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Parks and Recreation Department

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CALCINE PAVED ROADS REMEDIATION PROJECT
ALMADEN QUICKSILVER COUNTY PARK
SANTA CLARA COUNTY, CALIFORNIA

FINAL REPORT

January 2018

Prepared by:
Santa Clara County Parks Department

TABLE OF CONTENTS

I. INTRODUCTION

The Calcine Paved Roads Remediation project is located in the eastern portion of Almaden Quicksilver County Park in Santa Clara County. This project is one of several remediation projects completed and planned within the park to remove mercury mine waste (calcines) from the greater Guadalupe River watershed.

During the time period between 1845 and 1975, mercury was mined in eight cinnabar processing sites within the 3,750 acres of Almaden Quicksilver County Park. Mercury was extracted from ore, known as Cinnabar, by heating the ore to high temperatures in on-site furnaces. The waste product, known as calcines, was discarded to areas near the furnaces, including slopes, gullies and swales. The waste material was also used to pave the unpaved access trails. The most productive ore bodies were exhausted by the mid- 20th century and mining in the New Almaden District ceased altogether in the early 1970s. In 1975, the Santa Clara County Parks and Recreation Department purchased the former mining complex and undertook extensive remedial actions in the 1990s to reduce human health risk due to potential exposure to mercury. That effort included removal of all known calcine and furnace dust piles around the main retort sites, followed by capping, grading and revegetation. Since that time, there has been concern with the environmental impacts of the mercury mining operations. These impacts include erosion and downstream transport of mercury contaminated wastes, methylation and bioavailability to plant and animal life.

The Calcine Paved Roads Remediation Project consists of the removal of calcine waste material used by the mining company to pave and stabilize trails from each mine to the on-site furnaces. The waste material, installed along trails to a depth ranging from 4" to 6" deep, is excavated, loaded, and transported to the on-site landfill located near the top of the ridge on Mine Hill, near the juncture of Castillero and Wood Road Trails. Following excavation, the trails are graded and compacted to receive a 4" to 6" layer of Class II Aggregate, also graded and compacted. The goal of this operation is to reduce the amount of mercury sulfate and concentrated mercury entering into Randol, Los Capitancillos, Deep Gulch, and Los Alamitos Creeks which flow into the Guadalupe River watershed and eventually to San Francisco Bay.

As a direct result of mining operations, the drainage swales, streams and landscape were left with deposits of calcine rock material containing mercury which, when broken down into mercury sulfate, can be absorbed and detrimentally affect the fish and wildlife downstream. This project helps to address environmental impacts that have resulted from erosion and downstream transport of mercury contaminated waste. The objectives of this project were the following:

1. to excavate and remove the concentrated calcine materials within the trails and drainage ditches
2. construct new culverts, remediate existing culverts, establish improved drainage patterns, and install erosion preventive material.
3. Transport calcine material, deposit, spread, cover with clay and compact in an on-site protected repository.
4. Construct contouring of the trails (rolling dips and outslope drainage) to direct surface water to drainage swales, ditches, and culverts.
5. Prevent further contamination of the downstream waterways leading to San Francisco Bay.

6. Install Class II Aggregate paving material to fill the void of the removal of the calcine material and to provide a compacted paving material that helps to prevent future erosion along the trails.
7. Hydroseed all areas disturbed during construction including Open Cut Repository, staging and equipment storage areas, stockpile areas, and sides of trails to help prevent and reduce erosion.

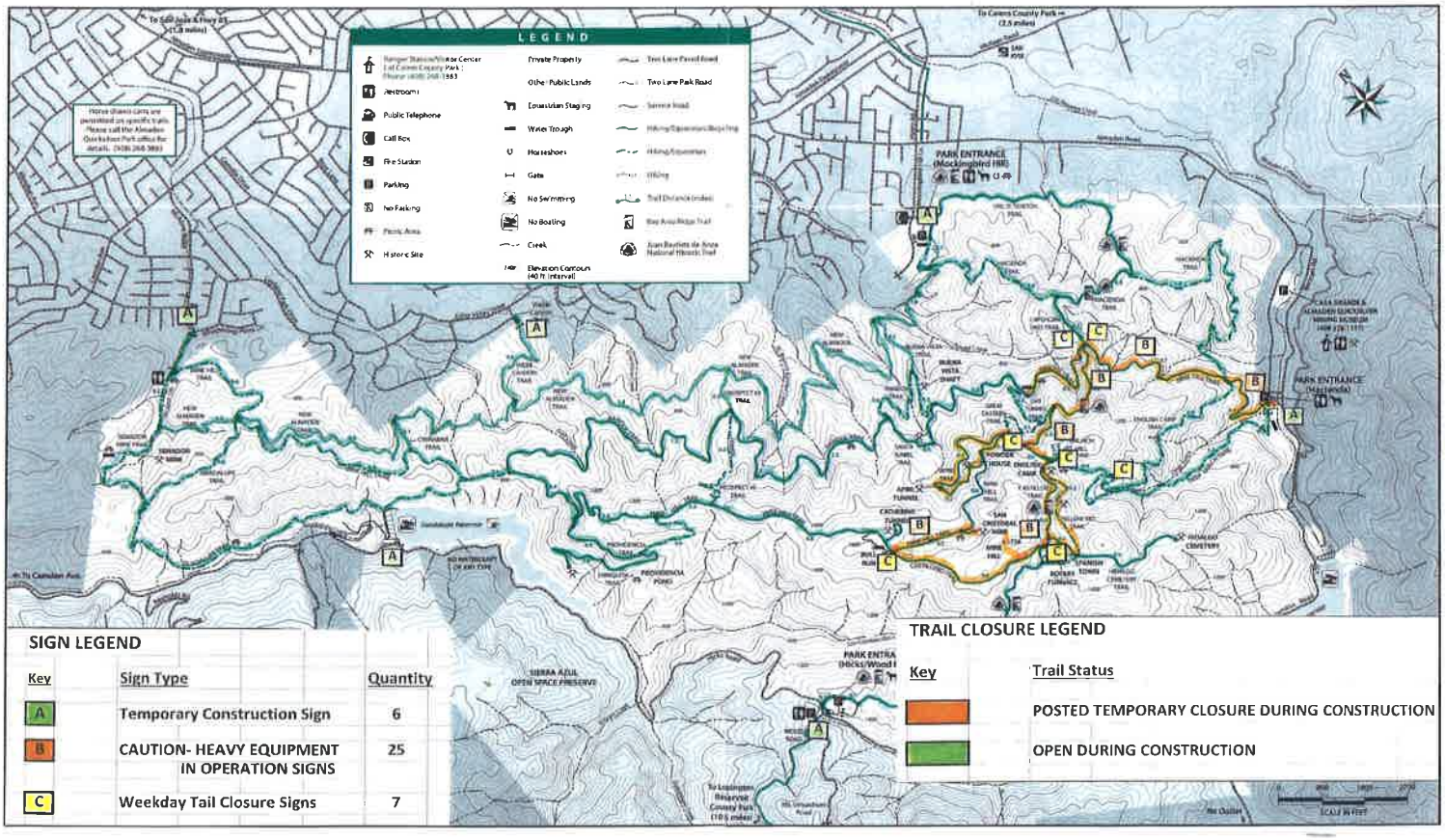
The County of Santa Clara worked with a consultant, AECOM, Inc. to design the remediation project, address all necessary permitting requirements for agency approval, and to provide on-site inspections, and environmental expertise during the course of construction of the project. In addition, AECOM provided expertise and monitoring in wildlife biology and environmental protection of endangered plant and animal species.

Construction of this project began on June 21, 2017 and was substantially complete on October 15, 2017. Culvert construction and restoration work was completed by October 13, 2017. During this time frame, trail access on Mine Hill Trail from the Hacienda Park Entrance was open to the public, however, an advisory to use caution was posted on the park's website and "Caution: Heavy Equipment in Operation" signs were posted from the park entrance to the top of Mine Hill on Castillero trail. All trails, including Randol, Mine Hill, Castillero, Yellow Kid, Hidalgo Cemetery, April, and San Cristobal Mine remained opened to the public during construction except for those days when excavation occurred. Trails were closed or detoured at the nearest intersection when there were Health and Safety precautions due to heavy equipment in operation and/or the risk of exposure to airborne mercury dust.

The County's construction contract is with Innovative Construction Solutions, Inc., in the amount of $1,591,406.00. Of this amount, $377,185.00 has been provided by the San Francisco Bay Water Quality Improvement Fund, through a grant from the Environmental Protection Agency. The remainder of the funds is budgeted from the County Parks Charter Fund.

Almaden Quicksilver

COUNTY OF SANTA CLARA
Regional Parks and Recreation Areas



SIGN LEGEND

Key	Sign Type	Quantity
A	Temporary Construction Sign	6
B	CAUTION- HEAVY EQUIPMENT IN OPERATION SIGNS	25
C	Weekday Tail Closure Signs	7

TRAIL CLOSURE LEGEND

Key	Trail Status
	POSTED TEMPORARY CLOSURE DURING CONSTRUCTION
	OPEN DURING CONSTRUCTION

II. SUMMARY OF PROJECT GOALS AND RESULTS IN REDUCING MERCURY IMPACTS IN THE GUADALUPE RIVER

1. **GOAL: Remove Mercury Mine Waste Deposits (Calcines) from unpaved trails, swales, and drainage ditches on Mine Hill, Castillero, Yellow Kid, April, Randol, Hidalgo Cemetery, and San Cristobal Mine Trails and thereby implementing the goal to reduce Guadalupe River's mercury total maximum daily load (TMDL).**

   RESULTS: Calcine deposits and their depths were identified by a series of soil borings during the early stages of design. They are mostly easily recognizable when excavating, however, many trails were paved with the calcine waste material and therefore visible on the surface. Calcine rock is a reddish to pinkish color and when ground, is distinguishable from clay and silty soil. As excavation commenced, it was discovered that there were greater depths and quantities of calcines on some trails and a lesser amount on other trails. The calcines were found to be deeper than estimated in the trail section on Mine Hill Trail between Castillero and San Cristobal Mine, Castillero, Yellow Kid and also on Hidalgo Cemetery Trail. In areas farther away from the mines and furnaces, the quantities of calcines used to pave the trails were less than what was estimated. By the end of excavation, there were 269 fewer cubic yards deposited in the landfill than from the estimated quantity in the bid items. The final quantity removed, transported and delivered to the SFOC landfill was 3,831 cubic yards.

   As part of the Health and Safety Requirements of the project, mercury mine waste, when disturbed, can become airborne (HgS)and may be a safety concern if ingested into the lungs or swallowed. Furthermore, mercury mine waste can be absorbed through the skin. Therefore, Personal Protective Equipment (PPE) and air monitoring equipment, which detects levels of mercury concentration in the air, were required before beginning construction.

