



Archuleta County Development Services Department
ARCHULETA COUNTY PLANNING COMMISSION AGENDA
County Commissioners Meeting Room, 398 Lewis Street
Public is welcome and encouraged to attend.

SPECIAL PLANNING COMMISSION MEETING FOR FEBRUARY 10, 2016, 1:30 PM

ROLL CALL

OLD BUSINESS:

NEW BUSINESS:

Two Rivers Gravel Pit Major Sand & Gravel Permit, Located At 12500 County Road 500

C&J Gravel Products, Inc. of Durango, Colorado, represented by Nathan Barton, Wasteline, Inc., have applied for a Major Sand & Gravel Permit for the proposed Two Rivers Pit, to be located on property owned by the James A. Constant Jr Revocable Trust and Leila B. Constant Revocable Trust; NW $\frac{1}{4}$ NE $\frac{1}{4}$, S $\frac{1}{2}$ NE $\frac{1}{4}$ and NE $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 10 and N $\frac{1}{2}$ SW $\frac{1}{4}$ and S $\frac{1}{2}$ NW $\frac{1}{4}$ Section 11, T33N R2W NMPM at 12500 County Road 500, Pagosa Springs, CO. C&J Gravel proposes to construct and operate a sand and gravel mining and processing facility on approximately 62.6 acres of the 100 acres of the property east of the San Juan River, in accordance with Colorado Division of Reclamation Permit M-2015-004.

Staff is recommending the Planning Commission continue the public hearing to a date certain, not in excess of 180 days, with direction to the Applicant as to specific issues to be resolved.

Documents: [2015-035SG_TWORIVERSPIT_PC-20160210_STAFF_REPORT.PDF](#), [A1-2015-035SG_AREAMAPS.PDF](#), [A2-2015-035SG_COUNTY-TOWN_INITIALREVIEW.PDF](#), [A3A-TRP MASTER COUNTY APP PKG P1-21.PDF](#), [A3B-TRP MASTER COUNTY APP PKG P22-50 \(REV\).PDF](#), [A3C-TRP MASTER COUNTY APP PKG P51-71.PDF](#), [A4A-CDRMS_TRP_EX1-24.PDF](#), [A4B-CDRMS_TRP_EX25-50.PDF](#), [A4C-CDRMS_TRP_EX51-67.PDF](#), [A5-TRP_TRAFFIC_IMPACT_STUDY-PRELIMINARY.PDF](#)

REPORTS, ANNOUNCEMENTS:

NEXT MEETING: Regular Meeting February 24, 2016, 6 PM

ADJOURN

Please Note: Agenda items may change order during the meeting; it is strongly recommended to attend the meeting at the start time indicated.



Archuleta County
Development Services—Planning Department
1122 HWY 84
P. O. Box 1507
Pagosa Springs, Colorado 81147
970-264-1390
Fax 970-264-3338

MEMORANDUM

TO: Archuleta County Planning Commission

FROM: John C. Shepard, AICP; Planning Manager

DATE: February 10, 2016

RE: Two Rivers Gravel Pit Major Sand & Gravel Permit, located at 12500 County Road 500.

EXECUTIVE SUMMARY

C&J Gravel Products, Inc, of Durango, Colorado, represented by Nathan Barton, Wasteline, Inc., have applied for a Major Sand & Gravel Permit for the proposed Two Rivers Pit, to be located on property owned by the James A. Constant Jr Revocable Trust and Leila B. Constant Revocable Trust; NW $\frac{1}{4}$ NE $\frac{1}{4}$, S $\frac{1}{2}$ NE $\frac{1}{4}$ and NE $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 10 and N $\frac{1}{2}$ SW $\frac{1}{4}$ and S $\frac{1}{2}$ NW $\frac{1}{4}$ Section 11, T33N R2W NMPM at 12500 County Road 500, Pagosa Springs, CO. C&J Gravel proposes to construct and operate a sand and gravel mining and processing facility on approximately 62.6 acres of the 100 acres of the property east of the San Juan River, in accordance with Colorado Division of Reclamation Permit M-2015-004.

REVIEW PROCEDURE

The *Archuleta County Land Use Regulations* Section 9.1.7 outlines submittal requirements for Sand, Soil, and Gravel Mining Operations. These include 13 items for local review, including a Site Plan and maps; written descriptions of the site, access and proposed operations; environmental impact analysis; and plans for blasting, reclamation, dust control and impact mitigation (See Attachment 3). A complete copy of the application submitted to the Colorado Division of Reclamation, Mining and Safety (CDRMS) is also required (See Attachment 4). A Major Sand and Gravel Permit is reviewed as a Conditional Use Permit (CUP). Submittal requirements for a CUP are outlined in Sec. 3.2.3.2, including title work, written descriptions and detailed site development plans. As stated in Sec. 9.1.8, Archuleta County does not intend to duplicate or conflict with federal or state requirements. However, where mitigation plans do not appear to address potential impacts, additional mitigation plans will be required.

Public notice was published in the *Pagosa Springs Sun*, posted on site, and mailed to neighboring property owners within 500' of the underlying parcel.

DISCUSSION

Applicant's Representative met with County Development Services staff on 7/21/2015 for a Pre-Application meeting, as required by the *Archuleta County Land Use Regulations*, and an informal checklist was provided for a Sand & Gravel Permit. A Land Use Permit application was submitted on 12/17/2015, and completed on 12/24/2015 (See Attachments 3 & 4).

The project was forwarded for agency reviews on 1/11/2016, as specified in Section 2.2.5. On 1/12/2016, County Engineering Technician requested a formal Traffic Study, per *Archuleta County Road & Bridge Standards* Sec. 27.0.6.1. Town of Pagosa Springs Planning Director also expressed concern with truck haul routes on city streets, and on 1/29/2016 requested additional time for thorough analysis of potential impacts. Staff and Applicants' Representative discussed providing additional information, to clarify elements of the site plan and to complete a review of potential impacts for this hearing. A Preliminary Traffic Impact Study and revised narrative was then submitted on 1/29/2016 (received 2/1/2016).

After reviewing the complete package and supplemental information, County Engineering recommends not approving the project at this time. After consulting with the County Attorney, Planning Staff concur. The application does not yet provide sufficient data to support Applicants' claim that no significant impact will occur due to heavy truck traffic without mitigation. A larger-scale site plan, at 24"x36" as specified in Sec. 3.2.3.2(3) would also help assess proposed phasing, reclamation and potential impacts of operations.

RECOMMENDATION AND FINDINGS

The Planning Commission may continue the public hearing to a date certain, not in excess of 180 days, with direction to the Applicant as to specific issues to be resolved.

If the Planning Commission concludes that, based on evidence provided the Applicants have **NOT** met the goals and objectives of the Land Use Regulations, then **staff would recommend the Planning Commission find that:**

- a. The application does NOT meet the performance standards for a Major Sand & Gravel Permit, in Section 9.1.6 of the *Archuleta County Land Use Regulations*, and
- b. The application does NOT meet the review criteria for a Conditional Use Permit, in Section 3.2.3.4 of the *Archuleta County Land Use Regulations*, and

That the Planning Commission recommend Disapproval of the Two Rivers Gravel Pit Major Sand & Gravel Permit.

PROPOSED MOTIONS

I move to continue this public hearing of the Two Rivers Gravel Pit Major Sand & Gravel Permit, to the regular meeting of April 27, 2016.

Or: I move to recommend Disapproval to the Board of County Commissioners, of Two Rivers Gravel Pit Major Sand & Gravel Permit, with Disapproval Findings A and B of the staff report.

ATTACHMENTS.

Attachment 1: Area Maps

Attachment 2: County Engineering & Town of Pagosa Springs Review

Attachment 3: Application Package

Attachment 4: CDRMS Permit Application

Attachment 5: Preliminary Traffic Study

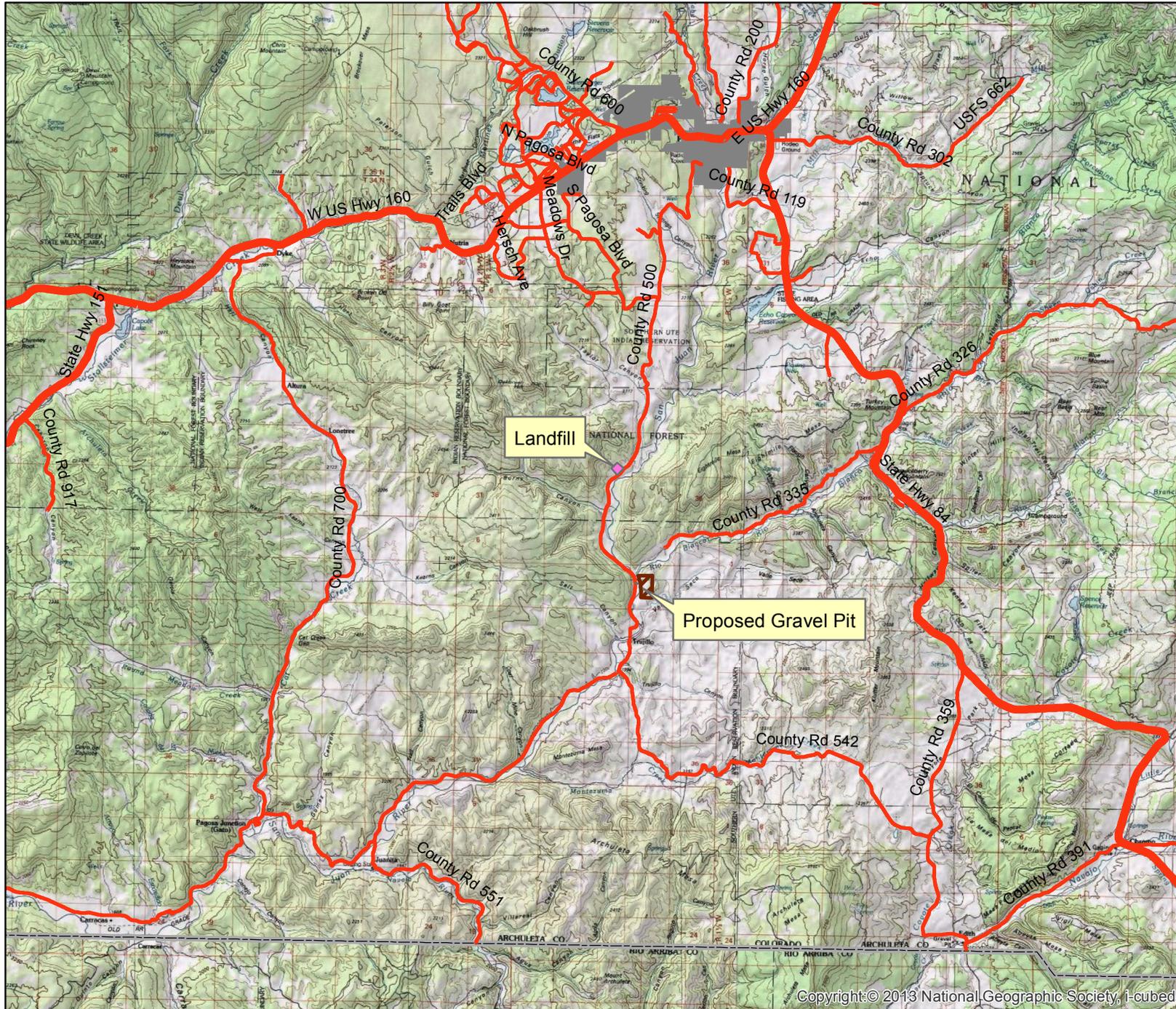


Location Map

Two Rivers Pit
Major Sand & Gravel
Permit
2015-035SG

Legend

-  Highway
-  Primary Road
-  Landfill
-  Gravel Pit Area



1 0.5 0 1 Miles



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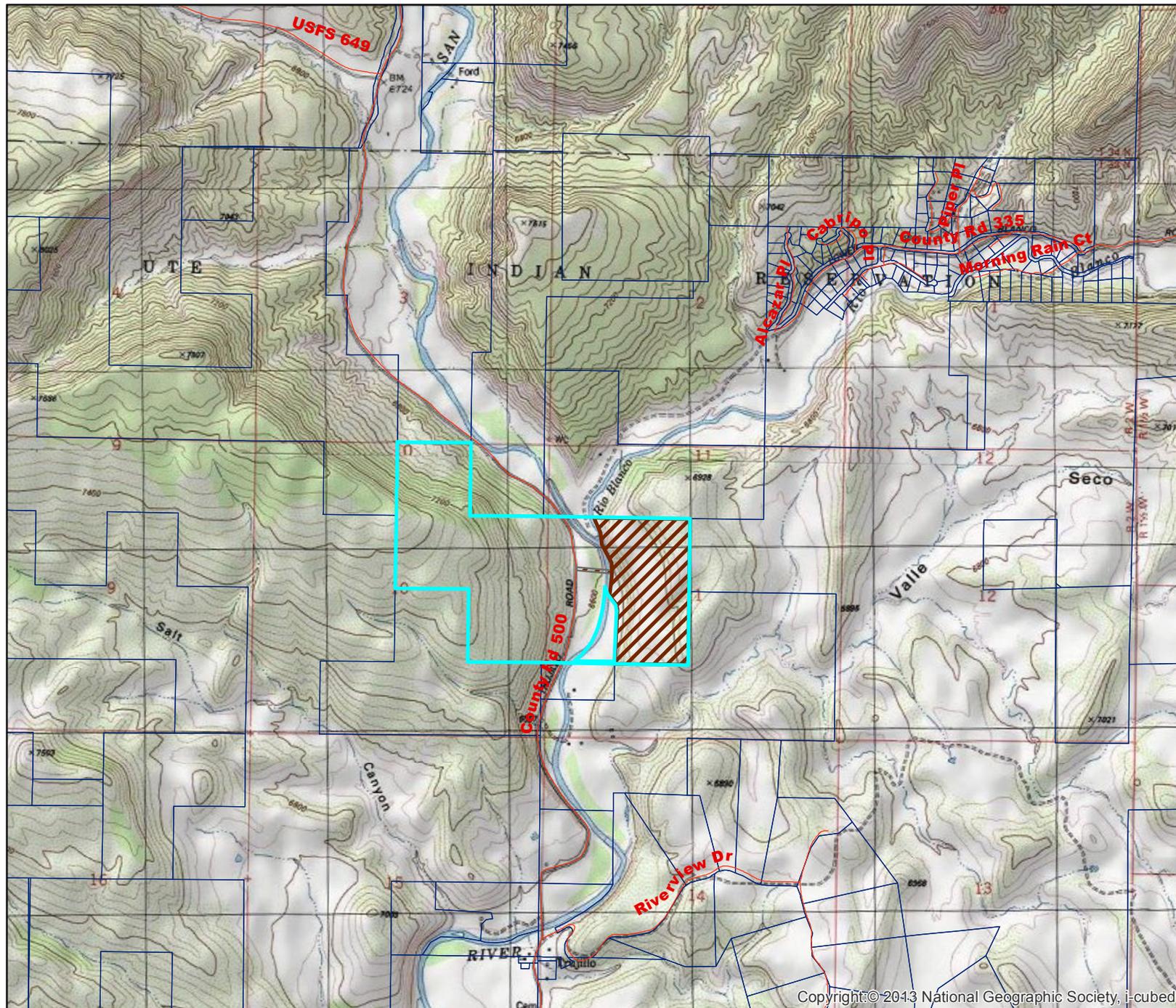


Site Map

Two Rivers Pit
Major Sand & Gravel
Permit
2015-035SG

Legend

- Roads
- Parcels
- Project Location
- Gravel Pit Area



1,000500 0 1,000 Feet



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This map has been produced using various geospatial data sources. The information displayed is intended for general planning purposes and the original data will routinely be updated. No warranty is made by Archuleta County as to the accuracy, reliability or completeness of this information. Consult actual legal documentation and/or the original data source for accurate descriptions of locations displayed herein.



MEMO

Date: February 1, 2016

To: John Shepard

From: Yari Arceneaux

CC: Ken Feyen

RE: Two Rivers Gravel Pit

We have reviewed the Two Rivers Gravel Pit submittal package. The Engineering Department recommends **not to approve this project at this time**. We are requesting a continuance of 2/10/16 Planning Commission Meeting so that we can fully understand the physical impact to our roads. The applicant provided **insufficient data** to support their claim that no significant impact will occur to the road system **structure** due to their proposed activity which is comprised of a high percentage of trucks. We requested a traffic study and the applicant could not provide a final traffic study due to limited availability of data and seasonal constraints, however the applicant would be able to provide final traffic study to us by the summer 2016. We would need additional time to analyze the potential impacts to our roads and how to mitigate those impacts to our road system. Per the Archuleta County Road and Bridge Standards, Section 27.0.6.1, "*New development shall be required to mitigate its proportionate share of impacts of the proposed activity on the County's road system*". In the application information provided to us, the applicant **has not offered any suggestion for mitigation** and the Engineering Department believes that this project would generate some structural impact to our road systems.

⊕ 970-264-5660 ⊕ FAX: 970-264-6815 ⊕

⊕ PO Box 1507 ⊕ 1122 S. HIGHWAY 84 ⊕ PAGOSA SPRINGS, CO 81147

YARCENEAUX@ARCHULETACOUNTY.ORG ⊕

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551 Hot Springs Boulevard
Post Office Box 1859
Pagosa Springs, CO 81147
P: 970.264.4151
F: 970.264.4634

Town of Pagosa Springs
Planning Department

Date: January 29, 2016
To: John Shepard, Archuleta County Planning Manager
Re: C&J Gravel Products, Inc. Gravel Pit application

Hello John,

In response to your request for comments we received on January 11, 2016 regarding the proposed C&J Gravel Products, Inc. Gravel Pit operation application submitted to the Archuleta County Planning Department, we currently have the following comments:

- 1) We have concerns related to the potential heavy truck traffic through Town and along the S. Eighth Street and Apache Street residential districts. This type of traffic could result in a negative impact to these neighborhoods and pedestrian safety.
- 2) We have concerns regarding potential damage to our aging, new and to be constructed road infrastructure that could result from the heavy truck traffic along the town's portion of Trujillo Road, S. Eighth Street, Apache Street and other potential routes. The proposed traffic count is based on 120 hauling days, however, there are no limits for only operating 120 days. Increased days of operation could drastically increase traffic counts, potential for road damage and traffic on Town roadways.
- 3) The application does not identify specific proposed truck routes, however, the use of Trujillo Road, S. Eighth Street and Apache Street are very likely truck routes for the suggested deliveries. In our opinion, all delivery's for the west Pagosa area should utilize South Pagosa Blvd to access U.S. Highway 160, and only delivery's for Downtown should utilize Apache and Eighth Streets. The use of Hot Springs Blvd has it own concerns, as this roadway sees many out of town tourists and the U.S. Highway intersection crosswalks are a very busy pedestrian thoroughfare. We believe a work session with all stake holders could be the best start to work through the best routes to reduce the potential for negative impacts.
- 4) Trujillo Road is in the process of being paved. Speaking with our engineers, the cross sectional design is for a 20 year plan of increased traffic. The proposed gravel pit operation could exceed the 20 year design immediately, especially if the traffic loads exceed the assumption of 120 operating days. A second layer of asphalt on the Town's portion is scheduled for placement this spring, however, the proposed traffic may require an additional 1 inch of asphalt above the current design, an extra expense the Town has not budgeted for.
- 5) Town Council may consider an ordinance to amend the adopted Model traffic code to require a permitting process for trucks of certain size and weight, however, much more analysis is necessary to determine if this is the best solution for assisting with the additional roadway infrastructure expenses associated with providing a thicker roadway section design.

- 6) The Town may elect to designate certain truck routes through town, that could include the consideration of out-going and in-coming truck routes. This also will require additional analysis for Town Councils consideration.
- 7) There is benefit to having construction materials available locally for the numerous construction projects undertaken in Archuleta County, thus, we support the idea of an additional Gravel Pit in our area.

Since the impacts could be significant, the Town will need additional time to thoroughly analysis the potential impacts to neighborhoods and roadways and how to potentially mitigate those impacts as well as financially improving and repairing such roadways. We respectfully request the mater be deferred for consideration until the Town has ample time to conduct a thorough review. The Town would highly recommend a worksession with the applicant and all stake holders to discuss the best possible solutions to mitigate all of our and the communities concerns.

Please contact me with any questions.

Thank You, Respectfully,

James Dickhoff
Town of Pagosa Springs
Planning Department Director
Po Box 1859
551 Hot Springs Blvd.
Pagosa Springs, Co. 81147
970-264-4151 x225

jdickhoff@pagosasprings.co.gov



Two Rivers Pit

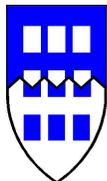


C&J GRAVEL PRODUCTS, INC.

27661 Highway 160, Durango, Colorado 81301

(970) 385-4112

12 November 2015

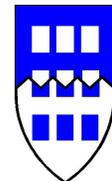


WASTELINE, INC.

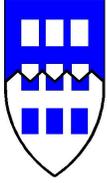
P.O. Box 3471 Rapid City, SD 57709-3471 (605)939-0650

PO Box 88 Cortez, CO 81321-0088 (970) 564-1380

E-mail: WASTELINE6@aol.com



Project: #5064.3 Two Rivers Pit



WASTELINE, INC.

P.O. Box 3471 Rapid City, SD 57709-3471 (605)939-0650
PO Box 88 Cortez, CO 81321-0088 (970) 564-1380
E-mail: WASTELINE6@aol.com



12 November 2015

County of Archuleta
Board of County Commissioners
c/o Mr. John Shepherd, Planning Director
VIA Hand delivery and E-mail

Subject: Application for County Land Use Permit for Two Rivers Pit (Landowners: Jac & Lee Constant, Operator/Applicant: C&J Gravel Products, Inc.)

Dear Gentlemen:

The following application is respectfully submitted as requested in the regulations, permitting meeting and correspondence.

Please feel free to contact us with any questions or concerns:

1. Mr. John Gilliland, President, C&J Gravel Products, Inc.
2. Mr. Perry Neil, Project Manager
3. Mr. Nathan Barton, Engineer
4. Mr. and Mrs. Jac Constant, landowners

Respectfully,

Prepared by Nathan A. Barton, CE, PE, DEE
Environmental and Permitting Compliance Engineer
FOR C&J GRAVEL PRODUCTS, Inc.

Project: #5064.3 Two Rivers Pit

TABLE OF CONTENTS

TWO RIVERS PIT APPLICATION TO ARCHULETA COUNTY PLANNING OFFICE

1.	Application Cover	1 page
2.	Table of Contents	1 page
3.	Application Form	2 pages
4.	Check for application fee (copy)	1 page
5.	Checklist	2 pages
6.	Evidence of Good Title/Legal Description	
	a. Title Report (AR21502281.pdf)	10 pages
	b. Legal description	2 pages
7.	Tax Statement	1 page
8.	Project Narrative	1 page
9.	Engineering	
	a. Bridge Evaluation Report	3 pages
	b. Road design/construction standards and proposal	5 pages
	c. Fire Safety Plan	3 pages
	d. Weed Management Plan	6 pages
	e. Fugitive Dust Control Plan (CDPHE Format)	11 pages
	g. Hazard report	1 page
10.	Existing Or Proposed Agreements or CC&R's	NONE
11.	Mineral, Oil & Gas Rights Documentation (including Timber)	1 page
12.	Surrounding & Interested Property Ownership	3 pages
	a. 8 landowners within 500 feet	
	b. 60 landowners within 1 mile	
13.	Public Hearing Notification Envelopes	SEPARATE
14.	Submittal Narrative (Section 9.1.7)	
	a. Itemized Listing, County Standards Section 3.2.3.4	2 pages
	b. Itemized Listing, County Standards Section 5.2	2 pages
	c. Itemized Listing, County Standards Section 9.1.6.	2 pages
	d. Itemized Listing, County Standards Section 9.1.7.	2 pages
15.	Site Plan Showing Existing and Proposed Development	3 pages
16.	State Permit Application (submitted to DRMS) w/approval	Electronic (PDF)
17.	Visualization for select phases	2 pages
18.	State (DRMS/MLRB) Approval Letter	2 pages





LAND USE PERMIT APPLICATION

TO SUBMIT THIS APPLICATION, COMPLETE AND DELIVER WITH THE APPROPRIATE FEE & SUBMITTAL REQUIREMENTS. FOR QUESTIONS CALL 970-264-1390 AND ASK FOR PLANNING

BY MAIL TO:
 Archuleta County Planning Department
 PO Box 1507
 Pagosa Springs, CO 81147

IN PERSON TO:
 Planning Department
 1122 HWY 84
 Pagosa Springs, CO 81147

TYPE OF REQUEST:

X	CONDITIONAL USE PERMIT (CUP)
	USE BY RIGHT PERMIT (UBR)
	PLANNED UNIT DEVELOPMENT (PUD)
	CONCEPT REVIEW
	GENERAL DEVELOPMENT PLAN
	VESTED RIGHTS
	MINOR LOT LINE ADJUSTMENT (MLLA)
	PLAT AMENDMENT
	LOT CONSOLIDATION
	LOT UNCONSOLIDATION
	SIGN PERMIT
	RE-ZONING
	OIL AND GAS (MINOR or MAJOR please circle)
X	SAND AND GRAVEL (MINOR or MAJOR please circle)
	TEMPORARY USE PERMIT (TUP)
	SUBDIVISION (MINOR or MAJOR please circle)
	SKETCH PLAN (SUBDIVISION)
	PRELIMINARY PLAN (SUBDIVISION)
	FINAL PLAN (SUBDIVISION)
	SUBDIVISION EXEMPTION PLAT (Final Plat)
	VARIANCE (GENERAL or ADMIN please circle)

GENERAL INFORMATION:

PROJECT: TWO RIVERS PIT

PROJECT NUMBER: _____

PROJECT ADDRESS: 12500 County Road 500
Pagosa Springs, CO 81147

ASSESSOR'S PARCEL NO. 5965-10-100015

CURRENT ZONING: AR PROPOSED ZONING: No change

CURRENT USE: GRAZING LAND

PROPOSED USE: MINING OF SAND & GRAVEL

PROJECT DESCRIPTION:
Using the existing road and bridge, sand and gravel will be mined on the ridge above the river, and transported to project locations in Archuleta County.

