed together. After mixing, the sample will be sieved to homogenize and reduce the size of the soil particles prior to analysis for lead content (see Section 2.4.6).

#### 2.4.4.3 **EQUIPMENT DECONTAMINATION**

Decontamination will be performed on all re-usable sampling equipment between sample locations. Soil sampling equipment may include stainless-steel sampling utensils, hand tools, and direct-push samplers. Small equipment will be decontaminated by washing with clean, distilled or de-ionized water mixed with detergent solution, and rinsing with clean, distilled or de-ionized water.

#### 2.4.5 SAMPLE PREPARATION AND ANALYSIS METHODS

All soil samples will be sieved through the U.S. Standard No. 60 sieve (250 µm mesh size) and then the materials passing the sieve will be analyzed for lead. Composited soil that does not pass through the sieve can be returned to the ground surface in the area where it was collected. Soils that are wet when collected may need to be dried before sieving. If drying is necessary, the soil should be air dried at ambient temperature, or if necessary, oven dried at temperatures less than 120 degrees F.

A Niton 700 Series XRF-instrument, or similar, will be used for field analysis of soil lead concentrations. The methods for XRF analysis will be consistent with EPA SW-846 Method 6200 (Field Portable X-Ray Fluorescence Spectrometry for the Determination of Elemental Concentrations in Soil and Sediment). Each soil sample will be homogenized by mixing and sieving prior to XRF analysis. Additional details are included in SOP VCUP 04 200305 - Handheld X-ray Fluorescence (Attachment 2 of this Work Plan).

A subset of samples (minimum of 10 percent) analyzed by XRF will be split after sieving for submittal to a laboratory for lead analysis using EPA SW-846 Method 6010, Inductively Coupled Plasma – Optical Emission Spectrometry (ICP). Upon receipt at the laboratory, these soil samples will be prepared for analysis using EPA SW-846 Method 3050B. The laboratory methods referenced by the contracted laboratory shall conform to the procedures outlined in EPA SW-846, Test Methods for Evaluating Solid

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Commented [DF33]: Usually No. 10 sieve (sand size) - this will restrict to silt and clay sizes, which is typically more conservative

Commented [AR34R33]: The established cleanup levels are

Commented [DF35R33]: OK with me.

Commented [DF36]: Explain how the samples will be analyzed

DRAFT

Waste: Physical/Chemical Methods, Update IV. Split analyses will not be required for verification of lead concentrations at previously sampled and previously remediated properties or for stockpiled soil.

The lead concentrations reported by the laboratory will be used to confirm the accuracy of the XRF measurements and describe the correlation between the lead concentrations obtained by the two distinct analysis methods <u>(see Attachment 2 - SOP\_VCUP\_04\_200305 - Handheld X-ray Fluorescence)</u>. Results of the split-sample comparisons will be evaluated and reported to CDPHE with data reports generated at the end of each year of sampling activities.

### 2.4.6 DOCUMENTATION OF SAMPLING ACTIVITIES

Sampling activities and property conditions at the time of sample collection will be documented by the sampling personnel.

## 2.4.6.1 PROPERTY MAPS AND SAMPLE LOCATIONS

AR shall-will prepare a sketch map of each property that shows property boundaries and improvements, including existing structures (e.g., house, garage, other structures), driveways, fences/walls, patios/decks, and landscaped areas (e.g., lawn, trees, and shrubs). AR will also delineate any vegetable gardens and any established play areas for children on the property map.

AR will clearly delineate each composite-sample area outlined on the property map and document each discrete sub-sample location within that area using a hand-held global position system (GPS) unit. AR will also record subsample locations and sample numbers in field notes at the time of sampling. The X/Y-location coordinates will be recorded in the following format: NAD 1983 State Plane; Colorado South FIPS 0503 Feet; Linear Unit: US Foot (0.3048006096012192).

## 2.4.6.2 FIELD DOCUMENTATION

For sampling at developed residential properties, the following types of sample areas will be established based on specific uses:

- Yards/Lots
- Driveways
- Vegetable gardens
- Play areas

AR will record the type of sample area along with the sample number (see below) during sample collection.

AR will photo-document sampling locations and procedures using either video or still photographs. For still photographs, AR will maintain a log that matches each photograph number with a written description of the photographic location. For video recording, AR will use a voice narrative to describe the location/activity being video recorded. Detailed photographic or video documentation will include the sample locations and the condition of the property during soil sampling and prior to remediation, including location and condition of concrete pads, fencing, sheds, gardens, etc.

DRAFTAppxD\_Ph1\_WorkPlan\_Rev\_02\_22\_21\_AR rec\_d from AR 3.2.2021 July 31, 2021 Commented [DF37]: What are the criteria for accuracy?

**Commented [DF38R37]:** This SOP only addresses the correlation coefficient between field and lab data (i.e., is there a correlation) but does not address correcting for any significant bias in the correlation. For example, you can have an excellent correlation meeting the SOP criteria, but the XRF results could trend 10% higher or lower than the ICP data. Developing and applying a correction factor for this is pretty easy and standard practice. See also comments on p. 16 and 17.

#### 2.4.6.3 SAMPLE LABELING

After each soil sample has been prepared for analysis (Section 2.4.6), the sample will be placed into a clean sample container that will be sealed and labeled with the following information:

- Property identification (street address)
- Sample number (includes the previously assigned "VCUP Lot number," as indicated below)
- Sampling date and time
- Sampling personnel
- Requested analysis

### 2.4.6.4 SAMPLE NUMBERING

A numbering system will be established for tracking each sample. The system will be designed to distinguish between types of properties and types of samples and will be consistent with the sample numbering scheme used during collection of the 2014-2015 samples (TREC 2015). For example, a sample number of 20-RES-028-01 includes the following information:

- The first two digits specify the year samples are collected (e.g., 20202021)
- The letters specify the type of property (e.g., RES residential, NRES non-residential, RD unpaved road)
- The three-digit number specifies the VCUP Lot number (e.g., 028)
- The final two digits specify the sample number at each property (e.g., 01, 02, 03)

## 2.4.7 SAMPLE HANDLING, SHIPPING, AND CHAIN OF CUSTODY

AR will prepare laboratory chain-of-custody forms for all samples, including those analyzed using field methods, to ensure that the samples are traceable from the time of collection until final disposition. Soil samples collected for laboratory analyses will be shipped in sealed coolers. For each sample or set of samples shipped for laboratory analyses, a copy of the completed chain-of-custody form and shipping receipt will be retained by the sampling personnel for the project's field records.

Sample holding times are established to minimize chemical changes in a sample prior to analysis and/or extraction. A holding time is defined as the allowable time between sample collection and analysis recommended to ensure accuracy and representativeness of analysis results, based on the nature of the analyte of interest and chemical stability factors. The holding time for analyses of lead in soil samples by EPA Method 6200 and EPA Method 6010 is 180 days.

### 2.4.8 MANAGEMENT OF INVESTIGATION-DERIVED WASTE

Investigation-derived personal protective equipment (PPE) and disposable sampling equipment will be contained in plastic garbage bags by AR and disposed of onsite for transport to the municipal landfill by AR. It is anticipated that there will be minimal amounts of investigation-derived waste (IDW) associated with collecting soil sampling. Equipment decontamination water will be transferred to buckets with sealable covers, or other sealable containers, and then disposed at the Rico Soil Lead Repository.

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AR will record an inventory of any IDW generated during sampling and analysis activities in daily field notes. The inventory will reference the date and area of generation as well as the storage or disposal location of the IDW.

## 2.5 QUALITY CONTROL REQUIREMENTS FOR SOIL SAMPLING AND ANALYSIS

This section describes data-quality checks that will be performed to evaluate measurement variability associated with soil sampling and analyses for lead. The following quality control (QC) specifications are generally consistent with those adopted during previous VCUP soil sampling and analysis activities (AR et al. 2004b, 2005; TREC 2015).

## 2.5.1 QUALITY CONTROL LIMITS FOR MEASUREMENT DATA

The project's target control limits for precision, accuracy, representativeness, and completeness of leadin-soil measurements for the VCUP project are as follows.

## Precision

Data precision is assessed by determining the agreement between replicate measurements of the same sample and/or measurements of duplicate samples. The overall precision of the sampling-and-analysis process is assessed by the analysis of field duplicates. The precision of sample analyses is determined by replicate analyses of the same sample.

Precision of analyses of soil for lead shall be determined by the analysis of field duplicate samples, dual analyses of split samples, and duplicate analyses (i.e., laboratory duplicates). The precision goals for these sample analyses are as follows.

- Field duplicate and split sample results < 35 relative percent difference (RPD).<sup>2</sup>
- Laboratory (analytical) duplicate results < 30 RPD.

## Accuracy

Accuracy is the degree of difference between the measured value and the true value. It is a measure of the bias or systematic error of the entire data collection process, which includes sample collection methods, interference effects during sample analysis, and calibration of the measurement system. The accuracy of reported lead concentrations will be evaluated by the analysis of samples with known concentrations of lead, and the analysis results will be expressed as a percentage recovery measured relative to the true (known) concentration.

For this project, XRF accuracy (EPA Method 6200) will be evaluated using results from XRF analysis of standard reference material (SRM) samples of a soil matrix. Laboratory accuracy (EPA Method 6010) will be determined by the analysis of calibration and method blanks, calibration verification samples,

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 $<sup>^{2}</sup>$  For duplicate pairs with one or both lead results being less than five times the reporting limit (RL) of the analysis method, a difference of less than or equal to two times the RL (difference  $\leq [2 \times RL]$ ) will be used as the precision goal.

laboratory control samples (LCS), and matrix spike (MS) samples. This project's accuracy goals for analyses of soil samples for lead depend on the analysis method, as follows.

XRF analysis of lead in soil (EPA Method 6200):

- Calibration in accordance with the XRF instrument manufacturer's specifications
- SRM recovery within 70 to 130 percent

Laboratory analysis of lead in soil (EPA Method 6010):

- Calibration and method blank concentrations < method detection limit
- LCS recovery within 80 to 120 percent
- MS recovery within 75 to 125 percent

#### **Representativeness**

Data representativeness is defined as the degree to which data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, or environmental conditions. Representativeness is a qualitative parameter that is addressed through the design of an appropriate sampling program. The sampling program described in Section 2.4 has been designed to provide samples that are representative of surface soil at each of the properties where samples are to be collected, and sample representativeness will be controlled through consistent use of the sampling and sample preparation procedures presented in this plan.

In addition, the representativeness of soil samples collected with re-usable and decontaminated sampling equipment will be evaluated through analyses of field equipment rinse samples (i.e., equipment blanks). The target control limit for equipment blank analyses is a lead concentration result less than five times the reporting limit for lead in water, as measured using EPA Method 6010.

#### **Comparability**

Data comparability is defined as the confidence with which one data set can be compared to another. Comparability is a qualitative parameter that is considered in the design of the sampling plan and selection of analytical methods, quality control protocols, and data reporting requirements.

Comparability shall be ensured by analyzing samples obtained in accordance with the standardized procedures described in this Work Plan, which are consistent with those used during past Rico Townsite Soils VCUP soil investigations. In addition, measurement data will be calculated and reported in consistent units so that the values can be directly compared to each other and to historical data from the project area. Soil lead concentrations are to be reported in consistent units of milligrams per kilograms (mg/kg, equivalent to parts per million).

### 2.5.2 FIELD QUALITY CONTROL PROCEDURES

Field duplicates of soil samples and SRM samples will be analyzed for lead to provide information regarding precision and accuracy of the sampling and analysis process. In addition, at least 10 percent

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## 2.5.2.1 FIELD DUPLICATE SAMPLES

Field duplicates will be collected at a minimum frequency of 1 per 20 field samples (frequency = 5 percent). Field duplicates will be collected simultaneously with or immediately after the corresponding original samples have been collected and prior to preparation of the sample by sieving. Each of the duplicate samples will be sieved separately and then submitted for analysis with a unique sample number/identifier.

## 2.5.2.2 STANDARD REFERENCE MATERIALS (SRMs)

SRMs are homogeneous and stable materials for which target analyte concentrations have been determined with a very high degree of certainty. Whenever XRF analysis is relied on for measuring lead content of soil samples, a certified SRM (i.e., SRM soil comparable to the Rico soil matrix) will be obtained and analyzed for lead at a minimum frequency of 1 per 50 field samples analyzed by XRF (EPA Method 6200). Analyses of SRMs will be in addition to daily (or more frequent) calibration of the XRF instrument for measurement of lead.

## 2.5.2.3 SPLIT SAMPLES FOR LABORATORY CONFIRMATION OF XRF MEASUREMENTS

Whenever XRF analysis (EPA Method 6200) is relied on for measuring lead content of soil samples, split samples will be prepared, at a rate of 1 sample per 10 samples (frequency = 10 percent), for confirmation analysis by EPA Method 6010. The split samples will be prepared from the fine fraction of soil obtained by sieving (refer to Section 2.4.6). One split sample will be analyzed for lead by EPA Method 6200, and the other will be analyzed for lead by EPA Method 6010.

## 2.5.2.4 FIELD EQUIPMENT BLANKS

When the equipment used to collect soil is re-used between composite sample locations and between sampling at separate properties, field-equipment blanks will be collected to evaluate field sampling and decontamination procedures. The equipment blanks will be obtained by pouring deionized water over the decontaminated equipment. Equipment blanks will be collected at a 5 percent frequency for each equipment type that is decontaminated. The equipment blanks will be analyzed for total lead by EPA Method 6010.

## 2.5.3 LABORATORY QUALITY CONTROL SAMPLES

The laboratory contracted by AR to support the Rico Townsite Soils VCUP project will perform calibration of measurement instruments/equipment and analyze QC samples in accordance with specifications included in EPA Method 6010. A laboratory method blank, LCS, analytical duplicate, and a MS sample should be run in each laboratory QC batch with a minimum frequency of 1 each per 20 field samples. If fewer than 20 field samples are submitted, then 1 set of these QC analyses would be included with the group of less than 20 samples.

DRAFTAppxD\_Ph1\_WorkPlan\_Rev\_02\_22\_21\_AR rec\_d from AR 3.2.2021 July 31, 2021 Soil samples collected in Rico will be used for preparation of the analytical duplicates and MS samples. The sampling personnel responsible for collection and shipping of samples to the laboratory shall designate the samples to be used for laboratory QC analyses (MS and analytical duplicate) on the COC forms.

### 2.5.4 INSTRUMENT/EQUIPMENT INSPECTION, CALIBRATION, AND MAINTENANCE

In order to ensure continual quality performance of instruments or equipment relied on for measurement data, AR shall will perform equipment testing, inspection and maintenance routinely and record it in field notes.

#### Field Equipment

AR will use hand-held GPS units for recording sample locations. Portable XRF instruments may be used to analyze soil samples in the field for lead content.

Measurement equipment will always be inspected and the calibration checked before it is transported to a field setting for use. When in use, field equipment shall be calibrated at least once at the start of each day's field activities using the procedures and standards provided by the equipment manufacturer. For lead-in-soil measurements by XRF analysis, the calibration requirements found in EPA Method 6200 shall also apply. Field instruments that fail calibration requirements will be tagged as "non-functional" or "defective" and returned to the manufacturer or other supplier for repair or replacement.

Field instruments will be cleaned and safely stored at the end of each day of use and also between separate sampling events. Any routine maintenance recommended by the equipment manufacturer will be performed at the specified or recommended frequency.

#### Laboratory Equipment

Laboratory measurement instruments will be maintained in accordance with the laboratory's Quality Assurance Plan and the requirements of the referenced analysis method (i.e., EPA Method 6010). In addition, all measurement instruments and equipment used by the laboratory shall be controlled by a formal testing and preventive maintenance program.

Laboratory preventive maintenance will include routine equipment inspection and calibration at the beginning of each day or each analytical batch, as per the laboratory's internal standard operating procedures (SOPs) and specific method requirements, whichever is more stringent. The laboratory will keep maintenance records and make them available for review, if requested, during laboratory audits.

Physical and chemical calibrations shall be performed at the laboratory as specified by the laboratory's Quality Assurance Plan, instrument manufacturer's guidelines, and the requirements of EPA Method 6010. When laboratory measurement instruments do not meet the calibration criteria of the laboratory's Quality Assurance Plan and/or EPA method, then the instrument will not be used for analysis of samples submitted under this Work Plan.

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**Commented [TAB39]:** What is the scope of the XRF use here? For confirmation sampling? For mine waste?

**Commented [AR40R39]:** Field XRF measurements can be used for analysis of any soil or mine waste sample. Appropriate quality control procedures will be implemented to ensure the quality of data collected using XRF analysis, as detailed in the SOP.