   The monitoring equipment used included 3 separate Jerome 431-X Mercury Vapor Analyzers. Each equipment unit came pre-calibrated from Pine Environmental. One piece of equipment was located at the San Francisco Open Cut Landfill, and two were located on Castillero and Yellow Kid Trails.

   After all health and safety requirements were met, the Contractor successfully removed and transported the Calcine waste to San Francisco Open Cut (SFOC) by way of truck transport through the park site on park trails. By removing the mercury waste from the trails and drainage swales alongside the trails, the project implemented the goal to reduce Guadalupe River's mercury total maximum daily load (TMDL).

2. **GOAL: Construct new culverts, remediate existing culverts, establish improved drainage patterns, and install erosion preventive material.**

   RESULTS: The contractor was successful in removing and replacing three (3) undersized storm drainage culverts with new pvc coated corrugated metal pipe (CMP) culverts. On

Randol Trail, an existing 15" culvert was upgraded to a 36" culvert. On Castillero Trail, an existing 18" culvert was upgraded to a 36" culvert and an existing 12" culvert was upgraded to an 18" culvert. Included in this construction was the installation of rock slope protection and rip rap preceding entry and exiting each culvert.

In addition to new culverts, there were six (6) existing culverts to remain that required cleaning of debris within the culvert and drainage ditch modifications that included either rock filled drainage swales to the inlet or earthen drainage swales to the inlet. This included four (4) 18" culverts on Randol, Mine Hill, Castillero, and Yellow Kid Trails, one (1) 36" culvert on April Trail, and one (1) 12" culvert on April Trail.

Two specific locations, one on April Trail, and one on Yellow Kid Trail, were identified as susceptible to trail erosion. Armored rock crossings consisting of 18" depth drain rock (1 ½" diameter) with 6" Class II aggregate surface helps stabilize the trail from erosion and impassable storm conditions. In six additional locations where rolling dips (drainage outlets) occurred, rip rap aprons were installed downslope of the trail dip, also to prevent erosion on the downslope. These occur on Randol Trail (2 locations), Castillero Trail (1 location), and April Trail (3 locations).

3. **GOAL: Transport, deposit, spread, cover and compact the calcine material in an on-site protected repository.**

RESULTS: Any detectable and measurable amount of excavated soil from the designated trails and drainage ditches containing calcines was required to be transported to the San Francisco Open Cut Landfill (SFOC). Prior to transporting calcine waste material to the SFOC, 1'-6" depth of clay cap soil was removed and stockpiled to the rear of the site for later placement over the calcine material. As a result of a much larger quantity of calcine material (3831 cubic yards) as compared to the previous phase of work at Senador Mine Restoration Project (514 cubic yards over 10,000 square feet) the contractor was required to deposit the calcines and clear a larger surface area. Much of the larger surface area did not have the 1'-6' depth of clay cover to stockpile. After 3,831 cubic yards of calcine waste material was spread and compacted in the Open Cut Landfill over 30,000 square feet, the landfill required additional clay soil to cap the calcines at a consistent depth of 2 feet. Consequently, additional quantities of clay cap soil totaled 1,048 cubic yards.

After completion of compaction, clay cover and final compaction, the Contractor excavated, formed, and installed two 20-foot long reinforced concrete V-Ditch extensions to meet the new elevations of the landfill and provide drainage requirements to the Open Cut Repository. This completed all outstanding work at the SFOC.

4. **GOAL: Construct contouring of the trails (rolling dips and outslope drainage) to direct surface water to drainage swales, ditches, and culverts.**

RESULTS: For environmental protections and storm water pollution protection practices (SWPPP), wattles were installed to prevent construction material (including concrete mix, fuel, adhesives and solvents) from entering the watershed via drainage swales, culverts, and

other drainage outlets. After removal of the calcine deposits from the trails and repaving with Class II Aggregate, some of the wattles were acting as dams to the natural flow of the drainage. Many of these wattles were either removed or relocated with openings to facilitate drainage on the edges of the trails. In some locations, outslope drainage of trails required excavating a trench swale or ditch to a lower elevation.

There were 55 rolling dips indicated on the plans. After construction of the new Aggregate paving, it was apparent that 55 rolling dips were far too many than needed. Each rolling dip was designed and detailed with a total length ranging from 75-100' in length and some situated as close as 150 – 200 feet apart. Constructing rolling dips with such undulation in topography combined with cross-slope conditions which necessitated earthen or rock-filled drainage ditches further complicated the drainage conditions of the trails.

From results of a field evaluation by Ranger, Maintenance and Construction staff, the total number of rolling dips was reduced from 55 to 17. There were twelve (12) areas identified where further modifications for out-slope drainage was needed. At the conclusion of this work, the drainage requirements were met with satisfaction to all.

5. <u>GOAL:</u> **Prevent further contamination of the waterways leading to the Guadalupe River and San Francisco Bay by removing the calcine paving deposits on the trails and drainage ditches, sealing calcines with compacted clay at the SFOC, and implementing the reduction of the Guadalupe River's Mercury Total Maximum Daily Load (TMDL).**

RESULTS: By removing calcine material from the unpaved trails and drainage ditches, the project prevents further contamination of the waterways leading to the river and bay. The Contractor placed a two-foot clay cover over 3,831 cubic yards of calcine waste material in the SFOC in an area of approximately 30,000 square feet.

In summary of these Goals and Results, the goal had been achieved to:

1. Reduce the mercury impacts in the Guadalupe River watershed and the Mercury Total Maximum Daily Load (TMDL).
2. Reduce the amount of erosive soil and contaminated areas within the watershed.
3. Protect biological species – plant and animal
4. In terms of overall quantities of Mercury Calcines (HgS, HgSe, & Hg) prevented from entering and affecting the downstream environment it is estimated as follows:
   A. Of 3641 cubic yards removed, approximately 90% or 3277 cubic yards were calcines.
   B. Of 190 cubic yards removed, approximately 40% or 76 cubic yards were calcines.

6. <u>GOAL:</u> **Install Class II Aggregate paving material to fill the void of the removal of the calcine material and to provide a compacted paving material that helps to prevent future erosion within the trails.**

RESULTS: The bid quantity listed in the contract documents for Class II aggregate paving was 4500 cubic yards. The final quantity needed to complete the project was 4806.55 cubic yards, an increase of 6.8% over the estimate. The additional amount was needed for the

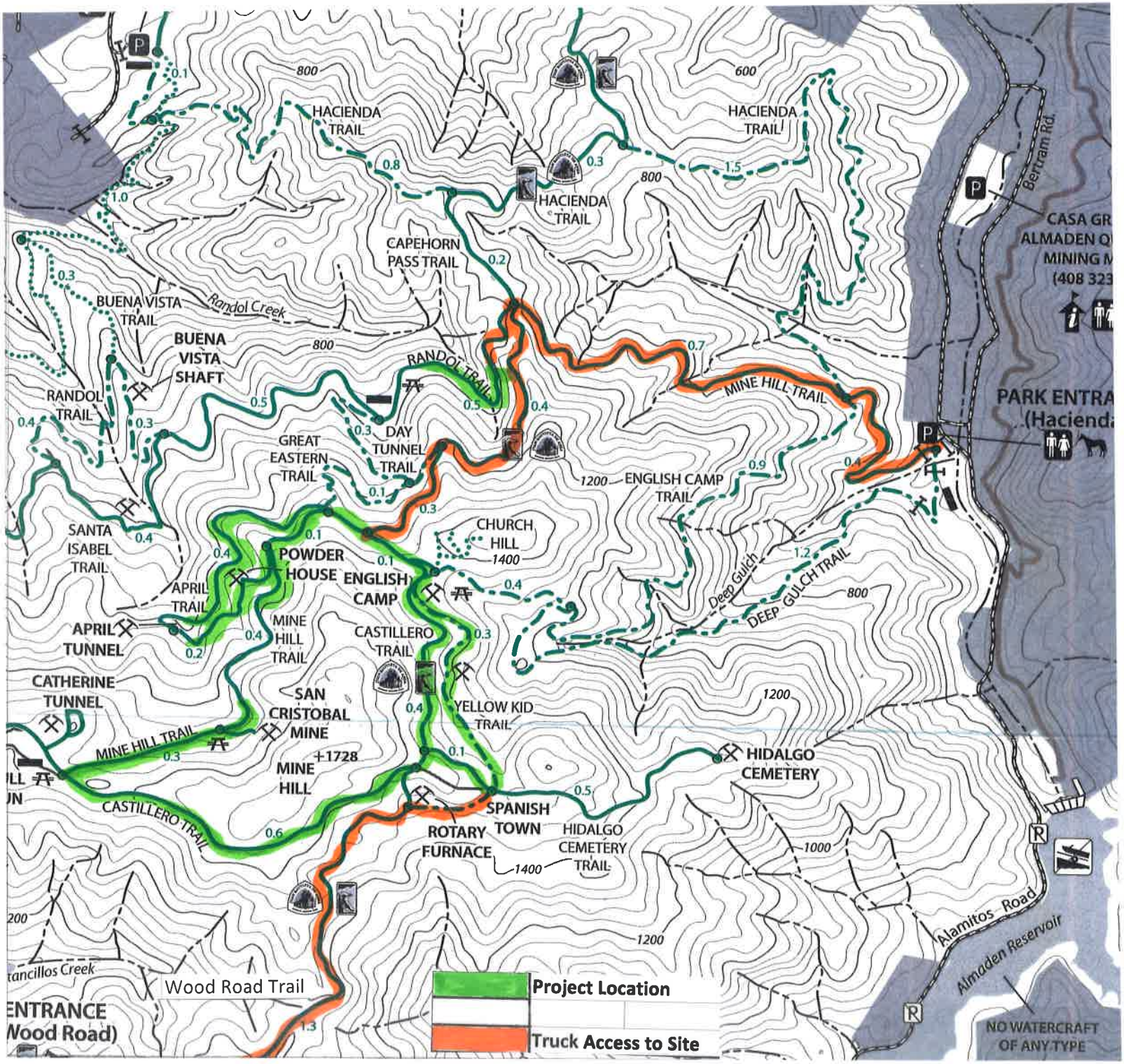
increased width of Yellow Kid Trail. At the time of commencement of the project, Yellow Kid Trail was barely passable with overgrown vegetation draping over the path. The drawings indicated that the trail was only five feet wide and to be maintained as five feet wide, further complicating the need to allow the heavy equipment to clear, grade, excavate the calcines and pave the trail.

The project manager directed the contractor to widen the trail to ten feet in order to facilitate excavation and construction of improvements. It also allowed the County and Contractor to better assess the drainage concerns along this trail.

7. **GOAL: Hydroseed all areas disturbed during construction including Open Cut Repository, staging and equipment storage areas, stockpile areas, and sides of trails**

RESULTS: Superior Hydroseeding began work on November 13th to hydroseed all areas disturbed during construction. The scope of work included both sides of trails, drainage ditches, areas surrounding culverts, construction trailer location, construction staging and storage areas, stockpiling areas, SFOC, and miscellaneous truck turn-around and grading areas. Superior concluded their work on December 4th. A 60 Day Maintenance Period will conclude on February 2, 2018.