APPLICANT:

C & J GRAVEL PRODUCTS, INC., Attn: Perry Neil, Pit Manager

MAILING ADDRESS: 27661 Hwy 160-E, Durango, CO 81301

PHONE: 970-385-4112 cell: 970-749-1444 EMAIL ADDRESS: PNeil@cjgravel.com

REPRESENTATIVE: Nathan A. Barton, Environmental and Permitting Compliance Engr.

MAILING ADDRESS: 11501 Road 34, Mancos, CO 81328

PHONE: 605-939-0650 cell: 605-390-7255 EMAIL ADDRESS: Wasteline6@aol.com

PROPERTY OWNER (IF DIFFERENT FROM APPLICANT): Jac & Lee Constant

MAILING ADDRESS: 12500 CR-500, P. Spgs 81147 PHONE: 970-264-4818

(NOTARIZED AGENT AUTHORIZATION FORM SIGNED BY ALL PROPERTY OWNERS IS REQUIRED AND MUST ACCOMPANY THIS APPLICATION IF APPLICATION IS MADE BY OTHER THAN OWNER(S) OF RECORD.)

APPLICATION RECEIVED BY: _____ DATE RECEIVED: _____

FEE AMOUNT REQUIRED: \$ _____ DATE PAID: _____

APPLICATION DEEMED COMPLETE BY _____ ON: _____

Continued on reverse

LAND USE PERMIT APPLICATION
CONTINUED

THE UNDERSIGNED AUTHORIZES THE LAND USE ADMINISTRATOR(S) TO PROCEED WITH PROCESSING THIS APPLICATION UNDER THE REQUIREMENTS SET BY THE ARCHULETA COUNTY LAND USE REGULATIONS.

(Required if checked) THE LANDOWNER GIVES PERMISSION FOR COUNTY STAFF TO ACCESS THE PROPERTY FOR INSPECTION OF THE DETAILS OF THIS APPLICATION.

(Required if checked) THE UNDERSIGNED ACKNOWLEDGES THAT THE APPLICANT IS RESPONSIBLE FOR PROVIDING THE COUNTY WITH THE LIST OF NAMES OF THE ADJACENT PROPERTY OWNERS LOCATED WITHIN **500 FEET** OF ALL BOUNDARIES OF THE PROPERTY AND PROVIDE **ADDRESSED STAMPED ENVELOPES** FOR ALL THESE PROPERTY OWNERS PURSUANT TO THE REQUIREMENTS AS SET FORTH IN THE LAND USE REGULATIONS.

.....
(Required if checked) THE UNDERSIGNED ACKNOWLEDGES THAT MINERAL ESTATE OWNERS/LESSEES WERE NOTIFIED IN ACCORDANCE WITH C.R.S 24-65.5-101-105. LAND USE PERMIT APPLICATIONS REQUIRING MINERAL ESTATE OWNERS/LESSEES NOTIFICATION. THIS NOTIFICATION REQUIREMENT IS STRICTLY THE APPLICANT'S RESPONSIBILITY.

APPLICANT'S INITIALS _____

LANDOWNER'S SIGNATURE AS ACKNOWLEDGEMENT: _____
.....

PUT COPY OF CHECK TO COUNTY HERE

Archuleta County Sand & Gravel Permit Application Requirements

For full information see Archuleta County Land Use Code, Section 9.1.

Conditional Uses and Uses by Right: A Major Sand and Gravel Permit must obtain a Conditional Use Permit (CUP), see the Land Use Code, Section 3.2.3. Material submitted for a Land Use Permit shall meet the following requirements.

Approximate Timeline: 3 – 4 weeks for Administrative review or 2-4 months for Planning Commission and Board of County Commissioners review (CUP), depending on complete information.

Project Reference Name C&J Gravel/Two Rivers Pit (Constant) Date 7/21/2015

Type of Use: Minor Sand and Gravel Permit Major Sand and Gravel Permit
 Nature of Proposal: New Construction Modification of Existing Site No Change to Existing Site

Submittal Requirements Checklist.....

Completed Land Use Application (a)	✓	Mineral, Oil and Gas Rights Documentation (k)	✓
Land Use Application Fees	✓	Surrounding & Interested Property Ownership Report (i)	✓
Evidence of Good Title/Legal Description (g)	✓	Public Hearing Notification Envelopes (j)	✓
Tax Statement (h)	✓		
Project Narrative	✓	Submittal Narrative (Section 9.1.7)	✓
Engineering (s) *see below for specific requirements	✓	Site Plan Showing Existing AND Proposed Development (24X36 and 11X17 or 8X11)	✓
Existing OR Proposed Agreements or CC&R's governing the use (<i>contracts, agreements, etc</i>)	✓	Other: State Permit copies (submitted to CO DRMS)	✓
Number of Submittal Packages: 24 x 36 11 x 17 or 8 x 11 1	✓	Other:	

INSTRUCTIONS:

1. Submit the items on this checklist along with the completed Land Use Application
2. Staff will need to review the application submittal for completeness. For Major projects requiring a hearing, a date will be set when the application is complete. No Board hearing will be set until after the Planning Commission recommendation is made.
3. If a hearing is required, the applicant is required to make proper notices, working with staff.
 - a. For a Conditional Use Permit (CUP), there is a *required meeting before the Planning Commission and a required hearing before the Board of County Commissioners*. The required notices for the Board hearing are:
 - i. published notice; twice in the 21-day period before the hearing; and
 - ii. posted notice; poster sited on the subject property at least 21 days before the hearing.
 - b. Notices will be provided by the Planning Department but the applicant is responsible for obtaining notices from staff; before the notices can be provided, the hearing date must be set.

Submittal Requirement Checklist:

(a) **Land Use Application Form:** Obtain from Planning Department or online.

(e) **Land Use Application Fees:** All land use application fees are determined by Board of County Commissioners and reviewed annually. Fees are non-refundable.

(g) Evidence of Good Title: A current report providing evidence that the applicant owns the subject property, acceptable examples include: title commitment, title policy and ownership & encumbrance report. Reports shall include a legal description of the property and be dated no more than thirty (30) days from the date of application submittal.

(h) Tax Statement: Statement of taxes due from the County Treasurer showing no taxes are due or delinquent.

(i) Surrounding and Interested Property Ownership Report: A current list of the names and addresses of the surrounding property owners within 500 feet of the property, mineral owners of record, mineral and oil and gas lessees for the property and appropriate ditch companies. Reports shall be dated no more than thirty (30) days from the date of application submittal. The applicant shall certify that the report is complete and accurate. Applicants should contact the Archuleta County Assessors Office to obtain current and an accurate list of ownership and the 500 foot radius map.

(j) Public Hearing Notification Envelopes: Applicants shall provide one (1) set of stamped, addressed, Number 10 (letter size) self-sealing envelopes. The envelopes shall have the County Planning Department's address as the return address and the envelopes shall be addressed to the surrounding property owners listed in the **Surrounding and Interested Property Ownership Report**.

(s) Engineering: All road, access, driveway, parking and drainage shall meet the Archuleta County Road and Bridge Design Standards Adopted by Resolution #2005-40, November 2, 2005. This includes the following unless Road and Bridge staff has determined the requirement does not apply:

- ✓ (a) Detailed grading and drainage plans as specified in Road and Bridge Standards
- ✓ (b) Storm water runoff calculations for historic and developed runoff. If runoff calculations show that storm water detention is required, the engineer shall supply calculations and plans for detention pond location, volume, and outlet structures with the plans.
- ✓ (c) Engineered and or construction details for culverts, or other drainage structures, adequate to handle the drainage.
- ✓ (d) Proposed and existing contours shown on plans as well as final grade.
- ✓ (e) Proposed water and sewer services and existing mains.
- ✓ (f) Utility easements, existing or proposed.
- ✓ (g) Traffic control devices in accordance with the Manual on Uniform Traffic Control Devices (MUTCD) 2003 Edition.

Performance Narrative

1. Describe how the project meets each of the Performance Standards in Section 9.1.6 of the Land Use Regulations, as well as the CUP Review Criteria in Section 3.2.3.4.

Submittals for Sand, Soil and Gravel Mining Operations (Section 9.1.7 of the Land Use Regulations)

1. Copy of application submitted to the Colorado Division of Minerals and Geology (CDMG)
2. Maps, including Quadrangle map of site and one (1) mile radius
3. Site Plan
4. Grading Plan
5. Two (2) foot contour map (existing and final)
6. Site Description
7. Written description of access roads
8. Project description
9. Blasting Plan
10. Reclamation Plan
11. Environmental and Vicinity Impact Analysis
12. Proposed Impact Mitigation Plan
13. Fugitive Dust Control Plan

Particular to this application:

- Confirm status of bridge (permitted as ag structure) & Floodplain Development Permit
- Consider visualization for select phases (Section 9.1.6.1.3)

MEP /

**Colorado Title & Closing Services, LLC
dba Colorado Land Title Company, LLC**

Serving All of Colorado

**ISSUING AGENT FOR
WESTCOR LAND TITLE INSURANCE COMPANY**

Prepared for:
**LEILA & JAMES CONSTANT
12500 County Road 500
Pagosa Springs, CO 81147**

Issuing Office:
**456 Lewis Street, P.O. Box 334
Pagosa Springs, CO 81147
Phone: (970) 264-4178
Fax: (970) 264-4775
Title Examiner:
**Margaret E. Poer
mep@coloradotitleservices.com
(970) 375-5959****

Copies to:
WASTELINE INC./NATHAN

SCHEDULE A

	<u>POLICY LIABILITY</u>	<u>PREMIUM CHARGES</u>
ALTA Owner's Policy (06/17/2006)		\$0.00
ALTA Loan Policy (06/17/2006)		\$0.00
Search Charge		500.00
Less Amount Paid		-500.00
Tax Certification		
	Total Due	\$0.00

SEARCH CHARGE

NOTE: The above search charge is a non-refundable fee, a portion of which may be credited toward the total premium charge.

IF THE PROPOSED POLICY IS NOT PAID FOR, THEN THE SEARCH CHARGE WILL BE APPLIED AS A CANCELLATION FEE FOR THE WORK PERFORMED AND ANY LIABILITY OF COLORADO LAND TITLE COMPANY AND WESTCOR LAND TITLE INSURANCE COMPANY SHALL CEASE IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF THE COMMITMENT.

1. Effective date: **July 27, 2015 at 5:00 PM** **Verified October 27, 2015 at 5:00 PM**

2. Policy or Policies to be issued:
ALTA Owner's Policy (06/17/2006)
Proposed Insured:

ALTA Loan Policy (06/17/2006)
Proposed Insured:

3. Title to the **FEE SIMPLE** estate or interest in said land is at the effective date hereof vested in:

JAMES A. CONSTANT, JR. REVOCABLE TRUST DATED MAY 30, 1995, as to an undivided 1/2 interest and LEILA B. CONSTANT REVOCABLE TRUST DATED MAY 30, 1995, as to an undivided 1/2 interest

4. The land referred to in this Commitment is located in the County of **Archuleta**, State of Colorado and described as follows:

Township 33 North, Range 2 West

Section 10: NW1/4NE1/4; S1/2NE1/4 and NE1/4SE1/4

Section 11: N1/2SW1/4 and S1/2NW1/4

SCHEDULE B - SECTION 1
REQUIREMENTS

The following requirements must be met:

- (1.) Pay the agreed amounts for the interest in the land and/or for the mortgage to be insured.
- (2.) Pay us the premiums, fees and charges for the policy.
- (3.) The following documents satisfactory to us must be signed, delivered and recorded.
- (4.) A Certificate of Taxes Due listing each taxing jurisdiction shall be obtained from the County Treasurer or the County Treasurer's authorized agent.

NOTE: There is no liability by or through this commitment until an insured is identified together with the amount to be insured and the applicable premium is paid, at which time any liability will be in accordance with the terms and conditions of the Title Insurance Policy. The company reserves the right to make additional requirements and/or exceptions, if necessary, once the proposed insured and amounts are identified.

SCHEDULE B - SECTION 2
EXCEPTIONS

Any policy we issue will have the following exceptions unless they are taken care of to our satisfaction:

1. Any facts, rights, interests or claims which are not shown by the Public Records, but which could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.
2. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.
3. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.
4. Any lien, or right to a lien, for services, labor or materials heretofore or hereafter furnished, imposed by law and not shown by the Public Records.
5. Defects, liens, encumbrances, adverse claims or other matters, if any, created, first appearing in the Public Records or attaching subsequent to the Effective Date hereof but prior to the date the proposed Insured acquires for value of record the estate or interest or mortgage thereon covered by the Commitment.
6. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
7. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) ditches and ditch rights; water rights, claims or title to water; (d) all interest in oil, gas, coal and other mineral rights severed by predecessors in Title and any and all assignments thereof or interests therein; whether or not the matters excepted under (a), (b), (c) or (d) are shown by the Public Records.
8. Any rights, title or interest of the general public, the State of Colorado and/or the United States in and to the waters, bed and banks of the San Juan River.
9. Any question, dispute or adverse claims as to any loss or gain of land as a result of any change in the river bed location by other than natural causes, or alteration through accretion, reliction, erosion or avulsion of the center thread, bank, channel or flow of waters in the San Juan River lying within subject land; and any question as to the location of such center, thread, bed, bank or channel as a legal description monument or marker for purposes of describing or locating subject lands.
10. Right of way for County Road 500.
11. All standing growth, standing and down merchantable and usable timber as conveyed in Quit Claim Deed from Whitney Newton to The National Lumber and Creosoting Company, recorded November 30, 1927 in [Book 42 at Page 439](#).
12. An undivided 1/2 interest in all oil, gas and other minerals in and under said property as conveyed by Arthur W. King, Eula L. King, Marcelino Harris, Adnelde Aguilar Harris, and Charles E. Harris, Sr. to Harold Payne in Mineral Deed, recorded September 30, 1947 in [Book 86 at Page 103](#), and any and all assignments thereof or interests therein.
13. An undivided 1/2 interest in all oil, gas and other minerals and mineral substances as ordered and decreed to P.B. English and Byrd-Frost Incorporated in Quiet Title Decree, recorded June 11, 1948 in [Book 86 at Page 429](#), and any and all assignments thereof or interests therein.

14. The effect of Disclosure Notice from James A. Constant, Jr. and Leila B. Constant recorded June 3, 1998 as Reception No. [98004440](#).
15. Easement as described in instrument from James A. Constant, Jr. Revocable Trust and the Leila B. Constant Revocable Trust to The Richard A. Berlanti Trust dated January 16, 1996, recorded September 6, 2006 as Reception No. [20608559](#).
16. Terms, agreements, provisions, conditions, obligations and easement as contained in Settlement Agreement and Release, between James A. Constant, Jr., Leila B. Constant, James A. Constant, Jr. Revocable Trust, the Leila B. Constant Revocable Trust, Quince Associates, LP and The Richard A. Berlanti Trust, recorded November 20, 2006 as Reception No. [20611211](#).
17. Oil and Gas Lease between James A. Constant, Jr. Revocable Trust dated May 30, 1995, Lessor(s), and Finney Land Co., Lessee(s), dated May 15, 2013, recorded June 11, 2013 as Reception No. [21303844](#), and any and all assignments thereof or interests therein and any easements or right of entry with respect thereto.
18. Oil and Gas Lease between Leila B. Constant Revocable Trust dated May 30, 1995, Lessor(s), and Finney Land Co., Lessee(s), dated May 15, 2013, recorded February 20, 2014 as Reception No. [21400849](#), and any and all assignments thereof or interests therein and any easements or right of entry with respect thereto.

Note 1: Colorado Division of Insurance Regulations 3-5-1, Paragraph C of Article VII, requires that "Every title entity shall be responsible for all matters which appear of record prior to the time of recording whenever the title entity conducts the closing and is responsible for recording or filing of legal documents resulting from the transaction which was closed." (Gap Protection)

Note 2: Exception No. 4 of Schedule B, Section 2 of this Commitment may be deleted from the Owner's Policy to be issued hereunder upon compliance with the following conditions and at the written request of the insured:

- A. The land described in Schedule A of this commitment must be a single family residence, which includes a condominium or townhouse unit.
- B. No labor or materials may have been furnished by mechanics or materialmen for purpose of construction on the land described in Schedule A of this Commitment within the past 13 months.
- C. The Company must receive an appropriate affidavit indemnifying the Company against unfilled mechanic's and materialmen's liens.
- D. Any deviation from conditions A through C above is subject to such additional requirements or information as the Company may deem necessary, or, at its option, the Company may refuse to delete the exception.
- E. Payment of the premium for said coverage.

Note 3: The following disclosures are hereby made pursuant to §10-11-122, C.R.S.:

- (i) The subject real property may be located in a special taxing district;
- (ii) A certificate of taxes due listing each taxing jurisdiction shall be obtained from the County Treasurer or the County Treasurer's authorized agent; and
- (iii) Information regarding special districts and the boundaries of such districts may be obtained from the County Commissioners, the County Clerk and Recorder, or the County Assessor.

Note 4: If the sales price of the subject property exceeds \$100,000.00, the seller shall be required to comply with the disclosure or withholding provisions of C.R.S. §39-22-604.5 (Non-resident withholding)

Note 5: Pursuant to CRS 10-11-123 Notice is hereby given:

- (a) If there is recorded evidence that a mineral estate has been severed, leased or otherwise conveyed from the surface estate then there is a substantial likelihood that a third party holds some or all interest in oil, gas, other minerals, or geothermal energy in the property; and
- (b) That such mineral estate may include the right to enter and use the property without the surface owner's permission.

Note 6: Effective September 1, 1997, C.R.S. 30-10-406 requires that all documents received for recording or filing in the clerk and recorder's office shall contain a top margin of at least one inch and a left, right and bottom margin of at least one-half inch. The clerk and recorder may refuse to record or file any document that does not conform.

Note 7: Our Privacy Policy is attached to this commitment.

Note 8: Pursuant to C.R.S. 38-35-125(2) no person or entity that provides closing and settlement services for a real estate transaction shall disburse funds as a part of such services until those funds have been received and are available for immediate withdrawal as a matter of right.

Note 9: C.R.S. 39-14-102 requires that a real property transfer declaration accompany any conveyance document presented for recordation in the State of Colorado. Said declaration shall be completed and signed by either the grantor or grantee.

Note 10: Pursuant to C.R.S. 10-1-128 (6)(a), It is unlawful to knowingly provide false, incomplete, or misleading facts or information to an insurance company for the purpose of defrauding or attempting to defraud the company. Penalties may include imprisonment, fines, denial of insurance and civil damages. Any insurance company or agent of an insurance company who knowingly provides false, incomplete, or misleading facts or information to a policyholder or claimant for the purpose of defrauding or attempting to defraud the policyholder or claimant with regard to a settlement or award payable from insurance proceeds shall be reported to the Colorado division of insurance within the department of regulatory agencies.

Nothing herein contained will be deemed to obligate the company to provide any of the coverages referred to herein unless the above conditions are fully satisfied.



Privacy Policy Statement

This notice is being provided on behalf of Colorado Title & Closing Services; Affiliates: Colorado Land Title Co. Inc, CLX Exchange Accommodators Inc, Rocky Mountain Escrow Inc and La Plata Abstract Co. dba Colorado Abstract and Title Services. It describes how information about you is handled and the steps we take to protect your privacy. We call this information "customer data" or just "data". If your relationship with us ends, we will continue to handle data about you the same way we handle current customer data.

Protecting Customer Data

We will use our best efforts to ensure that no unauthorized parties have access to any of your information. We restrict access to customer data about you to those individuals and entities who need to know that information to provide products or services to you. We will use our best efforts to train and oversee our employees to ensure that your information will be handled responsibly and in accordance with our privacy policy. We require our employees to keep the data secure and confidential.

Information We Collect

In the course of our business some of the customer data we collect may be nonpublic personal information about you from the following sources:

- Information we receive from you or your authorized representative on applications or other forms;
- Information about your transactions with us, our affiliates, or others;
- Information we receive from our internet web sites;
- Information we receive from the public records maintained by governmental entities that we either obtain directly from those entities, or from our affiliates or others;
- Information we receive from consumer or other reporting agencies; and
- Information from lenders and third parties involved in your transaction.

We maintain safeguards to protect your customer data from unauthorized access or intrusion. We limit access to your customer data only to those employees who need such access in connection with providing products or services to you or for other legitimate business purposes.

Use of Information

We may provide your customer data to various individuals and companies, as permitted by law, without obtaining your prior authorization.

Disclosures may include, without limitation, the following:

- To our affiliates and/or successor in interest;
- To agents, brokers, lenders or representatives to provide you with services you have requested;
- To third-party contractors or service providers who provide services or perform marketing or other functions on our behalf;
- To others with whom we enter into joint marketing agreements for products or services that we believe you may find of interest; and
- To lenders, lien holders, judgment creditors, or other parties claiming an encumbrance or an interest in title whose claim or interest must be determined, settled, paid or released prior to a title or escrow closing.

We may also disclose data as permitted or required by law, for example:

- To law enforcement officials;
- In response to subpoenas or a government investigation;
- To regulators and the Insurance Companies we represent; or
- To prevent fraud.

Links to Other Websites

Our websites contain links to websites that are provided and maintained by third parties and that are not subject to our Privacy Policy Statement. Please review the privacy policy statements on those websites. We make no representations concerning and are not responsible for any such third party websites or their privacy policies or practices.

Changes to this Privacy Policy Statement

This Privacy Policy Statement may be amended from time to time consistent with applicable privacy laws. When we amend this Privacy Policy Statement, we will post a notice of such changes on our website. The effective date of the Privacy Policy Statement, as stated below, indicates the last time this Privacy Policy Statement was revised or materially changed.



ALTA Commitment Form (6-17-06)

COMMITMENT FOR TITLE INSURANCE

ISSUED BY



COLORADO LAND TITLE CO. LLC

Providing your Title & Closing needs for over 60 years

AGENT FOR

WESTCOR LAND TITLE INSURANCE COMPANY

Westcor Land Title Insurance Company, a California corporation ("Company"), for a valuable consideration, commits to issue its policy or policies of title insurance, as identified in Schedule A, in favor of the Proposed Insured named in Schedule A, as owner or mortgagee of the estate or interest in the land described or referred to in Schedule A, upon payment of the premiums and charges and compliance with the Requirements; all subject to the provisions of Schedules A and B and to the Conditions of this Commitment.

This Commitment shall be effective only when the identity of the Proposed Insured and the amount of the policy or policies committed for have been inserted in Schedule A by the Company.

All liability and obligation under this Commitment shall cease and terminate six (6) months after the Effective Date or when the policy or policies committed for shall issue, whichever first occurs, provided that the failure to issue the policy or policies is not the fault of the Company.

The Company will provide a sample of the policy form upon request.

IN WITNESS WHEREOF, WESTCOR LAND TITLE INSURANCE COMPANY has caused its corporate name and seal to be hereunto affixed and by these presents to be signed in facsimile under authority of its by-laws, effective as of the date of Commitment shown in Schedule A.