**Commented [DF41R39]:** Normally this includes a correction factor based on the correlation between XRR and ICP data, unless the data have a 1:1 correlation, as lab ICP results are considered to be more accurate. See next comment.

Records of calibration, repairs, or replacement will be filed and maintained by the designated laboratory personnel performing QC activities. These records will be filed at the location where the work is performed and will be subject to quality assurance audit.

Calibration records and demonstration of acceptable calibration results are also required elements of the laboratory's data reporting to AR.

## 2.6 DATA QUALITY REVIEW AND EVALUATION OF SAMPLING AND ANALYSIS RESULTS

The QC information provided in field records and laboratory data reports will be reviewed to confirm that the reported measurement data are acceptable to support the VCUP project's objectives.

## 2.6.1.1 DATA QUALITY REVIEW

The QC information recorded during field and laboratory soil analyses will be subject to review to evaluate data quality. The project's targets for precision, accuracy, and representativeness, which are listed in Section 2.5.1, will serve as the basis for data quality evaluation. Laboratory results that do not achieve the target control limits for these parameters will be identified for data users as "estimated values," and the reason for this designation shall also be recorded for reference by data users.

## 2.6.1.2 LABORATORY DATA VALIDATION

An initial validation of field and laboratory methods for lead analysis of soil samples will be performed in accordance with SOP VCUP 07 using the general protocols and processes described in EPA National Functional Guidelines for Inorganic Superfund Methods Data Review (EPA 2017) and Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund (EPA 2009). The validation review will be performed for the first approximately 20 percent of samples analyzed by the contracted laboratory during each field season. For example, if the projected number of samples that will be sent to a laboratory for analysis during a field season is 75, then the data reported by the laboratory for analyses of the first 15 samples (20 percent) will be validated. Within 1 month of receiving the final laboratory data report, AR shall-will perform the data validation review and provide the validation results to CDPHE and the Town of Rico, so that any negative findings can be used to identify appropriate corrective actions that can be implemented in conjunction with later sample analyses.

The data validator will perform a manual validation, as defined in EPA guidance (EPA 2009), on the hard copy data reports prepared by the laboratories. Data validation will be equivalent to an EPA Contract Laboratory Program (CLP) Level VIIB validation. Data validation protocols and findings will be documented by the reviewer, and the validation records will be maintained with the other VCUP project records. A summary of data validation findings will also be included in a data summary report prepared at the end of the VCUP sampling and analysis activities and then submitted to CDPHE and the Town. Data validation records and the data validation summary reported to CDPHE will indicate any data qualifiers applied to individual results and reasons for application of those qualifiers.

DRAFTAppxD\_Ph1\_WorkPlan\_Rev\_02\_22\_21\_AR rec\_d from AR 3.2.2021 July 31, 2021 **Commented [DF42]:** Explain how field XRF data will be validated and evaluated, e.g., how correlation between field and lab values will be applied.

**Commented [DF43R42]:** SOP VCUP 07 refers to evaluating the correlation between lab and field data to allow use for field screening purposes (a minimum correlation coefficient of 0.7) and does not address the potential bias of the XRF data for use in risk assessment – i.e., when comparing XRF data to risk-based action levels. We can check with CDPHE if necessary to get their view on this question.

**Commented [AR44]:** Level IV validation is not warranted for laboratory data that will only be used to assess the accuracy of field XRF data.

RICO TOWNSITE SOILS VCUP APPLICATION	
APPENDIX D. VCI IP PHASE 1 WORK PLAN	

## **3** SOIL REMEDIATION

The objective of soil remediation under the Rico Townsite Soils VCUP Phase 1 project is to remove or cover surface soil from locations in the Town of Rico where lead-in-soil concentrations are above the CDPHE- and EPA-approved, risk-based, action levels. This Work Plan presents the overall approach and general procedures to be used for remediation of properties within the Rico VCUP project area. The approach and procedures described in this Work Plan are generally consistent with those used during previous VCUP remediation efforts in 2004-2005 (AR et al. 2004a, 2004b, 2005).

## 3.1 ACTION LEVELS FOR LEAD IN SOIL

A site-specific, human health risk assessment that evaluated residents' exposures to lead in soil and identified levels of lead in soil of potential health concern was performed using soil lead concentrations from properties in the Town of Rico (Integral 2006). Based on information provided by the risk assessment, two risk-based action levels were developed for lead in soil:

- Residential soil action level 1,100 mg/kg
- Commercial soil action level 1,700 mg/kg

These action levels were approved by CDPHE and EPA in 2006 and 2007 for soil remediation conducted as part of the Rico Townsite Soils VCUP project.

Properties will be identified for soil remediation by comparing the VCUP lead-in-soil data at each sampled property to the site-specific, risk-based action level. The residential action level (1,100 mg/kg lead) will apply at properties where Town of Rico zoning permits residential use. The commercial action level (1,700 mg/kg lead), referred to as the "non-residential action level" for purposes of this VCUP, will apply to soil on unpaved road and alley segments and properties where zoning prohibits residential use (e.g., Public Facilities and Open Space parcels).

## 3.2 PRELIMINARY SCOPE OF SOIL REMEDIATION

AR has already completed soil remediation at 78 properties in the project area (refer to Attachment 2 of VCUP Application). Additional soil remediation will be conducted to address lead in soil at developed properties where the lead content of soil exceeds the action level of 1,100 mg/kg (refer to Attachment 5 of VCUP Application for a preliminary list of properties identified for soil remediation), including approximately 1614 of the developed properties that were sampled in 2014 but not remediated at that time. For the purpose of the VCUP project, a developed property is an improved property with a structure that is in a condition suitable for commercial or residential use and occupation.

Properties with soil-lead concentrations greater than the action level that require remediation may also be identified through planned soil sampling at the remaining unsampled properties within the project area, as previously described in Section 2.1. In addition, soil remediation will be performed at previously remediated properties, if necessary, where soil has since been disturbed by excavation and/or new construction has been permitted by the Town since 2006. sampling indicates that additional

DRAFTAppxD\_Ph1\_WorkPlan\_Rev\_02\_22\_21\_AR rec\_d from AR 3.2.2021 July 31, 2021 **Commented [SC45]:** Town would like to have the usable space of the Town Park and the road serving the park remediated. Do not want the park hillside to be disturbed.

Commented [SC46]: Confirm/update

**Commented [AR47R46]:** See Attachment 5 of the 2021 VCUP Application. Fourteen properties are identified for soil remediation. These are different than the 16 disturbed, previously remediated properties that are to be resampled. remediation is required. At a minimum,Such previously remediated properties will be re-remediated when sampling indicates soil-lead concentrations greater than the applicable action level.

The final remediation design for each property <u>where Phase 1 remediation is planned</u>addressed by the <u>VCUP project</u> will be reflected in an Individual Site Work Plan (ISWP) prepared by AR. For properties where soil remediation is planned, AR will prepare an ISWP following completion of soil sampling (and analysis) at the subject property. The purpose of the ISWP will be to document the property-specific plan and specifications for soil removal and replacement. Section 3.5 describes the general scope and content of the ISWPs, along with other general requirements of VCUP soil remediation activities.

## 3.3 OWNER ACCESS AGREEMENTS FOR SOIL REMEDIATION

A valid access agreement must be in place with the current owner of any property prior to AR's implementation of a property-specific remediation plan. A template for preparing the n example soil-remediation access agreement is provided in Attachment 1. Each request for soil-remediation access will be accompanied by written explanation of the purpose of the VCUP program, the purpose of soil remediation, a summary description of the remediation approach, and a general timeline for conducting the work.

An initial written request for access will be hand\_-delivered (for local owners) or mailed to the owners of the properties identified for soil remediation based on the results of VCUP sampling and analysis activities. In addition, attempt(s) will be made to contact the property owners who do not respond to the mailing-initial request for access via telephone or by going door-to-door, or by other available means (e.g., email or text message). As appropriate, If these efforts are not successful, AR may request assistance from the Town of Rico will assist AR in contacting owners or otherwise addressing property owners' specific concerns regarding soil remediation plans and property disturbance by AR. Efforts to obtain access agreements from property owners will continue for no more than 1 year following the initial request for access mailing-described above.

Before preparation of an ISWP (refer to Section 3.5), representatives of AR will meet with the owner of the property, either in person or by phone, to discuss the general nature of the planned remediation activities and to identify any property-specific factors to be considered as the ISWP is developed. Once the ISWP has been presented and discussed with the property owner, the property owner will be asked to approve the plan, by signing a copy of the ISWP, before remediation activities are initiated by AR at the subject property.

## 3.4 SOIL REMEDIATION PLAN, BY PROPERTY TYPE

At each of the individual properties to be remediated under the VCUP project, on areas of the property where VCUP soil samples indicate the presence of lead at concentrations greater than the applicable action level for that property type, soil will be remediated to establish 12 inches of clean soil cover.<u>or a soil cover consisting of soils from elsewhere on the property demonstrated to have lead at concentrations lower than the applicable action level. Soil remediation performed at developed properties — including any previously remediated properties where soil has since been disturbed as a</u>

DRAFTAppxD\_Ph1\_WorkPlan\_Rev\_02\_22\_21\_AR rec\_d from AR 3.2.2021 July 31, 2021 Commented [SC48]: Issues regarding the cleanup number still need to be resolved, with some board members indicating 400 ppm should be the cleanup number.

**Commented [DF49R48]:** Some EPA remedies have included tiered action, beginning with education and similar actions at the 400 ppm level, and removal at higher levels.

result of work performed in accordance with a building or excavation permit issued by the Town of Rico —<u>The Phase 1 remediation</u> will include removal of surface soil, to a depth of 12 inches, in the yard areas where lead in soil exceeds the applicable action level of 1,100 mg/kg followed by replacement with clean soil and other appropriate cover materials in the same area(s).

Undeveloped properties where lead in soil exceeds <u>the applicable action level will 1,100 mg/kg shall</u> be remediated in the future as part of the ICs program if, and when, Town-permitted new development takes place at these properties. In accordance with Town <u>Overlay Zone Regulations land use regulations</u> that will be adopted as part of the ICs program (refer to Section 5 of this Work Plan), a property-specific soil-remediation plan will be developed in conjunction with building plans prepared for review and approval by the Town of Rico.

The detailed plans for soil remediation on any property in the project area will vary depending on the type and size of the subject property. General guidelines for soil remediation at developed properties and on parcels designated as open space and public facilities are provided below. More specific procedures that will be followed during soil removal and replacement are explained in Section 3.5.2.

## 3.4.1 DEVELOPED PROPERTIES ALLOWING RESIDENTIAL USE

The extent of yard-soil remediation at developed properties will be property-specific and dependent on the number and location of yard areas identified where the lead content of surface soil exceeds the residential action level. For properties with a total area of less than or equal to 5,000 sq ft, the entire yard area (i.e., areas of the property that are unpaved and clear of structures or other permanent cover materials) will be remediated. For properties with a total area greater than 5,000 sq ft, soil remediation will be performed in the yard areas within a 100-foot radius of the structure where the action level is exceeded rather than across the entire property. Decisions to remediate unpaved driveways, play areas, and vegetable gardens will be based on the individual sample results associated with each such area present. An example soil-remediation plan for a typical property of more than 5,000 sq ft is included as Figure D-5.

In the areas of the property where lead concentrations exceed 1,100 mg/kg, existing soil will be removed, generally to a depth of 12 inches bgs, followed by placement of clean soil over the excavated area(s). For properties that have a vegetable garden with soil lead concentrations that exceed 1,100 mg/kg, the soil will be removed from the garden area to a depth of 18 inches bgs and then replaced with 18 inches of clean soil.

### 3.4.2 DEVELOPED OPEN SPACE/PUBLIC FACILITIES PARCELS

Decisions to remediate soil on land parcels designated by the Town of Rico for open space and public facilities will depend on the uses of the parcel. The portions of such parcels where school yards or play areas frequented by young children are present will have soil remediated where soil lead concentrations exceed the residential action level of 1,100 mg/kg. Soil with lead content greater than 1,100 mg/kg will be removed to a depth of 12 inches and then replaced with clean soil.

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Open space or public facilities parcels that do not include areas intended for frequent use by young children will have soil remediated where soil lead concentrations exceed the commercial action level of 1,700 mg/kg. On such parcels, soil in the areas where sample results indicate lead content greater than 1,700 mg/kg will be removed to a depth of 12 inches and then replaced with clean soil. On open space and public facility parcels that will be used for recreation, only the area that will be disturbed by the development activity should be remediated, and not necessarily the full area of the individual lot or lots.

### 3.4.3 UNPAVED ROAD AND ALLEY SEGMENTS

The approach and procedures for remediation of unpaved road and alley segments are described separately in Section 4.2 of this Work Plan.

#### 3.5 GENERAL PROCEDURES FOR SOIL REMEDIATION

The soil-remediation methods, components, and materials described in this Work Plan are consistent with those used during previous VCUP remediation efforts conducted in 2005-2007 (AR et al. 2004a, 2004b, 2005).

#### 3.5.1 GENERAL REQUIREMENTS

The following requirements are applicable to soil remediation performed at any property within the VCUP project area.

#### 3.5.1.1 INDIVIDUAL SITE WORK PLANS

Before initiating cleanup activities at any individual property, AR will develop an ISWP for review by the property owner(s). The ISWP will include a brief narrative and/or an annotated map that presents a description of the areas where soil will be removed, the final cover type (e.g., native species, sod, aggregate or rock mulch), a list of features (e.g., trees, shrubs, fences), that will remain, if any, and steps that will be taken to minimize damage to any other features at the property. The map or site-plan drawing will show the property boundaries and any features that will be disturbed or modified by soil removal; the plan will also include an inventory of key features of the yard. An example conceptual-site-plan for soil remediation at a developed residential property is included as Figure D-5. The ISWP will also include a list of AR's contractor(s) and key personnel responsible for on-site construction activities, with their contact information. Finally, AR will include in the ISWP a photographic or video documentation of the condition of the property prior to remediation, including concrete pads, fencing, sheds, gardens, etc.

AR and the property owner must sign the ISWP to indicate acceptance of the plan for soil remediation before AR performs the work outlined in the ISWP for their property.

AR's oversight representative(s), remediation contractor(s), and the property owner will conduct a walkthrough of each property to review and discuss elements of the final ISWP prior to implementation of the plan. Once AR has completed the work, any changes to the ISWP adopted during construction will be noted by AR's on-site representative on an "as built" version of the ISWP, and a copy of the

DRAFTAppxD\_Ph1\_WorkPlan\_Rev\_02\_22\_21\_AR rec\_d from AR 3.2.2021 July 31, 2021 **Commented [DF50]:** The coarse sampling grid could result in excavation of 20,000 square feet of land, and associated impacts to vegetation and wildlife, when finer grid sampling might indicate a much smaller impacted area. The sampling plan should allow and encourage more surgical remediation in open space with

established vegetation.

amended/as-built ISWP will be provided to the property owner. The as-built ISWP will also be maintained in the project records available to the Town of Rico and CDPHE.

Upon completion of the VCUP soil remediation described in this Work Plan, AR will provide copies of all ISWPs to the Town of Rico for reference in the implementation and enforcement of regulations adopted for the ICs program, which is described in Section 5 of this Work Plan.

#### 3.5.1.2 SPECIFICATIONS FOR BORROW SOURCE AND CLEAN COVER SOIL

Prior to initiating soil remediation, AR will locate a borrow area (or areas) to serve as the source of clean backfill cover and growth media on remediated properties. Soil from the borrow source(s) will be tested to confirm suitability for use in soil remediation as backfill and clean cover soil (soil with lead concentration less than 100 mg/kg). Suitable clean soil may also be obtained from a source other than a borrow area (e.g., construction site in a nearby town or other existing soil stockpile), but that source must also be sampled and tested to confirm its suitability as backfill and clean cover soil.

#### **Engineering Specifications**

<u>All cover soil will meet the lead content criterion specified below.</u> AR will develop technical specifications for <u>the upper six inches of cover</u> soil that <u>will be used to backfill excavations as well as soil</u> <u>/growth media that isare</u> intended to support vegetation. The technical specifications will include suitability criteria for the following parameters:

- soil pH and conductivity
- texture and particle sizing
- percent organic matter
- sodium absorption ratio or exchangeable sodium percentage
- nutrient analysis (nitrogen, phosphorus, potassium)
  - a. Testing may identify a need for screening to remove excess coarse material or addition of organic amendments before the borrow soil is suitable for use as growth media.

#### Lead Content

The maximum lead concentration in clean/backfill\_cover soil obtained from a borrow area, or other source that is not the property being remediated, will be specified at 100 mg/kg (total lead, reported on a dry weight basis). The required frequency for sampling and analysis for lead concentration shall be at least one sample for every 200 cy of clean soil intended for use in soil remediation.