Of the 5.2 acres estimated, the County and the Contractor agreed on a percentage of the Native Seed Mix as follows: 1.2 acres- Mesic Mix; 4 acres Xeric Mix. Most of the Xeric Mix recommended was located in the drier, relatively flat areas of the site such as the staging areas and the SFOC.

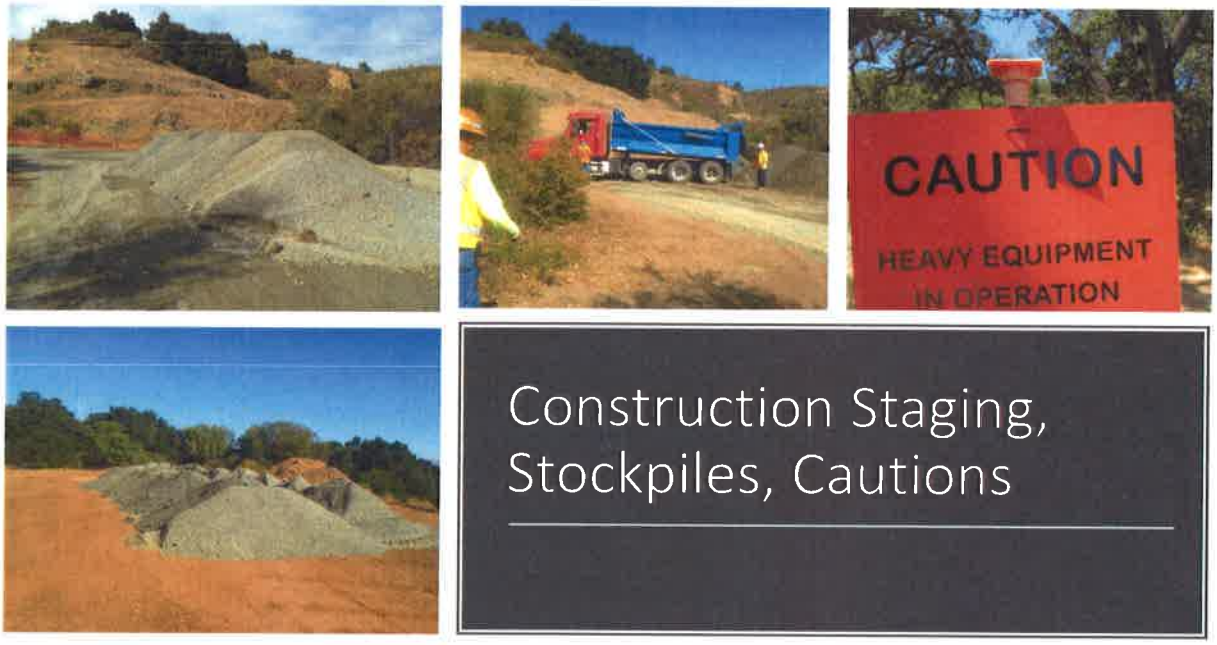


Site Map of Calcine Paved Roads Remediation Project

III. PROJECT COMPONENTS

- Mobilization and Pre-Construction Activities.
  This work involved the Contractor providing a secure staging area for administrative work, construction materials, vehicles and equipment, porta-potties, eyewash station, project construction signs, barriers, fences, and detour and caution signs.

- Construction Stockpiling
  The Contractor chose two areas for construction stockpiling of aggregate and rock. One was located near their administrative office shed on Castillero at Hidalgo Cemetery Trail, and the other was located in a flat area on Castillero near the Upper Mine Hill/Castillero Trail junction.



- Site Preparation.
  This work involved the submittal of a Storm Water Pollution Prevention Plans (SWPPP) and Requirements, pre-construction video of the truck-hauling route to the landfill, erosion and sediment control, biological and wildlife awareness training, protection of sensitive plant species, and protection of trees by fencing off the dripline of the trees.

- Pre-Construction Submittals
  This work included submittals prior to commencement of project construction and included: Fire Protection, Health and Safety, Air Monitoring, Water, and Noise Pollution Control Plans, temporary signage, Schedule for the project, hazardous and/or regulated materials storage list, sequence of work, quality control, registration of hazardous waste haulers, and Schedule of Values. Schedule of Values included a breakdown of costs in the lump sum of the Schedule of Quantities, Bid Item Number 1. It included specific costs for soil and compaction testing, preliminary and final survey work and related preparation work.

- Clearing, Grubbing, Stripping
  Work included the clearing and grubbing of plant material within the scope of work. Much of this work included the removal of poison oak, loose rock material, overgrown Coyote Brush and Scotch Broom species. Much of this work was located on the sides of trails, Unknown Trail access, and the clearing of Yellow Kid Trail.




Unknown Trail #2- Existing Conditions and Excavation; Unknown Trail #1 calcines not found

Yellow Kid Trail – Prior to Excavation

Castillero Trail | Pre-Construction at Culvert Location

- Excavation
  Excavation included the removal of calcine waste material used to pave the trails. Excavation also included the removal of 1.5' of existing clay cover over the SFOC landfill to expose the calcine deposits and excavating additional clay cap soil and transport to the SFOC landfill.



Castillero Trail - Excavation

April Trail Excavation of Calcines

April Trail under excavation revealed large boulders and rocks

Access to SF Open Cut - Excavation

- Truck Hauling Calcines to the Open Cut Landfill
  Calcine materials excavated from the trails were transported through the park, utilizing unimproved fire roads/trails to the San Francisco Open Cut (repository) located on Mine Hill within the park. During truck hauling, a small pilot vehicle preceded the trucks to alert hikers and bikers of on-coming trucks. Prior to hauling on this route, the trail was watered or dampened by a water truck which minimized dust production.

SF Open Cut – Prior to Removal of Clay Cap Soil

- Application of Calcines in the San Francisco Open Cut Landfill (SFOC repository)
  This procedure included the following steps:
  1. Strip the top 1.5 feet of clay cover over the existing calcine deposits and stockpile to a far corner/side of the spread area.
  2. Transport additional clay soil to supplement the cover being removed to provide a uniform two foot cover over the new calcine deposits.
  3. Transport calcines from each designated trail to the SFOC
  4. Spread the calcines and compact in 8" lifts, compact to 90% density.
  5. Deposit and spread two feet of clay cover over the calcines. Compact to 90% density.
  6. Hydroseed the disturbed areas at the end of project.

SF Open Cut

- Transport and Spreading of Calcines on SF Open Cut

The San Francisco Open Cut repository (SFOC) is located on Mine Hill, near the juncture of Castillero Trail and Wood Road Trail. Approximately 30,000 square feet of clay topsoil was excavated to prepare for the deposit of over 3800 cubic yards of calcine waste. Photo below illustrates the excavation and stockpiling of the existing soil to expose the calcine deposits.

Photos below illustrates the import and spreading of additional clay soil to cover the calcine waste material prior to leveling and compaction.

- Grading, Scarifying and Compaction of Trails
  The contractor began work on this project on Mine Hill at San Cristobal Mine Trail. Almost immediately, the contractor encountered an increased amount of calcine material and large boulder type rocks. The contractor broke several blades on his excavator while attempting to level and compact the trail for compaction. The plans called for the subbase material under the calcines to be scarified and mixed with aggregate to form a variable aggregate/dirt pavement.

Upper Mine Hill & San Cristobal Mine Trail

- Upper Mine Hill Trail included an excess of calcines, deep, with large rocks and boulders beneath - making construction difficult.

The Contractor discovered large diameters of rock and clay beneath the calcine material and they expressed concern that the subsoil would not readily mix well with the aggregate. As stated, when blended with the aggregate, the final product would produce a more dense or impervious layer that would cause increased erosion over time. Furthermore, the residual calcine deposits mixed with the aggregate and bringing it to the surface would not be compatible with the goal of the project to remove the calcines as paving material.

- <u>New Culvert Construction</u>
  This project included the construction of three new culverts to take the place of existing culverts that were undersized.

1. Randol Trail: The location for the upgrade in size of the culvert was on a U-shaped bend in the trail where a major swale crossed the path. Formerly a 15" culvert, the culvert was removed and replaced with a 36" Corrugated Metal Pipe (CMP) culvert that included the installation of an earthen drainage ditch extending 100 feet from each direction of the culvert. Also included was the installation of Rock Slope Protection (geotextile) and Rip Rap on the entrance and exit sides of the culvert.

2. Castillero Trail: Located near the intersection of Castillero and the SFOC access trail, this location produces substantial runoff from the open cut and the access trail. Formerly an 18" culvert, the culvert was removed and replaced with a 36" CMP culvert. A rockfilled V-Ditch was installed to drain the access trail and divert the water to the entrance of the culvert. An existing concrete V-Ditch from the open cut also feeds into this culvert. Also included was the installation of Rock Slope Protection and Rip Rap at the entrance and exit sides of the culvert.
3. Castillero Trail-Yellow Kid: This location has a historic headwall on the upslope side of the trail at the culvert. Significant water is produced off the hillside and through a reverse super-elevation of the cross-section of the trail, draining towards the hill rather than away. An earthen ditch, 1000 feet in length, drains the hillside and trail to the entrance of the culvert. Formerly a 12" culvert, the culvert was removed and replaced with an 18" CMP culvert. Also included was the installation Rock Slope Protection and Rip Rap on the exit side of the culvert.

Castillero Trail 36" Culvert with Rip Rap

- Installation of culvert, rip rap and connection to concrete V ditch from SFOC

Castillero Trail

- Cleaning of Headwall, adding a 18" CMP culvert and Earthen Drainage Ditch

- Modifications to Existing Culverts
  This project included the modification of six existing culverts either through cleaning, adding rip-rap aprons, and/or out-slope drainage and drainage ditches.

1. Mine Hill: On Mine Hill, near San Cristobal Mine Trail an existing 18" culvert is located near the junction of these two trails. San Cristobal Trail is a relatively steep sloped trail starting at the mine and flowing on both sides of the trail towards the existing culvert. Over the years, sediment has built up near the low point and water has puddled and cannot be released downhill. Located on the north side of the hill and in the shade, it is constantly wet or moist during the winter months.
   A swale was constructed and directed toward the entrance to this culvert on the uphill side and out-slope drainage was constructed at two locations on the downhill side. The culvert was also cleaned out.

Mine Hill at San Cristobal Trail Intersection

Drainage to an existing culvert was required on both sides of the trail. Steep grade from San Cristobal Mine Trail to Mine Hill trail required outslope drainage on the downhill side and a constructed swale on the uphill side leading to the existing 18" culvert.