Issued By:

WESTCOR LAND TITLE INSURANCE COMPANY

COLORADO LAND TITLE COMPANY LLC
970 Main Avenue (P.O. Box 3389)
Durango, CO 81302
(970) 247-5464
Fax: (970) 247-0105

As Agent



By: Mary O'Donnell
President

Attest: Patricia H. Power
Secretary

CONDITIONS

1. The term mortgage, when used herein, shall include deed of trust, trust deed, or other security instrument.
2. If the proposed Insured has or acquired actual knowledge of any defect, lien, encumbrance, adverse claim or other matter affecting the estate or interest or mortgage thereon covered by this Commitment other than those shown in Schedule B hereof, and shall fail to disclose such knowledge to the Company in writing, the Company shall be relieved from liability for any loss or damage resulting from any act of reliance hereon to the extent the Company is prejudiced by failure to so disclose such knowledge. If the proposed Insured shall disclose such knowledge to the Company, or if the Company otherwise acquires actual knowledge of any such defect, lien, encumbrance, adverse claim or other matter, the Company at its option may amend Schedule B of this Commitment accordingly, but such amendment shall not relieve the Company from liability previously incurred pursuant to paragraph 3 of these Conditions.
3. Liability of the Company under this Commitment shall be only to the named proposed Insured and such parties included under the definition of Insured in the form of policy or policies committed for and only for actual loss incurred in reliance hereon in undertaking in good faith (a) to comply with the requirements hereof, or (b) to eliminate exceptions shown in Schedule B, or (c) to acquire or create the estate or interest or mortgage thereon covered by this Commitment. In no event shall such liability exceed the amount stated in Schedule A for the policy or policies committed for and such liability is subject to the insuring provisions and Conditions and the Exclusions from Coverage of the form of policy or policies committed for in favor of the proposed Insured which are hereby incorporated by reference and are made a part of this Commitment except as expressly modified herein.
4. This Commitment is a contract to issue one or more title insurance policies and is not an abstract of title or a report of the condition of title. Any action or actions or rights of action that the proposed Insured may have or may bring against the Company arising out of the status of the title to the estate or interest or the status of the mortgage thereon covered by this Commitment must be based on and are subject to the provisions of this Commitment.
5. *The policy to be issued contains an arbitration clause. All arbitrable matters when the Amount of Insurance is \$2,000,000 or less shall be arbitrated at the option of either the Company or the Insured as the exclusive remedy of the parties. You may review a copy of the arbitration rules at <http://www.alta.org>.*

AMERICAN LAND TITLE
ASSOCIATION
COMMITMENT 6-17-06

WESTCOR
LAND TITLE
INSURANCE COMPANY

COMMITMENT
FOR
TITLE INSURANCE

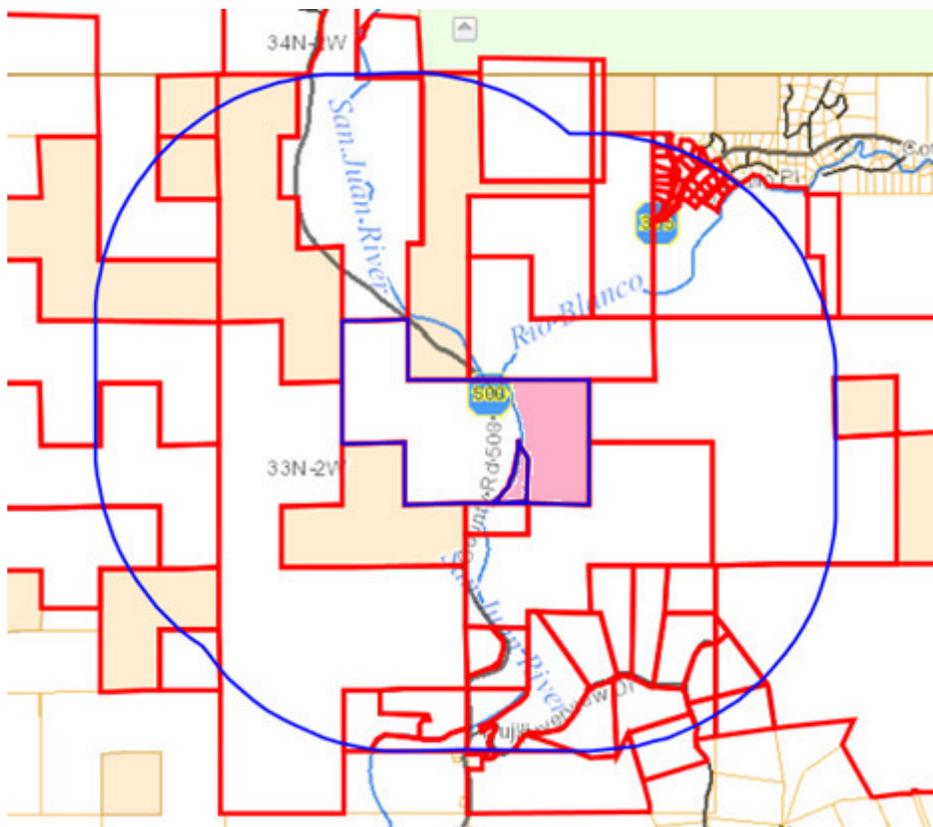
HOME OFFICE
201 N. New York Avenue, Suite 200
Winter Park, Florida 32789
Telephone: (407) 629-5842

LEGAL DESCRIPTION

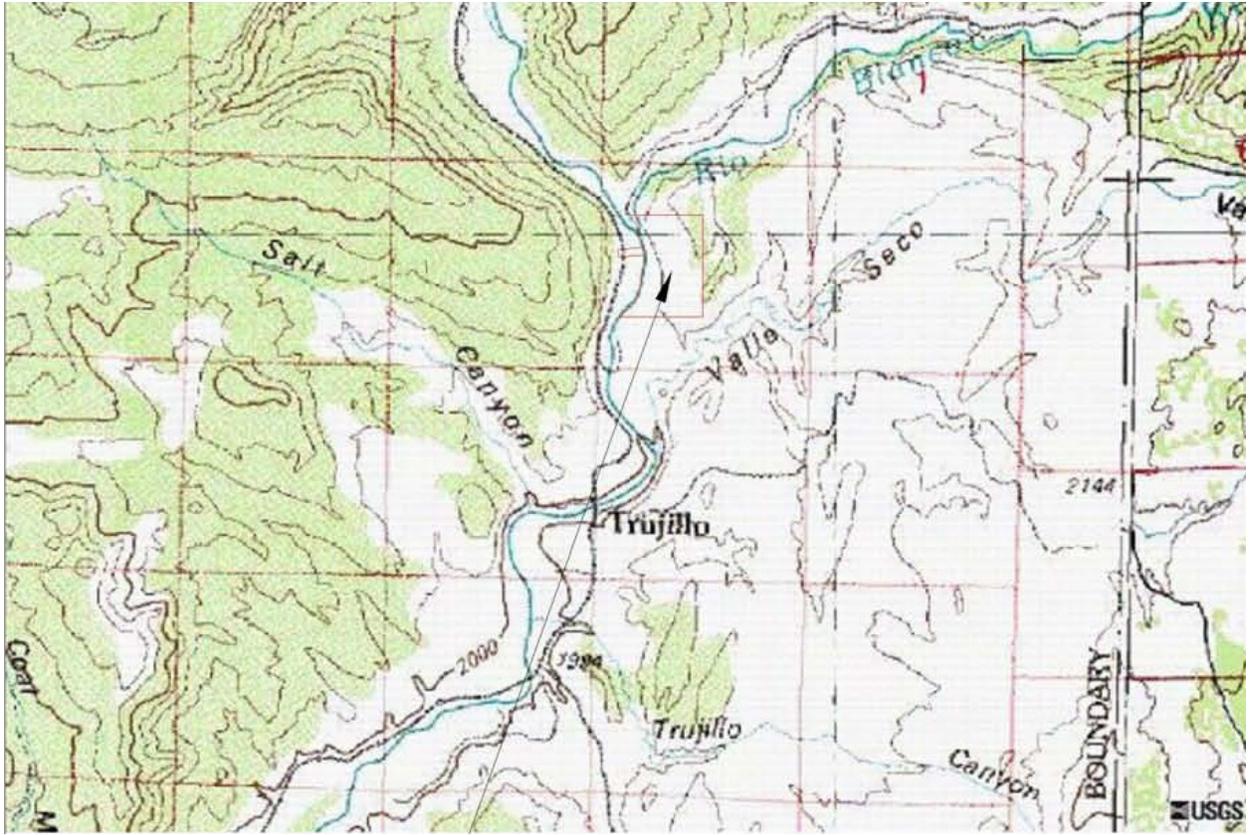
A parcel of land in Section 11, Township 33 North, Range 2 West, N.M. (10th) P.M., Archuleta County, Colorado, a portion of county parcel number 5965-10-100015, being more particularly described as follows:

That portion of the S $\frac{1}{2}$ of the NW $\frac{1}{4}$ and the N $\frac{1}{2}$ of the SW $\frac{1}{4}$ of Section 11, east of the San Juan River, approximately 99.7 acres more or less, plus an access easement or zone of 150 feet by 562 feet¹ west of the San Juan River (1.9 acres more or less), for a total of 102.6 acres, more or less.

Property corners are marked with standard survey markers; corners which might be disturbed by mining activities will also be marked with witness markers and delineators. The permit boundary along the east bank of the San Juan River is described as ten feet above the normal high-water mark, and the boundary along the irrigation ditch described as being on the east bank at the normal maximum flow level.



CONSTANT RANCH (Purple) and 1-mile radius from property line (NOTE: TWO RIVERS PIT is only that portion of the parcel EAST of the San Juan River/Rio Blanco (shaded area).)



TWO RIVERS PIT

Location on USGS map, showing section lines.

Type of right	Known owner/leasee	Document	Date	Reference	Citation	Date Expiration
½ undivided interest in oil, gas and other minerals	Harold Payne	Mineral Deed	30 SEP 1947	PB86, P103	Item 12	
½ undivided interest in oil, gas and other minerals	P.B. English & Byrd-Frost Inc	Quiet Title Decree	11 JUN 1948	PB86, P329	Item 13	
Oil and Gas Lease	Finney Land Co.	Lease	15 MAY 2013	21303844	Item 17	15 MAY 2018
Oil and Gas Lease	Finney Land Co.	Lease	15 MAY 2013	21400849	Item 18	15 MAY 2018
Oil and Gas Lease	Energen	Lease Assigned	15 MAY 2013	No record		15 MAY 2018
Oil and Gas Lease	Southland Royalty Company	Lease Assigned	15 MAY 2013	No record		15 MAY 2018

Note 1: No documentation has been found indicating the present owner of that interest belonging to Mr. Payne.

Note 2: No documentation has been found indicating the present owner of P.B. English interest. English may have been a contract geologist for Byrd-Frost

Note 3: Byrd-Frost Inc. - See attached report.

Note 4: Mike Finny of Finney Land Co. stated that tl

Note 5: Brian Lewis of Energen stated that the lease had been assigned to Southland Royalty Company and that he had no records.

Note 6: Southland Royalty has not returned calls for information, except to state that they didn't think that they had any leases in Archuleta County.

Note 7: No leases or contracts for timber exist: vegetation is not highly rated for timber production.

SYNOPSIS OF TWO RIVERS PIT PROJECT

Prepared for Archuleta County Planning Manager, Planning Commission, and Board of County Commissioners

Date: 27 July 2015 Rev 01 September 2015, 30 October 2015

Property Parcel: 5965-10-100015

Address of Project (proposed): 12550 Trujillo Road South (CR-500)

Landowners: Jac & Lee Constant, (CONSTANT JAMES A JR REVOCABLE TRUST & CONSTANT LEILA B REVOCABLE TRUST) 12500 Trujillo Road South (CR-500)

Operator: C&J Gravel Products, Inc., Durango, CO

C&J Gravel proposes to construct and operate a construction minerals extraction (sand and gravel mining and processing) operation, to be called the Two Rivers Pit, on property of the landowners. Located on a 320-acre parcel, the operation would have a permit area (by state law) of 102.6 acres, of which 62.6 acres would be affected (that is, disturbed by mining and related activities, and require reclamation). Access west of the river uses 3 acres. The remaining 37 acres is contained in buffer zones which will NOT be disturbed in any way by mining activities, and which therefore ensure (in accordance with state law) that neighboring property (including structures) are not damaged by mining operations. The entire affected area is located on the bench above and east of the San Juan River, on an area of mixed forest, savannah (scrub) and grass, and will be reclaimed as improved, irrigated range for the landowners' cattle grazing operations.

The actual excavation will begin near the center of the eastern edge of the affected area and then move south, so that the nearest neighboring residences are sheltered from impacts, since the activities involve excavation below the original ground level. Each year, about 2 acres of land will be mined, for up to 84,000 tons of raw material, generally processed to produce up to 70,000 tons of actual construction materials (sand and gravel) to be shipped from site. In addition, an area of between 4 and 5 acres will be stripped and leveled and shaped to provide space for stockpiles, processing, and loadout (including a site for temporarily locating ready-mixed concrete plants and/or hot-mix asphalt facilities for specific projects and in accordance with state and county requirements). Areas to be mined will be reclaimed, usually 2-3 years after the mining on that particular area is done, so that of the total area, less than 10-12 acres will be disturbed at any one time.

Access to the pit will use the existing bridge (constructed in 2013) and the existing road/ramp cut up the face of the bench east of the San Juan River, and will connect to CR-500 via a new access point to the south of the existing residential access road. Since all mining and plant activities will be located at least 200 feet from both the bank of the San Juan River and the Harris Ditch, and approximately 150-200 feet higher elevation than either of the two waterways, visibility of the operations from CR-500 will be minimized. Since extraction will be done working in the direction of the nearest neighbor, and will be done below grade, and between 20 and 60 feet below the original terrain, visibility of the operations from neighboring property will also be minimized. No mining or related activities will be done in the floodplain. Following completion of the mining and reclamation, both access and internal ranch existing roads and some roads constructed during mining will be left in place for ranch use. Ground water will not be exposed in mining or reclamation.

Engineering Evaluation Report – Constant Bridge, 12550 Trujillo Road South (CR-500), Archuleta County

1. Purpose: to evaluate the capacity and other features of the bridge constructed in 2013 across the San Juan River
2. Scope: Review of documentation and general inspection, including measurements, of the bridge, and a brief summary of findings.
3. Preparer: Nathan A. Barton, licensed Professional Engineer (PE), State of Colorado, environmental and civil/permitting compliance engineer for C&J Gravel Products, Inc.
4. Facility/Structure: Steel-stringer with composite deck (gravel-surfaced) and concrete/steel abutments and pier, over San Juan River, owned by Jac & Lee Constant. Earth/gravel approach ramps. Constructed 2013.
5. Documents reviewed for engineering purposes:
 - Approved Archuleta County bridge permit application and file
 - Construction plans and photos of construction in-progress
 - Agreement and addendum to agreement between Constants (owners of bridge and laacind) and owner of Harris Ditch (on an easement across Constant land)
6. Actions performed:
 - Reconnaissance of bridge, including all spans and abutments/approaches
 - Measurements to verify compliance with agreements and suitability for truck traffic
7. Actions NOT performed:
 - Specific review and verification of calculations
 - Inspection of individual members, such as stringers, elements of deck, railings, abutments and other superstructure and substructure components
 - Legal review of documents
8. Findings: It is my professional opinion that:
 - a. the bridge and its components are in compliance with the physical measurements as stated in the Addendum to the Agreement (Item 4c above), specifically the distance between the exterior faces of the bridge abutments on either side of the Harris Ditch, the width of the bridge deck, and the height of the bridge deck above the ditch invert, and that the clearance between the elements protecting the abutments are adequate for equipment to move through for maintenance of the Harris Ditch.
 - b. the bridge is properly designed and constructed to meet both county requirements and good engineering practice for the safe, continued use by trucks and other equipment fully and properly loaded, including standard commercial, over-the-road trucks hauling sand and gravel, provided traffic is properly managed.

- c. improvements to the road connecting the bridge and its existing earth and gravel approach ramp between the river and CR-500 necessary to support heavy truck traffic will not (assuming proper design and construction) change the base flood elevation of the 100-year floodplain in the area, require any mitigation to preserve the ability of the floodplain to hold the same amount of river flow for up to a 100-year (1% probability storm) event, as historically has been the case, and that the bridge is not in the floodway.
9. General observations and notes:
- a. The bridge consists of three spans, two to span the San Juan River and one to span the Harris Ditch, together with four bridge abutments and one pier located mid-stream in the San Juan.
 - a.i. The span and height over the San Juan River was not measured, but is definitely outside the ordinary high water mark of the river.
 - a.ii. The width of the deck is 15 feet, 3/8-inches, and it is surfaced with Class VI base course.
 - a.iii. The span over Harris Ditch, as measured at the base of the deck, is 32 feet, between the face of the abutments.
 - b. The bridge, including superstructure and substructure (including abutments), was designed by a licensed professional engineer with experience in bridge design and related disciplines, and appear to be adequately constructed in accordance with the plans and specifications.
 - c. The bridge was constructed in accordance with a bridge application as approved by Archuleta County, and as reviewed by the local regulatory office of the US Army Corps of Engineers. The application indicates the purpose is for agricultural use but there is nothing in the approval or County regulations that limits such use to agricultural purposes.
 - d. The bottom of the stringers and the deck appear to be well above the base flood elevation (BFE) for the 100-year floodplain (Zone A) for this location on the San Juan River.
 - e. The abutments and pier of the bridge appear to be properly constructed and protected against damage from flood waters, debris, and other hazards associated with high water.
 - f. The weight limits as posted on both bridge approaches on sign (multi-unit trucks 65T, three-axle trucks 49T, two axle trucks 45T) were provided by engineer designing/supervising construction of the bridge.
 - g. Guardrails (W-beam with steel posts) are 30 inches high (measured from top of deck) and installed by welding and bolting, and appear in compliance with CDOT standards.
 - h. Bridge deck is designed for one-lane truck traffic.
 - i. The Harris Ditch has not been maintained (cleaned) during the present season and may not have been maintained in the previous season, based on vegetation and other features.
 - j. If used for transportation related to mining of mineral/non-metallic materials, the bridge and approaches are not considered to be part of the mining operation (per US MSHA) but are transportation related.

10. Recommendations:

a. Signage and Markings (Safety/Traffic):

- a.i. Post speed limit signs: recommended 15 mph (dust control and safety)
- a.ii. Install delineators at 30-foot intervals on both sides of bridge and approaches (standard yellow/white retroreflective 3"x3" markers).
- a.iii. Control traffic by automatic (weight-triggered) and radio-controlled traffic light at the bottom of ramp west of river and at top of ramp/cut on the bench above the river to the east. There is not direct line of sight between these points.

b. Inspection, maintenance, and repairs:

- b.i. Maintain a daily log of all vehicle traffic greater than 20 tons gross vehicle weight. (Part of scale/sales log.)
- b.ii. Inspect deck at least quarterly and at beginning of operations if seasonal in nature. Maintain or repair as needed.
- b.iii. Repair surfacing (gravel) on deck as needed, and inspect monthly during heavy use (10 or more trips/day). Maintain or repair as needed.
- b.iv. Inspect superstructure annually. Maintain or repair as needed.
- b.v. Inspect substructure (including abutments) annually. Maintain or repair as needed.
- b.vi. Inspect approaches on both sides of river/ditch annually. Maintain or repair as needed.
- b.vii. Inspect gabions and rocks protecting abutments every three years. Maintain or repair as needed.
- b.viii. Document inspections with dated photographs and an inspection log; document repairs and maintenance with log, including time and quantities of materials.
- b.ix. At minimum, the monthly and quarterly inspections should be performed by an experienced construction supervisor.



Attachment 2. Revised Engineering Report on Two Rivers Pit road.

EXISTING SITE CONDITIONS:

TO BE UNCHANGED: West bank access ramp to Bridge, Bridge, and Access Road on east bank from Bridge to top of valley face. Existing Constant ranchstead yard access to CR-500. To be used for both ranching and mining.

PROPOSED TO BE MODIFIED: Access road from bridge through Constant ranchstead yard: no non-farm truck traffic to be on this road. To be limited to ranch/residential use only.

PROPOSED NEW CONSTRUCTION: Access road from curve (approximately 300 feet W of Bridge) to CR-500, including new access to County Road. To be used for both ranching and mining.

PROPOSED CLASSIFICATION: The proposed road will allow access *ONLY* to the Constant Property (although of course, access will be allowed across the property for firefighting and other emergencies). Therefore, no right-of-way and no easement is requested. Based on proposed temporary and permanent use, and discussions with County Planning and County Engineer, we believe the appropriate classification is as a “Primitive Road.” (Section 27.1.2.7) (See calculations below: anticipated traffic expected to be less than 400 vehicles per day).

ROAD DESIGN:

I am a qualified Colorado Licensed Professional Engineer, per Section 27.1.3. I am a graduate of the Colorado School of Mines (1979), have been licensed in Colorado since 1990, have 37 years service in the United States Army Corps of Engineers (11 active duty, 26 reserve), and recent experience includes design of highway improvements and new construction on Colorado and South Dakota state/federal highways, as well as on private property. I have done the design, plans and specifications for this project, myself or by persons responsible to me and under my immediate and direct supervision.

FUTURE PLANNING:

A. Design period: As stated in DRMS Application Exhibits, the Two Rivers Pit will operate for an estimated 25 to 30 years. This is being used as the design period.

B. Projected development: As stated in the DRMS Application Exhibits, the Two Rivers Pit will be a temporary (estimated 25-30 years), and will include annual mining of approximately 2 acres (100,000 tons/year of pit run, producing 70,000 tons of construction material shipped from the site, either as sand and gravel or in products such as hot-mix asphalt or ready-mixed concrete/concrete products). Areas not actively mined and not in reclamation status will continue to be used for agriculture (grazing), and following mining, the site will be used entirely for grazing. The site is not located near areas anticipated to be developed for residential, commercial, or industrial purposes, and access roads to the Pit are not anticipated to be used in the future to provide access to other properties.

C. Projected Traffic Volumes. Standard categories for traffic volumes do not apply to this project. Traffic volumes are calculated based on average and maximum anticipated shipment of construction materials from the Two Rivers Pit, plus allowances for support traffic (inspection, maintenance and repair, employee commuting, etc.) to the pit. These assumptions and calculations are found in the DRMS Application Package, Exhibit M. and restated here, with additional comments and information in italics:

TRUCKS

A variety of trucks will be used to haul materials from the Pit, including single dump trucks, semi-dump trucks, and trucks with pups. Most commonly used will be dump trucks with pups. (Sometimes called tandems.) *Semi-dump trucks may include end, side, and belly dump. All loads will be tarped before departing the pit.* Average haul for all vehicles will be 25 tons per vehicle.

TRAFFIC COUNTS AND SCHEDULES

Assuming an average haul of 70,000 tons per year, 25 tons/vehicle, and 120 hauling days per year, average truck traffic will be 23.33 trucks per day: 21 north and 2 south, with peak traffic counts of less than 4 per hour. Of 21 north, an estimated 6 will go to SH-160 in Pagosa West, 8 to Pagosa Springs itself, with various routes through the town, 5 east through Pagosa Springs to SH-84 for delivery to County or State shops, and 2 to delivery locations in the vicinity not requiring travel on state highways. County zoning and conditional use permits are expected to dictate exact routes and traffic limits. During normal operations, inspection, maintenance, and employee commuting traffic is expected to consist of 2-axle vehicles of 5 tons gross vehicle weight or less, for an average of three round trips per day to the Pit. Seasonally, depending on contracts for materials, additional truck and small vehicle

traffic can be anticipated for several days, to bring in equipment (crushing and screening equipment and other processing equipment), fuel, and other support needs. This will add an average of 0.5 round trips per day, mostly to and from Pagosa Springs.

Total annual average daily traffic count estimated: 24 single or multi-unit trucks, 3 small vehicles: total 27 round trips, or 54 movements. *This is the sum of the above movements.*

This estimate of traffic is based on information from the Institute of Transportation Engineers, CDOT data, and experience with sand and gravel operations, particularly in southwestern Colorado.

General Design Elements

Design Capacities

No information is available on the category of County Road 500 (*Trujillo Road*), nor existing traffic counts for the road. (*Traffic data obtained from the County Engineer in January 2016 is limited and will require supplementation.*) Based on observations from 2008 to present, this design assumes that the increased traffic in both directions from this operation will not exceed the range specified for its functional category. (*It is assumed to be a “Major Collector Road” based on connections to local access roads and residences/ranches along the road itself.*)

The traffic count is also not expected to exceed the planned capacity of the access road itself.

Design Speed

Interior to project: Based on the bridge, radius of existing curves, traffic control, grade of the ramp E of the bridge and the ramp to the Pit W of the bridge, sight distances (from the top of the hill and bridge), as well as environmental and miner safety and health requirements (such as dust control and traffic management) the speed limit on the access road is proposed to be made 15 mph, going uphill, and 10 mph going downhill when loaded.

Exterior to project (CR-500): Semi-trucks can operate safely at existing posted speed limits, based on observation of trucks.

Surfacing Requirement

The anticipated traffic, even during peak periods, is significantly less than 700 ADT. Therefore, paving is not planned. However, for environmental requirements (dust control) and to reduce potential nuisance and safety issues, the entire access road will have dust chemicals (mag-water or equal) applied regularly. The road surface will be graveled, using Class 6 base-course material, compacted in accordance with CDOT/County specifications. *Minimum of 6 inches of compacted aggregate base course will be used, exceeding county standards of 4 inches.*

Right-of-Way

As this is a private access road, there is no right-of-way proposed.

One-Way Roads

The access road will be a two-way road. The portion of the road from the toe of the ramp W of the Bridge to the top of the ramp up to the Pit itself will have automatic/remote-control traffic signals to provide for alternating traffic, for safety and environmental considerations. Roads within the pit itself will be one- or two-way based on safety and traffic control requirements (MSHA and DRMS).

Striping

As the road is proposed to be unpaved, no striping is proposed.

Specific Design Elements

Alignment

Alignment is dictated by the terrain and location of the Bridge. The terrain allows for both horizontal and vertical alignment to comply with County requirements, together with the proposed posted speed limit. Curbs will not be used, except that existing on the bridge deck itself, where a W-rail protects against going over the curb.

The radii of the intersection of the access road with CR 500 is proposed to be 40 feet, due to truck traffic. This exceeds County requirements of 35 feet (27.1.3.3.).

Sight distance is estimated to be greater than 1500 feet to the S on CR-500, and 1200 feet to the N on CR-500. Traffic in both directions on CR-500 has a clear view of the access road (Bridge to CR-500).

The grades proposed are as follows:

Within 200 feet of the intersection with CR-500: between 0.5 and 2%. (Note: bridge abutment is approximately 500 feet from CR-500.)

Bridge approach from the West (direction of CR-500): 8% (16 feet in 200 feet)

Bridge approach and ramp to the top of the hill (Pit): 8% (100 feet in 1200 feet)

Geometric Cross Sections *See Sheets C4 and C5 in DRMS Exhibits.*

It is proposed that the travel lane widths be as follows:

Between Bridge Ramp on W and CR-500 (400 feet): 2 each 13-foot lanes (26 feet total) with 1-foot shoulders each side: in last 100 feet (single-lane, alternating traffic) before Bridge, total width narrows to 15 feet. *This will provide a minimum of 360 feet of two-lane road for queuing of vehicles.*

Bridge, including E approach: 15-foot lane (single-lane, alternating traffic) (not including curve widening)

Ramp from E approach to Bridge to top of hill (Pit): 16-foot lane (single-lane, alternating traffic).

Roads on the operating area of the Gravel Pit: for haul trucks (one or two-way traffic): minimum 11-foot lane, with 2-foot minimum shoulder or berms.

Crown slope except at the bridge will be between 2 and 3 percent. Superelevation will be limited to 0.08 feet per foot.

Curve Widening at the E approach to the Bridge and at the top of the hill (Pit) will have a driving lane width minimum of 16 feet, with 2-foot shoulders on the outside of the curve.

A “bulb-type” turnaround will be provided at the top of the hill (Pit) and at the plant site, with a minimum exterior radius of 105 feet and a minimum interior radius of 90 feet, clear space, to meet requirements for emergency vehicles. Haul roads in the working area of the pit will normally terminate in cleared working face and pit floor areas at least 100 feet on a side.

Note: Although existing vegetation on site should be considered to have a “high wildfire hazard” rating, construction of the plant site and areas actually being mined will have all vegetation grubbed and the soil stripped and placed into berms (stockpiles) for reclamation, so fire hazard will be reduced to a minimum. See fire safety plan discussion.

Structural Sections

Not applicable (no paving). If paving is done in the future, structural sections will be designed and built in accordance with County requirements.

Drainage

The intersection of the access road will be at or near a crest in CR-500's vertical alignment, and the intersection, including radii, will be constructed to ensure that water continues to flow away from the County Road and access road in both directions, and the crown of the access road will be modified in

the approach to ensure that the crown of CR-500 is protected. Total fill to match the access road with the existing edge of driving lane of CR-500 has been surveyed at less than 2 feet vertical height.

Therefore, no culvert is needed at the access point.

Crown of the access road between the Bridge and CR-500 will be matched with bar ditches to catch and allow flow off the roadway to infiltrate or be transported as sheet flow to the surrounding irrigated pastureland (on both north and south sides of the access road. Water from the ramp to the Bridge will continue to flow into the bosque on the west bank of the San Juan River: no changes are proposed. Therefore, no culvert is needed for that portion of the access road which is located between the CR-500 intersection and the Bridge.