For borrow areas, AR will test soil for lead as it is moved into the project area or to a stockpile located outside the project area. The volume transported will be tracked over time, and one soil sample will be collected for lead analysis for every 200 cy moved from the borrow area.

For existing stockpiles not previously tested for lead, the surface area of the pile will be subdivided using a systematic grid pattern, with the grid areas sized to cover an area that corresponds to a volume of approximately 200 cy. Within each grid area, three subsamples will be collected, each one from a depth

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**Commented [AR52R51]:** Geotechnical specifications are unnecessary for cover soil. Cover material will be screened for rocks, roots, frozen masses, wood, and other deleterious material.

**Commented [DF53R51]:** I assume that road base materials will meet suitable criteria for this use.

**Commented [DF54]:** Should this apply to onsite excavated and stockpiled soil that is assumed to be clean based on 0-2" sample data, but might not meet this 1 in 200 cy requirement?

**Commented [AR55R54]:** This applies to soil stockpiled by AR for use as clean cover material on remediated properties (i.e., the top 12 inches of new soil placed during remediation).

Commented [SC56]: What is this intended to cover?

**Commented [AR57R56]:** Any existing stockpiled soil identified by AR as potentially suitable for use in remediating Rico properties.

of 0 to 12 inches below the existing surface, and these three subsamples will be composited into a single sample representing that 200 cy volume of soil.

## 3.5.1.3 TRANSPORT AND DISPOSAL OF EXCAVATED SOIL

Soil removed from any property during remediation will be hauled to the Rico Soil Lead Repository for permanent disposal. The repository was designed for disposal of <u>soil containing lead concentrations</u> <u>that exceed action levels-lead-containing soil</u>; materials other than soil will be removed from loads before hauling <u>excavated</u> from an excavation soil to the repository.

The following requirements shall apply to routine transport and disposal of excavated soil at the Rico Soil Lead Repository:

- Soil transport and disposal conducted during Phase 1 will be performed by AR's contractor(s).
- During transport, excavated soils shall be covered or adequately wetted in the haul vehicle to
  prevent fugitive dust emissions. Each work area will have a dry decontamination (decon) area
  established to limit tracking of contaminated soil off the work area on vehicles. The established
  decon area will have poly tarp placed and secured, hard bristle hand brushes, a 30-gallon trash
  can, and will be separated from the work area by fence or caution tape.
- Vehicles may require washing of residual soil after disposal to limit dust emissions and tracking
  of soil from the repository into the Town of Rico. If so, AR contractor personnel will perform all
  washing activities at the Rico Soil Lead Repository.

## 3.5.1.4 POST-REMEDIATION RESTORATION

Final reclamation of the clean soil surface will be designed to match the pre-remediation surface and cover conditions. Existing lawns will be replaced with sod. Properties with pre-existing native vegetation will be seeded with native vegetation species, fertilized, and mulched. Unpaved driveways and any erosion-prone areas of the yard will be capped with gravel or\_rock mulch (i.e., topsoil material with angular rock included to inhibit erosion). Lawn watering and maintenance of other types of reclamation vegetation will be the responsibility of the property owner. Existing irrigation systems, if any, will be <u>replacedre-installed</u>.

## 3.5.2 SOIL REMOVAL AND REPLACEMENT PROCEDURES

The following procedures will be adhered to in the performance of soil removal and replacement activities undertaken for the VCUP project.

## **Scheduling**

Each property owner will be given a minimum of one-week notification, in person or by phone, prior to scheduling soil removal and replacement work. AR will coordinate with the owner to accommodate reasonable requests for rescheduling planned soil remediation.

## Typical Soil Removal

DRAFTAppxD\_Ph1\_WorkPlan\_Rev\_02\_22\_21\_AR rec\_d from AR 3.2.2021 July 31, 2021 Commented [DF58]: Should also have procedures to prevent tracking of contaminated soil off the property (i.e., by wheels of trucks)

**Commented [t59]:** We need some type of soil specifications. We have had reports that some of the soil used in the initial remediation was not conducive to plant growth.

Commented [SC60]: What is this?

#### DRAFT VERSION 1.4, FEBRUARY 2021

Soil will be removed from identified areas of a remediated property to a <u>minimum-nominal</u> depth of 12 inches, <u>where practical</u>, using equipment such as conventional trackhoes or backhoes, small Bobcat-type loaders or excavators, and hand tools. Special precautions and grading requirements will apply near structures/facilities and trees/shrubs. AR will haul excavated soils to the Rico Soil Lead Repository for disposal. AR will implement precautions to prevent fugitive dust emissions during excavation, which could include spraying water on the surface of the soil being excavated.

#### Shallow Bedrock and Very Coarse Soil

If during soil removal, bedrock or predominantly very coarse-grained (D50 > approximately 3 inches, and with less than approximately 10 percent minus U.S. Standard No. 10 sieve) natural colluvial or alluvial soils are encountered and cannot be excavated using standard heavy equipment mobilized for soil remediation, excavation may be terminated. In such cases, the 12 inches of clean soil may be achieved by placing borrow and/or growth media above pre-existing grade, as necessary. If clean soil is to be placed above pre-existing grade, the soil will be placed so as not to interfere with existing surface drainage patterns within the property. If necessary due to drainage considerations, AR will request permission from CDPHE to locally modify the 12-inch clean soil criterion.

#### Trees and Shrubs

The areal extent of soil removal will generally stop at the dripline of established trees and shrubs designated by the property owner to remain (as shown on the map/drawing in the ISWP), and soil removal will terminate at the drip line of trees and shrubs to protect these plantings. In the case of mature trees with especially large canopies with overhead clearance allowing easy potential access to children, excavation for removal will continue toward the trunk but at progressively shallower depth using small equipment and/or hand tools as necessary to avoid damage to shallow roots. Also, large roots will be avoided and worked around if encountered during excavation.

Near the dripline of shallow-rooted aspen trees and between trees in aspen groves, soil will be removed to an approximate depth of 2 inches, using special care to minimize damage (cuts, breaks) to the aspen roots. Areas characterized by very dense thickets of aspen trees that are judged not readily accessible to children will be left undisturbed. Such areas will be specifically noted on the ISWP prepared for the subject property.

#### Vegetable Gardens

Soil will be removed from vegetable gardens to an approximate depth of 18 inches using equipment such as conventional trackhoes or backhoes, small loaders or excavators, and hand tools. Eighteen inches of growth medium will be placed into the excavation area to re-establish the garden bed. <u>AR will</u> <u>develop technical specifications for growth medium that are intended to support vegetation. The</u> technical specifications will include suitability criteria described in Section 3.5.1.2.

Vegetable gardens will not be revegetated following placement of 18 inches of growth medium.

Protection of Existing Utilities, Structures/Appurtenances, and Other Improvements

DRAFTAppxD\_Ph1\_WorkPlan\_Rev\_02\_22\_21\_AR rec\_d from AR 3.2.2021 July 31, 2021 **Commented [AR61]:** A minimum depth of 12 inches is not practical around certain obstacles such as shallow tree roots and near-surface bedrock.

Commented [DF62R61]: I agree - as discussed below.

**Commented [DF63]:** How will the excavation be sloped to achieve the full 12" away from the dripline?

**Commented [AR64R63]:** This will be a gradual slope over a short distance.

Commented [DF65R63]: OK

**Commented [SC66]:** This should be specified. It can be a range of materials, but they need to meet reasonable criteria.

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Special consideration will be given to protection of septic systems, propane tanks and lines, other utilities, fences, retaining walls, concrete features (e.g., patios, sidewalks), sheds and outbuildings, and subsurface irrigation systems during all on-site cleanup activities. In order to protect existing utilities, the location of buried public utilities will be determined to the extent practicable by AR's remediation contractor prior to initiating any excavation (including calling the Utility Notification Center of Colorado at Colorado 811, if applicable). The locations of private buried utilities will be based on the property owner's description and site observations and confirmed as necessary by probing/test pits during excavation. Should any damage to such features occur during the course of the remediation work, the damaged property will be repaired or replaced in kind by and at the expense of AR, without expense to the property owner.

## Placement of a Visible Marker

A light-weightbut durable, non-woven geotextile andscape fabric will be placed on the excavated subgrade surface of remediated areas of the property, except in the vicinity of aspen trees, on bedrock/coarse angular gravel/cobble subgrades, and on steeper slopes. The biologically inert and chemically resistant geotextile or geogrid will serve as a long-lasting visual marker indicating, for persons/entities performing any future excavations, that the base of the clean backfill soil has been reached.

In areas of nominal 2-inch soil removal around aspen trees, a lightweight but durable, woven, biaxial geogrid will be placed on the subgrade. The open aperture design of the geogrid permits some penetration by shallow aspen roots and is intended to minimize the potential for damage by cutting of the cambium by the geogrid during root growth. Geogrid will also be used where excessive damage to the lightweight geotextile\_landscape fabric may occur during installation, and/or on steeper slopes where the geogrid will help stabilize the overlying clean soil backfill-against slippage.

#### Backfill-Cover Soil Requirements and Surface Restoration

In areas disturbed by soil remediation, a suitable growth medium will be established by placing clean soil from an approved source (refer to Section 3.5.1.2). Organic amendments and/or fertilizer may be added to the soil if needed to meet the suitability criteria for growth media.

Together the backfill and any overlying final surface material (including rock mulch or aggregate, where used) will provide a minimum 12-inch-thick cover to minimize potential for human contact with any remaining subgrade soils with elevated lead concentrations. The cover materials will also provide suitable growth media for restoring and maintaining vegetation and ensure positive drainage consistent with pre-existing drainage patterns within the property while minimizing the potential for erosion to the extent practicable. Backfill areas will be regraded such that when finished with the final cover material the area will blend with the surrounding topographic contours.

Where vegetable gardens are addressed during remediation, the backfill will consist of 18 inches of growth medium.

DRAFTAppxD\_Ph1\_WorkPlan\_Rev\_02\_22\_21\_AR rec\_d from AR 3.2.2021 July 31, 2021 **Commented [DF67]:** Any reason why not using a geogrid, with more open space to allow free drainage of water, root growth, etc? Some fabrics (e.g., weed fabrics) can deteriorate substantially over time and may not be that obvious to someone operating a backhoe.

**Commented [AR68R67]:** Landscape fabric is appropriate for use as a visual barrier. This material is in widespread use for this purpose at lead sites across the country. Geogrid is more costly than fabric and would provide no additional benefit.

Commented [DF69R67]: I don't think this is a critical issue in this case given the regulations and permit system controlling the work, but still see benefits using more obvious and stronger plastic wind-fence type materials.

**Commented [DF70]:** Would like more definition or minimum criteria

Commented [DF71R70]: Cross-reference to 3.5.1.2 OK for this purpose.

In areas of aspen trees, the backfill requirement is 4 inches of suitable growth medium.

Clean <u>cover</u> soil from <u>the stockpilean approved source (</u>refer<u>red</u> to <u>in</u> Section 3.5.1.2) in areas receiving new sod or native seed and vegetable garden areas will be appropriately prepared for revegetation. The method applied will be appropriate to the materials and site conditions. The objectives will be to promote adequate water retention and drought tolerance while minimizing excessive settlement.

In areas of vehicular traffic (i.e., parking areas and driveways) to be surfaced with a layer of coarse gravel or aggregate, the clean backfill will be compacted to its full depth prior to placement of the surface gravel or aggregate material.

#### Sod Placement

Certified weed-free lawn sod will be placed over new growth media/clean soil where replacing areas of previously established and maintained lawn. As indicated in the ISWP and agreed upon by the property owner before the start of soil remediation, the property owner will be responsible for initial and subsequent watering of newly placed sod. Watering for a minimum of 21 days following sod placement is recommended. If long-range weather forecasts indicate that the ground may freeze before 21 days has elapsed since sod placement, revegetation may be delayed until spring with the concurrence of the property owner and CDPHE. Alternatively, at the discretion of the property owner, a native seed mix, aggregate, or rock mulch cover may be placed instead of sod.

#### Seeding

For areas of the property previously vegetated with native species, the soil surface will be prepared and revegetated with a native-seed mix. Two seed mixtures are specified to best match the pre-existing conditions in areas to be reclaimed by seeding. One mix (Type 1 – Native Lawn) is comprised of three or four native grass species for use in areas that are currently mowed, but where the property owner prefers not to place sod. The Type 1 revegetation will provide a more conventional lawn appearance, will be suitable for mowing if desired by the property owner, and will be more tolerant of natural precipitation versus frequent watering. The other mix is comprised of graminoids and forbs characteristic of native mountain meadow vegetation (Type 2 – Native Yard).

Mulching will be required only for areas of seeded revegetation with southern exposures that receive full sunlight. Mulch will meet the material, quality and application requirements in the Technical Specifications. Conventional (hay/straw) mulch or hydromulch will be used as appropriate to the site conditions.

Alternatively, at the discretion of the property owner, sod, aggregate, or rock mulch cover may be placed instead of revegetation with a native-seed mix.

#### Aggregate and Rock Mulch Covers

A layer of coarse gravel or an aggregate cover may be used as the finished surface in areas of soil removal that were previously unvegetated, including driveways, parking areas, storage areas, foot paths,

DRAFTAppxD\_Ph1\_WorkPlan\_Rev\_02\_22\_21\_AR rec\_d from AR 3.2.2021 July 31, 2021 etc. At the discretion of the property owner, aggregate may also be placed as final cover to reclaim disturbed ground in areas that were previously vegetated with either maintained lawn or native species. Aggregate will be placed to a minimum depth of 3 inches over previously placed and compacted clean backfill.

Rock mulch, generally defined as predominantly coarse-grained natural soil not necessarily meeting all grading and durability requirements specified for aggregate, may be placed in disturbed areas that are not to be revegetated and are not subject to vehicular traffic. These may include storage areas, rock gardens, etc. The decision to use rock mulch in a particular area will be made in consultation with the property owner and will be contingent upon the availability of materials meeting the rock mulch specifications. Minimum depth of rock mulch cover will be 3 inches or 1.5 D50 of the rock mulch, whichever is greater. A weed barrier consisting of a 6-mil polyethylene "greenhouse plastic" will be placed between rock mulch and the subgrade clean soils.

## 3.6 PROPERTY-OWNER RELEASE STATEMENT OF COMPLETION

Upon completion of soil remediation activities at each individual property, the property owner will be asked to sign a release-<u>Statement of Completion</u> stating that remediation work has been completed in an acceptable manner and in accordance with the ISWP. AR will work to obtain a signed release <u>statement</u> from each owner (or their designated representative). For each remediated property, AR will maintain the signed <u>release-statement</u> with the owner access agreement for soil remediation and the final or "as built" ISWP. These records will be made available to the Town of Rico and CDPHE.

# 4 REMEDIATION OF UNPAVED ROAD SEGMENTS

Detailed sampling of unpaved roads and alleys within the Town of Rico was performed in 2004 to characterize soil lead concentrations in road-surface materials. The basic sampling protocol involved collection of two subsamples from each block or road segment, with one sample collected approximately ¼ of the way along the length of the block and the other sample collected approximately ¼ of the way along the length of the block and the other sample collected approximately ¼ of the way along the block. The two samples were then combined to create a composite sample. The lead concentration in the composite soil sample was analyzed using a laboratory-grade XRF instrument. In addition to the road samples, additional grab samples were collected from the non-vegetated right-of-way immediately adjacent to the road at locations where visual observations indicated the possible presence of mine waste.

Additional sampling of unpaved alleys and selected right-of-way areas was performed in 2008. Surface soil samples were collected from a depth of 0 to 2 inches bgs at two locations along the in-use portion of the alley approximately equally spaced from the center of the in-use reach. Lead concentrations were measured with a Niton 700 Series XRF instrument. Analyses were completed in accordance with EPA Method 6200. Sample preparation included drying followed by screening through a U.S. Standard No. 60 sieve. The material passing through the sieve (i.e., < 250 µm diameter) were then analyzed for lead.

## 4.1 POTENTIAL RE-SAMPLING OF UNPAVED ROAD SEGMENTS

As indicated in Section 2.1, additional sampling may be necessary along previously sampled unpaved roads that have been disturbed since the original samples were collected in 2005 and 2008. Soil samples will be collected from the traveled surface of unpaved roads within each block identified as or suspected of having been recently disturbed by the Town of Rico. Road segments will be identified for re-sampling in consultation with the Town of Rico and following review of the Town of Rico's records of road disturbances since the 2004 VCUP sampling activities.

The lead concentrations reported with any new samples collected from road segments in the project area will be reviewed to evaluate whether any updates to the scope of planned roadway remediation are warranted to address the most recent conditions.