2. Castillero Trail: This existing 18" culvert is located approximately half-way between the SFOC access trail and Wood Road Trail. When the project began, this culvert was completely obstructed on both ends with vegetation, primarily Pampas Grass. The contractor removed the Pampas Grass and other vegetation surrounding the culvert, created a 20 foot length earthen drainage ditch to the entrance and installed a rip-rap apron on the downside of the culvert.

3. Yellow Kid Trail: This existing 18" culvert served to drain a major swale created from a retired mine shaft cavity. The culvert was cleaned and vegetation around it removed. Out-slope drainage was constructed to prevent settling water at this location.

Yellow Kid Trail – Existing Culvert prior to rip rap installation; 20' x 20' x 5' depth rip rap downslope of trail

4. Upper April Trail: This existing 12" culvert provides drainage for a significant swale. A rip-rap apron was constructed downslope of the culvert and an earthen drainage ditch was installed for 300 feet on the upslope side of the trail feeding into the entrance to this culvert.
5. Upper April Trail: This existing 36" culvert on the north side of the hill is located in a densely wooded area. A 100 foot rock filled V-Ditch was installed on the upslope side of the trail leading to the entrance to this culvert.

6. Randol Trail: Two rip-rap aprons were constructed- both were installed at rolling dips where minor swales produced overland water onto the trails. An earthen drainage ditch was constructed on the uphill side of the trail to the existing 18" culvert.

- Armored Rock Crossings – April and Yellow Kid Trails
  Two armored rock crossings were constructed to help stabilize the trails, provide drainage, and prevent puddling and erosion. On April Trail, a 25 foot by 25 foot armored crossing was constructed and consisted of 18" of 1 ½" drain rock underneath 6" of Class II aggregate. Rip-rap

was installed on the downhill side of trail. On Yellow Kid Trail, a 20 foot long by 10 foot wide armored crossing was installed at a location where rip-rap was installed with dimensions 20' x 20' x 5' depth.

April Trail – Armored Rock Crossing

Yellow Kid Armored Crossing

- Hydro-Seeding
  This item of work consists of the application of hydroseed mulch to all disturbed areas of construction. This includes the sides of excavated and graded calcine paved trails, the SFOC repository, the Wood Road trail area (clay soil borrow site), construction equipment staging area, stockpile areas, construction trailer area and driveway, and all areas where construction vehicles and equipment disturbed the native landscape.
  There were two types of hydroseed specified: a Mesic Mix (moist mix) and a Xeric Mix (drier mix). Of the 5.2 acres identified, 4 acres were hydroseeded with the Xeric Mix; mostly located on more flat or gentle sloping large areas, and 1.2 acres hydroseeded with the Mesic Mix, mostly located along the trails and shaded areas.

- Clean-Up and Demobilization
  This work consists of clearing and cleaning of the staging area, construction stockpile and storage areas, removal of construction fencing and temporary construction and detour signs, provide as-built drawings and survey information, punch-list implementation, and attend a close-out conference.

IV. PARTNERSHIPS and MEETINGS

This project was coordinated with:

- The County Board of Supervisors (BOS), County Attorney's Office and the following coordinating agencies:
- Santa Clara County Parks Department, Construction Services Division
- Innovative Construction Solutions, Inc. (I.C.S.), General Contractor
- AECOM, Design Consultant
- Environmental Protection Agency (EPA)
- San Francisco Estuary Project (SFEP)
- Association of Bay Area Governments (ABAG)
- San Francisco Bay Regional Water Quality Control Board (SFB)(RWQCB)
- State Department of Toxic Substance Control (DTSC)
- U.S. Army Corps of Engineers (Permits)
- California Department of Fish and Wildlife (CDFW)
- United States Department of Fish and Wildlife Services (DFWS)

September 25, 2017: Progress Meeting with the Regional Water Quality Control Board: James Muller, Tahsa Sturgis, Carrie Austin; Joe Bandel (AECOM); ICS staff and County staff.

January 30, 2018: End of Project Meeting with members of the New Almaden Community. Tom McLauchlan and Mark Frederick presented a power point presentation of the construction progression followed by a question-answer session. There were 10 people in attendance.

V. Summary of Monitoring and Testing Results

1. Mercury Monitoring Equipment Device and Log

AIR MONITORING LOG

Date: 07/27/2017
Project Name: Calcine Paved Roads Remediation - SF Open Cut
Project No.: NC-17-1106
Name: Gary

CALIBRATION RECORD			
Time	Location	Monitoring Device	Comments

DAILY LOG					
Time	Monitoring Device	Up-Wind	Down-Wind	Differential	Comments
7:30	Jerome 431x	0.003	0.000	0.003	
8:15	"	0.001	0.000	0.001	
10:00	"	0.002	0.004	0.002	
11:48	"	0.004	0.004	0.000	
12:35	"	0.001	0.001	0.000	
2:00	"	0.001	0.005	0.004	
3:30	"	0.001	0.001	0.000	

AIR MONITORING LOG

Date: 7/27/2017
Project Name: Calcine Paved Roads Remediation - Castellero
Project No.: NC-17-1106
Name: Gary

CALIBRATION RECORD			
Time	Location	Monitoring Device	Comments

DAILY LOG					
Time	Monitoring Device	Up-Wind	Down-Wind	Differential	Comments
7:31	Jerome 431x	0.000	0.001	0.001	
8:38	"	0.001	0.000	0.001	
9:46	"	0.000	0.000	0.000	
11:34	"	0.002	0.001	0.001	
12:30	"	0.001	0.001	0.000	
2:15	"	0.013	0.011	0.002	
3:15	"	0.002	0.012	0.010	

AIR MONITORING LOG

Date: 7/28/2017
Project Name: Calcine Paved Roads Remediation - Castellero & SF Open Cut.
Project No.: NC-17-1106
Name: Gary

CALIBRATION RECORD			
Time	Location	Monitoring Device	Comments

DAILY LOG					
Time	Monitoring Device	Up-Wind	Down-Wind	Differential	Comments
	AT Castellero				
7:20	Jerome 431x	0.003	0.004		
8:45	"	0.002	0.003		
10:00	"	0.002	0.003		
11:08	"	0.002	0.003		
12:35	"	0.005	0.003		
1:45	"	0.004	0.001		
3:10	"	0.004	0.001		
	AT SF Open Cut.				
7:48	Jerome 431x	0.001	0.001		
8:55	"	0.001	0.001		
10:23	"	0.001	0.002		
11:30	"	0.001	0.001		
11:58	"	0.003	0.003		
2:00	"	0.002	0.003		
3:30	"	0.000	0.001		

AIR MONITORING LOG

Date: 7/31/2017
Project Name: Calcine Paved Road Remediation
Project No.: NC-17-1106
Name: Garry

CALIBRATION RECORD			
Time	Location	Monitoring Device	Comments

DAILY LOG					
Time	Monitoring Device	Up-Wind	Down-Wind	Differential	Comments
	At San Christobal				
7:05	Jerome 431x	0.000	0.000		
8:15	"	0.002	0.003		
9:30	"	0.004	0.000		
10:40	"	0.000	0.000		
12:10	"	0.000	0.000		
1:15	"	0.001	0.001		
3:10	"	0.003	0.000		
	Station at SF Open Cut.				
7:30	Jerome 431x	0.000	0.001		
8:42	"	0.000	0.000		
10:00	"	0.001	1.000		
12:30	"	0.002	0.001		
1:48	"	0.002	0.000		
2:58	"	0.001	0.001		
3:30	"	0.003	0.002		

AIR MONITORING LOG

Date: 8/1/2017
Project Name: Calcine) Yellow kid & SE Open Cut
Project No.:
Name:

CALIBRATION RECORD

Time	Location	Monitoring Device	Comments

DAILY LOG

Time	Monitoring Device	Up-Wind	Down-Wind	Differential	Comments
	Station @ Yellow kid Trail				
7:50	Jerome 431X	0.001	0.002		
8:51	"	0.003	0.000		
9:59	"	0.000	0.001		
11:00	"	0.001	0.000		
12:11	"	0.003	0.001		
1:08	"	0.004	0.000		
2:10	"	0.001	0.000		
	Station @ SE Cut Open				
7:56	Jerome 431X	0.000	0.002		
8:50	"	0.000	0.001		
9:58	"	0.001	0.001		
11:00	"	0.002	0.001		
12:00	"	0.001	0.002		
2:00	"	0.003	0.002		
2:15	"	0.003	0.001		

AIR MONITORING LOG

Date: 8/02/2017
Project Name: Calcine - Paved Road Remediation
Project No.: NC-17-1106
Name: Gentry

CALIBRATION RECORD

Time	Location	Monitoring Device	Comments

DAILY LOG

Time	Monitoring Device	Up-Wind	Down-Wind	Differential	Comments
		Station @ Pine Mill			
8:10	Jerome 431X	0.003	0.000		
9:05	"	0.003	0.001		
10:45	"	0.000	0.001		
11:55	"	0.000	0.000		
12:55	"	0.000	0.001		
1:30	"	0.002	0.001		
2:30	"	0.001	0.000		
		Station @ Yellow kid.			
7:35	Jerome 431X	0.000	0.002		
8:45	"	0.001	0.002		
10:00	"	0.000	0.000		
11:55	"	0.001	0.001		
12:48	"	0.002	0.002		
2:10	"	0.000	0.001		
2:17	"	0.000	0.000		
		Station @ SE open cut.			
7:50	Jerome 431X	0.000	0.000		
8:40	"	0.001	0.001		
9:35	"	0.003	0.000		
11:30	"	0.002	0.001		
12:58	"	0.001	0.001		
2:32	"	0.002	0.000		
2:40	"				

AIR MONITORING LOG

Date: 8/22/2017
Project Name: Calcine Paved Road Remediation.
Project No.: NC-17-1106
Name: Gentry.

CALIBRATION RECORD

Time	Location	Monitoring Device	Comments

DAILY LOG

Time	Monitoring Device	Up-Wind	Down-Wind	Differential	Comments
		Station @ yellow kid.			
8:10	Jerome 431X	0.000	0.001		
9:15	"	0.001	0.000		
10:30	"	0.000	0.000		
11:30	"	0.002	0.002		
1:00	"	0.002	0.002		
2:18	"	0.001	0.001		
3:12	"	0.001	0.001		
		Station @ SE Open Cut			
7:45	Jerome 431X				
8:45	"	0.001	0.002		
10:25	"	0.001	0.002		
11:24	"	0.002	0.001		
1:38	"	0.0016	0.000		
2:45	"	0.000	0.000		
2:55	"	0.000	0.000		

AIR MONITORING LOG

Date: 8/4/2017
Project Name: Calcine Paved Road Remediation
Project No.: NC-17-1106
Name: Gentry.