The existing road from the E approach of the Bridge to the top of the hill (Pit) has existing drainage ditches on both sides of the road; the one on the uphill side flows into the river north of the bridge, near the mouth of Harris Ditch. The one on the downhill side flows into grassed areas between the face of the hill and the Harris Ditch, and either infiltrates or flows into Harris Ditch. At present, an area of approximately 1.3 acres at the top of the Hill is part of the basin which drains into these two ditches, or down the road itself. With grubbing and stripping and construction of roads in the Pit, including access to the plant site and initial areas to be mined, this will be reduced to approximately 0.4 acres in size or less, thus reducing surface water runoff along the road and in its ditches. Maintenance and inspection (M&I) of these ditches is included in the surface water management plan (SWMP) for the Two Rivers Pit. The M&I of the roadway itself is included in the operating plan for the Pit.

Side slopes

The side slopes for the radii of the intersection with CR-500, and along the 400 feet between CR-500 and the W Bridge Ramp shall be 3:1 or flatter.

No change is proposed for existing side slopes of the road E of the Bridge to the top of the hill (Pit).

These slopes have been examined by a licensed civil engineer qualified in soils and rock analysis and are stable since their construction in 2013, or earlier.

Side slopes for roads in the Pit itself may be steeper than 3:1 during active mining operations, but shall be reclaimed to 3:1 or less as required by DRMS.

Sidewalks

No sidewalks are proposed. Pedestrian traffic is not expected.

Traffic Control and Safety

Guardrails: None proposed, except for existing guardrails on Bridge, which meet CDOT standards and specifications.

Traffic Control Devices (Signage and Signals)

All signage shall be in conformance to the MUTCD, including CDOT addenda as applicable. During construction of the access to CR-500, all construction signage shall be in accordance with MUTCD and CDOT policy, and flaggers and other traffic control personnel shall be qualified in accordance with CDOT requirements.

Signage and traffic signals proposed:

R-1 STOP 24-inch, on standard breakaway post, to be installed 40 feet from edge of CR-500 (outside ROW and radii).

R-2 (15) SPEED LIMIT, 24-inch, (3 each) on standard breakaway post, to be installed 100 feet from edge of CR-500, at toe of W Bridge ramp (for outgoing traffic), and on approach E of Bridge.

R-2 (10) SPEED LIMIT, 24-inch, (2 each) on standard breakaway post, to be installed at top of hill and approximately 100 feet W of Bridge (both for outgoing traffic).

W-X 8% GRADE WARNING SIGN, 24-inch, (1 each) to be installed at the top of the hill (for outgoing traffic)

Automated and remote control traffic signals, standard LED 4-inch tri-color lenses, two sets, one at the

top of the hill for outgoing traffic, and one at the toe of the W Bridge ramp for inbound traffic. Signals will be controlled both by remote and by sensors to determine presence and passage of traffic, to control alternating traffic on the Bridge, Bridge ramps, and road to the top of the Hill (total distance approximately 1600 feet).

MSHA and Company Policy, and other (State) Permits require that additional signage be installed for various purposes, including traffic safety.

Delineators shall be installed at 100-foot (or closer) intervals on both sides of the access road between CR-500 and the toe of the road up the hill. Delineators shall be white Carsonite blades with yellow/white retroreflective squares, approved for CDOT projects.

Sight Triangles

At the intersection of the access road with CR-500, a sight triangle minimum of 70 feet shall be maintained in accordance with Section 27.1.6.3.

Aboveground Utility Locations

No aboveground or underground utilities are proposed to be constructed along the access road. All existing aboveground utilities are located on the W side of CR-500, opposite the access road.

Mail Delivery

No USPS mail delivery is proposed to the Two Rivers Pit. Delivery to the Constants' homes will continue unchanged.

Design Standards for Driveways

Although we are requesting classification as a “primitive road” the design meets or exceeds all requirements for driveways for commercial activities in County Road and Bridge Engineering Standards except for paving. Paving does not make sense as CR-500 is not itself paved. As stated above, dust control measures will be instituted and maintained on the roadway between the bridge and CR-500).

Location of Road

The access road is a minimum of 1500 feet from any road intersections with CR-500, and is proposed to be located approximately 60 feet S (center-to-center) of the existing Constant ranchstead driveway, meeting the 30-foot spacing rule. County Road personnel have inspected the proposed site and have indicated that the existing driveway can be left in place.

Stacking: Approximately 360 feet of two-lane access road is available for stacking both to enter onto CR-500 and to cross the Bridge using signal-controlled alternating-traffic pattern, thus providing for stacking of at least five multi-unit trucks (maximum legal length 65 feet). Due to low traffic volumes, left turns are not expected to be an issue.

Other Design Standards for Driveways

The above discussion of standards meets or exceeds requirements for driveways.

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Attachments:

1. General County Requirements (omitted: see Attachment 5)
2. Copies of Sheets C4 and C5 from DRMS Application Exhibits.

FIRE SAFETY PLAN

1. Site
 2. Purpose
 3. Scope
 4. Site Assessment
 5. Objectives of this plan
 6. Tasks
 7. Responsibilities
 8. Review, update, and approvals]
 9. Regulatory requirements
-
1. Site: Two Rivers Pit, Constant Ranch, 12550 County Road 500, Trujillo, CO (Archuleta County)
 2. Purpose: To identify and guide actions necessary to prevent fires, reduce potential for spread of wildfire and damage from wildfire, and fight fires both on- and off-site, both initially and with fire service support.
 3. Scope: This plan applies to the 102.6-acre permit area of Two Rivers Pit, including the access road and buffers, and to immediately adjacent parts of the Constant ranch, and is limited to those actions which can be done with the personnel and equipment of C&J Gravel Products Inc. and the landowners.
 4. Site Assessment: The site does not have any significant fire hazards.
 1. This site is not identified by the Archuleta County fire service as a “community of concern” for risk of wildfires (map, http://assessorrecords.archuletacounty.org/SubRanking_11x17.pdf)
 2. The site is at moderate risk of wildfire, as it currently exists, with a mixture of low-density forest and scrubland, and grassland, bounded on the west side by the river and the other three sides by similar grazing land. The only nearby residences are:
 1. Two residences located to the south (Diamond-T Ranch) which appear (based on satellite photos) to be “firesafe” as far as cleared safety zones and access.
 2. Two residences on the Constant ranch, located in the valley bottom west of the river, which are “firesafe” as regards cleared safety zones, access, and availability of water for fighting fire.
 3. At present, while water is available on the Constant Ranch either directly from the river or via irrigation systems, this water will have to be trucked to the top of the valley wall where mining and processing will take place. River and irrigation water is assumed to be frozen during part of the winter, so access may be limited.
 4. It is planned that irrigation water will be available via a pipeline installed along the access road ramp, but this may not be available in wintertime due to freezing.
 5. Access to/from the areas to be mined and used for processing and stockpiles is available only through the access road/ramp from CR-500. While the Constants are willing to allow emergency access across their land to reach land of adjacent property owners to the north, east, and south, those landowners are assumed to continue to prohibit any trespass on their land from the Constant property, regardless of purpose.
 5. Assessment of Proposed Project: The project does not present any significant fire hazards.
 1. Since areas to be mined are first cleared and grubbed, then stripped of soil, these areas are

- not at significant risk due to fire and form firebreaks.
2. Plant and stockpile areas are likewise cleared and grubbed and have soil stripped, and are generally large enough both to protect equipment from wildfire and to provide fire breaks against possible sources of ignition and fuels, such as fuel storage tanks, engines, other mechanical equipment, and human activities.
 3. The primary points of concern for wildfire at a construction materials operation are:
 1. Brush piles from clearing and grubbing.
 2. Roots and grass mixed with stripped and stockpiled soil.
 3. Equipment, including crushers, screens, and conveyors, mobile equipment (loaders, trucks, backhoes, etc.), fuel/lubricant storage, and activities, including fueling, maintenance, material processing, smoking, and other sources of sparks and fuel.
 4. Most operations will be conducted in spring, summer and fall; the only anticipated activities in wintertime may be limited hauling of materials from the site.
 5. Mining and material processing operations are uniquely equipped to allow most fires to be fought with personnel and equipment on-hand, including loaders, dozers, water trucks, and hand-tools, with MSHA-trained personnel (experienced miner).
6. Objectives of this plan: To prevent fires on the property, especially those caused by mining and processing and related activities; and to ensure that preparations are made to fight fires which cross onto the property or do start on the property, while preventing and minimizing damage to property and injury to persons and livestock.
7. Tasks
1. PREVENT FIRES ON-SITE:
 1. Ensure that all working areas (mining, processing, and transportation) are free from fire hazards such as weeds and other fuels.
 2. Ensure that equipment and working areas have adequate fire breaks against areas with vegetation or potential fire hazards.
 3. Prohibit activities on-site which can create fire hazards.
 4. Follow proper procedures for fuel storage and transfer, maintenance, equipment storage, material storage, and site inspection.
 5. Inspect work areas daily and weekly to identify and correct fire hazards and other unsafe conditions, especially after maintenance work is done.
 6. Post warning and regulatory signs for no-smoking and other actions.
 7. Control weeds. Control tall grass and other vegetation in traffic areas, including parking. Cut weeds and tall grass back from roadways.
 8. Control waste and litter. Collect and dispose of properly.
 9. DO NOT BURN TRASH.
 10. Properly store fuels and lubricants to protect against spills and being struck or shot at.
 11. Clean up spills of fuels and lubricants promptly.
 2. PROTECT SITE, EQUIPMENT AND OPERATIONS FROM FIRE:
 1. Integrate protections with other environmental, safety and health measures.
 2. Establish and maintain adequate fire breaks (safety zones) minimum 50 feet from all equipment, brush/grubbing stockpiles, etc.
 3. Block off and control trails and access to areas not prepared for traffic.
 4. Prevent trespassing by blocking access points and posting signs.
 5. Inspect engines and other fuel-burning equipment for spark arrestors and other protective features.

6. Inspect site and equipment if fires are observed or reported in the vicinity (within 5 miles).
 7. In coordination with county fire service authorities and landowners, consider controlled burns to remove thick stands of grass or weeds not otherwise able to be controlled.
 8. Control access to site by untrained personnel.
 9. Ensure that notification procedures (phone, radio, etc.) for calling County Sheriff and Fire Service are posted and accurate.
3. BE PREPARED TO AND FIGHT AND CONTROL FIRES ON-SITE:
1. Ensure that access for emergency equipment is maintained, including minimum 108-foot radii turn-arounds at ends of roads and access above highwalls.
 2. Ensure that water is available in tankers, trailers, or bladders on and adjacent to the plant site for dust and fire control.
 3. Ensure that all fuel-burning equipment and all equipment likely to cause sparks or friction during operation are equipped with fire extinguishers (minimum 5-pound ABC), and that fire extinguishers are properly inspected and serviceable.
 4. Ensure that hand tools for fighting grass and fuel spill fires are available on-site (shovels, picks, at minimum).
 5. Ensure that personnel are trained to respond properly to fires.
 6. As possible, coordinate with County and local fire service personnel, to include site visits to review preparation and actions.
 7. Follow established MSHA practices for alert and warning of persons on-site for fire and other responsibilities.
 8. Determine whether or not a fire can be controlled with hand tools, motorized equipment (loaders, etc.), water, or other means, or whether fire service should be called.
 9. During fires, ensure that nonessential personnel and equipment are evacuated.
8. Responsibilities: The site safety officer is also the site fire safety coordinator (FSC). The FSC shall assign responsibilities for the above tasks, in writing. The FSC shall ensure that all persons on-site are trained in their tasks.
9. Review, update, and approvals: This plan shall be reviewed at least annually, prior to beginning of operations on-site each year, and prior to moving crushing-screening train to the site. The plan shall be updated as necessary, with copies provided to the landowner and home office. This plan is effective immediately upon review and approval by the owner or manager. The plan shall be updated if determined to be inadequate or incorrect by a Fire Service, DRMS, or MSHA inspector.
10. Regulatory requirements:
1. This Fire Safety Plan is part of the Mine Emergency Response Plan required by MSHA Policy Letter P06-V-10.
 2. This Fire Safety Plan is incorporated into the DRMS Mining Plan and DRMS Reclamation Plan by reference.
 3. The Fire Safety Plan is incorporated into the MSHA Part 48 Fire Fighting Program (of Instruction)
 4. As this site is not located within an established fire protection district, there are no known local regulatory requirements. Although this site is located within the exterior boundaries of the Southern Ute Indian Reservation, there are no known tribal regulatory requirements.

NOXIOUS WEED CONTROL PLAN

1. Purpose: To identify actions to prevent and control infestations of noxious weeds on the lands as described in "Scope" and to comply with all applicable statutes, regulations, and guidelines.
2. Scope: This Noxious Weed Control Plan (NWCP) applies to the Two Rivers Pit (extraction and processing of construction materials and related activities) on the Constant Ranch, Archuleta County, Colorado, to include:
 - a. Permitted area under CDRMS-approved reclamation permitting application and adjacent areas, including access road to County Highway 200, bridge approaches, and immediately adjacent ditches on private land.
3. Responsibilities: The following organizations/agencies have responsibilities in this plan:
 - a. C&J Gravel Products, Inc., permitted operator
 - b. Constant Ranch (Jak and Lee Constant (trustees), as landowner
4. Concept: The land will be managed in a way to minimize infestations of noxious weeds and prevent spread of weeds to adjacent areas. Regular and routine inspections will be made of land to identify weed infestations. Infestations will be controlled and eradicated as much as possible as quickly as possible. Assistance will be requested as necessary. Priority of weed control methods will be established and followed. All operations shall be conducted in a safe and environmentally sound manner and in compliance with all applicable local, state, and federal regulations and statutes, and in compliance with DRMS and other state guidelines.

6. TASKING STATEMENT

Task: To control and when possible eliminate noxious weed infestations on the permitted area and immediately adjacent areas on property owned by landowners, both on affected and on unaffected land, and to prevent spread of weeds to adjoining sites and weed seeds when shipping sand and gravel from the site.

Conditions: Given normal operating conditions, year-round, with areas of disturbance (affected lands being stripped, mined, and reclaimed), unaffected areas, and reclaimed areas either released or still in revegetation stage.

Standards: Comply with:

- a. CDRMS Construction Materials Rules and Permit Conditions,
 - b. Mining and Reclamation Plan and related documents in DRMS application package.
 - c. Colorado Noxious Weed Control Act,
 - d. DRMS weed control policy (17JUL1998 and revised, 14 FEB 2002 and 28 OCT 2002) implementing Rule 3.1.10(6);
 - e. County regulations and policies;
 - f. NRCS/Natural Resource Conservation District recommendations; and
 - g. landowner desires;
- while documenting all actions.

5. DEFINITIONS AND EXPLANATION OF ISSUES:

Legally, a noxious weed is any plant designated by a federal, state or county government as injurious to public health, agriculture, recreation, wildlife or property. Once established, noxious weeds aggressively out-compete desirable native plants for vital resources (moisture, nutrients, space, and sunlight). Without weed management programs, noxious weeds can degrade the local ecosystem by replacing native vegetation communities with annual plant communities, and altering the fire ecology.

Established weed populations damage the ecosystem by forming monocultures that eliminate diverse native communities, increase soil erosion, diminish native forage production and cover for herbivores, and alter natural fire regimes. Additionally, invasive and noxious weeds reduce opportunities for hunting, fishing, camping and other recreational activities; displace many threatened, endangered or sensitive species; reduce plant and animal diversity because of weed monocultures-single plant species that over run other species in an area; disrupt waterfowl and neo-tropical migratory bird flight patterns and nesting habitats; and cost millions of dollars in treatment and loss of productivity to private land owners.

For recycling of aggregate materials, soils, and earth, as with aggregate producers, weed control is critical for additional reasons. First, many specifications for aggregates, including base course, specifically require that the materials be certified as weed-free, and achieving this specification is usually done by on-site inspection of the production and stockpile areas.

5. THREATS: In Archuleta County, various noxious weeds are identified by the County Weed Control Program using recommendations from various state agencies. In addition, state agencies have specified specific weeds to be controlled on areas which they permit. TASK: The permitted operator and user shall review these list (see references) annually and train one or more personnel in recognizing the listed weeds. See Attachment 2. Weed seed may be transported to the site by animals (livestock and wildlife), vehicles, pedestrians, and by wind. Weed seed is unlikely to be transmitted by flow of water on this location.

6. MINIMIZE/PREVENT INFESTATIONS: (See also Attachment 2.)

- a. Minimize disturbed areas, including traffic ways.
- b. Revegetate disturbed areas as quickly as possible.
- c. Ensure that vehicles and equipment are cleaned and free of mud and vegetation when moving to/from work sites.
- d. Ensure that stockpiles are kept compact and vegetated whenever possible.
- e. Protect areas (especially newly-seeded areas) from overgrazing by livestock and/or wildlife by fencing.
- f. Assist upwind neighbors with weed control, including informing them if weed infestations exist on their property near the Constant property/mining permit.
- g. Prior to affecting land for extraction or plant sites, and to shipment of materials, inspect for and remove all possible weeds found, before shipping.
- h. Obtain and use only certified weed-free straw or use fiber roll logs for sediment control and (when required) reclamation.

7. INSPECT AND OBSERVE FOR WEED INFESTATIONS

- a. Ensure that personnel are trained (including annual refresher training) on identification of weeds and other tasks.
- b. Observe all work areas, including berms and water retention basins weekly during growing season (especially in early spring) for signs of weed growth.
- c. Take photographs of operating areas, road shoulders, stockpiles, and other key areas and use to compare over subsequent inspections.
- d. Document inspections in work logs: include date of observation, types of weeds suspected, approximate extent of weeds found, estimated quantities or density of weeds, and whether weeds are flowering or seeds have developed.
- e. Report to supervisor for action.

8. ERADICATE/CONTROL INFESTATIONS

- a. Whenever possible and economically feasible, remove specimen (single) plants mechanically (uprooting/cutting at ground level). A single weed such as a thistle can produce thousands of seeds resulting in hundreds of new plants in a single season, if not removed promptly.
- b. For larger populations and infestations:
 - (1) Identify and mark limits of area.
 - (2) Determine height, density, and maturity of weeds in defined area.
 - (3) Remove weeds: Preferred method is to use mechanical means to uproot and remove entire plant. Second preferred method is to mow area (not less than 2 inches high or more than 4 inches high). Third preferred method is application of chemical pesticides. Specific method of removal will depend on the density and maturity of weeds in the area.
 - (4) Cutting and uprooting of weeds should be done as much as possible immediately after flowering and well before seed pods or heads are mature, since weed seed can continue to develop after the weed has been cut or uprooted.
 - (5) Burn weed patches, but only under limited conditions and with careful preparation only, and in coordination with county and adjacent landowners (including Southern Ute Indian Tribe). Rather than setting a fire and allowing it to burn across an area, use of a propane torch is highly recommended.
 - (5) Application of pesticide is most effective at specific times in the life cycle of a weed: consult a trained pesticide applicator for specific requirements and recommendations.
 - (6) Depose of uprooted and mowed weeds properly. As much as possible, do NOT leave weeds where cut or pulled, but either dispose of as municipal solid waste or immediately bury at depths of greater than three feet in clean, root free material. When

allowed, weeds can be burned in a barrel or burn pit, but only with adequate spark protection and precautions, in accordance with county/fire marshal requirements.

(7) Ensure that pesticides are used in areas where livestock, wildlife, and human contact can be minimized for recommended periods, and that pesticides are not allowed to wash off and into ravines or basins on-site or into San Juan River, or mixed with construction materials in processing or treatment, as much as possible.

(8) Inspect all treated areas (mechanical or chemical) one week and one month after treatment, at the end of the growing season and at the beginning of the next growing season. Conduct additional treatment as necessary.

c. Unless otherwise specified or recommended by County Weed Control, use one of two types of non-restricted herbicides--Roundup and 2-4-D. These chemicals are the least hazardous that can be used and still achieve the quality results needed to be cost effective and efficient.

1. Round Up is a direct contact spray. It will kill all plants that it comes in contact with (not a grown killer). It has very little odor and very little drifting qualities.

2. 2,4-D is a broad leaf weed killer which will not harm grasses, and will drift considerably at any time. 2,4-D has a more offensive odor than Round Up. 2,4-D should not be used on windy or breezy days.

3. Activator 90 is a supplemental chemical added to both herbicides to act as a wetting agent and increase adhesion to the plants.

9. PRACTICE WEED CONTROL SAFELY AND IN COMPLIANCE WITH REGULATIONS

a. Ensure that regular safety measures, including personal protective equipment and administrative controls (right-to-know, confined spaces entry, etc.) are followed.

b. Ensure that only EPA-registered and county-approved pesticides are used.

c. Ensure that pesticide applicators are appropriately trained and certified.

d. Ensure that new personnel are trained and refresher training is provided as necessary.

e. Establish access controls after application of pesticides as per manufacturers instructions.

f. Maintain records of inspections and treatment.

g. Coordinate with landowners periodically (usually at least twice a year, at the beginning and end of the growing season) on weed issues. Landowners will coordinate with adjacent property owners, including owner of Harris Ditch.

h. Coordinate with County Weed Control personnel at least annually (see Att 2.)

REFERENCES:

- (1) Weed Management Plan and Site http://www.dolorescounty.org/special_tax_districts/dolores_county_mandatory_pest_and_weed_district.html
- (2) DRMS Weed Control Policy, 28 October 2002 (<http://www.mining.state.co.us>)
- (3) Pagosa Springs Conservation District (<http://tinyurl.com/pyuomeo>)
- (4) Colorado Department of Agriculture (http://www.colorado.gov/cs/Satellite/ag_Conservation/CBON/1251618780047)
- (5) CSU Extension Service (<http://www.ext.colostate.edu/pubs/natres/03106.html>)
- (6) Colorado Weed Management Association (<http://www.cwma.org/noxweeds.html>)

Attachment 1. Elements of Prevention

The elements of prevention include:

- Limit the introduction of weed seeds into an area.
- Early detection and eradication of small patches of weeds.
- Minimize disturbance of desirable vegetation along roadsides, trails, and waterways.
- Manage land to build and maintain healthy communities of native and desirable plants to compete with weeds.
- Careful monitoring of high-risk areas such as human and animal transportation corridors and disturbed or bare ground.
- Re-vegetate disturbed sites with desirable plants.
- Annual evaluations of the effectiveness of the prevention plan so appropriate adaptations can be implemented the following year.

The spread of invasive and noxious weeds is a significant issue in mining and construction projects that involve land disturbance. Measures must be taken to prevent the spread of noxious and invasive weeds during all proposed mining and construction activities. Earth moving activities and the use of contaminated construction fill, seed, or erosion-control products contribute to the spread of weeds. Prevention is the least expensive and most effective way to halt the spread of noxious and invasive weeds.

Attachment 2. The State of Colorado Noxious Weed List

The following weed species were identified by individual Colorado counties as problem weeds or were recommended for management through public testimony.

List A species in Colorado are designated by the Commissioner for eradication:

Absinth wormwood (<i>Artemisia absinthium</i>)	Mediterranean sage (<i>Salvia aethiopis</i>)
African rue (<i>Peganum harmala</i>)	Medusahead (<i>Taeniatherum caput-medusae</i>)
<u>Black henbane (<i>Hyoscyamus niger</i>)</u>	Myrtle spurge (<i>Euphorbia myrsinites</i>)
Camelthorn (<i>Alhagi pseudalhagi</i>)	Perennial pepperweed (<i>Lepidium latifolium</i>)
Common crupina (<i>Crupina vulgaris</i>)	<u>Plumeless thistle (<i>Carduus acanthoides</i>)</u>
<u>Cypress spurge (<i>Euphorbia cyparissias</i>)</u>	Purple loosestrife (<i>Lythrum salicaria</i>)
<u>Diffuse knapweed (<i>Centaurea diffusa</i>)</u>	Rush skeletonweed (<i>Chondrilla juncea</i>)
Dyer's woad (<i>Isatis tinctoria</i>)	Sericea lespedeza (<i>Lespedeza cuneata</i>)

Giant salvinia (<i>Salvinia molesta</i>) Hydrilla (<i>Hydrilla verticillata</i>) Meadow knapweed (<i>Centaurea pratensis</i>)	Squarrose knapweed (<i>Centaurea virgata</i>) Tansy ragwort (<i>Senecio jacobaea</i>) Yellow starthistle (<i>Centaurea solstitialis</i>)
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List B noxious weed species have (or will have) a state noxious weed management plan developed to stop their spread.

Bouncingbet (<i>Saponaria officinalis</i>) Bull thistle (<i>Cirsium vulgare</i>) Canada thistle (<i>Cirsium arvense</i>) Chinese clematis (<i>Clematis orientalis</i>) Common tansy (<i>Tanacetum vulgare</i>) Common teasel (<i>Dipsacus fullonum</i>) Corn chamomile (<i>Anthemis arvensis</i>) Cutleaf teasel (<i>Dipsacus laciniatus</i>) Dalmatian toadflax, broad-leaved (<i>Linaria dalmatica</i>) Dalmatian toadflax, narrow-leaved (<i>Linaria genistifolia</i>) Dame's rocket (<i>Hesperis matronalis</i>) Eurasian watermilfoil (<i>Myriophyllum spicatum</i>) Hoary cress (<i>Cardaria draba</i>) Houndstongue (<i>Cynoglossum officinale</i>) Jointed goatgrass (<i>Aegilops cylindrica</i>) Leafy spurge (<i>Euphorbia esula</i>) Mayweed chamomile (<i>Anthemis cotula</i>)	Moth mullein (<i>Verbascum blattaria</i>) Musk thistle (<i>Carduus nutans</i>) Orange hawkweed (<i>Hieracium aurantiacum</i>) Oxeye daisy (<i>Chrysanthemum leucanthemum</i>) Quackgrass (<i>Elytrigia repens</i>) Russian knapweed (<i>Acroptilon repens</i>) Russian-olive (<i>Elaeagnus angustifolia</i>) Scentless chamomile (<i>Matricaria perforata</i>) Scotch thistle (<i>Onopordum acanthium</i> L.) Spotted knapweed (<i>Centaurea maculosa</i>) Spurred anoda (<i>Anoda cristata</i>) Sulfur cinquefoil (<i>Potentilla recta</i>) Tamarisk (<i>Tamarix chinensis</i> , <i>T. parviflora</i> , and <i>T. ramosissima</i>) Venice mallow (<i>Hibiscus trionum</i>) Wild caraway (<i>Carum carvi</i>) Yellow nutsedge (<i>Cyperus esculentus</i>) Yellow toadflax (<i>Linaria vulgaris</i>)
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List C noxious weed species:

Resources will be provided to jurisdictions that choose to require management of these species.