## 4.2 PRELIMINARY SCOPE OF REMEDIATION

Road and alley segments with an average lead concentration in surface materials greater than 1,700 mg/kg lead are targeted for remediation, including the adjacent Town-owned, unvegetated right-of-way areas that also have surface-soil lead contents greater than 1,700 mg/kg. The lead concentrations of composite samples collected from the top 2 inches of road and alley surface materials are shown in a map view in Figure 9 of the VCUP Application. As shown on that map, most of the roads and alley areas with lead concentrations greater than 1,700 mg/kg are in the northeastern part of town.

Based on data collected in 2004 and 2008, it is estimated that 103,000 sq ft of traveled roadways, 45,800 sq ft of adjacent unvegetated, Town-owned right-of-way, and 4,600 sq ft of in-use alleys have lead concentrations above the 1,700 mg/kg action level. Additional data collection is planned along

DRAFTAppxD\_Ph1\_WorkPlan\_Rev\_02\_22\_21\_AR rec\_d from AR 3.2.2021 July 31, 2021 **Commented [SC72]:** Town Board members have indicated the road remediation should be sequenced so that drainage can be maintained and so that it comes after utility installation work.

But is there planned utility work in the next 24 months? Road work is something that will likely take place in the 2023 building season.

Commented [SC73]: As noted in comments above, some Town Board members have previously expressed a desire to have roads re-sampled (rather than relying on old samples).

Additionally, Town Board members have suggested that the rightof-way beyond the edge of the traveled way be tested and that AR work with the Town to determine which lots need to be resampled.

**Commented [SC74]:** Approach to cleanup levels still being discussed.

some of the previously sampled road segments, and the results of the additional sample analyses for lead will help refine this preliminary estimate of the total road length targeted for remediation.

The Residual Risk Analysis completed for the Rico Townsite Soils VCUP project in 2010 (Integral 2010) recommended that future soil remediation also address soil in the road right-of-way adjacent to the property assigned VCUP Lot Number 45. The recommended soil remediation at this location would also be performed as part of the larger road remediation task.

## 4.3 CONCEPTUAL DESIGN

The basic concept for remediation of lead concentrations exceeding 1,700 ppm in soil on unpaved roads, including any unpaved alleys used for routine access to residences, in the Town of Rico is as follows:

- 1) Excavate the upper 12 inches of roadway materials in the portions of the traveled way, adjacent unvegetated, Town-owned right of way, and in-use alleys with lead concentrations greater than the applicable soil lead action level of 1,700 ppm.
- Haul excavated materials for disposal to the Rico Soil Lead Repository or another suitable disposal location approved by CDPHE; spread and compact waste soils at the repository in accordance with original specifications.
- 3) Prepare excavated subgrade within the prior traveled way and in-use alleys by proof rolling as necessary.
- 4) Purchase or otherwise acquire suitable subbase and aggregate base course and haul to site.
- Place and compact 8 inches of subbase (approved bank or pit run material with maximum particle size of 4 inches and attaining a minimum R-value of 50) within the traveled way and inuse alleys.
- 6) Place and compact 4 inches of Colorado Department of Transportation Class 6 Aggregate Base Course over sub-base within the traveled way and in-use alleys.
- Place and compact 12 inches of subbase (approved bank or pit run material with maximum particle size of 4 inches and attaining a minimum R-value of 50) within the non-vegetated rightof-way.
- 8) Implement all applicable traffic and environmental controls (e.g., dust and construction period stormwater runoff) during the course of the work.

This remediation concept is based on performing only that work necessary to address the elevated lead concentrations in roadway/in-use alley materials. It is not intended to address any existing drainage, grade, lane width, curvature, sight distance, or similar roadway issues that are or may be locally present on Town of Rico streets.

It is assumed that base course and subbase materials will be imported from outside the Town of Rico. These materials must be tested or otherwise certified as having lead values less than 100 mg/kg.

DRAFTAppxD\_Ph1\_WorkPlan\_Rev\_02\_22\_21\_AR rec\_d from AR 3.2.2021 July 31, 2021 **Commented [DF75]:** AR should commit to working with the Town to allow these issues to be addressed during remediation to the extent that it would not add appreciably to the cost of the work, and coordinate with the Town so that it can perform additional work in conjunction with remediation to address these issues (and potentially prolong the life of the remedy)

Commented [AR76R75]: See Sec. 6.1.5 of the 2021 VCUP Application.

**Commented [SC77R75]:** As noted in VCUP application, the Town does not agree that drainage improvements are outside the scope of the VCUP, and this issue needs to be discussed further and resolved.

**Commented [SC78]:** What is lead content of road base normally in this area?

**Commented [AR79R78]:** Less than 100 mg/kg as it is imported from Cortez.

**Commented [TAB80R78]:** See notes to funding agreement re what happens if a different source of road base is required.

## 4.4 ROAD REMEDIATION WORK PLAN PREPARATION

Upon finalization of the scope of road and alley remediation, a <u>Town contractor will prepare a</u> Road Remediation Work Plan <del>will be prepared</del>. The Road Remediation Work Plan will provide the final design details, including materials and equipment specifications, for road remediation conducted to reduce residents' exposure to lead. <u>The scope of the design and construction work for roads and alleys will be</u> <u>consistent with the existing infrastructure and, where needed, existing structures (e.g., culverts) will be</u> <u>replaced in-kind.</u>

The Road Remediation Work Plan will include detailed technical specifications for:

- removal of surface materials
- dust control/management of wastes
- transport and disposal of material removed from road segments
- clean backfill, road base, clean cover materials
- placement and compaction of road base and surfacing materials
- placement of clean backfill in non-vegetated rights of way
- drainage controls during construction
- post-construction drainage plan and specifications

AR and Town of Rico will work together with the Town contractor to finalize these specifications, and AR will assist the Town of Rico in preparing produce the final Work Plan.

The Road Remediation Work Plan will also include a map of the road segments and any non-vegetated right-of-way areas where remediation is planned. That map will be prepared from the data represented on Figure 9 of the VCUP Application and any additional lead data obtained during the soil sampling and analysis activities completed in accordance with this Work Plan.

RICO TOWNSITE SOILS VCUP APPLICATION
APPENDIX D: VCUP PHASE 1 WORK PLAN

## 5 DATA MANAGEMENT, RECORD KEEPING, AND REPORTING

Standard data management and record-keeping protocols will be adopted during the VCUP activities described in this Work Plan to ensure that complete and accurate records of VCUP soil sampling and soil remediation activities are available for future reference by the Rico Soils Management Program and the Town of Rico.

## 5.1 ENVIRONMENTAL DATA MANAGEMENT

A key element of the VCUP project's data management process is maintenance of an electronic database to store relevant soil sampling data in a consistent and readily retrievable format. AR has prepared an electronic database for the existing VCUP soil data. <u>During Phase 1</u>, AR will maintain the existing electronic database of soil sampling results <u>and remediation records</u> for properties within the VCUP project area (i.e., within the Town of Rico). The database will be routinely updated as additional soil-lead data are collected <u>and properties are remediated</u>.

Once the VCUP ICs Overlay Zone Regulations are in place, the Rico Soil Management Program will accept responsibility for the database, including all necessary updates and maintenance. This responsibility includes a commitment of the resources needed for secure data storage and backup, database updating, error correction, and other maintenance.

## 5.1.1 ELECTRONIC DATA MANAGEMENT PRACTICES

Sampling and property data are currently stored in an SQL Server database that is electronically linked to a GIS (ArcView<sup>™</sup>). Standardized data import formats and procedures are be used to upload new data. Prior to incorporation of new data into the project database, the data and supporting documentation are subject to review to ensure the accuracy and completeness of original data records. Standardized parameter names, numerical formats, and units of measure are applied to the original information, as needed to facilitate comparability across all datasets and within the database.

Detailed records of soil sampling-and analysis/analysis and remediation activities will be maintained for each property where <u>Phase 1 work sampling</u> is conducted by AR. Data <u>and other records associated</u> <u>with collected at</u> each of the participating properties will be entered into a central electronic database. Property-specific information will be tracked using its "VCUP Lot Number," a unique identification number assigned to each property in the Town of Rico.

## 5.1.2 DATABASE AND GIS SEARCH APPLICATION

A web-based GIS application has already been developed that retrieves property soil data and property remediation status for individually owned parcels within the Town of Rico. The key elements of that GIS application are as follows:

### 1. GIS layers

- a. Soil sample locations and lead data
- b. Parcel boundaries
- c. Town boundary

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- d. Roads and highways
- e. Surface hydrologic features
- 2. Dynamic mapping capabilities, allowing the user to:
  - a. Navigate around the map (pan, zoom in and out), as well as specific on-click map events.
  - b. Toggle the visibility of any of the individual GIS layers listed above.
  - c. Change the base map from a list of available options (imagery, topographic, or topo map).

3. **Searching and viewing tools** for access to soil-lead data and remediation status for individual parcels. Search by:

- a. Street Address (partial addresses allowed; a list of matching addresses will be returned).
- b. VCUP Lot Number (entered number must find an exact match in order to show a returned record).
- c. Owner last name (entered name must find an exact match in order to show a returned record).
- d. Map-click (user clicks on a parcel boundary, returned record displayed).

4. **Data and document retrieval** following a successful parcel search and selection. The following information will be displayed for the selected parcel:

 a. A map image showing lead concentrations for each sample location and sampled depth interval.

- b. Soil sample attributes:
  - Sample ID
  - Sample Date
  - Collection Depth (minimum and maximum depths)
  - Sample Lead Concentration (mg/kg)
- c. Parcel attributes:
  - Dolores County Property ID Number (PIN)
  - VCUP Lot Number
  - Property Street Address
  - Recorded Owner Name
  - Town of Rico Zoning Classification
  - Development Status (Developed/Undeveloped)
  - Remediation Status (Remediated/Not Remediated)
  - Remediation Documents (associated with Parcel boundaries) are available for properties that have been remediated. A hyperlink to the associated records opens the Parcel's associated \*.pdf file for review and/or downloading.
  - CDPHE's VCUP Determination (i.e., <u>NADs and NFAsNo Action</u>, <u>No Further Action</u>, <u>no determination made</u>)

## 5.2 RECORD KEEPING AND REPORTING

### 5.2.1 REPORTS TO PROPERTY OWNERS

Property owners will be individually notified of the lead concentrations in soil samples collected from their properties. For each of the sampled properties, AR will prepare a final Soil Sampling Report that

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presents the soil sampling and analysis results. That report will provide the lead concentrations associated with each soil sample collected on the property, along with descriptions of the sample date, depth, and location. These reports will be mailed to each property owner within 4 months of soil sampling at the subject property.

For owners of properties having soil lead concentrations above an action level, AR will develop an ISWP for each such property and will provide that plan to as an attachment to the access agreement with the owner for review and acceptance. Once remediation has been completed, the property owner shall also receive a copy of the Completion Report prepared to document soil remediation activities.

Owners shall also be provided with copies of requests made to CDPHE for No Action or No Further Action determination NADs and NFAs specific to their property.

## 5.2.2 PROPERTY RECORDS

AR shall-will maintain all hard-copy records for an individual property within the project area will be in a single file, cross referenced by the VCUP Lot Number. Those records shall-will include: signed access forms, release forms, agreements and attachments, field forms and data sheets, field notes and maps, laboratory analysis results, and data quality review results, Completion Reports, and NADs/NFAs. CDPHE and the Town shall be permitted access to these hard-copy records upon request.

## 5.2.3 ANNUAL STATUS REPORTS

AR, and later the Rico Soil Management Program, will prepare a project-status report at the end of each calendar year. The purpose of these annual reports will be to document the work completed during the subject calendar year. Each annual report shall include the following elements:

- Summary of soil sampling activities, including numbers and types of properties where soil sampling was completed (i.e., type of property, any roadway segments, rights of way, and borrow areas or other clean soil sources).
- Soil sampling locations, by VCUP Lot Number, property address and x-y coordinates, and results
  of soil sample analyses for lead (i.e., samples collected from all property types and any samples
  collected from borrow areas or other sources of clean soil identified for use at remediated
  properties).
- Summary of sample analysis data quality and any corrective actions taken to address data quality concerns.
- List of properties identified where soil lead content exceeded the 1,100 mg/kg soil-lead action level.
- Lists of properties where ISWPs were prepared for soil remediation and properties where soil remediation was completed.
- Copies of ISWPs prepared, including notes regarding any "as built" modifications.

DRAFTAppxD\_Ph1\_WorkPlan\_Rev\_02\_22\_21\_AR rec\_d from AR 3.2.2021 July 31, 2021  Requests sent to CDPHE for No Action and No Further Action determinations NADs and NFAs, referenced by the VCUP Lot Number, and any determinations received from CDPHE.

Much of this information will be compiled from the VCUP project database and GIS. These reports will be prepared during the first quarter of the year following the subject calendar year, and each report will be maintained on file by AR, or later the Rico Soils Management Program, and the Town of Rico.

## 5.2.4 PROJECT RECORDS

The VCUP project records will be routinely updated and maintained by AR. These records, either electronic or hard copy in form, shall include:

- CDPHE-approved VCUP Applications and associated sampling and analysis plans and work plans, with any CDPHE-approved modifications, updates, and addendums
- Soil sampling field records
- Soil analysis laboratory records
- Correspondence from AR (or its representatives) to individual property owners, including signed access agreements and Soil Sampling Reports prepared for property owners
- Final "as built" ISWPs for individual properties and corresponding Construction Completion Reports.
- Requests to CDPHE for <u>No Action determination</u><u>NADs</u>, for each sampled property with soil lead < 1,100 mg/kg, and CDPHE's final determination</li>
- Requests to CDPHE for <u>No Further Action determinationsNFAs</u>, for each remediated property, and CDPHE's final determination
- Final Road Remediation Work Plan and related technical specifications for contractors
- Borrow soil/stockpile soil sampling and analysis records
- Rico Soil Lead Repository operations records indicating the volume of soil (in cy) transported to the from the project area for disposal

Hard-copy field and laboratory records shall be maintained chronologically for future reference. The electronic versions of these records are to be maintained on a central server system with backup scheduled on a daily basis.

AR will retain these records for future reference by the Rico Soils Management Program. These records will also be made available for the Town of Rico's ongoing reference.

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US EPA. 2017. National Functional Guidelines for Inorganic Superfund Methods Data Review. Office of Superfund Remediation and Technology Innovation (OSRTI), United States Environmental Protection Agency (EPA), Washington, DC. EPA-540-R-2017-001. January 2017.

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### DRAFT VERSION 1.4, FEBRUARY 2021

## **FIGURES**

FIGURE D-1 PREVIOUSLY SAMPLED AND REMEDIATED PROPERTIES

FIGURE D-2 SCHEMATIC SAMPLING PLANS FOR PROPERTIES ≤ 5,000 SQ FT

FIGURE D-3 SCHEMATIC SAMPLING PLAN FOR PROPERTIES > 5,000 sq ft and  $\leq$  0.5 Acre

FIGURE D-4 SCHEMATIC SAMPLING PLAN FOR AN UNDEVELOPED PROPERTY > 5,000 sq ft and  $\leq$  0.5 Acre

FIGURE D-5 EXAMPLE SOIL REMEDIATION CONCEPTUAL DESIGN FOR A RESIDENTIAL PROPERTY

# **ATTACHMENT 1. PROPERTY ACCESS AGREEMENTS**

Preparation of updated access agreements is currently in progress.