CALIBRATION RECORD

Time	Location	Monitoring Device	Comments

DAILY LOG

Time	Monitoring Device	Up-Wind	Down-Wind	Differential	Comments
	Station @ Yellow kid Trail.				
7:30	Jerome 431X	0.000	0.001		
8:15	"	0.001	0.001		
9:30	"	0.000	0.000		
10:15	"	0.000	0.000		
11:10	"	0.000	0.000		
1:38	"	0.001	0.001		
2:10	"	0.001	0.001		
	Station @ Pine mill Trail.				
7:15	Jerome 431X	0.001	0.001		
8:40	"	0.000	0.000		
9:50	"	0.000	0.000		
10:50	"	0.001	0.000		
11:55	"	0.001	0.001		
12:45	"	0.000	0.000		
1:50	"	0.000	0.001		
3:38	"	0.001	0.000		
	Station @ Calcine Trail				
11:20	Jerome 431X	0.000	0.000		
12:13	"	0.000	0.000		
1:35	"	0.001	0.000		
2:45	"	0.001	0.000		
3:17	"	0.000	0.000		
	Station @ SE Cut Open.				
7:15	Jerome 431X	0.001	0.000		
8:40	"	0.000	0.001		
9:41	"	0.000	0.001		
10:50	"	0.000	0.001		
11:44	"	0.001	0.000		
12:48	"	0.000	0.000		
1:45	"	0.000	0.000		
2:38	"	0.000	0.000		
3:15	"	0.000	0.000		

AIR MONITORING LOG

Date: 8/7/2017
Project Name: Calcine Paved Road Remediation.
Project No: NC-17-1106
Name: Garry:

CALIBRATION RECORD

Time	Location	Monitoring Device	Comments

DAILY LOG

Time	Monitoring Device	Up-Wind	Down-Wind	Differential	Comments
		Station @ Yellow Kid Trail.			
7:15	Jerome 431x	0.000	0.001	0.001	
8:15	"	0.003	0.001	0.001	
9:55	"	0.001	0.000	0.001	
9:57	"	0.002	0.000	0.002	
11:50	"	0.004	0.001	0.003	
1:19	"	0.003	0.001	0.002	
2:38	"	0.001	0.002	0.001	
3:18	"	0.002	0.002	0.000	
		Station @ April Trail.			
7:30	Jerome 431x	0.001	0.004	0.003	
8:55	"	0.005	0.004	0.001	
9:15	"	0.002	0.001	0.001	
10:44	"	0.003	0.004	0.001	
11:45	"	0.003	0.000	0.003	
1:09	"	0.002	0.000	0.002	
2:12	"	0.001	0.001	0.000	
3:43	"	0.001	0.002	0.001	
		Station @ SF Open Cut			
7:45	Jerome 431x	0.001	0.000	0.001	
8:43	"	0.005	0.002	0.003	
9:18	"	0.003	0.001	0.002	
10:20	"	0.001	0.001	0.000	
11:37	"	0.002	0.004	0.002	
12:21	"	0.003	0.003	0.000	
1:48	"	0.004	0.003	0.001	
3:40	"	0.005	0.003	0.002	

AIR MONITORING LOG

Date: 8/8/2017
Project Name: Calcine Paved Road Remediation
Project No: NC-17-1106
Name: Garry:

CALIBRATION RECORD

Time	Location	Monitoring Device	Comments

DAILY LOG

Time	Monitoring Device	Up-Wind	Down-Wind	Differential	Comments
		Station @ Yellow Kid			
7:15	431 Jeromex	0.000	0.000	0.000	
9:29	"	0.009	0.003	0.002	
10:46	"	0.007	0.003	0.001	
12:13	"	0.002	0.003	0.001	
1:09	"	0.001	0.001	0.000	
2:15	"	0.000	0.001	0.001	
3:14	"	0.001	0.000	0.001	
		Station @ April Trail.			
7:30	Jerome 431x	0.004	0.003	0.001	
8:51	"	0.005	0.000	0.005	
10:17	"	0.001	0.002	0.001	
11:37	"	0.001	0.000	0.001	
12:24	"	0.000	0.000	0.000	
1:15	"	0.002	0.000	0.002	
3:50	"	0.003	0.005	0.000	
		Station @ SF Open Cut.			
7:55	Jerome 431x	0.003	0.001	0.002	
8:50	"	0.002	0.005	0.003	
10:10	"	0.000	0.003	0.003	
11:15	"	0.000	0.002	0.002	
12:38	"	0.000	0.000	0.000	
1:52	"	0.000	0.002	0.002	
3:30	"	0.004	0.003	0.001	

AIR MONITORING LOG

Date: 8/9/2017
Project Name: Calcine. Paved Road Remediation
Project No: NC-17-1106
Name: Garry Cogwell.

CALIBRATION RECORD

Time	Location	Monitoring Device	Comments

DAILY LOG

Time	Monitoring Device	Up-Wind	Down-Wind	Differential	Comments
		Station @ Yellow Kid.			
7:15	Jerome 431x	0.001	0.000	0.001	
9:02	"	0.002	0.004	0.002	
9:15	"	0.005	0.004	0.001	
10:47	"	0.009	0.003	0.003	
11:53	"	0.003	0.004	0.001	
1:00	"	0.005	0.007	0.002	
2:18	"	0.003	0.001	0.001	
3:15	"	0.003	0.005	0.002	
		Station @ April Trail.			
7:30	Jerome 431x	0.001	0.004	0.003	
8:55	"	0.009	0.003	0.003	
9:56	"	0.010	0.015	0.005	
10:55	"	0.001	0.002	0.000	
12:43	"	0.003	0.001	0.001	
2:28	"	0.002	0.001	0.000	
3:09	"	0.002	0.001	0.001	
		Station @ SF Open Cut.			
8:00	Jerome 431x	0.002	0.004	0.002	
9:13	"	0.003	0.003	0.001	
10:51	"	0.001	0.005	0.004	
11:30	"	0.003	0.003	0.000	
12:51	"	0.001	0.004	0.003	
2:09	"	0.001	0.005	0.004	
3:09	"	0.001	0.005	0.004	

AIR MONITORING LOG

Date: 8/10/2017
Project Name: Calcine Paved Road Remediation
Project No: NC-17-1106
Name: Garry Cogwell.

CALIBRATION RECORD

Time	Location	Monitoring Device	Comments

DAILY LOG

Time	Monitoring Device	Up-Wind	Down-Wind	Differential	Comments
		Station @ April Trail.			
7:33	Jerome 431x	0.002	0.000	0.002	
8:15	"	0.001	0.001	0.000	
9:55	"	0.004	0.003	0.001	
10:01	"	0.003	0.001	0.002	
11:58	"	0.003	0.004	0.000	
1:15	"	0.004	0.002	0.002	
2:17	"	0.004	0.002	0.002	
3:15	"	0.003	0.000	0.003	
		Station @ SF open cut.			
7:45	Jerome 431x	0.001	0.003	0.002	
8:33	"	0.001	0.004	0.003	
8:50	"	0.000	0.001	0.001	
10:46	"	0.003	0.001	0.002	
12:01	"	0.001	0.002	0.001	
1:54	"	0.003	0.001	0.002	
2:10	"	0.003	0.005	0.002	
3:19	"	0.004	0.004	0.000	

AIR MONITORING LOG

Date: 8/11/2017
Project Name: Calcine Paved Road Remediation.
Project No: NC-17-1106
Name: Garry Cogwell

CALIBRATION RECORD

Time	Location	Monitoring Device	Comments

DAILY LOG

Time	Monitoring Device	Up-Wind	Down-Wind	Differential	Comments
		Station	@ April	Trail	
7:53	Jerome631X	0.001	0.002	0.001	
8:49	"	0.005	0.003	0.002	
10:01	"	0.003	0.003	0.000	
11:34	"	0.002	0.003	0.001	
12:41	"	0.002	0.000	0.002	
1:55	"	0.001	0.002	0.001	
2:36	"	0.004	0.001	0.003	
		Station	@ SF Open	Cut	
7:30	Jerome631X	0.003	0.006	0.001	
8:38	"	0.002	0.003	0.001	
9:43	"	0.002	0.003	0.000	
10:35	"	0.003	0.005	0.002	
12:19	"	0.002	0.004	0.002	
1:33	"	0.002	0.001	0.003	
2:33	"	0.001	0.002	0.001	

AIR MONITORING LOG

Date: 8/14/2017
Project Name: Calcine Paved Road Remediation
Project No: NC-17-1106
Name: Garry Cogwell

CALIBRATION RECORD

Time	Location	Monitoring Device	Comments

DAILY LOG

Time	Monitoring Device	Up-Wind	Down-Wind	Differential	Comments
		Station	@ East	Mine	Hill Trail.
7:15	Jerome631X	0.001	0.000	0.001	
8:33	"	0.003	0.000	0.003	
9:54	"	0.002	0.003	0.001	
11:37	"	0.001	0.003	0.002	
12:42	"	0.003	0.002	0.001	
2:06	"	0.004	0.004	0.000	
3:38	"	0.005	0.004	0.001	
		Station	@ SF Open	Cut.	
7:33	Jerome631X	0.004	0.000	0.004	
9:15	"	0.005	0.001	0.004	
10:47	"	0.005	0.001	0.004	
12:16	"	0.005	0.004	0.001	
1:43	"	0.003	0.004	0.001	
2:57	"	0.004	0.004	0.000	
3:31	"	0.004	0.003	0.001	

AIR MONITORING LOG

Date: 8/15/2017
Project Name: Calcine Paved Road Remediation
Project No.: NC-17-1106
Name: Garry Cogwell

CALIBRATION RECORD

Time	Location	Monitoring Device	Comments

DAILY LOG

Time	Monitoring Device	Up-Wind	Down-Wind	Differential	Comments
	Station	@ Mine	Hill	East	Trail
7:33	Jerome631X	0.001	0.005	0.004	
8:51	"	0.003	0.005	0.002	
9:42	"	0.001	0.005	0.004	
11:38	"	0.004	0.005	0.001	
12:34	"	0.005	0.006	0.001	
1:53	"	0.003	0.003	0.000	
2:19	"	0.002	0.003	0.001	
	Station	@	Church Hill		
10:00	Jerome631X	0.004	0.001	0.003	
11:16	"	0.003	0.004	0.001	
12:29	"	0.003	0.001	0.002	
1:19	"	0.002	0.002	0.000	
	"	0.004	0.001	0.003	
	Station	@ Castillero	Trail	Towards	English Camp.
1:05	Jerome631X	0.002	0.000	0.001	
1:31	"	0.005	0.001	0.004	
[illegible]	"	0.002	0.001	0.001	
3:01	"	0.002	0.001	0.001	
		Station	@ SF	Open	Cut.
7:53	Jerome631X	0.006	0.000	0.006	
9:01	"	0.005	0.002	0.003	
10:13	"	0.005	0.002	0.003	
11:46	"	0.006	0.003	0.003	
12:49	"	0.007	0.001	0.006	
1:45	"	0.006	0.001	0.005	
2:31	"	0.004	0.002	0.002	
3:14	"	0.005	0.003	0.002	