Chicory (<i>Cichorium intybus</i>) Common burdock (<i>Arctium inus</i>) Common mullein (<i>Verbascum thapsus</i>) Common St. Johnswort (<i>Hypericum perforatum</i>) Downy brome (<i>Bromus tectorum</i>) Field bindweed (<i>Convolvulus arvensis</i>) Halogeton (<i>Halogeton glomeratus</i>)	Johnsongrass (<i>Sorghum halepense</i>) Perennial sowthistle (<i>Sonchus arvensis</i>) Poison hemlock (<i>Conium maculatum</i>) Puncturevine (<i>Tribulus terrestris</i>) Redstem filaree (<i>Erodium cicutarium</i>) Velvetleaf (<i>Abutilon theophrasti</i>) Wild proso millet (<i>Panicum miliaceum</i>)
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County and Conservation District shall be consulted at least annually to obtain current information on the county weed control/noxious weed list, any information on non-noxious weeds (native plants) which require control, and to coordinate any issues with adjacent landowners and the County Road Department. This plan shall be updated as necessary based on that annual consultation.

Prepared by Nathan A. Barton, CE, PE, DEE; Revised 01FEB2014. Mr. Barton is an environmental and civil engineer with 25 years experience in mining and reclamation, and related areas.

- MINING OPERATIONS -

**GENERAL INSTRUCTIONS FOR
FUGITIVE PARTICULATE AIR POLLUTANT EMISSION NOTICE / CONTROL PLAN**

Complete only those sections of this form which are applicable to your operation. All data given, such as production rates, topsoil removal, etc., should be for that period of 12 months that is expected to have the greatest amount of activity, usually for the first year. Emissions will be calculated in terms of pounds per day and tons per year of particulates generated. Also, please submit the following, if available:

1. A map showing site location and boundaries, haul roads, and nearby residences or commercial structures. See DRMS Application Package Exhibits B and C.
2. Production schedule. No production schedule firmly established at this time.
Depends largely on County restrictions.
3. Schematic of the operation.
See DRMS Application Package Exhibit D (page 17).
4. Engineering or manufacturing data on control equipment.
Not applicable. Only portable equipment used.

PERMITS REQUIRED

Fugitive Particulate Emission Permits are issued for site-specific activities, such as mining, storage of materials, haul road activities, etc.

The Division will use the information submitted on this form to estimate emissions from the activity.

Any processing equipment, such as a crusher, screen, concrete batch plant, or asphalt plant is considered to be portable and requires a separate permit application, Air Pollution Emission Notice, and filing fee.

This aids the applicant by requiring only a revised Air Pollution Emission Notice for Relocation, whenever the equipment is moved to a new site.

FEES

A filing fee of \$152.90 shall accompany each Air Pollution Emission Notice / Control Plan filed with a permit application. Permit processing fees will be charged for the amount of time the Division spends evaluating the permit application. These fees, (currently \$76.45 per hour) plus any required public notice fees, must be paid before an Initial Approval Permit will be issued. Once the project has commenced operation, the source has 180 days to certify compliance with the permit conditions. Once the source has self-certified, Final Approval processing will begin. Final Approval Permit processing fees must be paid before the Final Approval Permit is issued.

For more information or assistance call:

Small Business Assistance Program

(303) 692-3148 or (303) 692-3175

- MINING OPERATIONS -

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- MINING OPERATIONS -

**Air Pollutant Emission Notice (APEN) – and – Application for Construction Permit
- and Fugitive Particulate Emissions Control Plan**

New Facility Transfer of Ownership¹ Change in Production APEN Update

All sections of this APEN and application must be completed for both new and existing facilities, including APEN updates. An application with missing information may be determined incomplete and may be returned to you or result in longer engineer processing times. You will be charged an additional APEN fee if APEN is filled out incorrectly or missing information and requires re-submittal.

¹ For transfer of ownership or company name change, you must submit proof of ownership transfer (e.g., Transfer of Ownership Form signed by the previous owner or a copy of a Bill of Sale with this form).

Permit Number _____ **AIRS Number** _____

Company Name:	<u>C&J Gravel Products, Inc.</u>	
Pit/Mine Name:	<u>Two Rivers Pit</u>	County: <u>Archuleta</u>
Pit/Mine Location:	<u>12550 Trujillo Road S (CR 500), Archuleta County</u>	
Billing Address:	<u>27661 Hwy 160-E</u> <u>Durango, Colorado</u>	Zip Code: <u>81301</u>
Person to Contact:	<u>Perry Neil or Nathan Barton</u>	Phone Number: <u>970-385-4112</u>
E-Mail Address:	<u>pneil@cjgravel.com</u>	Fax Number: <u>970-385-5014</u>

Please provide description of the activity: (Also, please provide a site map)

Mining and processing of construction materials, no ground water exposed. All processing to be done with portable equipment (no fixed conveyors, screens, crushers). Site map provided in Exhibits C and F of DRMS application package. No washing or drying planned. No drilling and blasting planned.

If facility is NOT yet constructed:

What is the projected start-up date? Spring 2016 (based on County approvals)

Normal Operation of this Source:

8-10 Hours per day 5 Days per week 20-40 Weeks per year

Seasonal Throughput (% of Annual):

Dec - Feb 5+ Mar - May 20+ June - Aug 50+ Sept - Nov 25+/-

Actual Annual Production: max 70,000 Tons Per Year Actual Data Year: 2016 (i.e. 2010)

Requested Annual Production: 70,000 Tons Per Year
(The requested level will be your permit limit (maximum allowed))

Commodity Produced: (Please be consistent with the ~~Division of Minerals and Geology~~ permit)

- Aggregate / Sand and Gravel Div of Reclamation Mining and Safety
- Stone
- Coal
- Minerals or Metals Type:
- Other:

- MINING OPERATIONS -

ESTIMATED EMISSIONS

Year For Which Actual Data Applies: 2016				
Pollutant	Estimated Emissions (tons/yr) at throughputs requested		Actual Emissions From Data Year	Estimation Method
	Controlled	Uncontrolled		
Particulate	4.0	7.9	2016	Previous Permits
PM-10	1.7	3.5	2016	issued by APCD
PM-2.5	0.33	0.67	2015	in 2015

A. TOPSOIL REMOVAL

Maximum Tons Removed Per Day: 870 Topsoil removal using
 Tons Removed Per Year: 2170 dozer, loader, and/or
 Proposed Controls For **Topsoil** Removal: scraper. See notes 1-5.
 Moist Material
 Water Spray As needed; if matl is too dry. See notes.
 Other (**specify**) _____

B. TOPSOIL STOCKPILE(S)

Maximum Stored At One Time: 4300 Tons After first two years ops,
 Proposed Controls For **Topsoil Stockpile**: soil moved directly to area
 Watering initially as needed Times/Day being reclaimed, not stockpiles.
 Chemical Stabilizer
 Compacting Of Piles
 Enclosures Type: _____ (Complete or Partial)
 Revegetation Revegetation Must Occur Within One Year Of Soil Disturbance
 Other (**specify**) _____

C. OVERBURDEN REMOVAL

No overburden anticipated to be removed

Equipment Used For Removal: Unanswered
 Maximum Tons Removed Per Day By Dragline: 0
 Tons Removed Per Year By Dragline: 0
 Number Of Scraper Hours Per Day: 0
 Number Of Scraper Hours Per Year: 0
 Proposed Controls For **Overburden** Removal:
 Moist Material
 Water Spray
 Other (**specify**) _____

- MINING OPERATIONS -

D. OVERBURDEN STOCKPILE(S) No overburden expected to be stored

Maximum Stored At One Time 0 Tons

Proposed Controls For **Overburden Stockpile:**

Watering _____ Times/Day

Chemical Stabilizer

Compacting Of Piles

Enclosures _____ (Complete or Partial)

Revegetation _____ Revegetation Must Occur Within One Year Of Soil Disturbance

Other (specify) _____

E. DRILLING

Number Of Holes Drilled Per Day: 0 **NO DRILLING.**

Number Of Holes Drilled Per Year: 0

Proposed Controls For **Drilling:**

Water Injection

Chemical Stabilizer

Bag Collectors

Other (specify) _____

F. BLASTING

Number Of Blasts Per Day: 0 **NO BLASTING.**

Number Of Blasts Per Year: 0

Type of Blasting Material Used: N/A

Tons of Blasting Material Used: N/A

Hours Of Emissions Per Day: N/A

G. RAW MATERIAL REMOVAL

Maximum Tons Removed Per Day: 1500

Tons Removed Per Year: 84,000

Drop Height: max 10 Feet

Specify Moisture Content: min 2 %, (if known)

Proposed Controls For **Raw Material Removal:**

Moist Material

Water Spray

Other (specify) shut down with high winds

H. RAW MATERIAL STOCKPILE(S)

Maximum Stored At One Time: 21,000

Proposed Controls For **Raw Material Stockpile:**

Watering as needed Times/Day

Chemical Stabilizer

Compacting Of Piles

Enclosures Type: _____ (Complete or Partial)

Other (specify) shut down with high winds (>25 mph)

Normally will be moved directly from face to plant, but stockpile proposed in case of scheduling issues.

- MINING OPERATIONS -

I. PROCESSING

Will processing (i.e., crushing, screening, etc.) occur on site? Yes

Expected equipment permitted as 07PO0957 and 07PO0958. May change.

NOTE: ALL PROCESS EQUIPMENT REQUIRES A SEPARATE PERMIT APPLICATION AND APEN. All process equipment will be portable and not permanently on site.

Quantities are estimated based on equipment, schedule/materials.

PRIMARY CRUSHING

SCREENING/CLASSIFYING

Maximum tons crushed per year: 42,000 Tons
Maximum tons crushed per hour: 250 avg 150 Tons
Hours of crushing per day: 12

Maximum tons screened per year: 84,000 Tons
Maximum tons screened per hour: 250 avg 150 Tons
Hours of screening per day: 12

Proposed Controls:

- Moist Material
- Water Spray As needed
- Enclosure Type: _____
- Other (specify) not operate in strong winds

Proposed Controls:

- Moist Material
- Water Spray As needed
- Enclosure Type: _____
- Other (specify) not operate in strong winds

SECONDARY CRUSHING

RESCREENING/CLASSIFYING

Maximum tons crushed per year: 21,000 Tons
Maximum tons crushed per hour: 150 Tons
Hours of crushing per day: 12

Maximum tons screened per year: 42,000 Tons
Maximum tons screened per hour: 150 Tons
Hours of screening per day: 12

Proposed Controls:

- Moist Material
- Water Spray As needed
- Enclosure Type: _____
- Other (specify) not operate in strong winds

Proposed Controls:

- Moist Material
- Water Spray As needed
- Enclosure Type: _____
- Other (specify) not operate in strong winds

J. CONVEYORS/TRANSFER POINTS

Tons Of Material Conveyed Per Year Total 84,000 Tons.
Tons Of Material Conveyed Per Day Total 1,800 Tons.

Proposed Controls

- Enclosure Type: _____ (Complete or Partial)
- Other (specify) moist materials

Number Of Transfer Points : Est 10

Proposed Controls

- Enclosure Type: _____ (Complete or Partial)
- Water Spray
- Chemical Stabilizer
- Other (specify) moist materials

(Indicate On A Separate Diagram How Conveyor System Is Set Up)

Only temporary portable conveyors will be used, as part of the crushing and screening train. Configuration will vary based on equipment and materials (raw and produced). Tonnage assumes 20% loss of fines: only 70,000 tons or less will be produced. There is NO transfer of material by conveyor on this site NOT associated with a portable plant. Generally, material will be moved from working face directly to plant by loader, and then from product stockpiles (at end of plant stacker) directly to trucks.

- MINING OPERATIONS -

K. FINISHED PRODUCT STOCKPILE(S)

Maximum Stored At One Time: 70,000 Tons
 Proposed Controls For **Finished Product Stockpile**:
 Watering as needed Times/Day
 Chemical Stabilizer
 Compacting Of Piles
 Enclosures Type: _____ (Complete or Partial)
 Revegetation Revegetation Must Occur Within One Year Of Soil Disturbance
 Other (**specify**) Limit size of stockpile to 1 acre.

L. RAW MATERIAL TRANSPORT FROM REMOVAL SITE TO STOCKPILE(S)

Haul road distance (one way) max 500 Feet Initially 100 ft or less
 Road surface silt content (if known) 2 % Gravel (pit-run) surface
 Posted speed limit on haul road 20 m.p.h.
 Watering
 Frequent (Watering Frequency of 2 or More Times Per Day)
 As Needed
 Chemical Stabilizer
 Gravelling
 Other: Keeping haul distance as short as possible.

	<u>Vehicle Type</u>	<u>Capacity</u>	<u>Empty Weight</u>	<u>No. Of Trips Per/Day</u>
1	18-Wheelers	_____ Tons	_____ Tons	_____
2	10-Wheelers	_____ Tons	_____ Tons	_____
3	4-Wheelers	<u>8</u> Tons	<u>26</u> Tons	<u>Average 235 Max 250</u>
4	_____	_____ Tons	_____ Tons	_____

M. FINISHED PRODUCT TRANSPORT (ON SITE)

Amount of material for off-site transfer: 70,000 Tons per year
 On-site haul road distance (one way) 2,300 Feet
 Road surface silt content (if known) max %
 Posted speed limit on-site: 20 m.p.h.
 Watering
 Frequent (Watering Frequency of 2 or More Times Per Day)
 As Needed
 Chemical Stabilizer
 Gravelling
 Paving
 Other: _____

	<u>Vehicle Type</u>	<u>Capacity</u>	<u>Empty Weight</u>	<u>No. Of Trips Per/Day</u>
1	18-Wheelers	<u>24</u> Tons	<u>16</u> Tons	<u>60% = 5 avg</u>
2	10-Wheelers	<u>20</u> Tons	<u>20</u> Tons	<u>30% = 3 avg</u>
3	4-Wheelers	<u>4</u> Tons	<u>4</u> Tons	<u>5% = 2-1/2 avg</u>
4	6-Wheelers	<u>5</u> Tons	<u>4</u> Tons	<u>5% = 2 avg</u>

Average annual daily traffic (AADT) for 70,000 tons/year: 12 (rounding)

- MINING OPERATIONS -

N. SITE DISTURBANCE

Total Area of Site: 102.6 Acres

Total Disturbed Area of Site: 62.6 Acres

Proposed Controls:

- Watering
 - Frequent (Watering Frequency of 2 or More Times Per Day)
 - As Needed
- Chemical Stabilizer
- Revegetation Revegetation Must Occur Within One Year Of Site Disturbance
 - Seeding With Mulch Based on soil conditions
 - Seeding Without Mulch
- Other (specify) _____

Additional Sources of Emissions

List any other sources of emissions and related controls (includes fugitive emissions)

None

<u>Original signed by Perry Neil, Manager</u>	<u>16 November 2015</u>
Signature of Legally Authorized Person (not a vendor or consultant)	Date

<hr/>	<hr/>
Name (please print)	Title

Check the appropriate box if you want:

- Copy of Preliminary Analysis conducted by the Division
- To review a draft of the permit prior to issuance

(Checking any of these boxes may result in an increased fee and/or processing time)

This notice is valid for five (5) years unless a significant change is made, such as an increased production, new equipment, change in fuel type, etc. A revised APEN shall be filed no less than 30 days prior to the expiration date of this APEN form.

Send this form along with \$152.90 to:
Telephone: (303) 692-3150

**Colorado Department of Public Health and Environment
Air Pollution Control Division
APCD-SS-B1
4300 Cherry Creek Drive South
Denver, CO 80246-1530**

NOTES FOR APEN FOR TWO RIVERS PIT.

1 PRODUCTION This tonnage of 70,000 tons per year (TPY) is the maximum amount of material expected to be shipped from the site, and does not include waste generated, overburden, topsoil, or materials mined and stockpiled but not shipped from the site.

2 PRODUCTION As with equipment APENs and permits, the actual production may not be the full amount requested as the permit limit, in order to provide flexibility. If production increases from the data year, appropriate agencies will be notified in accordance with permit conditions. This is the planned average production to be shipped from this site per year, but the actual amount is based on market demand and may be unpredictable.

3 TOPSOIL REMOVAL Soil in-place 2300 lbs/CY (1.15 T/CY). Does not include removal from pre-existing stockpiles for reclamation purposes. Topsoil on the site ranges from 3" to 12" in depth. Based on an assumption of 6" average soil depth, or 800 CY (920 T) per acre, a maximum of 1 acre stripped per day (800 CY= 920 T), and an average of 1/4 acre (200 CY = 230 T) stripped per day. Stripping is expected to be relatively fast. For the next five years a maximum of 12.5 acres is expected to be stripped, in equal amounts (2-5 to 3.1 acres/year), for a total of 2900 TPY.

Other controls: As much as possible, stripping of topsoil is scheduled for days with little or no wind, and when soil is relatively moist, since this promotes both safe and environmentally sound operations. Stripping is generally done early in the construction season, when more moisture is present and some frost remains in the ground, reducing dust generated. Under some conditions, soil may be watered prior to removal, but this is not always possible. As stated in storm water management plans, work includes silt fencing, berms, ditches, mulching, and similar measures where needed in conjunction with or in lieu of revegetation. Average haul distance 500 feet one-way, 5 ton/load: 580 trips, 110 miles per year.

4 TOPSOIL STOCKPILES Soil in-place 2300 lbs/CY (1.15 T/CY). Does not include removal from stockpiles for reclamation purposes, which will be done at end of project. As much as possible, topsoil will be moved directly from stripped locations to areas in process of reclamation, so a total of two years' material is stored in stockpiles, and after that, stripped topsoil will be moved immediately to areas being reclaimed. In some cases, stockpiles are used only for a few hours or days, when the soil is immediately used for reclamation. For the first two years' stripping, the stockpile will probably remain in place until all mining is completed and reclamation is done at the end of the life of the pit.

Controls: Watering as used in this completed form means application by some method, not strictly spraying. Application rates and frequency will vary and are not fixed unless so stated.

Revegetation as used in this completed form means the preparation and planting or seeding of an area, and does not imply that revegetation standards of the Division of Mining and Geology reclamation permit have been met. Revegetation is accomplished in accordance with reclamation and storm water management plans. Since irrigation water is not available, planting will be done during recommended periods (fall) at the end of the production season.

Other: Move soil directly to reclaim areas, to minimize stockpile size and additional disturbance. (See storm water management plans): includes silt fencing, berms, ditches, mulching, and similar measures where needed in conjunction with or in lieu of revegetation. Limit stockpile area to 1 acre or less. Avg 18 ft high.

5 OVERBURDEN REMOVAL: No overburden is expected to be removed: usable raw materials are available immediately below soil.

6 OVERBURDEN STOCKPILES: No overburden is expected to be removed: usable raw materials are available immediately below soil.

7 RAW MATERIAL REMOVAL: controls: other: Average haul distance from excavation point to plant directly or through stockpile is maximum 500 feet one-way, assuming 8 ton/trip, requiring 8,750 trips and 1,660 miles of travel per year 70,000 tons/year.

8 This is based on a maximum of 70,000 tons (56,000 CY) per year and 60 work days per year, for an average maximum of 1,200 tons/day and a maximum of 50% higher, or 1,800 tons/day. With an average face height of 40 feet and 1.15 tons/CY, this means a maximum 2.5 acres per year. Equipment has a maximum capacity of 500 TPH, and operates 8-10 hours per day, but actual working capacity is based on haul distance involved, and capacity of processing plant versus pit-run shipped off-site. Raw material is moved (preferably) directly from point of excavation into processing plant (and not stockpiles, due to economics and scheduling), and usually is NOT loaded into a truck for haul on-site. This material is sand and gravel, and includes an estimated 20% fines washed or screened out and used for backfill, as well as material used in the pit for dust control and other uses. Some material may not be processed on site, but most is processed onsite. This APEN and estimates assume no shipment of pitrun material directly off-site without processing. Raw "pitrun" material averages >2% (up to 5%) moisture when first excavated. Since it is normally fed directly to plant, there is little loss in moisture. Although raw materials might be stockpiled for up to 120 days, most will be in a stockpile for a far shorter time or not stockpiled at all. This depends on equipment availability, production schedule, and demand. Amount stockpiled also varies based on plant capacity available on-site. As used in this completed form, only processing using fixed (non-portable) equipment will be described in this APEN; otherwise, please refer to the APEN for the portable equipment which might be used on this site. Only equipment permitted in the State of Colorado will be used in this pit: EPA/SUIT will be notified as appropriate in accordance with EPA regs.

9 Maximum product stockpiles is based on materials left on-site at the end of the crushing/screening session, from which product is shipped over the course of approximately three months, to the beginning of the next production session. Product stockpiles are usually disturbed daily during construction season, as material is sold. However, in wintertime, remaining stockpiles may not be touched for much or all of the season, depending on weather. Piles are not separately watered, but materials put into stockpiles are wet as they come from the crushing and screening plants, where they are wetted by spray bars at multiple points.

10 Average distance, based on use of loaders (4-wheelers) directly from source to stockpile OR plant. When possible, there is no "haul road" per se; the plant is located in the pit and the pit floor is used to transport materials to the plant infeed. Depending on processing plant used, hauls range from 100 feet to 500 feet in length and average 300 or less. Several sizes loaders may be used in the pit: this APEN assumes an "average" such as a Volvo L220E with an 8-CY bucket. Trips are based on a maximum average of 1,800 TPD.

11 This is assumed, for completion of this form, to include the following actions: (1) movement from stockpile at end of conveyor to distant stockpiles, (2) movement of stockpiled material on-site for use in the site or to further process (by washing, etc.), and (3) movement from stockpile to gate of site. Double handling is limited as much as possible; haul distances vary significantly, and equipment used may vary. Generally, off-site transport is done in trucks; on-site transport is done by loaders.

12 Average distance from product stockpile areas to gate of site (intersection of CR-500 with access road).

13 Highest posted for loaded trucks from product stockpiles (past scale) to CR-500. Lower speeds apply in some areas. Steep grade limits speed. Based on average 1,800 TPD, 60% by semi, 30% by dump truck 10% by small dump/vehicle. Although a large percentage of the permit area of the site is disturbed, only a portion of that is disturbed at any one time. Areas which have been reclaimed are assumed not to be disturbed for purposes of calculation of dust emissions. Plant areas will be limited to a maximum of 5 acres at any one time, access road is a permanent post-reclamation feature, per mine reclamation plan.

14 Restrict traffic from unneeded areas, limit traffic routes, restrict speeds, partially enclosed by walls of pit and terrain, storage of equipment and materials, reclaim as soon as possible. Note: disturbed areas used for traffic, stockpiles, and plant sites cannot be reclaimed within one year of disturbance.

GEOLOGICAL, RADIATION AND RELATED HAZARDS

Reconnaissance of the site and surrounding area, as well as research into publicly-available records and coordination with specialists, has found no indication of any geological hazards related to the site or which the proposed operation would create on or off-site, to include:

- Landslides and rockslides
- Earthquakes and other seismic events
- Flooding, and/or Excessive Erosion and/or Sedimentation
- Avalanches
- Naturally-occurring radioactive materials (NORM)

Setting: The material to be mined is unconsolidated conglomerate in Tertiary and Quaternary deposits, resting above the bedrock Mesaverde Group, a series of formations which include the Point Lookout Sandstone, Menefee Formation, and Cliff House Sandstone. At this location, the Menefee Formation appears to form most of the profile. The Mesaverde Group rests on top of the Mancos Shale, and consists primarily of sandstone, with fine-grained mixed clastic rock, some conglomerate, and sometimes coal. As discussed in the DRMS application, mining will not extend into the bedrock, which will form the floor of the pit.

Site reconnaissance and research: In addition to inspection of the site by a number of licensed professional engineers with civil experience, including one specializing in mineral resources and geology, review was made of published geological maps, studies, and reports, including published and available unpublished literature and on-line materials. The siting and potential issues were discussed with staff of the Colorado Geological Survey (CGS).

Findings: There are no documented hazards, which are potentially significant.

- There are no recorded instances of landslides or significant rockfalls in the area. As discussed elsewhere, inspection of the existing road cut for the ramp from the bridge to the planned operational area will include inspection for potentially unstable rock and other materials. If rock is disturbed and falls from the cut, rockfall may delay operations until they are removed, but there is no potential for impact on permanent structures or off-site.
- Although there are various faults in the area, there are no recorded earthquakes in state records, since 1867. The nearest recorded earthquakes, according to the CGS 6.75 mi S (intensity I, lowest) and 7.60 miles S (magnitude <2.6).
- The proposed operations are located 120 feet or more above and outside of the designated flood hazard areas, per Federal Emergency Management Agency documents. No direct discharge of water from affected lands to the San Juan River, Harris Ditch, or any tributaries to those streams is planned. Basins to retain water (for evaporation and/or infiltration) will reduce potential for erosion and prevent discharge of sediment.
- There is no evidence of, and no terrain features or other conditions which would allow avalanches to develop.
- Discussion with Dr. Paul Morgan, Senior Geologist with CGS, determined that there are no potential radioactive hazards (NORM) associated with the Mesaverde Group. While there are very minute quantities of natural uranium, thorium, and radioactive isotopes of potassium which may be present in the formations, there is no potential for greater than normal background radioactivity, even if the formation is disturbed. Any radon released in excavation of soils, sand, and gravel, will quickly dissipate, as no structures which would trap that gas are planned.

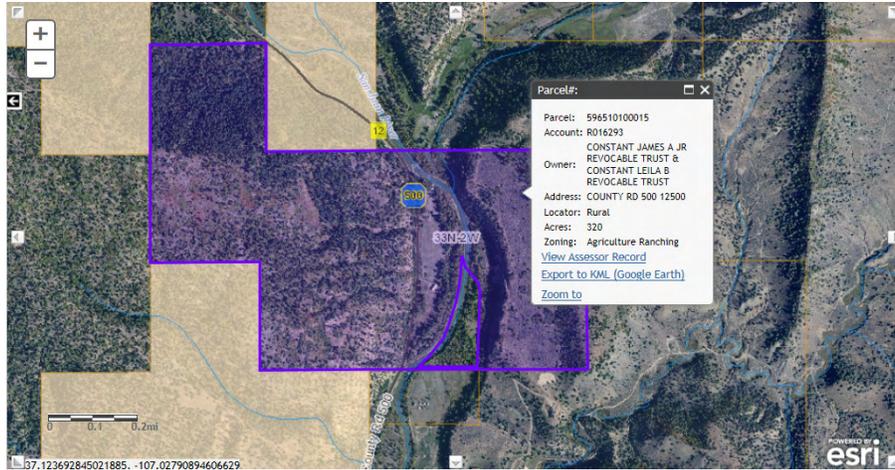
Recommendations: None.