Request to Owner for Property Access to Perform Soil Sampling

Request to Owner for Property Access to Conduct Soil Remediation

DRAFT VERSION 1.4, FEBRUARY 2021

# **ATTACHMENT 2. STANDARD OPERATING PROCEDURES**

Refer to separate files transmitted with Draft Phase 1 VCUP Work Plan

### **Rico Land Use Code Appendix D Section D.1 Findings of Fact**

- A. Background. In the Town of Rico (the "Town") and the surrounding area, elevated levels of lead are present in the soil due to solid waste from past mining activities, as well as local geologic conditions that may lead to naturally-occurring elevated lead levels. The presence of elevated levels of lead has been described in a number of documents, including the Rico Townsite Soils Voluntary Cleanup Program ("VCUP") application submitted by the Town and Atlantic Richfield Company and approved by the Colorado Department of Public Health and Environment ("CDPHE") on [ ], 2020,2021 (the "VCUP Application"), pursuant to the Colorado Voluntary Cleanup and Redevelopment Act, § 25-16-301, C.R.S. There are two designated areas in the Town where elevated levels of lead and potentially other metals in soil may be present-health risks to property owners: the Rico Soils Overlay Zone District ("RSOZ") and the Environmental Remediation Overlay Zone District ("EROZ"). These Environmental Overlay Zone Regulations (alternatively referred to hereinafter as the "Regulations") primarily pertain to the RSOZ and remediation of lead soils contamination. The EROZ covers several non-contiguous areas within the Town boundaries, as listed in Section D.2.B.7, that were subject to previous VCUP remediation efforts or that otherwise warrant inclusion within the EROZ due to unique environmental conditions on the property.
- B. <u>Not Areas of State Interest</u>. Except to the extent the boundaries of the RSOZ or EROZ overlap with properties of an area designated as an Area of State Interest in Article VIII of the Rico Land Use Code ("RLUC"), properties within the RSOZ or EROZ shall not be considered Areas of State Interest. To the extent a development activity covered by these Regulations is proposed for properties within an area designated as an Area of State Interest, the provisions in the RLUC relating to Areas of State Interest shall be separate from, and apply in addition to, the requirements provided for in these Regulations.
- C. <u>Environmental Overlay Zone Regulations Are Additional</u>. These Regulations are in addition to any other applicable requirements of the RLUC.
- D. Non-Liability of the Town of Rico. These Regulations shall not be construed to hold the Town or any of its employees, officials, or designees, acting within the scope of their employment, responsible or liable for any damages to persons or property resulting from: any inspection, enforcement, or review, or failure to inspect, enforce, or review as required by these Regulations; the issuance or denial of any permit pursuant to or in accordance with these Regulations; or the institution or failure to institute any court action as authorized or required by these Regulations. In enacting these Regulations, the Town intends to preserve all rights of the Town, its agencies and departments, and its elected and appointed officials, employees, and designees to immunity from liability as set forth in the Colorado Governmental Immunity Act, §§ 24-10-101, C.R.S., *et seq.*, and any other applicable law, regulation, or standard.

### **Rico Land Use Code Appendix D Section D.2 General Provisions**

A. <u>Lands to Which Environmental Overlay Zone Regulations Apply</u>. Sections D.1 – D.9 of these Regulations shall apply to all lands situated in the overlay zone known as RSOZ. For

lands located within the overlay zone known as EROZ, Sections D.1, D.2, and D.9 shall apply.

- B. <u>Definitions</u>. The following terms, as used throughout these Environmental Overlay Zone Regulations, shall have the meanings set forth below. Where there is a conflict between the definitions set forth below and the definitions set forth in Article I of the RLUC, the definitions below shall prevail for purposes of these Regulations only.
  - Action Level(s): Action Level(s) shall mean the site-specific, human health riskbased, concentration levels of lead in soil selected and adopted by CDPHE, with concurrence from the U.S. Environmental Protection Agency, in 2006 and 2007 for soil remediation performed as part of Rico Townsite Soils VCUP project. The Action Levels are set at 1,100 mg/kg at Residential Use properties and 1,700 mg/kg at Non-Residential Use properties.
  - 2. <u>Application</u>. Application shall mean an application submitted under these Regulations requesting a Soils Excavation Permit, as that term is defined below.
  - 3. <u>CDPHE</u>. CDPHE shall mean the Colorado Department of Public Health and Environment.
  - 4. <u>Cleanup Completion Certification</u>. Cleanup Completion Certification shall mean a determination by the Town issued pursuant to Section D.5.C of these Regulations.
  - 5. <u>Cleanup Completion Report</u>. Cleanup Completion Report shall mean a report prepared and submitted by a Developer as required by Section D.5.B of these Regulations.
  - 6. <u>Development Activity</u>. Development Activity shall mean any manmade change in the use or character of land that involves or results in construction, grading, excavation, digging, demolition, drilling, planting, placing Non-Native Fill, landscaping, or other similar activities that disturb or move soils.
  - <u>Developer</u>. Developer refers to the property owner, or other person or entity acting on the property owner's behalf, engaged in a Development Activity.
  - 8. <u>Disturbed Native Soils</u>. Disturbed Native Soils are Native Soils that have been significantly disturbed by prior activities (e.g., regrading).
  - <u>Environmental Officer</u>. Environmental Officer refers to the Town Manager or the Town Manager's designee for the purposes of administering these Regulations and issuing Soils Excavation Permits.
  - 10. Environmental Remediation Overlay Zone District ("EROZ"). Environmental Remediation Overlay Zone District means the sites listed below within Town boundaries that (i) received a VCUP No Further Action Determination on December 10, 1999, from CDPHE pursuant to the state VCUP program, (ii) were otherwise remediated under CDPHE oversight, or (iii) nonetheless warrant inclusion within the

Commented [SC1]: Issues regarding the cleanup number still need to be resolved, with some board members indicating 400 ppm should be the cleanup number.

In discussions with CDPHE and ARC, the parties are evaluating an approach that would require additional analysis to set the cleanup numbers, with the updated analysis being presented to CDPHE with ARC and the Town being able to back out if the cleanup number is not acceptable.

Commented [t2R1]: Still being reviewed.

EROZ due to unique environmental conditions on the property. These properties are depicted in Figure 21 and are defined as follows:

- a. Columbia Tailings Site, CDPHE VCUP Site No. 30, located on the east side of the Dolores River corridor west of Highway 145 and Rico on townsite Blocks 1-11 and 39, in portions of E1/2 of the NE1/4 of the SE1/4 of Section 35, and the NW114 of the NW114-NW1/4 of the SW1/4 of Section 36, T40N, R11W, NMPM, Dolores County, within portions of the following land tracts: Tremble Tract, Winkfield Tract East, and Town of Rico tracts (bounded on west by Winkfield Tract East and Tremble Tract, and on the east by Blocks 11 and 39). Approximately 3.3 acres.
- b. Grand View Smelter Site, CDPHE VCUP Site No. 40, located <u>on the east side</u> <u>of State Highway 145 at the north end of the Town of Rico in <del>portions the</del> <u>middle</u> of the <del>S1/2 or <u>SW1/4</u> of the SWJ1/4 of Section 25, T40N, <u>R11W</u>, <u>NMPM, Dolores CountyR11W, NMPM, Dolores County, comprising portions</u> <u>of the following patented mine claims: Columbia Millsite (Patent No. 10202, Mineral Survey No. 365B), and Homestake & Little Cora Consolidated Placer (Patent No. 14903, Mineral Survey No. 410). Approximately 1.7 acres.</u></del></u>
- c. Santa Cruz, Iron Clad, and Rico Boy Mines Site, CDPHE VCUP Site No. 36, located southwest of on the west side of the Dolores River Corridor, south of west Rico on-townsite Blocks 34 and 36, in a portion of N1/2 of the NE1/4 of the SE1/4, and the NWJ1/4 of the SE1/4 of the SE1/4 of Section 35, T40N, R11W, NMPM, Dolores County, comprising portions of the San Juan Nation Forest, R.G.S. "Y" Tract, Winkfield Tract, Winkfield Tract West, A.E. Arms Tract North, and Max Boehmer Tract, and portions of the following patented mine claims: Iron Clad (Mineral Survey No. 865), Santa Cruz (Patent No. 25864, Mineral Survey No. 6132), Hardscrabble (Patent No. 27326, Mineral Survey No. 8070), and Burchard (Patent No. 27326, Mineral Survey No. 8070). Approximately 5 acres.
- d. Silver Swan Mine Site, CDPHE VCUP Site No. 22, located on the west side of the Dolores River corridor in the southwest or portion of the Rico townsite in a portion of the S1/2 of the SE1/4 of the SE1/4 or of Section 35, T40N, R11W, NMPM, Dolores County, comprising portions of the A.E. Arms Tract North, A. E. Arms Tract, F.G. Day Tract, A.E. Arms Tract South, and R.G.S. R.O.W. South. Approximately 4 acres.
- e. Silver Swan Mine East Wasterock Pile Site [need description and map]
- f. Pro Patria Mill Tailings Site [need description and map]
- e. Silver Swan Mine East Wasterock Pile Site, located on the east side of the Dolores River corridor west of the historic Rio Grande Southern railroad grade, in portions of the SE1/4 of the SE1/4 of the SE1/4 of Section 35, T40N,

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R11W, NMPM, Dolores County, within portions of the following land tracts: F.G. Day Tract and R.G.S. R.O.W. South; materials from the site were consolidated to the Columbia Tailings Site, CDPHE VCUP Site No. 30. Approximately 0.1 acre.

- <u>f.</u> Pro Patria Mill Tailings Site, located on the east side of the Dolores River corridor east of the historic Rio Grande Southern railroad grade, west of River Street, and southwest of the west end of Mantz Avenue (where the historic Pro Patria mill was located), in portions of the E1/2 of the E1/2 of the NE1/4 of Section 35 and SW1/4 of the NW1/4 of the NW1/4 of Section 36, T40N, R11W, NMPM, Dolores County, within portions of the following land tracts: R.G.S. Tract, Roy's Tract, and Block 28, Lots 3-4 and west 80 feet of Lots 5-20; materials from the site were consolidated to the Columbia Tailings Site, CDPHE VCUP Site No. 30. Approximately 2 acres.
- g. Van Winkle Mine Site, [need description and map]Van Winkle Subdivision (recorded plat at Reception No. 157374), Lot 2 and Lot 3, Rico, Dolores County.

h.—East Shamrock Mine Wasterock Pile Site-[need description and map]

- i. West Overbank Deposit, located north of the Pro Patria Mill Tailings Site [need description and map]
- j-h. Atlantic Cable Mineon the east bank of the Dolores River, approximately ½ mile north of the Columbia Tailings Site [need-description and map]; materials from the site were consolidated to the Columbia Tailings Site, CDPHE VCUP Site No. 30.
- 11. <u>Excavated Soils</u>. Excavated Soils shall mean soils (including Surface Soils and underlying soils) disturbed at, or excavated from, the property during a Development Activity.
- 12. Existing Soils Cover. Existing Soils Cover shall mean a Soils Cover that has been installed over a geotextile fabric or other cover that meets the requirements of Section D.7.D, the placement of which is documented in soil remediation records maintained by the Town under these Regulations.
- 13. <u>Mine Waste</u>. Mine Waste shall mean solid waste materials resulting from mining, milling, smelting or processing operations, including, without limitation, waste rock, ore, and tailings, which are visibly distinctive in appearance (color and texture) as compared to the surrounding Native Soil, unless testing shows the material does not contain lead at a concentration greater than 1,100 mg/kg using the analytical procedures set forth in [Section D.6.C] [Appendix #].
- 14. <u>Native Soils</u>. Native Soils shall mean naturally occurring soils (not imported fill or landscaping materials) that exist at the property subject to the Development Activity

prior to the Development Activity that have not been significantly disturbed in the past (e.g., regraded).

- 15. <u>Non-Native Fill</u>. Non-Native Fill shall mean soils from a location other than the property subject to the Development Activity.
- 16. Non-Residential-No Action Determination Confirmation: Non-Residential No Action DeterminationConfirmation shall mean a determination by the Town issued pursuant to Section D.2.D of these Regulations for a Non-Residential Use property with lead soil concentrations below the non-residential Action Level. A Non-Residential No Action Determination-Confirmation issued pursuant to Section D.2.D. is separate and independent from <u>a</u> VCUP No Action Determinations and VCUP No Further Action Determinations, Determination as defined in Sections D.2.B. <u>22 and D.2.B.23</u>, respectively<u>28</u>.
- 17. <u>Non-Residential Use</u>. Non-Residential Use shall mean Development Activity or other use of a property that is subject to zoning restrictions prohibiting Residential Use (*e.g.*, Public Facilities and Open Space parcels), as provided in the RLUC. The Non-Residential Use Action Level (1,700 mg/kg lead, as defined in Section D.2.B.1) applies to soil on Non-Residential Use properties.
- Open Space. Open Space shall mean an area of one or more parcels that is zoned as an Open Space Zone District as defined in the RLUC, Article II § 290.
- 19. Residential No Action Determination: Residential No Action Determination Planned Unit Development. Planned Unit Development shall have the meaning stated in § 24-67-103(3), C.R.S., and shall include, without limitation, any Development (as defined in Article IX, Section 910 of the RLUC) within a Residential Planned Unit Development District or a Commercial Planned Unit Development District in the Town of Rico, as such terms are used and defined in Articles II, III, and VIII of the RLUC.
- 19.20. Residential Confirmation: Residential Confirmation shall mean a determination by the Town issued pursuant to Section D.2.D of these Regulations for a Residential Use property with lead soil concentrations below the residential Action Level. A Residential No Action Determination Confirmation issued pursuant to Section D.2.D. is separate and independent from <u>a</u> VCUP No Action Determinations and VCUP No Further Action Determinations, Determination as defined in Sections D.2.B. <u>26 and</u> D.2.B.27, respectively28.
- 20.21. Residential Use. Residential Use shall mean any development on property where zoning allows Residential Use, as provided in the RLUC. The residential Action Level (1,100 mg/kg lead, as defined in Section D.2.B.1) applies to soil on Residential Use properties. Per the RLUC, Residential Use is allowed in all zoning districts except for "Public Facilities" and "Open Space."

**Commented [AR3]:** The State requests that we change the name of this term and *Residential No Action Determination* to avoid confusion with the CDPHE-issued VCUP NADs / NFAs. The concept remains the same as before, but AR suggests labeling these Town-issued determinations as "Confirmations."

**Commented [TAB4]:** Subject to change. Will likely be blank throughout for VCUP application.

**Commented [AR5]:** Definitions have been added for Planned Unit Development and Subdivision. Per discussions with the State (Mark Rudolph), developers performing Development Activities within PUDs and Subdivisions will need to separately manage their Excavated Soils or apply for their own separate VCUP.

**Commented [SC6R5]:** The Town would like to discuss this. PUDs can be applied to small parcels whose owners want more flexibility.

**Commented [TAB7]:** Subject to change. Will likely be blank throughout for VCUP application.

- 21.22. Rico Soils Lead Repository or Repository. Rico Soils Lead Repository or Repository shall mean the soil lead repository located approximately 0.75 miles north of Rico and adjacent to the St. Louis Tunnel portal in the NW114, NW1/4 of Section 25, T40N, R11W in Dolores County, and operated under the Certificate of Designation issued by Dolores County on October 24, 2005.
- 22.23. Rico Soils Overlay Zone District ("RSOZ"). Rico Soils Overlay Zone District shall mean the area delineated on Figure 1 as the RSOZ but excluding the area delineated as the EROZ-as depicted in Figure 2. Properties not contained within the RSOZ as of the Effective Date of these Regulations shall not be subsequently added to the RSOZ.
- 23-24. Soils Excavation Permit. Soils Excavation Permit shall mean a soils excavation and grading permit approved by the Environmental Officer pursuant to these Regulations.
- 25. Soils Cover. Soils Cover shall mean a cover consisting of natural earthen or other material that meets the requirements of Section D.7.D placed over contaminated soils or material to encapsulate, immobilize, and eliminate surface exposure of such soils and material.
- <u>Subdivision</u>. Subdivision shall mean the subdivision activities listed in Article V,
   <u>Section 506.1 of the RLUC</u>, and any other division of land within the Town of Rico into two or more lots, tracts, sites, parcels, separate interests, interests in common, or other division that is subject to the Rico Subdivision Regulations, as defined in Article V, Section 506.1 of the RLUC.
- 24:27. Surface Soils. Surface Soils shall mean earthen material found in the top twelve (12) inch soil layer. Where Surface Soils are Native Soilseither Native Soils or Disturbed Native Soils or Non-Native Fill comprising a depth of at least twelve (12) inches, soil samples collected from the top two (2) inches of the soil layer shall be considered representative of Surface Soils for the purpose of characterizing the soil lead concentrations. Where Surface Soils are Disturbed Native Soils or Non-Native Fill comprising a depth of less than twelve (12) inches, soil samples collected from the top two (2) inches of the soil layer shall be considered representative of Surface Soils are Disturbed Native Soils or Non-Native Fill comprising a depth of less than twelve (12) inches, soil samples collected from the top two (2) inches of the soil layer may be considered representative of Surface Soils on a case-by-case basis in consultation with the Environmental Officer.
- 25.28. VCUP No Action Determination ("VCUP NAD"). VCUP NAD shall mean a property-specific determination made by CDPHE pursuant to the Colorado Voluntary Cleanup and Redevelopment Act, § 25-16-307, C.R.S., that remediation of the property is not necessary to protect human health and the environment in light of the current or proposed use of the property, because sampling performed in accordance with these Regulations demonstrates that lead in soil does not exceed the applicable Action Level. A VCUP NAD also means CDPHE written concurrence with a Residential or Non-Residential No Action Determination Confirmation obtained from the Town pursuant to Section D.2.D of these regulations, when the property owner (or

**Commented [SC8]:** Town would like to discuss. Small changes should be allowed.

Commented [TAB9]: See note above.

Commented [SRC 5.110]: This is an issue to be discussed, because it likely depends on the thickness of the soil laver.