AIR MONITORING LOG

Date: 8/16/2017
Project Name: Calcine Paved Road Remediation
Project No.: NC-17-1106
Name: Garry Cogwell

CALIBRATION RECORD

Time	Location	Monitoring Device	Comments

DAILY LOG

Time	Monitoring Device	Up-Wind	Down-Wind	Differential	Comments
		Station @	Castellero		
7:33	Jerome631X	0.002	0.001	0.001	
8:18	"	0.003	0.001	0.002	
9:43	"	0.003	0.001	0.002	
11:05	"	0.003	0.000	0.003	
12:30	"	0.004	0.002	0.002	
1:42	"	0.005	0.000	0.005	
2:55	"	0.003	0.001	0.002	
		Station @	Hidalgo	Cemetery.	
8:05	Jerome631X	0.001	0.000	0.001	
9:14	"	0.000	0.001	0.001	
10:31	"	0.000	0.002	0.003	
11:51	"	0.001	0.001	0.000	
1:12	"	0.003	0.002	0.001	
2:13	"	0.004	0.001	0.003	
3:15	"	0.001	0.002	0.001	
		0.002	0.003	0.001	
		Station @	SF Open	Cut.	
8:16	Jerome631X	0.001	0.003	0.002	
9:19	"	0.002	0.002	0.000	
10:30	"	0.005	0.003	0.002	
11:37	"	0.003	0.002	0.001	
12:30	"	0.000	0.000	0.000	
1:30	"	0.003	0.000	0.003	
2:22	"	0.001	0.001	0.000	

AIR MONITORING LOG

Date: 8/17/2017
Project Name: Calcine Paved Road Remediation
Project No: NC-17-1106
Name: Garry Coglwell

CALIBRATION RECORD

Time	Location	Monitoring Device	Comments

DAILY LOG

Time	Monitoring Device	Up-Wind	Down-Wind	Differential	Comments
		Station (2) Hidalgo			Cemetary.
8:01	Jerome631X	0.000	0.001	0.001	
9:47	"	0.000	0.003	0.003	
9:53	"	0.000	0.003	0.003	
10:43	"	0.001	0.002	0.001	
12:03	"	0.001	0.002	0.002	
1:09	"	0.002	0.003	0.001	
2:02	"	0.004	0.005	0.001	
3:15	"	0.002	0.001	0.001	
		Station (3) Water Tank Trail.			
7:30	Jerome631X	0.001	0.000	0.001	
8:21	"	0.000	0.002	0.002	
9:46	"	0.003	0.001	0.001	
10:54	"	0.000	0.003	0.001	
12:07	"	0.000	0.001	0.001	
1:03	"	0.001	0.003	0.002	
		Station (4) SE open cut.			
9:25	Jerome631X	0.000	0.000	0.000	
8:30	"	0.001	0.003	0.002	
9:23	"	0.001	0.003	0.002	
10:53	"	0.001	0.002	0.001	
11:58	"	0.000	0.005	0.005	
13:30	"	0.000	0.000	0.000	
1:17	"	0.002	0.000	0.000	
2:32	"	0.003	0.003	0.000	
3:45	"	0.000	0.002	0.002	

AIR MONITORING LOG

Date: 8/18/2017
Project Name: Calcine Paved Road Remediation.
Project No: NC-17-1106
Name: Garry Coglwell.

CALIBRATION RECORD

Time	Location	Monitoring Device	Comments

DAILY LOG

Time	Monitoring Device	Up-Wind	Down-Wind	Differential	Comments
		Station (2)	Water	Tank.	
7:30	Jerome631X	0.001	0.003	0.002	
8:51	"	0.000	0.003	0.003	
9:39	"	0.000	0.000	0.000	
11:14	"	0.001	0.004	0.003	
12:31	"	0.000	0.003	0.003	
2:01	"	0.004	0.005	0.001	
3:15	"	0.003	0.004	0.001	
		Station (3) Castellero/Hidalgo			
7:33	Jerome631X	0.000	0.001	0.001	
8:02	"	0.002	0.001	0.002	
10:14	"	0.000	0.002	0.002	
11:39	"	0.001	0.001	0.001	
12:56	"	0.001	0.002	0.001	
2:06	"	0.003	0.001	0.002	
3:09	"	0.003	0.004	0.001	
		Station (4)	SE open	Cut.	
9:15	Jerome631X	0.001	0.000	0.000	
9:19	"	0.002	0.003	0.001	
10:39	"	0.000	0.000	0.000	
11:37	"	0.001	0.001	0.000	
12:50	"	0.005	0.002	0.003	
2:06	"	0.002	0.000	0.002	
3:22	"	0.001	0.004	0.003	

AIR MONITORING LOG

Date: 8/23/17
Project Name: Calcine Paved Road Remediation.
Project No: NC-17-1106
Name: Garry

CALIBRATION RECORD

Time	Location	Monitoring Device	Comments

DAILY LOG

Time	Monitoring Device	Up-Wind	Down-Wind	Differential	Comments
		Station (1)	Castellero		
7:35	Jerome631X	0.001	0.001	0.000	
8:40	"	0.003	0.002	0.001	
9:50	"	0.003	0.003	0.000	
11:05	"	0.000	0.000	0.000	
12:40	"	0.002	0.001	0.001	
1:11	"	0.004	0.001	0.003	
2:27	"	0.001	0.001	0.000	
3:30	"	0.000	0.003	0.003	
		Station (2)	SE open	Cut	
7:50	Jerome631X	0.001	0.000	0.001	
9:15	"	0.001	0.001	0.001	
9:10	"	0.003	0.004	0.001	
10:23	"	0.001	0.000	0.000	
11:34	"	0.001	0.001	0.001	
12:30	"	0.002	0.003	0.000	
1:19	"	0.003	0.001	0.002	
2:26	"	0.003	0.003	0.000	
3:55	"	0.003	0.003	0.000	

AIR MONITORING LOG

Date: 11/9/17
Project Name: CALCINE — PANDOL TRAIL
Project No: NC 17-1106
Name: GARY

CALIBRATION RECORD

Time	Location	Monitoring Device	Comments

DAILY LOG

Time	Monitoring Device	Up-Wind	Down-Wind	Differential	Comments
8:30	Dickson 421-X	.000	.000	0	Station (2)
9:50	" "	.000	.000	0	Pandol
11:41	" "	.001	.002	.001	
12:05	" "	.003	.003	.000	Trail
12:48	" "	.000	.002	.002	
1:15	" "	.000	.001	.001	
2:16	" "	.000	.002	.002	
3:58	" "	.000	.000	.000	

AIR MONITORING LOG

Date: 10/9/17
Project Name: CALCINE — UNKNOWN TRAIL
Project No: HC 17-1106
Name: GARY

CALIBRATION RECORD			
Time	Location	Monitoring Device	Comments

DAILY LOG					
Time	Monitoring Device	Up-Wind	Down-Wind	Differential	Comments
7:30	Jerome 431-X	.002	.003	.001	Station at
8:20	" "	.000	.001	.001	Unknown
9:00	" "	.001	.003	.002	
10:15	" "	.003	.000	.003	Trail
10:50	CALCINE REMOVAL COMPLETE ON UNKNOWN				
7:45	Jerome431X	0.001	0.000	0.001	Station at
8:30	"	0.00[illegible]	0.004	0.00[illegible]	SF Open
9:45	"	0.001	0.003	0.002	
10:20	"	0.000	0.000	0.000	Cut
11:[illegible]	"	0.001	0.002	0.001	
1:10	"	0.003	0.003	0.000	
2:15	"	0.002	0.001	0.001	
3:25	"	0.003	0.001	0.002	

AIR MONITORING LOG

Date: 9/26/17
Project Name: CALCINE — Watertank Trail & SF open cut
Project No: HC 17-1106
Name: GARY

CALIBRATION RECORD			
Time	Location	Monitoring Device	Comments

DAILY LOG					
Time	Monitoring Device	Up-Wind	Down-Wind	Differential	Comments
7:25	JEROME 431X	.003	.001	.002	WATER TANK TRAIL
7:51	" "	.002	.002	.000	" "
8:15	" "	.004	.001	.003	" "
8:13	" "	.002	.002	.000	SF OPEN CUT
8:40	" "	.001	.001	.000	SF OPEN CUT
8:58	" "	.003	.002	.001	WATER TANK
9:15	" "	.003	.003	.000	WATER TANK
9:50	" "	.001	.001	.000	SF OPEN CUT
11:22	" "	.002	.002	.000	WATER TANK
11:48	" "	.000	.001	.001	WATER TANK
1:15	" "	.003	.000	.003	SF OPEN CUT

AIR MONITORING LOG

Date: 10/5/17
Project Name: Calcine Paved Road Remediation.
Project No.: NC-17-1106
Name: Gary.

CALIBRATION RECORD			
Time	Location	Monitoring Device	Comments

DAILY LOG					
Time	Monitoring Device	Up-Wind	Down-Wind	Differential	Comments
		Station @ Unknown Trail			
8:10	Jerome431X	0.000	0.003		
9:02		0.002	0.000		
9:48		0.002	0.002		
10:35		0.000	0.000		
12:27		0.003	0.001		
1:20		0.000	0.001		
2:30		0.000	0.000		
		Station @ SF Open Cut			
8:00	Jerome431X	0.001	0.004		
9:16		0.002	0.000		
10:50		0.005	0.002		
11:32		0.002	0.001		
12:20		0.000	0.001		
1:20		0.003	0.003		
2:32		0.001	0.002		

AIR MONITORING LOG

Date: 10/6/17
Project Name: CALCINE — UNKNOWN TRAIL
Project No.: HC 17-1106
Name: GARY

CALIBRATION RECORD			
Time	Location	Monitoring Device	Comments

DAILY LOG					
Time	Monitoring Device	Up-Wind	Down-Wind	Differential	Comments
7:30	Jerome 431-X	.000	.000	0	Station
8:35	" "	.000	.000	0	at
9:40	" "	.002	.000	.002	Unknown
10:32	" "	.003	.001	.002	Trail
11:50	" "	.000	.003	.003	
12:27	" "	.004	.003	.001	
1:20	" "	.001	.003	.003	
2:35	" "	.003	.000	.003	
7:35	Jerome431X	0.001	0.000	0.001	Stations
8:30	"	0.004	0.003	0.001	at
9:58	"	0.002	0.001	0.001	SF
10:42	"	0.00[illegible]	0.00[illegible]	0.00[illegible]	Open
11:56	"	0.002	0.001	0.001	Cut
12:45	"	0.001	0.00[illegible]	0.001	
1:25	"	0.002	0.001	0.001	
2:30	"	0.002	0.001	0.001	

AIR MONITORING LOG

Date: 10/25/17
Project Name: CALCINE SF OPEN CUT
Project No: NC 17-1106
Name: Gary