Prepared by Nathan A. Barton, CE, PE, DEE, Environmental and Permitting Compliance Engineer
Mr. Barton is a graduate of the Colorado School of Mines, with 36 years experience in civil and mineral engineering, environmental design, geology, and site assessments.

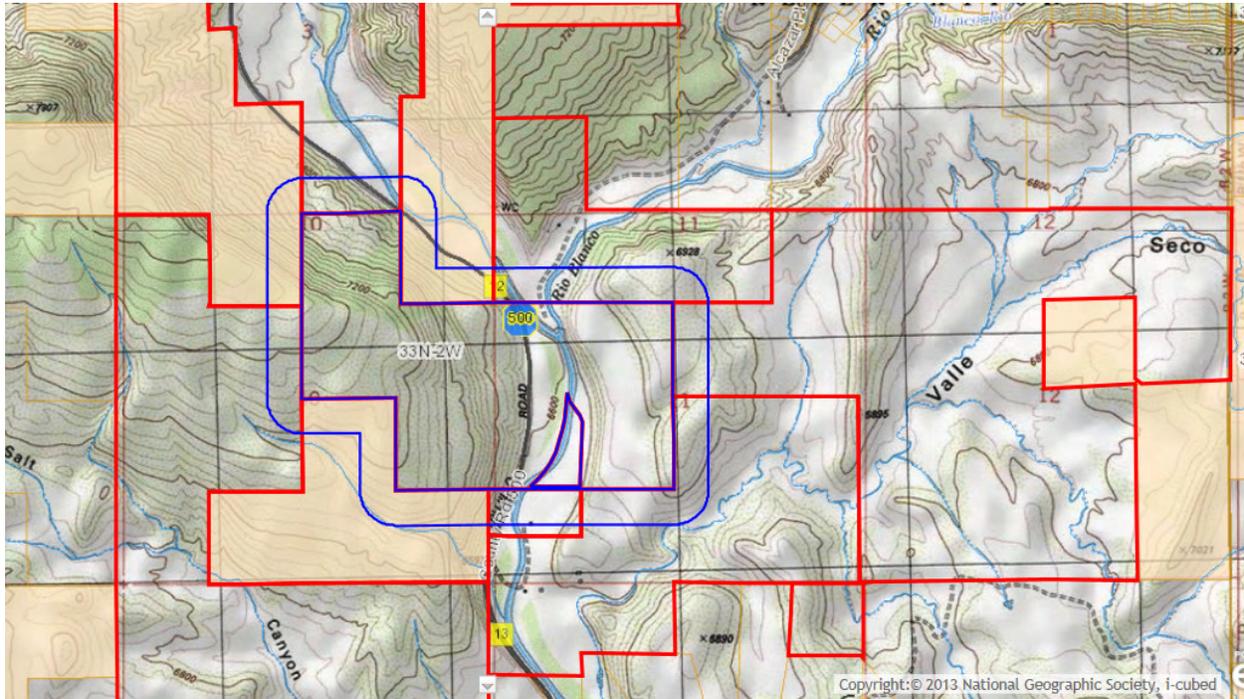
LAND OWNERS WITHIN 500 FEET AND ONE MILE
From Archuleta County GIS, as of 30 OCT 2015

Property on which Two Rivers Pit is proposed (blue outline).

(Note: triangular parcel was a proposed pit some years ago: it is within the state-approved permit boundary but NO disturbance is proposed in that part of the property.)



Property and parcels within 500 feet (blue radius) with topography



500-ft County Landowner list

PID	MAP	AccountN	MailAdd	SitusAdd	Owner
589134300038	H	R014855	10300 CR 500 PAGOSA SPRINGS, CO 81147	11000 CTY RD 500	ONE IN THE SPIRIT LTD
596501200002	E G I	R016177	PO BOX 737 IGNACIO, CO 81137-0000	500-542 CTY RD	UNITED STATES OF AMERICA T/F SOUTHERN UTE TRIBE
596501400005	B	R016246	3900 S WADSWORTH BLVD SUITE 440 LAKEWOOD, CO 80235	13790 & 13830 CTY RD 500	DIAMOND T RANCH LLC
596509100013	F	R016288	PO BOX 4027 CROSSVILLE, TN 38557	X CTY RD 500	EAGLE SHADOW RANCH LLC
596510100015	Situs	R016293	12500 CTY RD 500 PAGOSA SPRINGS, CO 81147	12500 CTY RD 500	CONSTANT JAMES A JR REV TRUST, CONSTANT LEILA B REV TRUST
596511200016	A	R016297	355 S GRAND AVE, 26TH FLOOR LOS ANGELES, CA 90071	12272 CTY RD 335	AE GRETHER LAND & CATTLE LLC
596511300017	D	R016298	414 ROLLING HILLS CIR COPPELL, TX 75019-0000	12664 CTY RD 500	WATERMAN JAMES O
596511400018	B	R016299	3900 S WADSWORTH BLVD STE 440 LAKEWOOD, CO 80235	12800 CTY RD 500	DIAMOND T RANCH

As of 30 October 2015

Property and parcels within 1 mile (blue radius)

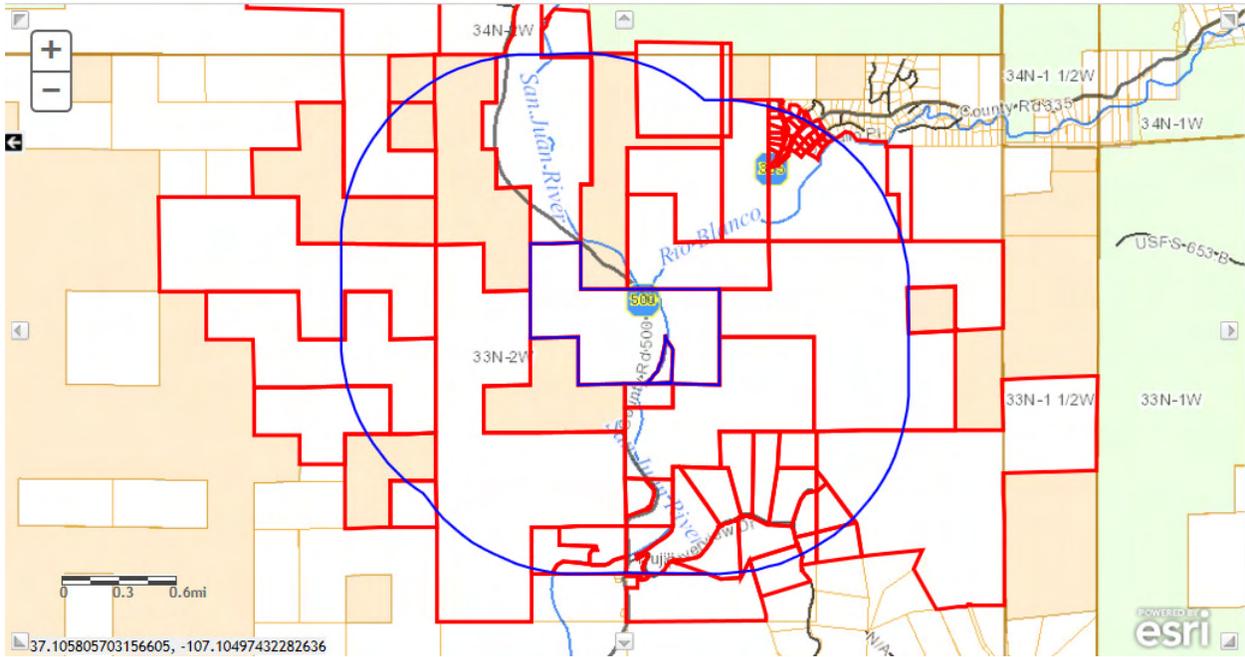


Table on Next Page

Parcel Number	AccountN	MailAdd	SitusAdd	Owner
589134300038	R014855	10300 CR 500 PAGOSA SPRINGS, CO 81147	11000 COUNTY RD 500	ONE IN THE SPIRIT LTD
589134400012	R014856	3820 WINSLOW DR FT WORTH, TX 76109-0000	10210C COUNTY RD 500	SAN JUAN RUNNING M INVESTORS LP
596501200002	R016177	PO BOX 737 IGNACIO, CO 81137-0000	500-542 COUNTY RD	UNITED STATES OF AMERICA T/F SOUTHERN UTE TRIBE
596501203004	R016213	6015 ONYX AVE SCOTTSDALE, AZ 85235	X COUNTY RD 335	WILLIAMS ANDREW D
596501203005	R016214	921 ORTIZ DR SE ALBUQUERQUE, NM 87108	136 CABALLO PL	PARSONS WILLIAM W
596501204001	R016215	1929 E LIBRA DR TEMPE, AZ 85283-3229	X CABALLO PL	SOWELL STEVEN R
596501204002	R016216	PO BOX 2083 PAGOSA SPRINGS, CO 81147	125 CABALLO PL	RICKER DEARLE ANN
596501300003	R016241	355 S GRAND AVE, 26TH FLOOR LOS ANGELES, CA 90071	PONY EXPRESS ESMT TR	AE GRETHER LAND & CATTLE LLC
596501300006	R016243	355 S GRAND AVE, 26TH FLOOR LOS ANGELES, CA 90071	PONY EXPRESS ESMT TR	AE GRETHER LAND & CATTLE LLC
596501400005	R016246	3900 S WADSWORTH BLVD SUITE 440 LAKEWOOD, CO 80235	13790 & 13830 COUNTY RD	DIAMOND T RANCH LLC
596502101003	R016253	727 RCR 1531 POINT, TX 75472	X CABRIPO PL	DELUCHE DANIEL ERWIN , DELUCHE BRENDA SUE
596502101004	R016254	PO BOX 91487 SAN DIEGO, CA 92169	299 ALCAZAR PL	WARD CHRISTY
596502101005	R016255	PO BOX 103 PAGOSA SPRINGS, CO 81147-0000	344 ALCAZAR PL	WEISSINGER RONALD ALLEN
596502101006	R016256	PO BOX 103 PAGOSA SPRINGS, CO 81147-0000	300 ALCAZAR PL	WEISSINGER RONALD ALLEN
596502101007	R016257	4252 COUNTY RD 335 PAGOSA SPRINGS, CO 81147	246 ALCAZAR PL	ANGLE GABE
596502101008	R016258	P O BOX 304 PAGOSA SPRINGS, CO 81147	206 ALCAZAR PL	RUEGGER STEVE
596502101009	R016259	P O BOX 4474 PAGOSA SPRINGS, CO 81147	176 ALCAZAR PL	ROLLINS SANDRA L , ROLLINS LEON C JR
596502101010	R016260	PO BOX 5104 PAGOSA SPRINGS, CO 81147	142 ALCAZAR PL	MUNRO PETER G
596502101011	R016261	355 S GRAND AVE, 26TH FLOOR LOS ANGELES, CA 90071	104 ALCAZAR PL	AE GRETHER LAND & CATTLE LLC
596502101013	R016262	355 S GRAND AVE, 26TH FLOOR LOS ANGELES, CA 90071	53 ALCAZAR PL	AE GRETHER LAND & CATTLE LLC
596502101014	R016263	355 S GRAND AVE, 26TH FLOOR LOS ANGELES, CA 90071	167 ALCAZAR PL	AE GRETHER LAND & CATTLE LLC
596502101015	R016264	4521 S ENSENADA ST AURORA, CO 80015	245 ALCAZAR PL	DRAKE JAMES T , DRAKE PATRICIA M
596502101016	R016265	4521 S ENSENADA ST AURORA, CO 80015	X ALCAZAR PL	DRAKE JAMES T , DRAKE PATRICIA M
596502101017	R016266	8 S FULTON DR MONTAUK, NY 11954	X CABRIPO PL	PASSIE JOHN
596502101018	R016267	8 S FULTON DR MONTAUK, NY 11954	X CABRIPO PL	PASSIE JOHN
596502102001	R016270	5700 COUNTY RD 335 PAGOSA SPRINGS, CO 81147	5700 COUNTY RD 335	BALDREY RALPH H
596502102002	R016271	2935 COUNTY RD 335 PAGOSA SPRINGS, CO 81147	5462 COUNTY RD 335	BARROWS ALEXANDER , DICKINSON DANITA
596502102003	R016272	2935 COUNTY RD 335 PAGOSA SPRINGS, CO 81147	5576 COUNTY RD 335	BARROWS ALEXANDER , DICKINSON DANITA
596502102004	R016273	2935 COUNTY RD 335 PAGOSA SPRINGS, CO 81147	X CABALLO PL	BARROWS ALEXANDER S , DICKINSON DANITA K
596502102005	R016274	308 County Rd 216 DURANGO, CO 81303-7829	X CABALLO PL	HAGEN RANDALL S
596502102006	R016275	1164 COUNTY ROAD 7611 DEVINE, TX 78061	106 CABALLO PL	WHITNEY CULLEN STILER , WHITNEY PATSY ELAINE
596502102007	R016276	PO BOX 2083 PAGOSA SPRINGS, CO 81147	X CABALLO PL	RICKER DEARLE ANN
596502200003	R016278	355 S GRAND AVE, 26TH FLOOR LOS ANGELES, CA 90071	X COUNTY RD 335 ESMT	AE GRETHER LAND & CATTLE LLC
596502300004	R016279	355 S GRAND AVE, 26TH FLOOR LOS ANGELES, CA 90071	6130 COUNTY RD 335	AE GRETHER LAND & CATTLE LLC
596502401012	R016280	355 S GRAND AVE, 26TH FLOOR LOS ANGELES, CA 90071	42 ALCAZAR PL	AE GRETHER LAND & CATTLE LLC
596509100013	R016288	PO BOX 4027 CROSSVILLE, TN 38557	X COUNTY RD 500	EAGLE SHADOW RANCH LLC
596509300012	R016289	PO BOX 4027 CROSSVILLE, TN 38557	X COUNTY RD 500	EAGLE SHADOW RANCH LLC
596509400068	R016292	PO BOX 4027 CROSSVILLE, TN 38557	X COUNTY RD 500	EAGLE SHADOW RANCH LLC
596510100015	R016293	12500 COUNTY RD 500 PAGOSA SPRINGS, CO 81147	12500 COUNTY RD 500	CONSTANT JAMES A JR REV TRUST , CONSTANT LEILA B REV TRUST
596511200016	R016297	355 S GRAND AVE, 26TH FLOOR LOS ANGELES, CA 90071	12272 COUNTY RD 335	AE GRETHER LAND & CATTLE LLC
596511300017	R016298	414 ROLLING HILLS CIR COPPELL, TX 75019-0000	12664 COUNTY RD 500	WATERMAN JAMES O
596511400018	R016299	3900 S WADSWORTH BLVD STE 440 LAKEWOOD, CO 80235	12800 COUNTY RD 500	DIAMOND T RANCH
596514123002	R016305	2121 LOMA LINDA DR PAGOSA SPRINGS, CO 81147-0000	290 S ROCKCLIFF CIR	HOPKINS GARY L & PAMELA K TRUST
596514123023	R016306	10501 LAGRIMA DE ORO #204 NE ALBUQUERQUE, NM 87111	X RIVERVIEW DR	CRAWFORD PINON HILLS LLC
596514123025	R016308	425 SACRED EAGLE LANE SEDONA, AZ 86336-0000	X RIVERVIEW DR	FOLEY JERRY & ROXANNE

596514123029	R016309	4801 NORTH HILLS BLVD NORTH LITTLE ROCK, AR 72116-00	X RIVERVIEW DR	MATTHEWS JAMES P & ALIX C
596514123030	R016310	4801 NORTH HILLS BLVD NORTH LITTLE ROCK, AR 72116-00	X RIVERVIEW DR	MATTHEWS JAMES P & ALIX C
596514323001	R016315	11300 FM 1960 W HOUSTON, TX 77065	X RIVERVIEW DR	DIAMOND M KING RANCH LLC
596514323027	R016317	PO BOX 245 ASHLAND, OR 97520	X RIVERVIEW DR	HEALY DOUG K AND NINA M , PILOT ROCK CAPTIAL INC
596514323028	R016318	P O BOX 246 PAGOSA SPRINGS, CO 81147-0246	X RIVERVIEW DR	PINON HILLS RANCH PROPERTY OWNERS ASSOCIATION INC
596514423003	R016319	519 LONA VISTA PAGOSA SPRINGS, CO 81147-0000	X S ROCKCLIFF CIR	ROTH JAMES A & KRISTEN J
596514423021	R016323	11040 PINEVALE LANE FRANKTOWN, CO 80116	X S ROCKCLIFF CIR	MCAFEE LEIF & KAROLYN J
596514423022	R016324	630 VINCENT PARK REDONDO BEACH, CA 90277-0000	X S ROCKCLIFF CIR	GRANT FAMILY TRUST
596515400002	R016326	8563 TL RANCH RD PONDER, TX 76259-0000	13831 COUNTY RD 500	TERRELL CHRISTINE FRANCIS
596515410001	R016330	PO BOX 4027 CROSSVILLE, TN 38557	13687 COUNTY RD 500	EAGLE SHADOW RANCH LLC
596515410002	R016331	PO BOX 4027 CROSSVILLE, TN 38557	13685 COUNTY RD 500	EAGLE SHADOW RANCH LLC
596514300059	R018629	PO BOX 1028 BRECKENRIDGE, TX 76424	13926 COUNTY RD 500	KILLION INVESTMENTS INC
596502103002	R018633	700 E RT 66 #98 GLENDORA, CA 91740	105 CABALLO PL	CONNER SHERYL J
596514200053	R019043	PO BOX 4027 CROSSVILLE, TN 38557	X COUNTY RD 500	EAGLE SHADOW RANCH LLC
596514200054	R019044	4 CRESTWOOD DR HOUSTON, TX 77007	13300 COUNTY RD 500	DIAMOND M KING RANCH LLC

As of 30 OCT 2015

County Standards 3.2.3.4

<u>Section</u>	<u>Title/Description</u>	<u>Actions/Condition/Task</u>
3.2.3.4	Review Criteria Relationship/Impact on Development Objectives	We believe that this application demonstrates that the proposed use: complies with and furthers the development objectives of Archuleta County by providing needed materials in a responsible way.
3.2.3.4(1)	Effect of use on:	
3.2.3.4(2)	Light	has no impact
	Air	has no impact beyond that allowed by environmental statutes and regulations.
	Distribution of population	has no impact, except to provide more sources of material for development
	Transportation facilities	will provide needed materials and more competition to supply those materials for county transportation facilities (roads), while impacts on roads (for transportation of those materials will be mitigated, and in some cases, reduced from the current situation.
	Utilities	has no impact, including supply of water, except that utilities will also have an additional source and competition to provide them needed construction materials.
	Schools	has no impact: there will be part time employees, but will generally be local residents and there will be no influx of new families or residents into the area.
	Parks and recreation facilities	has no impact: there will be part time employees, but will generally be local residents and there will be no influx of new families or residents into the area.
	Other public facilities	has no impact
3.2.3.4(3)	Effect of use on: Traffic, especially: Congestion	has no significant impact: increased annual average daily traffic of trucks will be relatively low and within capacity of the existing road net; this new source will reduce traffic on other roads.
	Vehicular and Pedestrian Circulation	has no impact
	Safety and convenience	has no impact
	Traffic flow and control	has no significant impact: traffic signage and entry design will ensure no significant change to CR-500
	Access	has no impact
	Maneuverability	has no impact
	Removal of snow from roads	will make sand more readily available for use in snow and ice control and removal for county and city
	Sidewalks	has no impact
	Parking areas	has not impact; all parking is on site
3.2.3.4(4)	Effect of use on: Character of the area	has no significant impact: site design (including buffers) and other measures described in mining and reclamation plan address and mitigate impacts on area
	Relational scale and bulk of proposed use	is compatible both in scale and bulk with the agricultural nature of the area, and is at a sufficient distance from more dense residential use to create no problems.
3.2.3.4(5)	Adequacy of the design features to accommodate:	
	Accessibility	is adequately designed to provide required accessibility.
	Services areas	is adequately designed to accommodate all existing and future known services areas
	Parking	is adequately designed and has adequate on-site parking to accommodate all parking needs.
	Loading	is adequately designed to provide for safe loading and unloading
	Landscaping	is designed (including both mining and reclamation) to minimize visual impacts, and restore to a landscape appropriate for agricultural (ranching) use.

County Standards 3.2.3.4

	Buffering	is designed to provide 200 feet or more buffer from other properties and significant manmade structures, as well as significant natural resources.
	Lighting	is designed to adequately address both needed lighting for safety and security but not contribute to light pollution.
3.2.3.4(6)	Natural resources and wildlife habitat areas: Natural resources	is designed to obtain and use natural resources (sand and gravel) while protecting and conserving other natural resources and allowing development and use of those, including rangeland and other agricultural use, oil and gas, and water, to improve use of agricultural natural resources by increasing productivity. (NOTE: mining of sand and gravel is considered an irrevocable use of that natural resource.)
	Wildlife habitat	has been determined by state and federal agencies to not impact negatively on wildlife habitat, and will result in improved wildlife habitat (shared with livestock and other agricultural use) at the end of mining.
3.2.3.4(7)	Other factors:	have been addressed in the DRMS application process. The operator/landowner will address other factors as requested by the Planning Commission and Board of County Commissioners.

Section	Title/Description	Actions/Condition/Task
5.2	Environmental Standards	
5.2.1	Preservation of Natural Features and Resources	
5.2.1.1.	Natural Features	200-ft buffer zone in all directions No unusual rock formations Face of cliffs already changed by existing roadway to be used Existing bridge over river and irrigation ditch to be used
5.2.1.2	Archeological, Cultural, and Historical Resources	DRMS Package, Exhibit M Reviewed by SHPO
5.2.1.3.	Water Quality Control	DRMS Package, Exhibit H NOI for mining under MSGP for Indian Country (storm water Not covered by construction permit: falls under MSGP for Indian
5.2.1.4.	Water Body Setbacks	200 feet from River OHWM and irrigation ditch Existing bridge over river and irrigation ditch to be used
5.2.1.5.	Wetlands Protection	DRMS Package, Exhibit G No wetlands delineated on affected USACE Durango Regulatory Office reviewed state reclamation application and bridge construction No wetlands inventoried or likely to exist on site Storm water management plan protects waters of the US
5.2.1.6	Wildlife Habitat Protection	Located outside Critical Habitat per Map 2, AC Cmty Plan DRMS Package, Exhibit H CDPW reviewed state reclamation application
5.2.1.7.	Scenic View Protection	No viewshed overlay district established No permanent structures/buildings Processing plants and stockpiles located in interior and after initial several years will be in mined out areas, generally below original 200-foot buffer on N, E, and S sides; at top of and behind façade of
5.2.2	Mitigation of Natural Hazards	See DRMS Package Exhibits C, D and S.
5.2.2.1	Steep land	Reclamation to 3:1 slopes stated in reclamation plan, DRMS No habitable structures
5.2.2.2	Geologic Hazard Areas	200 foot buffer zone to west includes setback from face of hill No habitable structures within 300-feet + of proposed operations See hazards report: no geological or radiation hazard areas.
5.2.2.3	Flood Hazard Areas	All proposed operations are located outside the FEMA-designated

5.2.2.4 Wildfire Hazards

The proposed operations are approximately 120 feet above base
There is no direct discharge of water into the San Juan or its
See fire safety plan: no significant threat of wildfire to operations
or from operations to adjacent lands.

Site is not located within an organized fire district but has SUIT and
federal/state support to adjacent lands.

5.2.2.5 Radiation Hazard Areas

See hazards report: no geological or radiation hazard areas.

5.3 Infrastructure Standards

5.3.1 Survey Monuments

Not applicable: no subdivision proposed

5.3.2 Access Permit Required

See Engineering. Access and road design information provided.

Site has adequate access, including emergency access, to and from
Access Plan included in DRMS Package, Exhibits C and D.

5.3.3 Roads

See Engineering. Access and road design information provided.

5.3.4 Drainage System

See Engineering. Access and road design information provided.

5.3.4.1 On-site retention

The DRMS Package includes the equivalent of a drainage study

5.3.4.2 Design criteria (25- & 100-yr storms)

All affected areas proposed shall have no surface discharge of

Interior drainage is designed to at least the 24-year, 24-hour storm

Exterior drainage, including roads, is designed to at least the 10-

Retention basin design is also based on annual precipitation and

evaporation, in addition to the 72-hour rule (DWR)

5.3.4.3 Design criteria (100-yr storms)

See above: duplicate requirement.