**Commented [AR11R10]:** AR is ok with treating Disturbed Native Soils and Non-Native Soils differently, subject to the proposed additional text. However, it's unclear how sampling will need to proceed if the Environmental Officer determines samples from the top 2 inches are not representative. We also need CDPHE to weigh in on this.

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property owner's representative) submits a no action petition to CDPHE pursuant to § 25-16-307, C.R.S. Consistent with Section D.2.E.5 of these Regulations, Development Activities on properties for which a prior VCUP NAD has been made are exempt from these Regulations, provided that, (i) no exposed Mine Waste is encountered on the property; and (ii) for Non-Residential Use properties, there has not been a change in the zoning of the property from Non-Residential Use to Residential Use since issuance of the VCUP NAD.

- 26-29. VCUP No Further Action Determination ("VCUP NFAD"). VCUP NFAD shall mean a property-specific determination made by CDPHE pursuant to the Colorado Voluntary Cleanup and Redevelopment Act, § 25-16-307, C.R.S., that soil remediation performed and maintained in accordance with a Soils Excavations Permit issued by the Town pursuant to these Regulations is adequate to protect human health and the environment in light of the current or proposed use of the property, where the surface soil-lead concentrations were above the applicable Action Level before the Development Activity, and the property owner (or property owner's designated representative) has requested, and received, the determination after the Effective Date of these Regulations. VCUP NFAD shall also mean a property-specific determination by CDPHE issued pursuant to § 25-16-307, C.R.S., prior to the Effective Date of these Regulations for soil remediation performed on a property in accordance with a CDPHE-approved VCUP application that resulted in a prior VCUP NFAD. Development Activities on properties for which a prior VCUP NFAD has been made remain subject to these Regulations.
- C. <u>Town Approval</u>. Unless exempt under these Regulations, any Development Activity within the RSOZ shall require (a) prior approval by the Town of a Soils Excavation Permit; or (b) a Residential or Non-Residential <u>No Action Determination Confirmation</u> issued by the Town pursuant to Section D.2.D of these Regulations. A Residential or Non-Residential <u>No Action Determination Confirmation</u> under these Regulations will apply to subsequent development activities at the property, unless the provisions of Section D.2.D provide otherwise.
- D. <u>No Action Determinations (NAD)</u>.Residential or Non-Residential Confirmations. A Residential or Non-Residential <u>No Action Determination Confirmation</u> under these Regulations shall mean that the property or portion of the property for which the <u>No Action Determination Confirmation</u> is obtained is exempt from the requirement to obtain a Soils Excavation Permit. However, a Non-Residential <u>No Action Determination Confirmation</u> will no longer apply if the zoning on the property changes to allow Residential Use (subject to applying for and receiving a Residential <u>No Action Determination following the change in use</u>). Additionally, properties that receive Residential and Non-Residential <u>No Action Determinations following the change in use</u>). Additionally shall <u>be remain</u> subject to the <u>Mine Waste management provisions of Section D.7.E of these Regulations related to Mine Waste if exposed Mine Waste is <u>determined to be present-encountered</u> on the property-<u>during a Development Activity.</u> A Residential or Non-Residential <u>No Action DeterminationConfirmation</u> under</u>

**Commented [AR12]:** Per the State's request, this term has been changed from NFAD to NFA.

these Regulations may be obtained under the following circumstances and with the following conditions:

- 1. For Developments on Residential Use Property Less than 5,000 Square Feet: If the lead concentration in each composite sample collected from Surface Soils at the property is below 1,100 mg/kg based on soil sampling conducted pursuant to the procedures established in Section D.6, then the Developer may apply for a Residential No Action Determination Confirmation.
- 2. For Developments on Residential Use Properties Greater than 5,000 Square Feet: If the lead concentration in each composite sample collected from Surface Soils at the property is below 1,100 mg/kg based on soil sampling conducted pursuant to the procedures established in Section D.6, then the Developer may apply for a Residential No Action Determination.Confirmation. If sampling has been or is conducted on only the portion of the property that is developed or is to be developed, and the lead concentration in each composite sample collected from Surface Soils in that portion of the property is below 1,100 mg/kg based on soil sampling conducted pursuant to the procedures established in Section D.6, then the Developer may apply for a Residential No Action Determination Confirmation for that portion of the property. The Residential No Action Determination Confirmation will not apply to any other portion of the property.
- 3. For Developments on Non-Residential Use Property Less than 5,000 Square Feet: If the lead concentration in each composite sample collected from Surface Soils at the property is below 1,700 mg/kg based on soil sampling conducted pursuant to the procedures established in Section D.6, then the Developer may apply for a Non-Residential No Action Determination. Confirmation. However, the Non-Residential No Action Determination will no longer apply if there has been or will be a change in zoning of the property toallow to allow Residential Use (subject to applying for and receiving a Residential No Action Determination Confirmation following the change in use).
- 4. For Developments on Non-Residential Use Property Greater than 5,000 Square Feet: If the lead concentration in each composite sample collected from Surface Soils at the property is below 1,700 mg/kg based on soil sampling conducted pursuant to the procedures established in Section D.6, then the Developer may apply for a Non-Residential No Action Determination.Confirmation. If sampling has been or is conducted on only the portion of the property to be developed, and the lead concentration in each composite sample collected from Surface Soils in that portion of the property is below 1,700 mg/kg based on soil sampling conducted pursuant to the procedures established in Section D.6, then the Developer may apply for a Non-Order Property is below 1,700 mg/kg based on soil sampling conducted pursuant to the procedures established in Section D.6, then the Developer may apply for a Non-Residential No Action Determination Confirmation for that portion of the property. The Non-Residential No Action Determination Confirmation will not apply to any other portion of the property. Additionally, the Non-Residential No Action

in zoning of the property to allow Residential Use (subject to applying for and receiving a Residential No Action Determination Confirmation following the change in use).

- 5. Recording: A Residential or Non-Residential No Action Determination Confirmation shall be signed by the Environmental Officer and filed with the Town within five (5) business days after the Environmental Officer's issuance of the Residential or Non-Residential No Action Determination. Confirmation. The Developer may elect to record the Residential or Non-Residential No Action Determination Confirmation in the Dolores County Clerk and Recorder's Office.
- E. <u>Activities Exempt from Regulations</u>. The following Development Activities are hereby exempt from review and application of these Regulations, except that if Mine Waste is encountered in the course of a Development Activity in the RSOZ, the Developer shall comply with Section D.7.E:
  - A discrete event of excavation/grading/digging/filling, not associated with a larger plan for development, resulting in a disturbance of less than a total of one cubic yard of soil associated with the Development Activity, provided that this exemption does not apply to any excavation the purpose of which is to install, relocate, or repair underground utilities;
  - 2. Installation, repair or relocation of fences and porches;
  - 3. Excavation for the sole purpose of conducting soil sampling and other soils testing. provided that this exemption does not apply to test pitting for the purposes of soil sampling, which may involve if the excavation of disturbs greater than one cubic yard of soil; and
  - 3.4.Excavation for the sole purpose of conducting soil testing for septic tanks on undeveloped properties;
  - 4.<u>5</u>.Excavation/grading/digging/filling required to address an emergency situation, <u>including, without limitation, broken or frozen plumbing fixtures</u>, provided that the Environmental Officer concurs that an emergency exists, that the Developer complies with these Regulations to the maximum extent practicable under the circumstances, and that the Developer complies fully as soon as the emergency has passed, including by complying with the remedial standards in Section D.7<del>; and</del>
  - 5.6. Development Activities on properties where testing has confirmed that lead concentrations in Surface Soils do not exceed the applicable Action Level, and either (i) the Town has made a Residential or Non-Residential No Action DeterminationConfirmation consistent with Section D.2.D of these Regulations, or (ii) a prior VCUP NAD has been made; provided that, (i) no exposed Mine Waste is encountered on the property; and (ii) for Non-Residential Use properties, there has not been a changeremains in the zoning of the property to allow Residential Use since issuance of the Non-Residential No Action Determination or VCUP NAD effect.

**Commented [AR13]:** AR still believes that recording these Town-issued Confirmations is important to maintaining the long-term efficacy of this ICs program. But as long as the Town will assist AR in getting CDPHE-issued VCUP NADs and NFAs recorded, we can accept this change.

- F. Phase 1 VCUP Remediation Exempt from Regulations. The Phase 1 VCUP soil remediation work performed by Atlantic Richfield Company, pursuant to Section 6 and Appendix D of the VCUP Application submitted by the Town and Atlantie Richfield to CDPHE on 2020 and approved by CDPHE on 2020, shall be completed in conformance with the substantive requirements of these Regulations and exempt from the review and permitting requirements of these Regulations to the same extent the same work done by the Town itself would be exempt from the review and permitting requirements of these Regulations from the review and permitting requirements of these Regulations and exempt from the review and permitting requirements of these Regulations, except that the requirements to obtain a Residential or Non-Residential No Action Determination and/or a Cleanup Completion Certification from the Town shall in all cases apply to the Phase 1 VCUP soil remediation work. Such work remains subject to the requirement to obtain a building or other permit, as applicable. Future Development Activities on properties remediated as part of the Phase 1 VCUP soil remediation work are subject to all requirements shall be exempt from review and application of these Regulations.
- G. <u>Failure to Obtain Prior Approval</u>. The following are deemed a violation of this RLUC and shall be punishable in accordance with Article I: (a) the commencement of any Development Activity not exempted by Section D.2.E within the RSOZ prior to review and approval by the Town; and (b) the failure to comply with Section D.9 for any property within the EROZ.
- H. Failure to Obtain or Comply with Soils Excavation Permit or File Required Cleanup Completion Report. Any failure to obtain a Soils Excavation Permit when so required, to comply with a Soils Excavation Permit that has been obtained, or to file a Cleanup Completion Report required pursuant to Section D.5.B7.G is hereby deemed a violation of this RLUC and shall be subject to the enforcement provisions of the RLUC, including but not limited to provisions in Article I.
- I. <u>Prohibition on Creation of Nuisance</u>. Partial completion of work covered by an approved Soils Excavation Permit can in some instances create a nuisance pursuant to Ordinance Number 277. The creation of such nuisance is hereby prohibited.
- J. <u>Failure to Perform and Report Required Testing</u>. It is illegal and a violation of these Regulations to falsify or fail to disclose to the Town any test results required by these Regulations.
- K. <u>Persons Liable</u>. The owner, tenant, or occupant of any building or land or part thereof and any builder, agent, or other person who participates in, assists, directs, creates, or performs any Development Activity without first performing the requirements of these Regulations may be held responsible for the violation of these Regulations and subject to the enforcement provisions of the RLUC.
- L. <u>Duration of Soils Excavation Permit</u>. Soils Excavation Permits issued under these Regulations shall be valid for a period not to exceed one year, unless renewed by the Environmental Officer.
- M. <u>Transfer of Soils Excavation Permit</u>. A Soils Excavation Permit is not transferable to a subsequent owner unless the subsequent owner expressly agrees to transfer of the permit into

**Commented [AR14]:** These Regulations are not the place to establish performance requirements specific to AR's remediation work, which will be done in accordance with the CDPHE-approved VCUP Application and Work Plan. If there are specific requirements the Town wants to impose, they can be addressed in the Funding Agreement.

Commented [SC15R14]: Town would like to discuss.

**Commented [AR16]:** See prior comment about recording Residential and Non-Residential Confirmations. AR still believes there is a benefit to requiring that they be recorded. The State agrees with this comment and also supports recording the VCUP NADs / NFAs.

his or her name in writing and obtains written consent of the Environmental Officer for such transfer.

- N. Effective Date of Regulations. These Regulations shall take effect upon adoption by the Town Board of Trustees, and shall only apply to Applications filed pursuant to Section D.4 after the Effective Date.
- O. Consultation to Amend. Prior to the Town considering any amendment to these Regulations, the Town shall consult with CDPHE and shall incorporate such requirements as CDPHE may recommend to ensure these Regulations continue to protect human health and the environment.
- N.P. Lack of Third Party Enforcement Rights. The enforcement of these Regulations is within the discretionary police power of the Town of Rico, and these Regulations are not intended to, nor do they, create a third-party right of enforcement; provided, however, that these Regulations are directly enforceable by CDPHE, pursuant to the Intergovernmental Agreement between CDPHE and the Town of Rico.
- O.Q. Water Quality Issues Not Addressed. These Regulations do not address water quality issues, and it remains the responsibility of the <u>owner\_Developer</u> to comply with state and federal requirements with respect thereto.

#### Rico Land Use Code Appendix D Section D.3 Reviewing Entity

A. Environmental Officer. The Town Manager is the representative of the Town for purposes of administering these Regulations and shall be responsible for issuing Soils Excavation Permits under these Regulations. The Town Manager shall be referred to as the "Environmental Officer" in this capacity. The Town Manager may, with consent of the Board of Trustees, designate another person to serve as the Environmental Officer for purposes of these Regulations or to fulfill certain tasks for which the Environmental Officer is responsible under these Regulations. Such designation shall remain in effect until revoked by the Town Manager or Board of Trustees, with or without cause.

#### **Rico Land Use Code Appendix D Section D.4 Application Requirements**

Before commencing any non-exempt (with exempt activities being those specified in Section D.2.E.) Development Activity within the RSOZ, the Developer shall prepare and submit an application in hard copy and in electronic format to the Town, for review by the Environmental Officer, containing the following information:

A. Existing Soil Sampling Data. The Developer shall submit with the application all existing soil sampling data reasonably available to the Developer for the subject property and/or any information regarding the presence of Disturbed Native Soils, Non-Native Fill materials, and/or an Existing Soils Cover (whether comprised of Disturbed Native Soils or Non-Native Fill materials) at the subject property. The source of soil data shall be identified. The Developer shall consult with the Environmental Officer regarding the availability of existing

Commented [TAB17]: Need to discuss with Town.

**Commented [AR18]:** "Existing Soils Cover" is already defined. An Existing Soils Cover will not be comprised of Disturbed Native Soils.

data before submitting an application, so that all existing data, including soil data collected to support VCUP projects within the Town of Rico, is provided in the application.

- B. <u>New Soil Sampling Data</u>. If the existing soil sampling data for the property do not meet the standards for soil sampling set forth in Section D.6, or conditions on a site have changed such that existing soil sampling data are no longer representative, then the Developer shall submit new soil sampling data that meet the standards of Section D.6. The Environmental Officer may also determine upon review of the application that more data are desired to assess soil or fill conditions or to facilitate the development of the property for the proposed use, in which case the Developer shall resubmit the application with the required soil sampling data.
- C. <u>Soil Sampling Data Must Be Submitted with Application</u>. The Developer shall submit the required sampling data, whether existing or new, with the Application, regardless of whether the Developer proposes to place Non-Native Fill, use Disturbed Native Soils, or retain the Native Soils following the Development Activity. Submission of sampling data for an Existing Soils Cover is not required.
- D. <u>Description of Proposed Use</u>. The Developer shall describe the proposed use of the property and identify whether the proposed use qualifies as a Residential Use, Non-Residential Use, or Open Space pursuant to these Regulations and the zoning provisions of the RLUC.
- E. <u>Description of Proposed Development Activity</u>. The Developer shall describe the proposed Development Activity, including a narrative statement, site plan, description of area and depth of any excavation or fill placement, extent of any grading, and the time frame for the Development Activity. To the extent stockpiling of soils is planned during the Development Activity, the Developer shall specify the means of protecting the stockpile and the planned duration of the proposed stockpiling. If placement of a Soils Cover is an element of the Development Activity, the Developer shall specify the source of the Soils Cover material to be used and the means by which that cap shall be placed and maintained.
- F. <u>Authorization for VCUP Representation</u>. In an application submitted pursuant to these Regulations, the Developer may, if it has not already done so, authorize the Town and Atlantic Richfield Company to act as its VCUP representative for purposes of obtaining a VCUP NFAD from CDPHE upon completion of a Development Activity performed in accordance with these Regulations.

#### Rico Land Use Code Appendix D Section D.5 Application Review and Determinations

A. <u>Application Review</u>. The Environmental Officer shall review the application to determine: (1) whether the required information is contained in the application; (2) whether a Soils Excavation Permit is in fact required for the specific property and Development Activity at issue; (3) if soil sampling data is required for the specific property and Development Activity, whether sufficient data that meets the standards for soil sampling set forth in Section D.6 has been submitted; (4) whether the Developer has requested a conditional Cleanup Completion Certification for the Development Activity <u>pursuant to Section D.5.D</u>; and (5) whether the Developer has requested a Residential or Non-Residential <u>No Action</u>

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Determination\_Confirmation pursuant to Section D.2.D. If the required information has been submitted, the Environmental Officer may: (1) approve the application and issue the Soils Excavation Permit; (2) issue a conditional Cleanup Completion Certification; (3) issue a Residential or Non-Residential No Action DeterminationConfirmation; or (4) deny the application. If the application is denied, the Environmental Officer shall state in writing the reason for the denial.