CALIBRATION RECORD			
Time	Location	Monitoring Device	Comments

DAILY LOG					
Time	Monitoring Device	Up-Wind	Down-Wind	Differential	Comments
7:45	Jerome 431-X	.000	.000	.000	
8:30	" "	.003	.000	.003	
9:[illegible]	" "	.004	.001	.003	
10:41	" "	.001	.001	.000	
11:[illegible]	" "	.004	.000	.004	
12:[illegible]	" "	.000	.000	.000	
[illegible]	" "	.000	.000	.000	
[illegible]	" "	.000	.002	.002	
2:45	" "	.002	.003	.001	

AIR MONITORING LOG

Date: 10/[illegible]/17
Project Name: CALCINE SF OPEN CUT
Project No: NC 17-1106
Name: Gary

CALIBRATION RECORD			
Time	Location	Monitoring Device	Comments

DAILY LOG					
Time	Monitoring Device	Up-Wind	Down-Wind	Differential	Comments
9:45	Jerome 431-X	.000	.000	.000	
10:40	" "	.000	.004	.004	
11:20	" "	.000	.000	.000	
12:30	" "	.000	.000	.000	
1:35	" "	.000	.000	.000	
2:[illegible]	" "	.000	.000	.000	
2:23	" "	.001	.002	.001	

AIR MONITORING LOG

Date: 10/25/17
Project Name: CALCINE SF OPEN CUT
Project No: NC 17-1106
Name: Gary C

CALIBRATION RECORD			
Time	Location	Monitoring Device	Comments

DAILY LOG					
Time	Monitoring Device	Up-Wind	Down-Wind	Differential	Comments
7:30	Jerome 431-X	.001	.000	.001	Windy
8:15	" "	.003	.003	.000	
9:[illegible]	" "	.000	.000	.000	
10:27	" "	.001	.001	.000	
11:45	" "	.003	.002	.001	
12:50	" "	.003	.001	.002	
1:10	" "	.003	.001	.002	
2:23	" "	.000	.003	.003	
2:53	" "	.002	.000	.002	

AIR MONITORING LOG

Date: 10/24/17
Project Name: CALCINE / SF OPEN CUT
Project No: NC 17-1106
Name: Gary

CALIBRATION RECORD			
Time	Location	Monitoring Device	Comments

DAILY LOG					
Time	Monitoring Device	Up-Wind	Down-Wind	Differential	Comments
8:10	Jerome 431-X	.001	.004	.003	
9:14	" "	.001	.000	.001	
10:16	" "	.005	.007	.002	
11:37	" "	.003	.001	.002	
12:20	" "	.000	.000	.000	
1:40	" "	.003	.003	.000	
2:22	" "	.001	.000	.001	

AIR MONITORING LOG

Date: 8/27/17
Project Name: CALCINE / SF OPAL CUT
Project No.: NC 17-1106
Phase: Grey C

CALIBRATION RECORD

Time	Location	Monitoring Device	Comments

DAILY LOG

Time	Monitoring Device	Up-Wind	Down-Wind	Differential	Comments
7:30	Ultrarae #20 x	.000	.000	.000	
8:50	"	"	.000	.000	
9:40	"	"	.003	.003	
10:30	"	"	.000	.001	

VI. Summary of Drainage Improvements

The following is a brief summary of the location and scope of drainage improvements for this project:

NEW CULVERTS	QUANTITY
• Randol Trail – Upgrade existing 15" culvert to 36" culvert	1
• Castillero Trail – Upgrade existing 18" culvert to 36" culvert	1
• Castillero Trail – Upgrade existing 12" culvert to 18" culvert	1
MODIFICATIONS TO EXISTING CULVERTS	
• Randol Trail – Clean out Existing 18" Culvert	1
• Mine Hill Trail - Clean out Existing 18" Culvert	1
• Castillero Trail - Clean out Existing 18" Culvert	1
• Yellow Kid Trail - Clean out Existing 18" Culvert	1
• Upper April Trail - Clean out Existing 12" Culvert	1
• Upper April Trail - Clean out Existing 36" Culvert	1
ARMORED CROSSINGS	
• April Trail – armored rock crossing	1
DRAINAGE AND EROSION CONTROL MEASURES	
• Randol Trail – Earthen Drainage Ditch to ex. 18" Culvert	1
• Randol Trail – Earthen Drainage Ditch to new 36" CMP Culvert	1
• Mine Hill/San Cristobal – Earthen Ditch to existing 18" Culvert	1
• Castillero – Rock Lined Ditch to new 36" CMP culvert	1
• Castillero – Earthen Ditch to new 18" CMP culvert	1
• Upper April – Earthen Ditch to ex. 12" Culvert	1
• Lower Mine Hill – Earthen & Rock Lined Ditch to ex. 36" culvert	1
Rip Rap Aprons on Existing Culverts	
• Randol Trail	2
• Castillero Trail	1
• April Trail	3
• Yellow Kid	1

VII. Summary of Expected Outputs, Outcomes, and Accomplished Deliverables:

The following table illustrates the list of quantities:

1. The Original Bid Quantities (AECOM/County)
2. The Bid (ICS)
3. The final quantities completed during the project construction (ICS)

PROJECT: CALCINE PAVED ROADS REMEDIATION PROJECT

BID OPENING DATE: April 13, 2017

ITEM	DESCRIPTION	ENGINEER'S ESTIMATE				BIDDING			FINAL PAYMENT	
		QUANTITY	Unit	Unit Cost	Engr's Estimate	QUANTITY	Unit Cost	I.C.S. BID	QUANTITY	UNIT COST	TOTAL COST
1	Division 1 General Conditions/Requirements	1.00	LS	1.00	$ 264,336.00	1.00	$ 113,500	$113,500.00	1	$ 113,500	$ 107,000.00
2	Project Construction Signs (12)	6.00	EA	1,220.00	$ 7,320.00	6.00	$ 2,181.00	$ 13,086.00		$ 2,181.00	$ 13,086.00
3	Weekday Trail Closure Signs	7.00	EA	305.00	$ 2,135.00	7.00	$ 995.00	$ 6,965.00		$ 995.00	$ 6,857.50
4	Environmental Requirements	1.00	LS	24,400.00	$ 24,400.00	1.00	$ 30,792.00	$ 30,792.00	1	$ 30,792.00	$ 30,792.00
5	Traffic Control	1.00	LS	7,000.00	$ 7,000.00	1.00	$ 10,482.00	$ 10,482.00	1	$ 10,482.00	$ 10,482.00
6	Clearing and Grubbing- sides of Calcine Roads	160,000.00	SF	0.61	$ 97,600.00	160,000.00	$ 0.27	$ 43,200.00	160,000	$ 0.27	$ 43,200.00
7	Clearing and Grubbing- V-Ditches & Deposits	22,000.00	SF	0.61	$ 13,420.00	22,000.00	$ 0.33	$ 7,260.00	22,000	$ 0.33	$ 7,260.00
8	Clearing and Grubbing- Grading, Unknown Trails	32,000.00	SF	1.00	$ 32,000.00	32,000.00	$ 0.84	$ 26,880.00	32,000	$ 0.84	$ 21,491.40
9	Excavation of Calcine Trails, Haul to SFOC, stkpile	4,100.00	CY	73.20	$ 300,120.00	4,100.00	$ 32.08	$131,528.00	3,831	$ 32.08	$ 122,898.48
10	Excavate & Removal of 1.5' Clay Cap cover, stkpile	1,800.00	CY	7.00	$ 12,600.00	1,800.00	$ 7.33	$ 13,194.00	1,800	$ 7.33	$ 13,194.00
11	Import Clean, clay soil cap material (Wood Rd trail)	600.00	CY	40.00	$ 24,000.00	600.00	$ 30.67	$ 18,402.00	1,648	$ 30.67	$ 50,544.16
12	Construct New Landfill cover- place,grade,compact	6,500.00	CY	24.00	$ 156,000.00	6,500.00	$ 6.68	$ 43,420.00	7,279	$ 6.68	$ 48,623.72
13	Grading and Scarifying trails to 10" depth	28,600.00	SY	3.00	$ 85,800.00	28,600.00	$ 1.01	$ 28,886.00	28,600	$ 1.01	$ 28,886.00
14	Import Soil to fill earthen ditches	150.00	CY	78.00	$ 11,700.00	150.00	$ 101.00	$ 15,150.00	0	$ 101.00	$ -
15	Grade, Compact Soil in former Earthen Ditches	7,170.00	SF	2.00	$ 14,340.00	7,170.00	$ 0.85	$ 6,094.50	7,170	$ 0.85	$ 6,094.50
16	Deliver and Place Class II Aggregate Base	4,500.00	CY	24.40	$ 109,800.00	4,500.00	$ 106.66	$479,970.00	4,806.55	$ 106.66	$ 512,666.62
17	Mix Class II Agg. Base &Scarified Soil,grd,compact	8,750.00	CY	8.66	$ 75,775.00	8,750.00	$ 18.88	$165,200.00	3,943	$ 18.88	$ 122,010.00
18	Excavate & Remove Soil- V Earthen Ditches	110.00	CY	73.20	$ 8,052.00	110.00	$ 69.50	$ 7,645.00	110	$ 69.50	$ 7,645.00
19	Grade, Scarify, compact V Earthen Ditches	2,030.00	LF	10.00	$ 20,300.00	2,030.00	3.00	$ 6,090.00	2,030	3.00	6,090.00
20	Excavate & Remove Soil - V Rock Ditches	80.00	CY	73.20	$ 5,856.00	80.00	$ 57	$ 4,560.00	80	$ 57	$ 4,560.00
21	Grade, Scarify, Compact V-Rockfilled Ditches	960.00	LF	10.00	$ 9,600.00	960.00	$ 10	$ 9,120.00	960	$ 10	$ 9,120.00
22	Rip Rap for V-Ditches- rock Filled Channel	80.00	CY	122.00	$ 9,760.00	80.00	$ 123	$ 9,872.00	80	$ 123	9,872.00
23	Geotextile Fabric (Type B)- Rockfilled V Ditches	600.00	SY	3.66	$ 2,196.00	600.00	4.24	$ 2,544.00	600	4.24	2,544.00
24	Rolling Dips (not including Rip Rap)	50.00	EA	1,000.00	$ 50,000.00	50.00	$ 381	$ 19,027.00		$ 381	40,987.00
25	Geotextile Fabric (Type B)- All rock Slope Protect.	1,170.00	SY	3.00	$ 3,510.00	1,170.00	$ 4	$ 4,680.00	1,170	$ 4	4,680.00
26	Armored Rock Crossing- April Trail	625.00	SF	40.00	$ 25,000.00	625.00	$ 13	$ 8,125.00	625	$ 13	15,495.00
27	Excavation-Rock Slope Protection (culverts/riprap)	400.00	CY	70.00	$ 28,000.00	400.00	$ 44	$ 17,516.00	400	$ 43.79	17,516.00
28	New 36" Diameter CMP Culvert	60.00	LF	150.00	$ 9,000.00	60.00	$ 155	$ 9,285.00	60	$ 154.75	9,285.00
29	New 18" Diameter CMP Culvert	30.00	LF	70.00	$ 2,100.00	30.00	$ 125	$ 3,750.00	30	$ 125	3,750.00
30	RkslpProtect-CMP;slpRepair&RollDips w/Rip Rap	330.00	CY	122.00	$ 40,260.00	330.00	$ 169	$ 55,704.00	330	$ 169	55,704.00
31	SFOC Concrete V-Ditch Extensions	2.50	CY	2,440.00	$ 6,100.00	2.50	$ 3,738	$ 9,345.00	2.5	$ 3,738	9,345.00
32	PCC Endwalls/Headwalls	3.00	EA	4,880.00	$ 14,640.00	3.00	$ 3,967	$ 11,901.00	3	$ 3,967	11,901.00
33	Site Preparation for Seeding	5.20	AC	8,900.00	$ 46,280.00	5.20	$ 3,788	$ 19,697.60	5.2	$ 3,788	19,697.60
34	Erosion & Sediment Control, Protection Fabric	1.00	LS	13,000.00	$ 13,000.00	1.00	75,634.50	$ 75,634.50	1	$ 75,634.50	75,634.50
35	Hydroseed Planting	5.20	AC	8,000.00	$ 41,600.00	5.20	25,000	$130,000.00	5.2	$ 25,000.00	130,000.00
36	60 Day Maintenance & Warranty Period	5.20	AC	7,000.00	$ 36,400.00	5.20	6,327.00	$ 32,900.40	5.2	$ 6,327.00	32,900.40
	TOTAL BASE BID				**$ 1,610,000**			**$ 1,591,406.00**			**$ 1,611,812.88**