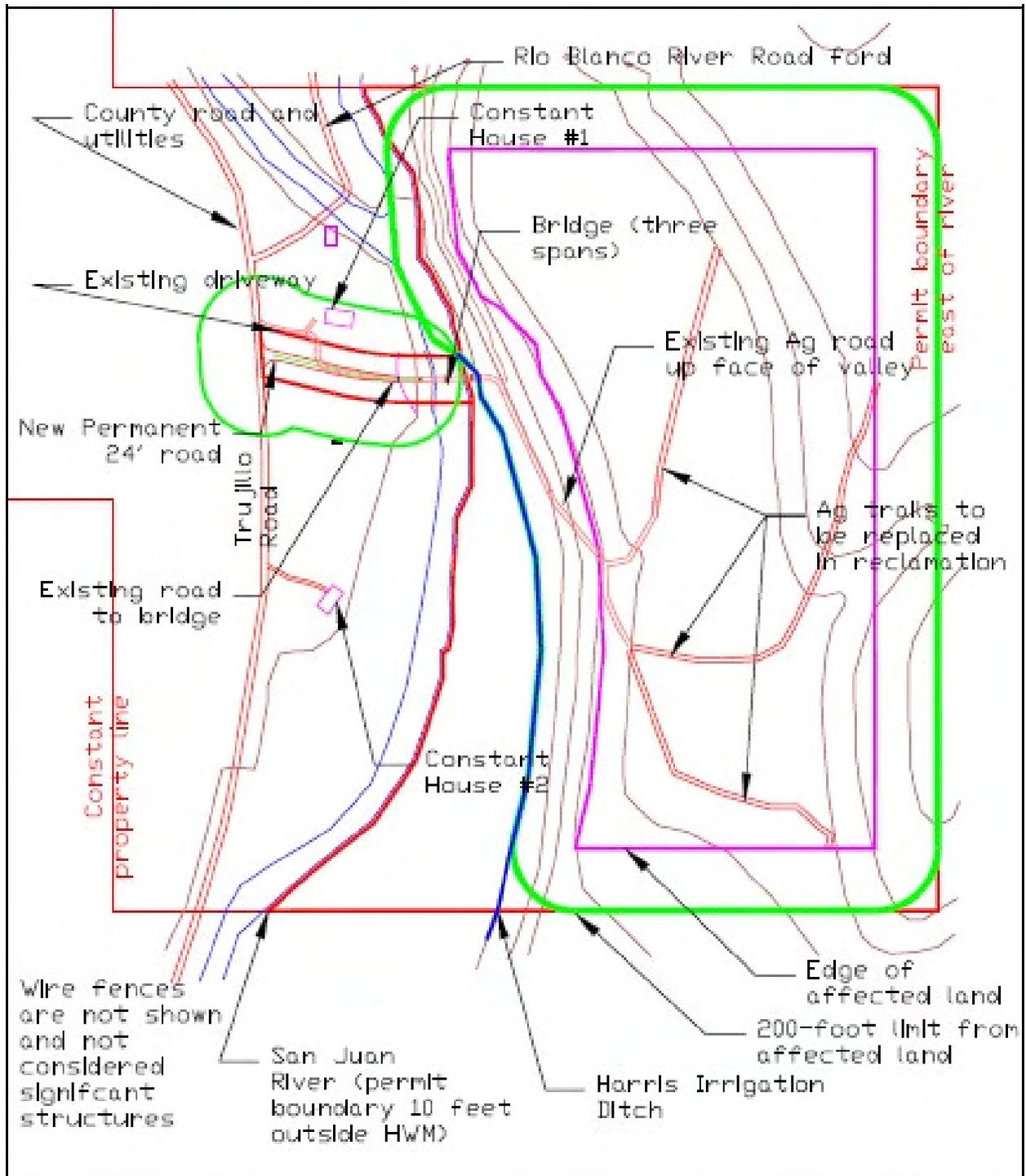
<u>Section</u>	<u>Title/Description</u>	<u>Actions/Condition/Task</u>
9.1.6	Performance Standards [Mining Operations]	
9.1.6.1	Compatibility with surrounding land use	The LO/O believe that the TRP is fully compatible with existing surrounding land use.
(1)	are primarily ag, forestry, or industrial	The LO/O believes the TRP complies with this requirement. See maps in DRMS Package.
(2)	no truck access thru res, rec, or comml	The LO/O believes the TRP complies with this requirement. See maps in DRMS Package.
(3)	not visible to adjacent surrounding residences (ASR)	As described in the DRM Package, terrain and the sequence of operations limits visible from ASR.
(3)a	or mitigated	Vegetated berms (protected soil stockpiles) will further reduce visibility of operations.
(3)b	placed suff dist from public roadways	The LO/O believes the TRP complies with this requirement. See maps in DRMS Package.
(3)c	placed behind natural landforms/exist veg	The LO/O believes the TRP complies with this requirement. See maps in DRMS Package.
(3)d	away from growth centers	The LO/O believes the TRP complies with this requirement. See maps in DRMS Package.
(3)e	minimize visual contact	The LO/O believes the TRP complies with this requirement. See maps in DRMS Package.
(4)	equipment not visible from adj surr. Residences	The LO/O believes the TRP complies with this requirement. See maps in DRMS Package.
(4)a	or mitigated	
(5)	no generation of noise/vibration	The LO/O believes the TRP complies with this requirement. See maps in DRMS Package.
(5)a	or mitigated per 5.4.2.1	
9.1.6.2	Air Quality	
(1)a	gravel, water, or chem access roads	The LO/O believes the TRP complies with this requirement. See maps in DRMS Package.
(1)b	gravel, water, or chem stripped areas	
(1)c	gravel, water, or chem excavations	
(2)	increase watering ops immed in response	The LO/O will comply with this requirement
(3)a	plant stripped areas/stockpiles > 1 season	The LO/O will comply with this requirement
(4)	cease aeration ops at WW pond during events	Not applicable: no aeration operations proposed.
9.1.6.3.	Visual Amenities and Scenic Quality	
(1)a	Low profile permanent equipment	Not applicable: no permanent equipment (located on site > 1 year) is planned
(1)b	Paint to blend	Not applicable: no permanent equipment (located on site > 1 year) is planned
(1)c	Screen permanent equipment	Not applicable: no permanent equipment (located on site > 1 year) is planned
(1)d	Color selection reviewed/approved by DCD	Not applicable: no permanent equipment (located on site > 1 year) is planned
(2)	maintain weed control	The LO/O will comply with this requirement
(2)b	maintain watering program	Not applicable: no watering planned for landscaping or reclamation. LO may irrigate grazing areas.
(3)	visual impact mitigation appvd by DCD	
(3)a	landscaping	Not applicable: no landscaping planned
(3)b	screening	Not applicable: other than berms for stockpile and operational use, no screening is planned.
(3)c	fencing	Not applicable: no fencing other than existing livestock fencing is planned.
(3)d	other	Not applicable: no other visual impact mitigation planned.
(4)	Not visible along highways (>1 year)	Not applicable: not along highway.
(5)	Distant from other mining (cumulative impacts)	There are no other mining operations within at least one mile of the parcel on which this is located.
9.1.6.4	Crushing, Processing, Batching, and HMA	
(1)	Current CDPHE APCD notices/permits	LO/O will comply with this requirement.
(2)	Mitigate visual impacts from batch plants	LO/O will comply with this requirement.
(3)	No batch plants within 100-yr floodplain	LO/O will comply with this requirement.
(4)a	Fully lined recirculation ponds or tanks	LO/O will comply with this requirement.
(4)b	Divert runoff from batch plant areas	LO/O will comply with this requirement.
(5)	Stationary sources meet APCD standards	LO/O will comply with this requirement.
(5)b	Stationary sources meet WQCD standards	LO/O will comply with this requirement.
(5)c	More stringent requirements by BOCC	LO/O request that information be provided as to likely requirements to be imposed; LO/O will comply if possible.

- | | | |
|------|---|--|
| (6)a | Submit relocation inspection of batch plant to CPD | To our knowledge, there are no inspections by CDPHE Divisions upon relocation of equipment. |
| (6)b | Submit annual inspection of batch plant to CPD | To our knowledge, there are no annual inspections by CDPHE of equipment. If CDPHE inspects, O will submit copy of report when (if) received. |
| (7)a | County permit limited to 20 years | Although anticipated estimated operations in DRMS package is greater than 20 year, LO/O understand this limit. |
| (7)b | New permit review required for renewal | LO/O understand that a new permit review is required and that the BOCC may add conditions |
| (8)a | County performance guarantee | LO/O request that a copy of the required guarantee be provided for review and to ensure we can comply |
| (8)b | Provide BOCC certified copy of DRMS bond (warranties) | LO/O will comply with this requirement. |
| | LO/O Landowner/Operator | |
| | O Operator | |
| | LO Landowner | |

<u>Section</u>	<u>Title/Description</u>	<u>Actions/Condition/Task</u>
9.1.7	Submittals	
9.1.7.1	Copy of Application submitted to CDMG	Note: CDMG is now the Colorado Division of Reclamation, Mining, and Safety (DRMS)
(1)	Site Plan	Exhibits B (Sheets B1-B3) and C (Sheets C1-C3) are the "site plan"
(2)	Operations Plan	Exhibit C (Mining Plan) appears to be the closest to this request, but portions of other exhibits may also be included.
(3)	Road Use Plan	There is no "road use plan" or similar in the DRMS Package. Sheets C4-C5 show the access road.
(4)	Reclamation Plan	Exhibits E (Reclamation Plan) and F (Reclamation Plan Maps and Cross-Sections)
(5)	Copy of Bond	The Performance Warranty and Financial Warranty are not prepared or issued until the Reclamation Permit Application is approved and posted: after county process is completed.
(6)a	Wildlife	DRMS Package Exhibit H
(6)b	Soils	DRMS Package Exhibit I
(6)c	Geology	DRMS Package Exhibit I, and Sheet B-3
(6)d	Hydrology	DRMS Package Exhibit G
(6)e	Other environmental information	DRMS Package, Exhibits C, D, E, F, G, I, J, L, M, and S
9.1.7.2.	Maps and Plans	
(1)a	Maps: Location	DRMS Package, Exhibit B
(1)b	Maps: Mining	DRMS Package, Exhibit C
(1)c	Maps: Reclamation	DRMS Package, Exhibit F
(1)d	Maps: Adjacent owners	DRMS Package, Exhibit(s)
(1)e	Maps: Water	DRMS Package, Exhibit G
(1)f	Maps: Soil	DRMS Package, Exhibit(s)
(1)g	Maps: Geology	DRMS Package, Exhibit B Sheet B-3, and Exhibit
(1)h	Maps: Structures	DRMS Package, Exhibit S
(2)	USGS Quad 1-mile radius	Exhibit B of DRMS Package
(3)	Site Plan ... exploration operation	Not applicable: no exploration planned. Mining and Reclamation Site Plans are in DRMS Package Exhibits C and F
(4)	Grading Plan	Maps in Exhibits C and F of DRMS Package
(5)	Contour Map	Maps in Exhibits C and F of DRMS Package
(6)	Site Description:	Exhibit D of DRMS Package has a written description of the site, and references other Exhibits
(6)a	Existing vegetative types	DRMS Package Exhibit J.
(6)b	Existing land use of site, surrounding	DRMS Package, Exhibit M, Map M-1, and Exhibit O
(6)c	Location of various items	Extraction areas: stockpiles, topsoil stockpiles: overburden stockpiles: None, Nearest waterways Nearest residences: Proposed/existing fencing: All shown in various maps in DRMS Package
(7)	Written description of access roads:	ATT # 9 (Engineering) Sections a and b.
(7)a	Route recon details	ATT # 9 (Engineering) Sections a and b.
(7)b	Anticipated impacts and traffic	ATT # 9 (Engineering) Sections a and b.
(7)c	Areas along route	ATT # 9 (Engineering) Sections a and b.
(7)d	Location of internal haul roads	DRMS Package, Sheet F3
(8)	Project description	DRMS Package, Exhibit D (Mining) and Exhibit E (Reclamation)
(8)a	Size/timing of extraction	DRMS Package, Exhibit D (Mining) and Exhibit E (Reclamation)
(8)b	Depth of topsoil/overburden	DRMS Package, Exhibit D (Mining) and Exhibit E (Reclamation)
(8)c	Max area to be disturbed at any one time	DRMS Package, Exhibit D (Mining) and Exhibit E (Reclamation)
(8)d	Methods, times of extraction, employees	DRMS Package, Exhibit D (Mining) and Exhibit E (Reclamation), normally 2-3 employees on-site.
(8)e	Expected volume/annual volume	DRMS Package, Exhibits C and M (fr discussion of haul and traffic)
(8)f	Outdoor storage and weed control plan	DRMS Package Exhibit J. All outdoor storage shall be on the plant site and within the working floor of the pit. See also item (10)e below (ATT # 9 (Engineering) Section D

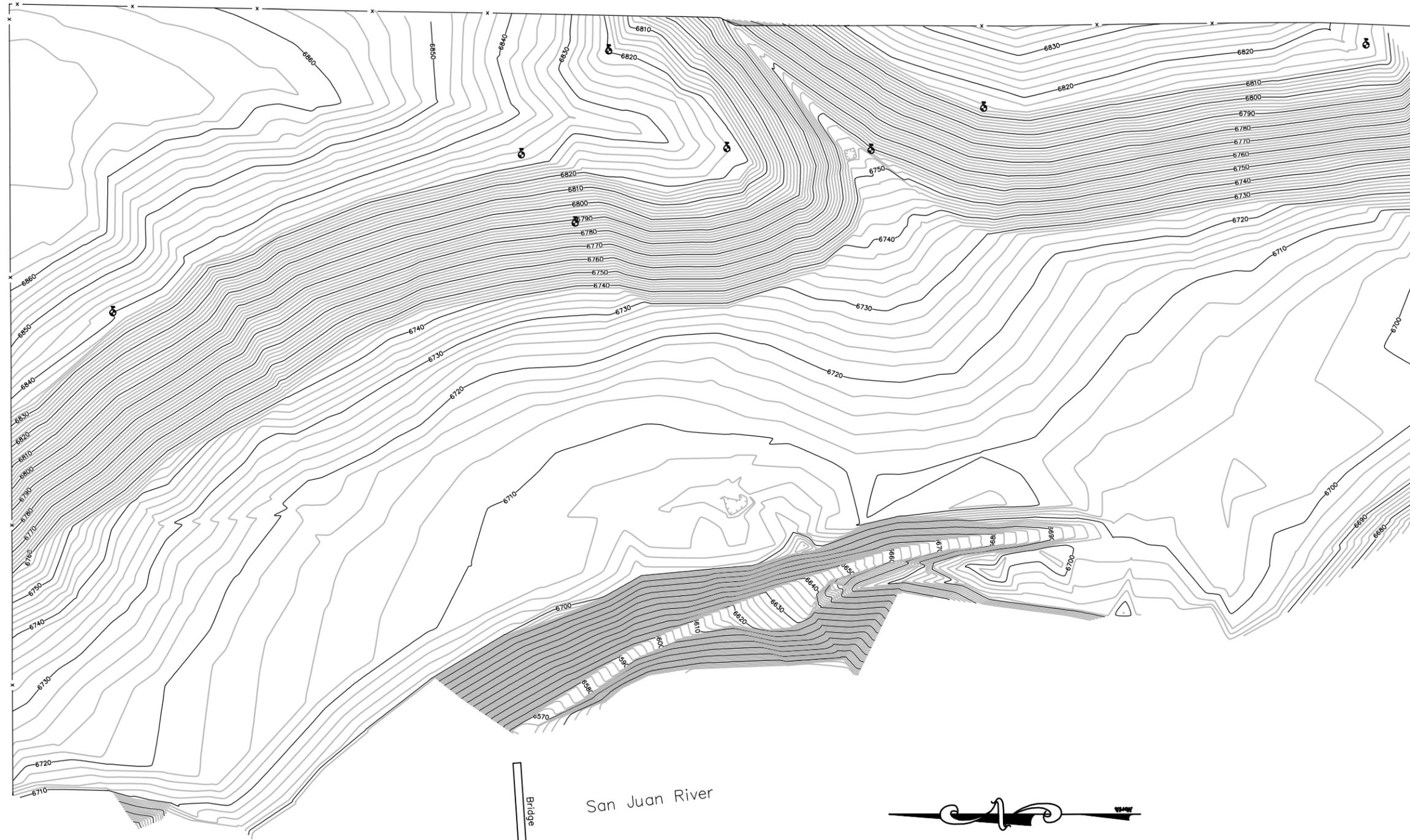
(9)	Blasting plan and information	DRMS Package, Exhibit M: No blasting is proposed for the Two Rivers Pit
(10)	Reclamation Plan	DRMS Package, Exhibits E and F
(10)a	Proposed final land use	DRMS Package, Exhibit E (Reclamation)
(10)b	Timing of reclamation	DRMS Package, Exhibits E and F
(10)c	Salvage, redistribution and disposal	DRMS Package, Exhibit D (Mining) and Exhibit E (Reclamation)
(10)d	SCS/MLRB seeding/revegetation	DRMS Package, Exhibit J. ATT #
(10)e	Weed control plan	DRMS Policy Letter and DRMS Package Exhibit J, ATT # 9 (Engineering) Section D
(11)	Environmental/vicinity impact	DRMS Package, Exhibits C, D, E, F, G, I, J, L, M, and S
(11)a	Soils	DRMS Package, Exhibit I
(11)b	Visual impacts: area/neighborhood, roads	DRMS Package, Exhibit M
(11)c	Wildlife	DRMS Package, Exhibit H
(11)d	Geologic, floodplain, hydro, wildfire hazards	DRMS Package: Geology: Exhibits B & I Floodplain: Exhibit G Sheet G-X Hydrological: Exhibit G, Wildfire:
(11)e	Potential pollution incl noise, water rights	DRMS Package, Exhibit M
(11)f	Climatological data	DRMS Package, Exhibit K
(11g)	Surrounding property uses, land values	DRMS Package, Exhibit M, Map M-1, and Exhibit O
(12)	Impact mitigation plan	DRMS Package, Exhibits C, D, E, F, G, I, J, L, M, and S
(12)a	Visual	DRMS Package, Exhibit M and ATT # 17
(12)b	Wildlife	DRMS Package, Exhibit H
(12)c	Geologic, floodplain, hydro, wildfire hazards	DRMS Package: Geology: Exhibits B & I Floodplain: Exhibit G Sheet G-X Hydrological: Exhibit G, Wildfire:
(12)d	Air pollution	DRMS Package, Exhibit M
(12)e	Water quality and quantity/augmentation	DRMS Package, Exhibit G
(12)f	Significant vegetation preservation	DRMS Package, Exhibit J
(13)	Fugitive Dust Control Plan	DRMS Package, Exhibit M and ATT # 9 (Engineering) Section e.

DRMS Package is Attachment 16 and includes approval letter after MLRB decision.



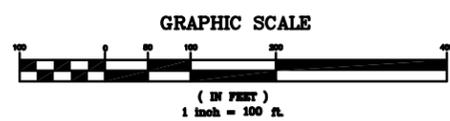
KEY EXISTING FEATURES OF THE SITE, AND CURRENT CONTOURS

Topographical Mapping
of the Constant Property
located in
Section 11, T33N, R2E, N.M.P.M.
Archuleta County Colorado



Bridge

San Juan River



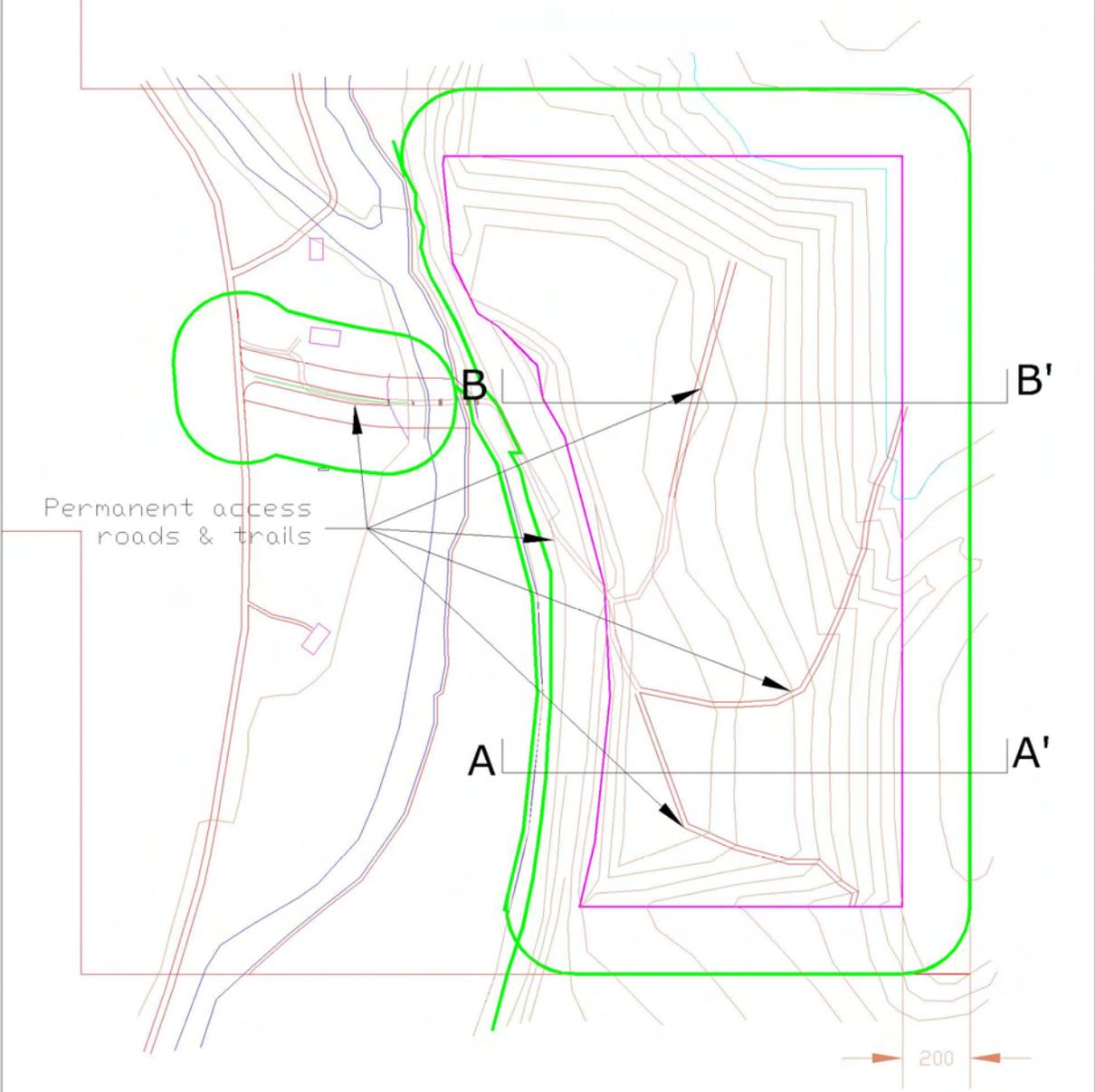
Dimensions are in U.S. Survey Feet
Elevation Datum: NAVD88
Contour Interval: 2 ft

⊗ : Test Pit

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Gibbons - NBQ Inc.	
aka Ernst Engineering Co. Inc.	
P.O. Box 3178 DURANGO, CO. 81302	
Topographical Mapping of the Constant Property located in Section 11, T33N, R2E, N.M.P.M. Archuleta County Colorado	
Job: Constant15.dwg	Drawn by: GW
Checked by:	Rev:
Scale: 1" = 50'	Date: Sept. 17, 2015

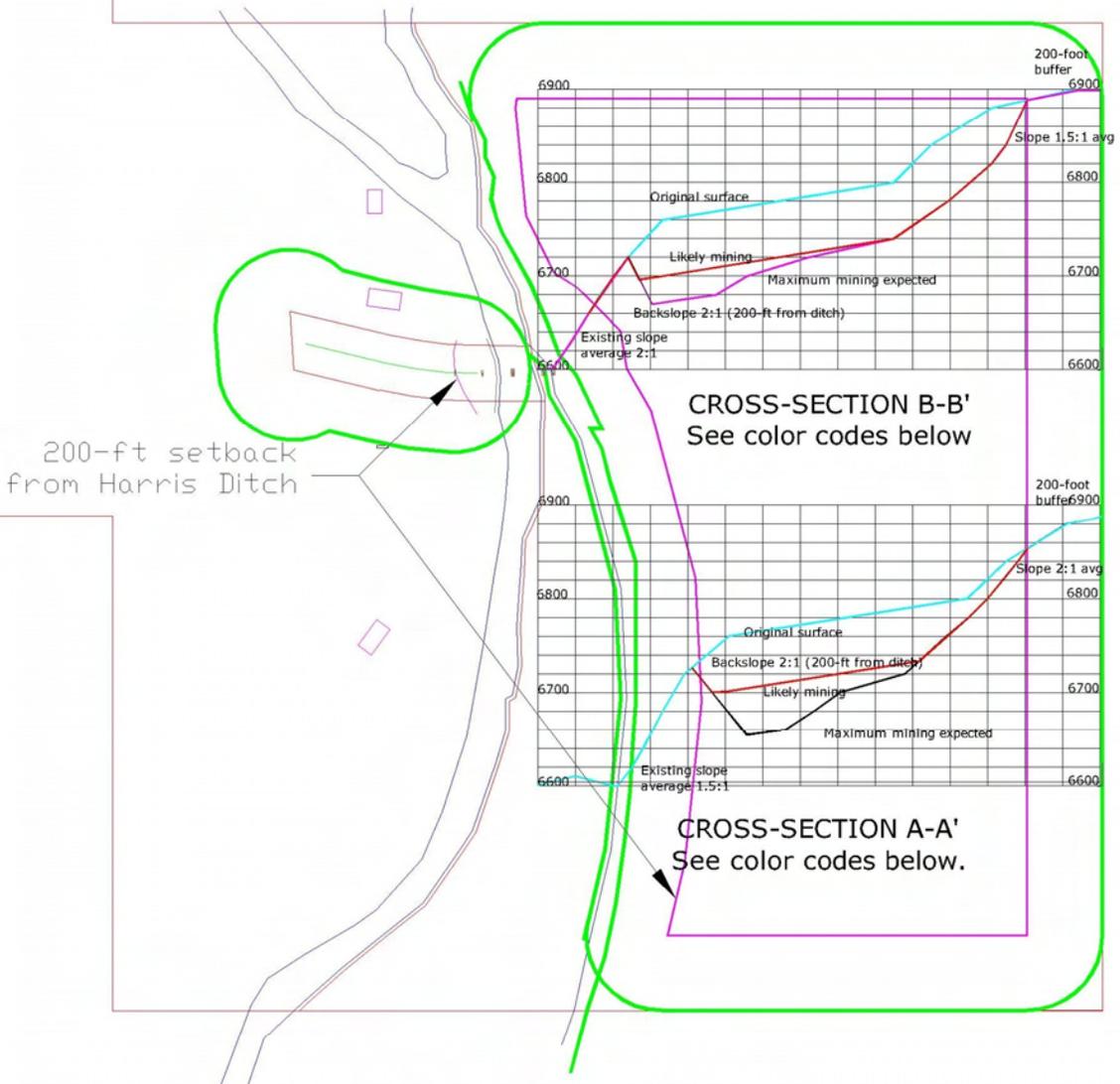
C&J Gravel Products, Inc. Two Rivers Pit



A | A'
CROSS-SECTIONS

POST-RECLAMATION CONTOURS AND FEATURES

C&J Gravel Products, Inc. Two Rivers Pit



200-ft setback
from Harris Ditch

CROSS-SECTION B-B'
See color codes below

CROSS-SECTION A-A'
See color codes below.

CROSS SECTIONS LOOKING NORTH

HORIZONTAL SCALE: 1 block = 100 feet

VERTICAL SCALE: 1 block = 20 feet

Cyan: Original

Red: Likely final contours (60 foot max)

Magenta: Possible maximum contours (110 foot max)



View of Pit from CR-500 (using Google Street View) – façade of the pit facing San Juan River and CR-500 will remain, hiding the excavation and reclamation from view.