- B. <u>Cleanup Completion Report</u>. For any Development Activity subject to an approved Soils Excavation Permit, the Developer shall prepare and submit a Cleanup Completion Report to the Town once the work as described in the approved Soils Excavation Permit is complete. The <u>Cleanup Completion Report shall set forth</u>: a legal description of the site; a description of the nature of the site, lead concentrations in Surface Soils, and date of soil sample collection and analysis for lead; documentation of the location, quantity and date that soils with elevated lead concentrations were removed from the site; and shall include as an attachment the Soils Excavation Permit approved by the Town. If the Developer has removed soil from the property, the Developer shall provide documentation that the soil was properly disposed of pursuant to this Appendix D of the RLUC.
- C. <u>Cleanup Completion Certification</u>. Based on the information provided in the Cleanup Completion Report, the Environmental Officer shall either issue a Cleanup Completion Certification for the Development Activity or decline to issue a Cleanup Completion Certification and provide conditions that need to be met to obtain a Cleanup Completion Certification. At its sole discretion, the Environmental Officer may require an inspection of the property to determine whether the information provided in the Cleanup Completion Report is accurate before issuing or declining to issue a Cleaning Completion Certification. The Cleanup Completion Report shall be signed by the Environmental Officer and filed with the Town within five (5) business days after the Environmental Officer's issuance of a Cleanup Completion Certification. The Developer may also record the Cleanup Completion Report and Cleanup Completion Certification in the Dolores County Clerk and Recorder's Office.
- D. Conditional Cleanup Completion Certification. A Cleanup Completion Certification may be issued conditionally when the conditions outlined in Section D.7.A.1 of these Regulations are met. The Environmental Officer may include appropriate conditions in a conditional Cleanup Completion Certification, including but not limited to the conditions that the Development Activity not disturb soils below an Existing Soils Cover and the Existing Soils Cover will be repaired as part of the Development Activity. After completion of the Development Activity and a successful inspection by the Environmental Officer to ensure that the requirements of Section D.7.D. are met, the Environmental Office shall make the conditional Cleanup Completion Certification final rather than conditional, and the Cleanup Completion Certification may be recorded in the Dolores County Clerk and Recorder's Office.
- E. <u>Appeals</u>. A Developer may appeal any final decision by the Environmental Officer as to the issuance or denial of a Soils Excavation Permit, Residential or Non-Residential-<u>No Action</u>

**Commented [AR19]:** A Cleanup Completion Report template can be prepared to either attach to regs. or to be provided by Town at time of permit application.

**Commented [AR20]:** See prior comments about recording.

**Commented [AR21]:** AR would like to better understand the thinking behind Conditional Cleanup Completion Certifications. This seems like an unnecessary complication.

**Commented [SC22R21]:** The reasoning is that when the conditions outlined in Section D.7.A.1 are met, the Developer should not be required to obtain a Soils Excavation Permit, but there should be some record of the Development Activity so that the Environmental Officer is aware of the Activity and an inspection is scheduled upon completion of the Activity to confirm that cap was not disturbed or has been repaired. .

However, the Town is open to revising or considering other concepts.

Determination Confirmation, or Cleanup Completion Certification. An-The Developer may appeal the decision of the Environmental Officer's decision may be madeOfficer to the Board of Trustees by filing a notice of appeal with the Town Clerk within thirty (30) days of the Developer's receipt of the final decision by the Environmental Officer. The appeal to the Board of Trustees shall proceed in accordance with the provisions set forth in Article V, Section 516 of the RLUC Cite to be added by Town].

#### Rico Land Use Code Appendix D Section D.6 Standards for Soil Sampling

The following requirements and guidelines shall govern all environmental testing and sampling performed under these Regulations:

- A. <u>Existing Soil Sampling Data</u>. A Developer may use existing soil sampling data to satisfy Soils Excavation Permit requirements if the number and types of samples collected and the laboratory analyses conducted meet the standards in this Section D.6.
- B. <u>Approved Sampling Contractors</u>. All sampling and analysis must be performed by a qualified contractor, and the conformance of all sampling and analysis with the standards set forth in this Section D.6 must be certified by a Professional Engineer ("P.E.") registered and licensed in the State of Colorado or a Professional Geologist ("P.G.") meeting the requirements of C.R.S. § 23-41-208(1)(b). C.R.S. The proper chain of custody shall be maintained and documented for all samples collected for the property. All samples undergoing laboratory analysis shall be submitted to a CDPHE-approved or EPA-certified laboratory qualified to perform metals analysis in a solid matrix.
- C. <u>Analytical Procedures</u>. All samples to be analyzed for lead content will be sieved through a U.S. Standard No. 10 mesh sieve. If any sample has less than 5 percent passing the No. 10 sieve it should be discarded and not processed further for metals analysis. Soil samples shall be analyzed for lead using laboratory-grade x-ray fluorescence (XRF) or using inductively coupled plasma (ICP). Analytical methods shall conform to the then-current procedures prescribed in EPA's Test Methods for Evaluating Solid Waste, Physical / Chemical Methods, SW-846, as amended, or an equivalent method approved by the Environmental Officer.
- D. <u>Minimum Number of Samples</u>. Within each sampling sector established pursuant to Section D.6.E, soil samples will be collected from a depth of 0 inches to 2 inches (below the base of any sod or root mat that may be present) at five randomly selected locations. The five surface samples collected from within each sector should be of similar size and composited into a single sample for analysis for that sector. Soil samples should not be collected from locations where Mine Waste material is observed or from the drip zone of buildings (four feet from the edge of a building) to avoid lead paint contamination. If any areas of the sampling sector include areas from which Mine Waste has been removed, one of the samples should be collected from that area.
- E. <u>Number and Division of Sampling Sectors</u>. When soil sampling data are collected, whether before or after development, adherence to the following sampling plans is required:

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- For Properties Less than 5,000 Square Feet: Properties less than or equal to 5,000 square feet in total area will be divided into at least two sampling areas, excluding buildings, pavement, or other permanent caps over the soil. A minimum of two composite samples (comprised of five subsamples each), one each from the front yard and back yard (and side yard if substantial), plus a separate sample for each distinct driveway, vegetable garden, and play area, if present, will be collected.
- 2. For Non-Residential Use Properties Greater than 5,000 Square Feet and Less than 0.5 Acre: The property shall be divided into a minimum of four (4) sampling sectors not to exceed 5,000 square feet in size (excluding buildings, pavement, or other permanent caps over the soil that cannot be removed by hand to expose the underlying soil). If only a portion of such property is to be developed, the ownerDeveloper may: (i) subdivide the property subject to provisions in the RLUC and complete the sampling only on the portion of the property that will be developed; or (ii) sample a 100-foot radius ("Sampling Radius") around the area affected by the Development Activity and, when submitting a Cleanup Completion Report to the Town per Section D.5.B, provide clear documentation of the portions of the property that have and have not been sampled and remediated. If the resulting Subdivision or Sampling Radius results in an area greater than 5,000 square feet, it shall be divided into sampling sectors as described in this sub-paragraph. If the resulting Subdivision or Sampling Radius results in an area less than 5,000 square feet in size, it shall be divided into two (2) sampling sectors based on the criteria in Section D.6.E.1. Once the sampling sectors have been defined, the procedures established in Section D.6.D shall be followed for each sampling sector. A separate sample will also be collected for each distinct driveway, vegetable garden, and play area, if present. This section does not create any additional rights for creating a Subdivision, and any Subdivision must comply with all other applicable requirements of the RLUC for obtaining the Subdivision approval.
- 3. For Residential Use Properties Greater than 5,000 Square Feet and Less than 0.5 Acre: The property shall be divided into a minimum of four (4) sampling sectors not to exceed 5,000 square feet in size (excluding buildings, pavement, or other permanent caps over the soil that cannot be removed by hand to expose the underlying soil). If only a portion of such property is to be developed, the <u>ownerDeveloper</u> may (i) subdivide the property subject to provisions in the RLUC; or (ii) establish and document a Sampling Radius as provided for in Section D.6.E.2, and complete the sampling only on the portion of the property to be developed and, if necessary, remediated, so long as the development area sampled includes the greater of: (a) a total area of 3,000 square feet adjacent to and surrounding the residence, not including areas covered by pavement or other permanent caps over the soil; (b) the portion of the property to be developed that will not be covered by buildings, pavement, or other permanent caps over the soil; or (c) all areas to be developed as lawns (sod or seeded), play areas, gardens, and other landscaped features around any structures. If the sampling area based on the above criteria is greater than 5,000

square feet, it shall be divided into sampling sectors as described in this subparagraph. If the sampling area based on the above criteria is less than 5,000 square feet in size, it shall be further divided into two (2) sampling sectors based on the criteria in Section D.6.E.1. Once the sampling sectors have been defined, the procedures established in Section D.6.D shall be followed for each sampling sector. A separate sample will also be collected for each distinct driveway, vegetable garden, and play area, if present. This section does not create any additional rights for creating a Subdivision, and any such Subdivision must comply with all other applicable requirements of the RLUC for obtaining the Subdivision approval.

- 4. For Residential Use and Non-Residential Use Properties Greater than 0.5 Acres: The property to be sampled shall consist of a 100-foot radius around the area affected by the Development Activity. The procedures of Section D.6.E.1 through 3 shall apply depending on the size and zoning designation – Residential Use or Non-Residential Use – of the portion of the property subject to sampling. On portions of such property outside the 100-foot radius around the area affected by the Development Activity, no specific standard or requirement applies, except that if Mine Waste is encountered, the provisions for management of Mine Waste in Section D.7.E shall apply.
- 5. For Open Space Areas: The area to be sampled shall consist of the area affected by the Development Activity (e.g., only the area impacted by a utility easement, road, or trail), and not the full area of the individual lot or lots. The procedures of Section D.6.E.1, E.2, and E.4 shall apply depending on the size of the portion of the property subject to sampling. On undisturbed portions of such property where the use is to remain Open Space, no specific standard or requirement applies, except that if Mine Waste is encountered, the provisions for management of Mine Waste in Section D.7.E shall apply.
- F. <u>Placement of Non-Native Fill</u>. The Developer shall identify the source of any <u>Non-Native Non-Native</u> Fill transported to the property as part of the Development Activity, whether for use as a Soils Cover or any other purpose, and shall: (1) show that the source has been approved by the Town pursuant to Section D.7.D; or (2) show, using sampling data or other information acceptable to the Environmental Office, that the Non-Native Fill contains less than 100 mg/kg lead.
- G. <u>Additional Sampling</u>. Additional sampling may be required if deemed necessary by the Environmental Officer for accurate analysis of potential health risks posed by soil conditions considering the proposed Development Activity and/or use of the property.
- H. <u>Failure to Certify Soil Testing</u>. The Developer's failure to provide to the Town soil sampling data that has been certified by a registered and licensed P.E. or a P.G. meeting Colorado statutory requirements shall result in <u>rejection denial</u> of the Soils Excavation Permit.
- I. <u>Provision of all Soil Sampling Results</u>. Developers shall promptly provide all soil sampling results to the Town.

#### **Rico Land Use Code Appendix D Section D.7 Remediation Standards**

The objective of these Remediation Standards is to ensure that the average lead concentration in exposed soil in each sector of the property, whether Native Soils, Disturbed Native Soils, or Non-Native Fill, based on soil samples collected according to or in a manner consistent with Section D.6, do not exceed applicable Action Levels. If the lead concentration of one or more composited Surface Soil samples collected within a sampling sector exceeds the relevant Action Level for the property in question, then the average lead concentration for Surface Soils in that sector is deemed to exceed the Action Level.

- A. <u>Requirements Applicable to Development Activities on Properties or Property Sectors with</u> <u>an Existing Soils Cover</u>.
  - If the Development Activity will not disturb soils below the Existing Soils Cover or any disturbance to the Existing Soils Cover is limited to the depth of that soil cover, which is typically no more than twelve (12) inches below the ground surface, and the Existing Soils Cover will be repaired as part of the Development Activity, the Developer may seek a conditional Cleanup Completion Certification from the Town, based on the existing conditions meeting the requirements of Section D.7.D. <u>The purpose of the conditional Cleanup Completion Certification is to allow the Development Activity to proceed with minimal administrative requirements, while ensuring the Environmental Officer is aware of the Development Activity. Upon completion of the Development Activity, the Developer shall schedule and complete an inspection by the Environmental Officer to ensure that the requirements of Section D.7.D. are met.
    </u>
  - 2. If the Development Activity will disturb an Existing Soils Cover and underlying soils, then:
    - a. The Existing Soils Cover material (above the geotextile fabric) shall, to the extent practicable, be removed and stockpiled on a clean surface (e.g., pavement or plastic sheets) and later reused for repairing the Soils Cover (or at other locations at the site), provided the Existing Soils Cover material does not become contaminated with underlying soils or Mine Waste and provided further that such Existing Soils Cover material is stockpiled onsite at the property that is subject to the Development Activity. If such soil is stockpiled, the soil must be stockpiled in an area to be capped or on a clean surface (e.g., pavement or plastic sheets) that will be cleaned after the stockpile is removed.
    - b. Excavated Soils (and/or the Existing Soils Cover material, if it becomes contaminated) shall if possible(i) to the extent space is available in the excavation, be (i) returned to the excavation to a depth up to twelve (12) inches below the final surface grade and placed below a Soils Cover pursuant to Section D.7.D; or (ii) demonstrated to have lead levels below the applicable Action Level using the sampling procedures established in Section D.6. Only if the options set forth in (i) and (ii) are not possible shouldAny Excavated

**Commented [AR23]:** This requirement doesn't apply to stockpiled Existing Soils Cover material, and the prior sentence already requires that Existing Soils Cover Material be stockpiled on a clean surface.

**Commented [AR24]:** Existing Soils Cover should not become contaminated if these regulations are properly implemented and enforced. We don't want to offer an excuse to not comply.

Commented [TAB25R24]: Discuss with Town

Soils (and/or the Existing Soils Cover material, if it becomes contaminated)that remain after backfilling to a depth up to twelve (12) inches below the final surface grade shall be disposed of at the Repository or other appropriate waste disposal location, pursuant managed in accordance with Section D.7.C. If Excavated soil isSoils are stockpiled onsite at the property that is subject to the Development Activity, it-they must be stockpiled in an area to be capped or on a surface that will be cleaned after the stockpile is removed.

- c. Stockpiled Excavated Soils shall be protected from erosion, covered with plastic sheets, or managed using other appropriate controls if left on site for more than 24 hours. Any soil that does erode or blow from a stockpile shall be promptly collected and returned to the stockpile. Using best management practices, the Developer must also control generation and dispersal of fugitive dust from any soil or Mine Waste that is exposed by the Development Activities. It is not permissible to stockpile soils that will be sent to the Repository, except as provided in Section D.7.C.
- d. The final grade in the area disturbed by the Development Activities must consist of a Soils Cover meeting the requirements of Section D.7.D.
- e. Confirmation soil samples must be collected according to the procedures established in Section D.6 in any areas where the upper 2 inches of the exposed final grade consists of Native Soils that were not previously tested (for example, deeper soils exposed by excavation and grading activities or Surface Soils that remained in place but were potentially contaminated by Development Activities), to demonstrate that these materials are below the applicable Action Level. Confirmation sampling is not required for caps consisting of imported fill from a location pre-approved by the Town pursuant to Section D.7.D.