VIII. OUTPUTS AND OUTCOMES – SUMMARY of ADDITION/DELETION WORK CONTRACT CHANGE ORDERS

	DESCRIPTION OF WORK TO BE PERFORMED:	UNIT	Unit Price	Quantity	Extension
1	On August 1, 2017 a Request for Quote was forwarded to Innovative Construction Solutions proposing the addition of 25 "Caution: Heavy Equipment in Operation". signs. These signs were proposed to provide additional warning to hikers, bicyclists, and equestrians in regards to the presence of earth moving trucks, equipment, and watering trucks on Mine Hill, Castillero, and Wood Road Trails.	EA	$19.50	25	$ 487.50
2	**Pay Item #3** included the cost for "Weekday Trail Closure Signs". The County salvaged these signs from the Senador Mine Restoration Project from the previous year. These signs were provided to the Contractor for use on this project. The deletion and credit for these signs includes fabrication costs only.	EA	$85.00	-7	$ (595.00)
3	Refer to **Pay Item #11**: Import Clay Cap Soil. The original quantity of import clay soil was 600 c.y. Additional surface area of the SF Open Cut was required for the deposit of calcine waste material. This necessitated the need for additional soil to cover the calcine material to a depth of 2'-0" for a total amount of 1648 c.y.	CY	$ 30.67	1048	$ 32,142.16
4	Refer to **Pay Item #9**: Excavation of Calcine Trails, haul to SFOC, stockpile. The original quantity in this bid item was 4100 c.y. After quantifying the material from each trail, the final quantity was 3831 c.y. The credit for this pay item is the difference between the two quantities.	CY	$ 32.08	-269	$ (8,629.52)
5	Refer to **Pay Item #14**: Import Soil. The original quantity of import soil was listed as 150 c.y. ICS, Inc. proposed native soil to backfill earthen ditches and culvert base material. This proposal saved hauling time and labor as well as a potentially long approval process for an approved topsoil material from at testing source.	CY	$ 101.00	-150	$ (15,150.00)
6	Refer to **Pay Item #16**: Deliver and place Class II Aggregate Base. The original quantity in this bid item was 4500 c.y. After quantifying the material required for each trail, the final delivered quantity was 4806.55 c.y. The add for this pay item is the difference between the two quantities.	CY	$ 106.66	306.55	$ 32,696.62
7	Refer to **Pay Item #8**: Clearing, Grubbing, Grading - Unknown Trails. The original quantity listed in this bid item was listed at 32,000 s.f. During clearing operations, Contractor was unable to discover 900 l.f. of the Unknown Trail #1 after clearing Unknown Trail #2. The gradiant of the trail became too steep, with dense vegetation and trees with no evidence of calcine material in its subbase material. County recommended a circular turn-around at the end of Unknown Trail #2. The Add/Delete quantities are as follows: 900 l.f x 10' wide = 9000 s.f. (credit). The addition includes the extra square footage for the turn-around: 2585 s.f. (addition).	SF SF	$ 0.84 $ 0.84	-9000 2585	$ (7,560.00) $ 2,171.40
8	Refer to **Pay Item #12**: Construct New Landfill Cover. The scope of Work for this pay item consisted of spreading, grading, and compacting of calcine deposits, stockpiled clay, and import in the SF Open Cut. The addition for this pay item considers the reduction amount of calcines, and the increased amount of import clay required to cover the calcines to a 2'-0" depth. The original quantity listed in this bid item was 6500 c.y. The final quantity was 3831 c.y. (calcines) + 1800 c.y. (stockpiled clay) + 1648 c.y. (import clay) = 7279 c.y.	CY	$ 6.68	779	$ 5,203.72
9	Refer to **Pay Item #17**: Mix Class II Aggregate Base and Scarified Soil, grade and compact. The quantity listed in this bid item was 8750 c.y. The mixing of aggregate base with the scarified soil was removed from the contract, therefore, the quantity of grading and compacting aggregate base was reduced. The deletion of this task results in a partial credit of (8750 c.y.) (full amount of pay item) - 4806.55 c.y. (amount of aggregate placed) = 3943.45 c.y.)	CY	$ 10.95	-3943	$ (43,190.00)
10	Time Extension: Increase the calendar days by 24 due to scheduling of Hydroseeding				$0.00
11	Refer to **Pay Item #1**: Schedule of Values. Listed in this pay item is a cost for soil testing in the amount of $6500.00. Contractor used native soil rather than import, therefore there is a credit of $6,500 for this item.				($6,500.00)
12	After further review of potentially wet conditions on Yellow Kid Trail, Station 20+50, it was determined that an Armored Crossing 20' long x 10' wide would be required to mitigate the volume of water that could further erode the trail. Total cost includes re-use of existing rip-rap, re-mobilization, labor and materials	SF	200	36.85	$ 7,370.00
13	After review of rolling dips, it was determined that the above grade installation of surface mounted 'water bars' were not installed per specification and did not conform to the details shown on the plans. The County re-evaluated the placement of the rolling dips and determined that there were many locations that were not needed. The County directed ICS to remove 36 of the 53 rolling dips. The locations of these rolling dips will be graded and compacted to trail requirements. ICS to revise 17 locations of the rolling dips to conform to the plan details and specifications.	EA	36	610	$21,960.00

IX. KEY MESSAGES, LESSONS LEARNED

The Calcine Paved Roads Remediation Project officially began on June 21, 2017 and was substantially completed by October 15, 2017. Although there was a delay at the beginning of mobilization, by July 17, the material and equipment operations were being fully executed by ICS.

There was a brief delay in late July when Lexington Quarry, the listed supplier of rock and aggregate, notified ICS that their supply was severely limited and could not supply the quantity of material requested. Therefore, ICS contacted Stevens Creek Quarry to deliver the needed supply to begin work. There was more coordination with this delivery as Stevens Creek Quarry is a longer distance away from the project site than the local Lexington Quarry.

Decisions made early in the project construction had an impact later in construction. The decision to not mix the underlying clay subbase and 'hard to breakdown' rocky material with the aggregate impacted the construction of the rolling dips. The contractor proceeded with surface mounted rolling dips that were similar to speed humps or water bars rather than the detailed rolling dips shown on the plans.

After review of the installation of the water bars, it was determined that the quantity of rolling dips shown on the plans was much greater than what was needed. The County Construction, Ranger, and Maintenance staff re-evaluated the rolling dips and reduced the total quantity from 55 to 17. In addition, further recommendations were noted to increase locations for out-slope drainage from the trails.

In regards to the Unknown Trails, Unknown Trail #2 was found to be very narrow and was in very steep terrain as it proceeded uphill from Castillero Trail. The Contractor was required to stabilize a 30 foot long section with rip-rap so that equipment could safely navigate the steep, narrow section. The gap between Unknown Trail #2 and Unknown Trail #1 provided uncertainty on whether there were any calcine deposits beyond Trail #2. There was a level area in the gap between the two trails and the contractor cleared 300 lineal feet until a severe drop-off in elevation occurred. Within this heavily vegetated area on the north side of the hill, the contractor found no deposits or evidence of calcine material. The County agreed that the trail, if present, was fully covered with vegetation and sediment and there was no evidence of a carved cross-section of the hillside for such a trail.

X. FUTURE WORK

The County of Santa Clara is presently reviewing the feasibility of providing remediation improvements to the Jacque Gulch with the RWQCB and the State.

XI. CONCLUSIONS

The Calcine Paved Roads Remediation Project Construction Team worked well together and made critical decisions and revisions where necessary in a timely manner. The most time-consuming part of the project was during the review and modifications of the rolling dip work.

The Calcine Paved Roads Remediation Project Construction Contract, in the amount of $1,591,406.00, had a 10% construction contingency ($160,000.00) provided by the County of Santa Clara. Of that 10% contingency, $20,406.88 or 12.8% of the contingency amount was expended for extra work. Much of the extra work was in the form of two major items:

1. Additional clay soil to cap the deposited calcine at the SFOC
2. Additional aggregate required for Yellow Kid Trail and formation of Rolling Dips

The length of Construction Contract with Innovative Construction Solutions was 120 Calendar Days. The first day of the contract was June 21, 2017 and the last day of the contract was scheduled for October 20, 2017, a timeline that left no room for delays in relation to the October 15 deadline for work in the stream channels. A 21 day extension was granted after all work in the stream channels were complete. This extension included additional aggregate placement and removal and the installation of the hydroseeding.

After the County approved the time extension, the final day of the contract was _____ and the final acceptance meeting with the contractor on _____. All work in the stream channels was completed by October 15, 2017. Remaining work outside the stream channels, consisting of the final compaction and hydro-seed of the SFOC, the final survey work of grades of both the trails and the SFOC, additional aggregate placement, and the demobilization work was completed in _____.

XII. PROJECT CONSTRUCTION TEAM MEMBERS

County of Santa Clara Parks Department:

Robb Courtney, Director

Don Rocha, Deputy Director,

Mark Frederick, Construction Services Manager

Tom McLauchlan, Capital Projects Manager

David Lake, Project Inspector

Christian Elliott, County Grant Administrator

Innovative Construction Solutions, Inc.

Mike Piercey, Gary Cogwell, Brian Heiser, Hrishikesh Londhe

AECOM, Inc.

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