#### B. <u>Requirements Applicable to Development Activities on Properties or Property Sectors</u> <u>Without an Existing Soils Cover.</u>

- If the lead concentration in each composite sample collected from Surface Soils at the property is below the applicable Action Level based on soil sampling conducted pursuant to the procedures established in Section D.6, then no further testing or remedial action will be required under these Regulations (other than compliance with the requirement for placement of clean Non-Native Fill), and the Developer may apply for a Residential or Non-Residential <u>No Action DeterminationConfirmation</u> pursuant to Section D.2.D. However, if exposed Mine Waste is encountered on the property, the procedures of Section D.7.E or D.7.B.2 shall be followedapply.
- 2. For each sector where one or more composite samples in existing Surface Soils at the property is above the applicable Action Level based on soil sampling conducted

pursuant to the procedures established in Section D.6, Excavated Soils shall be managed as follows:

- a. Excavated Soils , including Surface Soils shall be placed below a cap pursuant to Section D.7.D up to twelve (12) inches below , to the final surface grade, if possible. Excavated Soils, including Surface Soils, that cannot extent space is available in the excavation, be returned to the excavation to a depth up to twelve (12) inches below the final surface grade may be disposed of at the Repository pursuant to and placed below a Soils Cover pursuant to Section D.7.D. Excavated Soils that remain after backfilling to a depth up to twelve (12) inches below the final surface grade shall be managed in accordance with Section D.7.C. If soil is stockpiled, soilStockpiled Excavated Soils must be stockpiled-placed in an area to be capped or on a clean surface (e.g., pavement or plastic sheets) that will be cleaned after the stockpile is removed.
- b. In a sampling sector where the average lead concentration of Surface Soils is below the applicable Action Level, the Applicant can elect to remove and temporarily stockpile the <u>Excavated</u> Soils and later reuse such soils for the Soils Cover, provided that such soils do not become contaminated with underlying soils or Mine Waste, and provided further that such materials are stockpiled onsite. <u>If such soil is stockpiled, the soilStockpiled Excavated Soils</u> must be <u>stockpiledplaced</u> in an area to be capped or on a clean surface (e.g., pavement or plastic sheets or clean sector).
- c. Stockpiled Excavated Soils shall be protected from erosion, covered with plastic sheets, or managed using other appropriate controls if left on site for more than 24 hours. Any soil that does erode or blow from a stockpile shall be promptly collected and returned to the stockpile. The Developer must also control fugitive dust using best management practices. The Soils Excavation Permit Application shall specify appropriate time limits for temporary stockpiling of soil disturbed during the Development Activities, to be approved by the Environmental Officer.
- d. The final grade in the area disturbed by the Development Activities must consist of Soils Cover materials meeting the requirements of Section D.7.D.
- e. Confirmation soil samples must be collected pursuant to the procedures established in Section D.6 in any areas where the upper 2 inches of the final grade consists of soils that were not previously tested (for example, deeper soils exposed by excavation and grading activities or Surface Soils that remained in place but were potentially contaminated by Development Activities) to demonstrate that the average lead concentrations of these materials are below the applicable Action Level. Confirmation sampling is not required for caps consisting of imported fill from a location pre-approved by the Town pursuant to Section D.7.D.

C. Management and Disposal of Excavated Soils at the Repository.

- 1. For Development Activities Involving a Single Lot: For Development Activities on a property that is not within or associated with a Planned Unit Development or Subdivision, soils meet the criteria for disposal at the Repository if they are: (1) Excavated Soils from sectors that exceed the applicable Action Level and that remain as excess after Excavated Soils are used as backfill in the excavation; or (2) Mine Waste identified and managed in accordance with Section D.7.E. If the amount of excess Excavated Soil from a Development Activity that cannot be used as backfill is 53 cubic yards or less in volume, it may be disposed of attransported by the Developer to the Repository regardless offor disposal without further testing to determine the concentration of lead in the soil. If the amount of excess Excavated Soil from a Development Activity that cannot be used as backfill is greater than three (3) cubic yards, the Developer must contact the Environmental Officer to request confirmation testing of the Excavated Soil. If such confirmation testing confirms that the excess Excavated Soil exceeds the Action Level, it may be transported by the Developer to the Repository for disposal. If such confirmation testing determines that the excess Excavated Soil does not exceed the Action Level, it shall not be transported to the Repository for disposal, and the Developer shall manage it in accordance with Article VIII of the RLUC or otherwise to prevent a nuisance. Materials such as tree roots, large boulders, trash, and other non-soil debris may not be disposed of at the Repository, and must be removed from Excavated Soils before transport by the Developer to the Repository. Soils to be disposed of at the Repository must be placed directly into trucks or roll-off containers at the time of excavation, or stockpiled pursuant to the procedures described in Sections D.7.A and D.7.B. The Developer shall ensure that all soils and Mine Waste transported to the Repository shall be are covered during transport to the Repository. The Developer shall obtain a certificate from the operator of the Repository to demonstrate that soils excavated pursuant to these Regulations were in fact disposed of at the Repository, and shall submit this certificate with its Cleanup Completion Report. If the Repository is unavailable, the Developer should consult with the Environmental Officer for further instruction.
- D. Installation of Soils Covers. The following materials may be used as a cap to cover soils exceeding the Action Level.
  - <u>Soils Cover</u> For Development Activities Involving a Planned Unit
     <u>Development or Subdivision</u>: Excavated Soils and Mine Waste from a
     Development Activity within or associated with a Planned Unit Development or
     <u>Subdivision</u> are not eligible for disposal at the Repository. Such Excavated Soils and Mine Waste shall be managed and disposed of as follows:
- D. Any Developer who generates Excavated Soils or Mine Waste in connection with a Development Activity within or associated with a Planned Unit Development or Subdivision shall submit a soils management and disposal plan to CDHPE and the Environmental Officer

**Commented [AR26]:** This seems like a reasonable compromise.

Commented [TAB27R26]: Discuss with town.

Commented [TAB28]: Confirm with Town so it is clear that owners are responsible for this excess soil. Is there an incremental cost here?

**Commented [TAB29]:** This is a new concept from ARC. Perhaps limit to PUD of a certain size?

for review and approval. The soils management and disposal plan shall describe the methods and procedures to be used by the Developer to ensure that all Excavated Soils and Mine Waste that cannot be returned to the excavation to a depth up to twelve (12) inches below the final surface grade and/or placed below a Soils Cover are managed and disposed of in accordance with applicable federal, state, and local requirements. Excavated Soils and Mine Waste from a Development Activity within or associated with a Planned Unit Development or Subdivision shall not be transported from the property that is subject to the Development Activity except in accordance with the soils management and disposal plan after approval in writing by CDPHE, with concurrence from the Environmental Officer. Installation of Soils Covers. The following materials may be used as a cap to cover soils exceeding the Action Level.

- 1. Soils Cover. A minimum of 12 inches of soil from the property subject to the Development Activity with may be used as the Soils Cover if it has an average lead concentration below the applicable Action Level, provided the soils are adequately protected against erosion (e.g., by appropriate grading and/or vegetation). If Alternatively, the Soils Cover consists may consist of soils imported from off-site (e.g. from a location other than the property subject to the Development Activity), provided the imported soils must contain less than 100 mg/kg lead and otherwise be are suitable for use as a Soils Cover. Such clean soils must come from a source approved by the Environmental Officer, or be shown to be clean fill by soil sampling data obtained pursuant to the procedures set forth in Section D.6.D. The Environmental Officer may pre-approve soil borrow areas based on analytical testing from geographic areas demonstrating the soils from such areas are below 100 mg/kg lead and otherwise suitable for use as fill due to the absence of contamination. A geotextile fabric or other marker material, as approved by the Environmental Officer, shall be installed directly beneath the clean soil layer to mark the boundary between the Soils Cover and underlying Native Soils.
- 2. <u>Mature Trees</u>. Where mature trees are present and will remain after the Development Activity, soil beneath the canopy must have a lead concentration less than the applicable Action Level (or 100 mg/kg lead concentrations if imported soils are used) to a depth of 12 inches at the edge of the canopy, and to a depth of 0 inches at the base of the tree trunk. For soil beneath mature Aspen trees, the depth of soil may be reduced to a uniform 4 inches depth beneath the canopy.
- 3. <u>Pavement</u>. An impervious surface such as 4 inches of concrete or 2 inches of asphalt over a minimum 4 inches of clean granular fill (e.g., driveways, patios, walks) may be used to cover soils with concentrations of lead above the applicable Action Level.
- 4. <u>Buildings and Structures</u>. Where construction of a permanent building or structure is part of the Development Activity, the footprint of the building or structure may be used to cover soils with lead concentrations above the applicable Action Level.

E. Identification, Management, and Disposal of Mine Waste. Notwithstanding other terms of these Regulations, in the event that Mine Waste is encountered during any Development Activity, the Developer shall (i) presume that such materials exceed the applicable Action Level; (ii) contact the Environmental Officer to confirm the presence or absence of Mine Waste through a visual inspection and/or testing; and (iii) upon such confirmation, manage such waste pursuant to Section D.7 by removing Mine Waste from a depth of 0 to 12 inches below the ground surface for disposal at the Repository and installing a Soils Cover meeting the requirements of Section D.7.D. Mine Waste present at depths greater than 12 inches shall be left in place below a Soils Cover. If Mine Waste is excavated from a depth greater than 12 inches during the Development Activity, the excavated Mine Waste-it shall be managed pursuant tothe same as other Excavated Soils in accordance with the provisions of this Section.

#### F. Additional Considerations for Remediation

- 1. <u>Shallow Bedrock and Very Coarse Soil</u>. If during soil removal, bedrock or predominantly very coarse-grained (D50 > approximately 3 inches, and with less than approximately 10 percent minus U.S. Standard No. 10 sieve) natural colluvial or alluvial soils are encountered and cannot be excavated using standard heavy equipment mobilized for soil remediation, excavation may be terminated. In such cases, the 12 inches of clean soil may be achieved by placing borrow and/or growth media above pre-existing grade, as necessary. If clean soil is to be placed above pre-existing grade, the soil shall be placed so as not to interfere with existing surface drainage patterns within the property. If necessary due to drainage considerations, permission may be sought from the Town and CDPHE to modify the 12-inch clean soil requirement.
- 2. Trees and Shrubs. The areal extent of soil removal shall generally stop at the dripline of established trees and shrubs designated by the Soils Excavation Permit to remain, and soil removal shall terminate at the drip line of trees and shrubs to protect these plantings. In the case of mature trees with especially large canopies with overhead clearance allowing easy potential access to children, excavation for removal shall continue toward the trunk but at progressively shallower depth using small equipment and/or hand tools as necessary to avoid damage to shallow roots. Large roots must be avoided and worked around if encountered during excavation. Near the dripline of shallow-rooted aspen trees and between trees in aspen groves, soil shall be removed to an approximate depth of 2 inches, using special care to minimize damage (cuts, breaks) to the aspen roots. In areas of aspen trees, 4 inches of suitable growth medium shall be required as backfill. Areas characterized by very dense thickets of aspen trees that are judged not readily accessible to children may be left undisturbed. Such areas must be specifically noted on the Soils Excavation Permit prepared for the subject property.

#### **Commented [SC30]:** AR or its contract should be responsible for hauling mine waste to repository.

**Commented [AR31R30]:** Transport of any materials to the Repository will be the responsibility of the Developer.

Commented [SC32R30]: The Town believes AR should be responsible for hauling identified mine waste and would like to discuss.

**Commented [AR33]:** Although these provisions come from the VCUP Work Plan, they really don't belong in the LUC Regulations. These are procedures that AR will use when implementing VCUP remediation at developed properties. For future developments covered by these Regulations, these procedures generally won't apply, since every Development Activity will be different. We think including this text here adds an unnecessary complication to the Regulations that will only cause confusion in the future.

Commented [TAB34R33]: Discuss with town

- 3. <u>Vegetable Gardens</u>. Soil shall be removed from vegetable gardens to an approximate depth of 18 inches, and 18 inches of growth medium shall be placed into the excavation area to re establish the garden bed. Revegetation of vegetable gardens following placement of 18 inches of growth medium is not required.
- Protection of Existing Utilities, Structures/Appurtenances. The Developer shall give special consideration to protection of septic systems, propane tanks and lines, other utilities, fences, retaining walls, concrete features (e.g., patios, sidewalks), sheds and outbuildings, and subsurface irrigation systems during all on-site cleanup activities.

#### Rico Land Use Code Appendix D Section D.8 Maintenance of Remedial Features

To the extent a Soils Cover exists on a property, the current owner of that property is required to maintain the integrity of that Soils Cover in a manner that minimizes the risk of human exposure to soils with elevated levels of lead that may exist below the Soils Cover. Filing of the Cleanup Completion-Report Certification, Soils Excavation Permit, and related documents with the Town (and recording the same in the Office of the Dolores County Clerk and Recorder, if the Developer chooses to do so) is intended to advise transferees and future owners of past remediation activities and on-going maintenance requirements with respect to the Soils Cover. In the event that a Soils Cover is not maintained as required by this Appendix D, the Town Manager may issue a written notice of violation to the then-current property owner describing the conditions present on the property that constitute a failure to maintain the Soils Cover. If such a notice is issued, the notice shall be posted on the property in a conspicuous place and mailed via registered mail to the last known address of the property owner according to the Dolores County Assessor's records. The property owner shall have thirty (30) days after the posting and mailing of such notice to remedy all conditions on the property related to the described violation. A property owner can request an extension of time to remedy any violation under this Section D.8, which request shall be in writing, shall indicate good cause for requesting an extension, and shall propose a definite date to remedy all impaired property conditions and restore the integrity of the Soils Cover consistent with the approved Soils Excavation Permit. The Town Manager on behalf of the Town shall have authority to grant a single extension of up to one hundred eighty (180) days. The Rico Board of Trustees shall have the authority to grant greater extensions. Any grant of extension shall be in writing and mailed to the property owner at the last known address according to the Dolores County Assessor's records. The failure to remedy any violation under this Section D.8 within thirty (30) days after receiving notice, or after a definite date approved in an extension, shall be deemed a violation of the RLUC and each day shall be deemed a separate violation, and such violation shall be punishable in accordance with Article I of this RLUC.

#### <u>Rico Land Use Code Appendix D Section D.9 Development Activities Within the EROZ</u> <u>Overlay</u>

A. <u>Properties within the EROZ</u>. Properties within the EROZ were subject to previous remedial efforts pursuant to the State VCUP program or otherwise have unique environmental

conditions that warrant inclusion within the EROZ. Substantial Development Activities on such lands could pose the risk of contaminating other nearby lands within the Town through erosion, wind-blown dust, changes to erosion controls, or other damage to existing remedial features. As a result of these conditions and the involvement of CDPHE, Development Activities within the EROZ are prohibited unless the Developer obtains approval from CDPHE pursuant to a separate the VCUP program or other written approval from CDPHE for the Development Activity. Certain EROZ properties contain erosion control features, soil caps, surface grading, and passive water treatment features. It is the responsibility of the owner of the property to maintain those features and protect them against damage resulting from any proposed Development Activity.

- B. <u>Developer Submittals</u>. At the same time the Developer submits materials related to the Development Activity to CDPHE, the Developer shall provide copies of documents to the Environmental Officer.
- C. <u>Approvals from CDPHE</u>. If the Developer obtains approval from CDPHE, the Developer shall provide written documentation of the approval to the Town prior to initiating the Development Activity. Upon completion of the Development Activity, the Developer shall provide notice to the Town that the work has been completed to the satisfaction of CDPHE, including but not limited to any documentation from CDPHE with respect to same. A written approval from CDPHE obtained pursuant to this Section D.9 does not relieve the Developer from any other required approvals or requirements that may apply to the Development Activity.
- D. <u>Restrictive Covenants</u>. To the extent a property within the EROZ contains a land use covenant that is more restrictive than these Regulations, the more restrictive <u>covenant</u> requirement shall apply <u>in addition to these Regulations</u>, including additional notice or approval requirements that may be imposed by virtue of the land use covenant. Development Activities inconsistent with the more restrictive land use covenant shall not be permitted.
- E. <u>EROZ and RSOZ Overlaps</u>. To the extent a legal parcel lies within both the EROZ and RSOZ, only the portion of parcel that is within the EROZ is subject to this Section D.9, with the balance of the parcel being subject to the other provisions of these Regulations; however, in such situations, a Developer may elect to manage an entire parcel under this Section D.9 at its option.

**Commented [AR35]:** This change is based on a comment from CDPHE.



# How will parcels be remediated?



• Sampling already completed and planned should minimize the need for new sampling to determine which properties require remediation. If there is a need to complete additional sampling, that sampling will be completed.

- An individual site work plan will be produced. This plan will be discussed with the property owner. These individual site work plans will vary depending on the size and type of property and areas where development may or may not occur.
- A 12" layer of contaminated soil will be removed and taken to a soil repository provided by ARCO/BP. Rock, other debris and uncontaminated soil is not to go to the repository. Twelve inches of clean soil will be placed on areas where contaminated soil has been removed on top of a thin geotextile marker. The area will be revegetated according to the site work plan.
- Once the work has been completed, any changes to the plan will be noted in an "as-built" version of the plan. This "as-built" will be maintained in project records as is customary with septic permits. The property owner is to maintain the soil cap and take appropriate steps if the soil cap is disturbed.

## Sample of individual site work plan





## Institutional Controls: What is involved



### Development on parcels that may have lead content that exceeds CDPHE allowable levels



#### **Exempt activities include:**

- Soil disturbance of less than 1 cubic yard
- · Installation or repair of fences or decks
- Excavation for soil sampling and/or testing
- Emergency repairs

Are the proposed development activities exempt?



#### **Rico Soils Management Program:**

The Rico Soils Management Program would provide a team or an individual that would assist landowners and developers in creating an individual site work plan and ensure that remediation work would be conducted in accordance with that plan.