Views of the Bridge Approach and Face of the Valley Wall in Summer 2015. Façade (cliff and trees) will remain: the ridge to the east will be gone.

October 6, 2015

C & J Gravel Products, Inc.
Perry Neil
27661 Highway 160 E
Durango, CO 81301



COLORADO
Division of Reclamation,
Mining and Safety
Department of Natural Resources

1313 Sherman Street, Room 215
Denver, CO 80203

**RE: Two Rivers Pit, File No.M-2015-004, Construction Material Regular (112) Operation
Reclamation Permit Application Decision Letter – Financial and Performance Warranty
Request**

Dear Mr. Neil:

On September 23, 2015, the Division of Reclamation, Mining and Safety (Division) approved the above noted permit application.

The amount of financial warranty set by the Division for this operation is an amount of (\$140,354.28). A financial warranty of the entire amount, as well as a performance warranty, must be submitted to the Division before a Reclamation Permit may be issued. Please select a type of financial warranty from those detailed in Rule 4.3. Once a financial warranty type is selected, please download the applicable financial warranty and performance warranty forms from the Division's website <http://mining.state.co.us/Mineral%20Forms.htm>. You may also contact the the Division to have copies of your selected warranty forms mailed to you.

Please make arrangements with Barbara Coria at the Division of Reclamation, Mining and Safety Denver Office, phone no. 303.866.3567, ext. 8148 for submittal of the financial and performance warranties. Any questions regarding completion, execution and/or submittal of financial and/or performance warranty forms should also be directed to Barbara Coria.

PLEASE NOTE THAT MINING OPERATIONS MAY NOT COMMENCE UNTIL A PERMIT HAS BEEN ISSUED BY THE DIVISION AFTER RECEIPT OF THE FINANCIAL AND PERFORMANCE WARRANTIES. A PERMIT WILL NOT BE ISSUED UNTIL THE ADEQUACY OF BOTH THE FINANCIAL WARRANTY AND PERFORMANCE WARRANTY ARE VERIFIED BY THE DIVISION.

If you require additional information, or have questions or concerns, please contact me at the Division's Grand Junction Field Office.

Sincerely,

Stephanie Mitchell
Environmental Protection Specialist
Department of Natural Resources
Division of Reclamation, Mining and Safety
101 South 3rd, Suite 301
Grand Junction, CO 81501
Phone: (970) 242-5025
Fax: (970) 241-1516



Addressee Name

Date

Page 2

Cc: Barbara Coria, DRMS
Russ Means, DRMS

Exhibits to 112 Permit Application M-2015-0__
Filed with Colorado Division of Reclamation, Mining, and
Safety

Two Rivers Pit

12550 Trujillo Road S (CR-500)
Archuleta County, Colorado

Owned by:
Jac and Lee Constant
12500 CR-500, Pagosa Springs, CO 81147

Operated by:
C&J Gravel Products, Inc.
27661 Hwy 160-E, Durango, CO 81301

Prepared by:
WASTELINE, INC.
PO Box 88, Cortez, CO 81321

01 January 2015

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EXHIBIT A -LEGAL DESCRIPTION

A parcel of land in Section 11, Township 33 North, Range 2 West, N.M. (10th) P.M., Archuleta County, Colorado, a portion of county parcel number 5965-10-100015, being more particularly described as follows:

That portion of the S $\frac{1}{2}$ of the NW $\frac{1}{4}$ and the N $\frac{1}{2}$ of the SW $\frac{1}{4}$ of Section 11, east of the San Juan River, approximately 99.7 acres more or less, plus an access easement or zone of 150 feet by 562 feet¹ west of the San Juan River (1.9 acres more or less), for a total of 102.6 acres, more or less.

Property corners are marked with standard survey markers; corners which might be disturbed by mining activities will also be marked with witness markers and delineators. The permit boundary along the east bank of the San Juan River is described as ten feet above the normal high-water mark, and the boundary along the irrigation ditch described as being on the east bank at the normal maximum flow level.



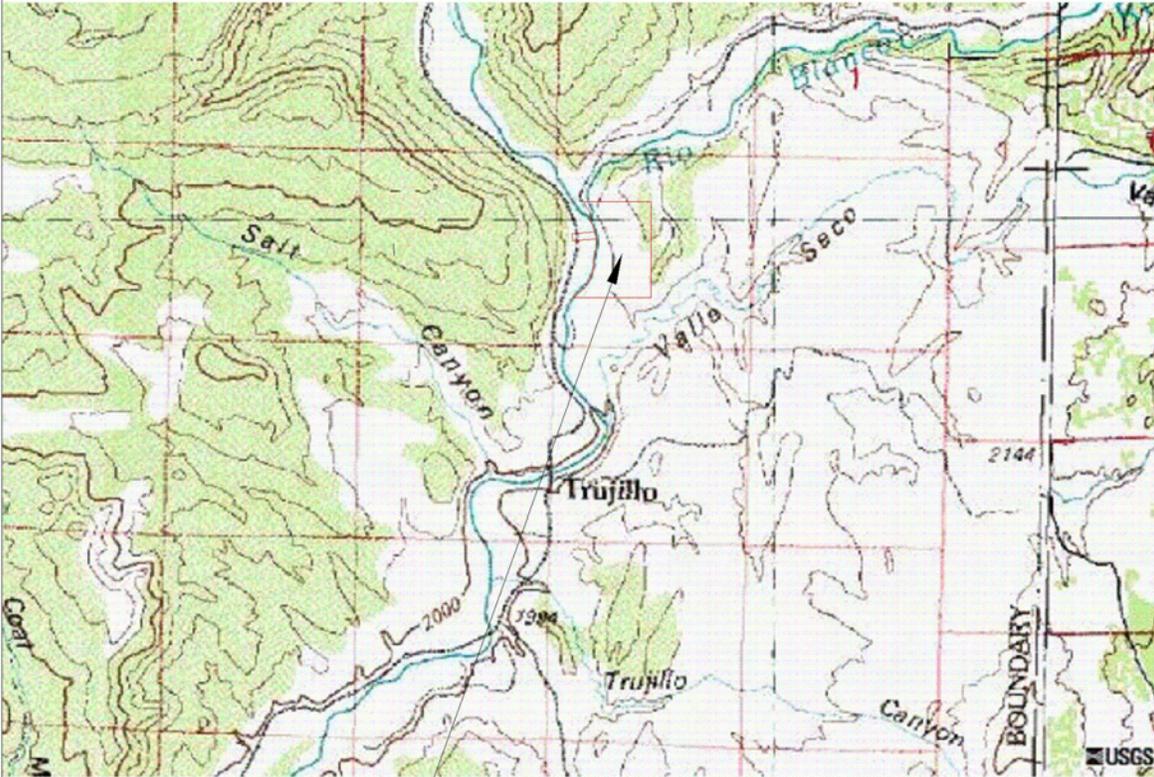
Oblique view of Two Rivers Pit, viewed from West. Taken before bridge was built.

¹ The distance of 561.4 feet (rounded to 562) is the centerline of the existing and proposed road, measured from the center abutment of the bridge to the edge of CR-500, defined as:

EXHIBIT B - INDEX MAP

C&J Gravel Products, Inc. Two Rivers Pit

12550 Trujillo Road (CR-500)
Approximately 12 miles S of Pagosa Springs, Archuleta County, CO

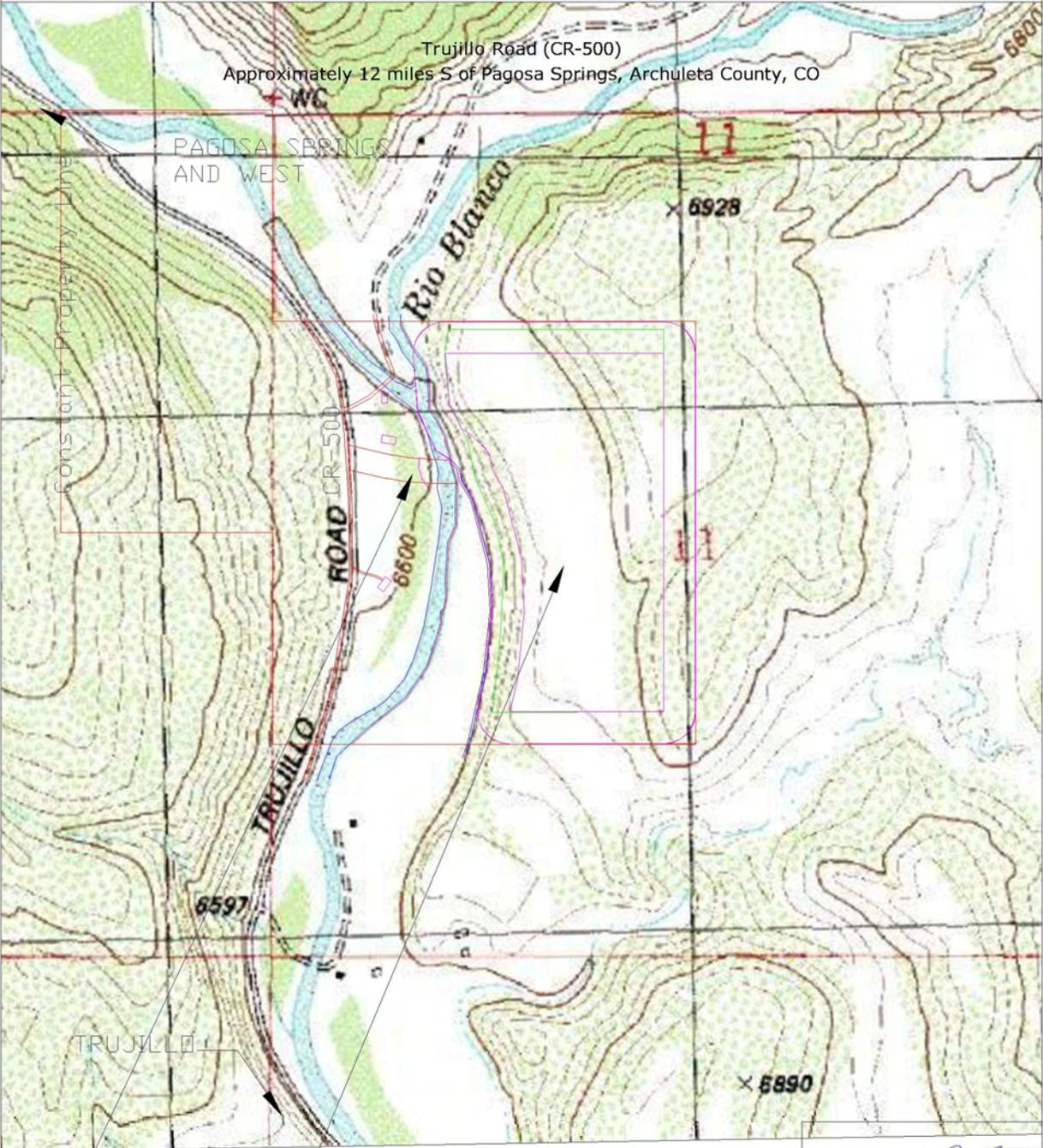


TWO RIVERS PIT 102.6 Acres *Nathan A. Barton*
Nathan A. Barton, PE (CO-82630)

Prepared for C&J Gravel by and (c) WASTELINE, INC. Date: 21 NOV 14 By: N. Barton Rv: P. Neil Scale: 1"=1000' Source: USGS Map/Photo. Portions T33N, R2W, 10th PM, Archuleta Co., Colorado, Pertaining to Application: Two Rivers Pit M-2015-____ Legend: standard USGS	INDEX/LOCATION MAP Source: USGS Trujillo 7.5-min Quad Map (July 1978) note: USGS map does not accurately show section lines.	Drawing/ Sheet No. <h1 style="font-size: 2em; margin: 0;">B1</h1>
---	---	---

Address: 12550 Trujillo Road S (CR 500)Pagosa Springs-Trujillo, CO.
 Entrance to Site (Bridge across River): UTM 13S 318350E, 4110104N elev 6628

C&J Gravel Products, Inc. Two Rivers Pit



TWO RIVERS PIT 102.6 Acres
150-ft x 562-ft easement

Nathan A. Barton
Nathan A. Barton, PE (CO-82630)

Prepared for C&J Gravel by and (c) WASTELINE, INC.
Date: 21 DEC 2014 By: N. Barton Rv: P. Neil
Scale: 1"=1000' Source: USGS Map/Photo, bridge survey.
Portions SW 1/4 Sec 11, T33N, R2W, 10th PM, Archuleta Co., CO, Pertaining to Application: Two Rivers Pit M-2015-____ Legend: standard USGS

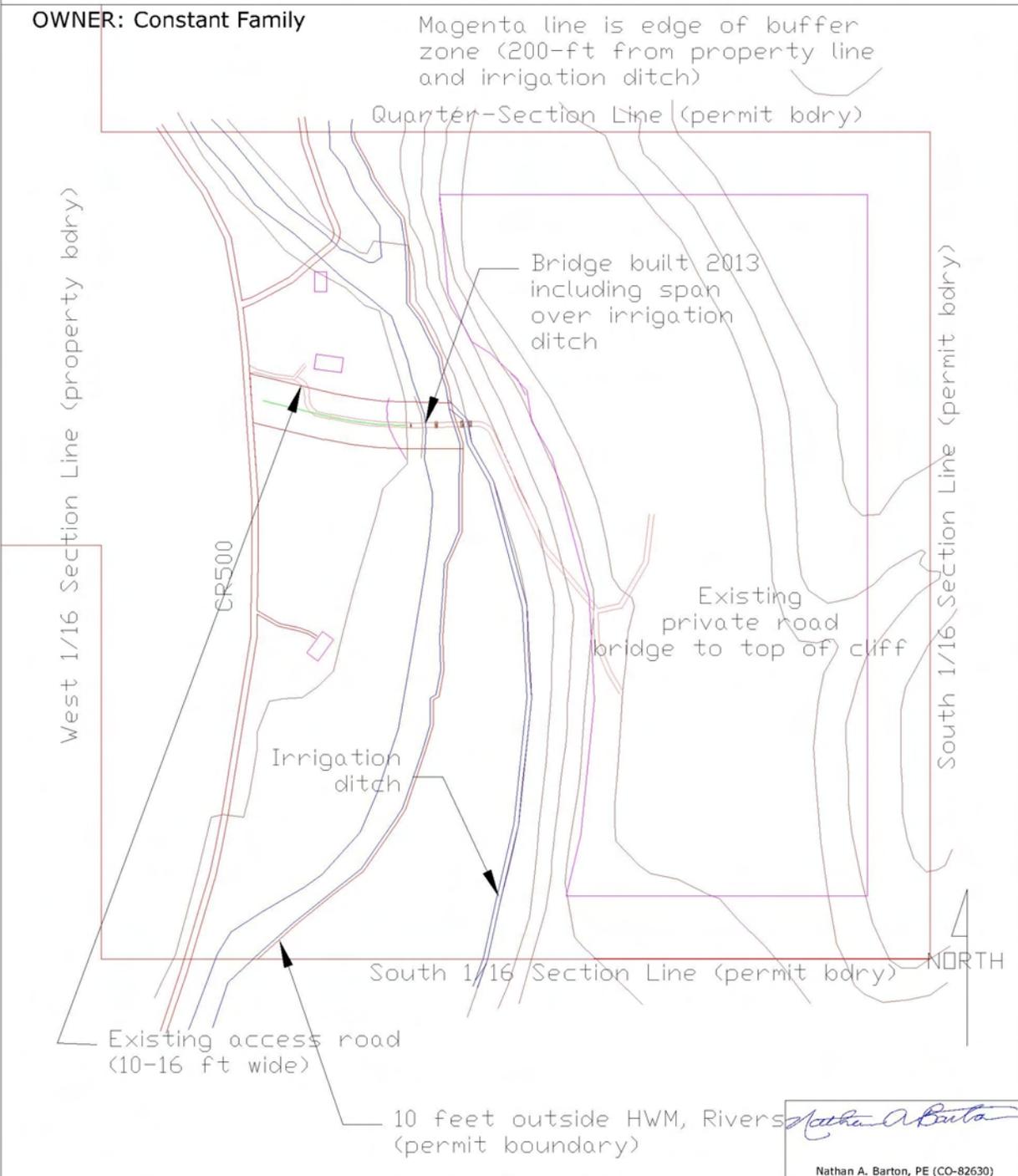
INDEX/LOCATION MAP
Source: USGS Trujillo 7.5-min Quad Map (July 1978)
note: USGS map does not accurately show section lines.

Drawing/
Sheet No.
B2

C&J Gravel Products, Inc. Two Rivers Pit

OWNER: Constant Family

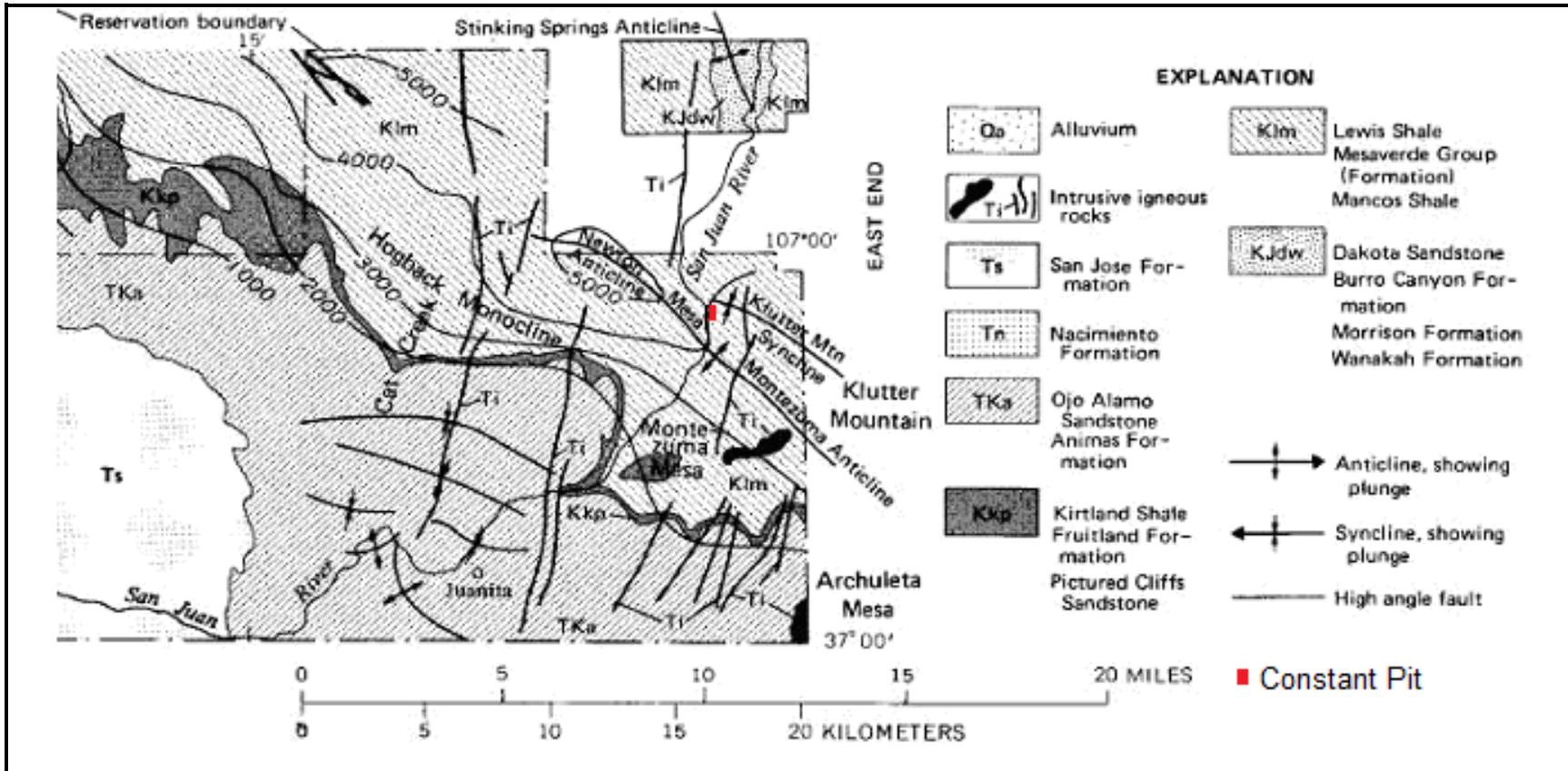
Magenta line is edge of buffer zone (200-ft from property line and irrigation ditch)



Prepared for C&J Gravel by and (c) **WASTELINE, INC.**
 Date: 21 DEC 14 By: N. Barton Rv: P. Neil
 Scale: 1"=500' 40-ft contours. Source: USGS Map/Photo
 Portions SW 1/4 Sec 11, T33N, R2W, 10th PM, Archuleta
 Co., CO, Pertaining to Application: Two Rivers Pit
 M-2015-____ Legend: as indicated

LOCATION MAP
 Source: USGS Trujillo 7.5-min Quad
 Map (July 1978)

Drawing/
 Sheet No.
B3



C&J Gravel Products	Map Title	Constant Pit Area Surficial Geology Map		Scale	As shown	North ↑ Date: 15 NOV 2014
	Source of Map	BIA Resource Info Report, 1976 http://www1.eere.energy.gov/tribalenergy/guide/pdfs/southern_ute_19.pdf	Permit No. & Name		M-2014-____ Constant Pit	Drawn by NAB Checked by NAB
	Legend	As shown above. Red box marks pit.				File No. B-4

EXHIBIT C - PRE-MINING AND MINING PLAN MAPS OF AFFECTED LANDS

INDEX

SHEET C-1: Entire site showing present contours and permanent structures with owners.

SHEET C-2: Entire site showing proposed mining and facilities, including sequence, by years.

SHEET C-3: Aerial (satellite) photo.

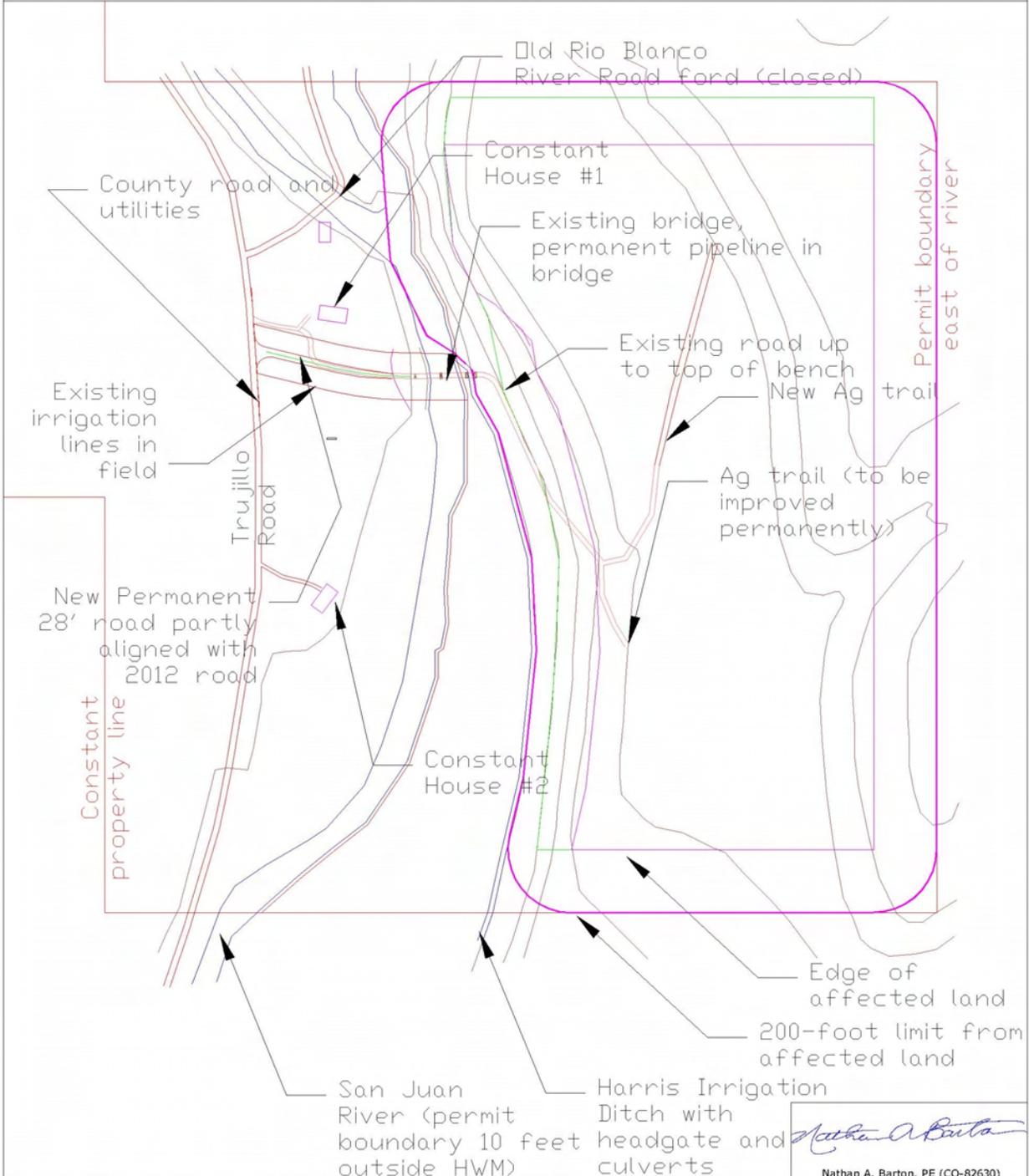
SHEET C-4: Detail maps of access road and river/ditch crossing.

SHEET C-5: Plan of existing and planned access road and related features.

Notes:

1. There are no recorded easements on the property within the permit boundary. The Harris Ditch just inside the permit boundary on the east bank of the San Juan River is an established water right, but has no defined easement recorded.
2. Information on soils is shown on Map in Exhibit I.
3. Information on vegetation is shown on Map in Exhibit J.
4. Adjoining surface owners of record are shown on Map in Exhibit O.
5. Information on permanent or man-made structures is shown in Table in Exhibit S.

C&J Gravel Products, Inc. Two Rivers Pit



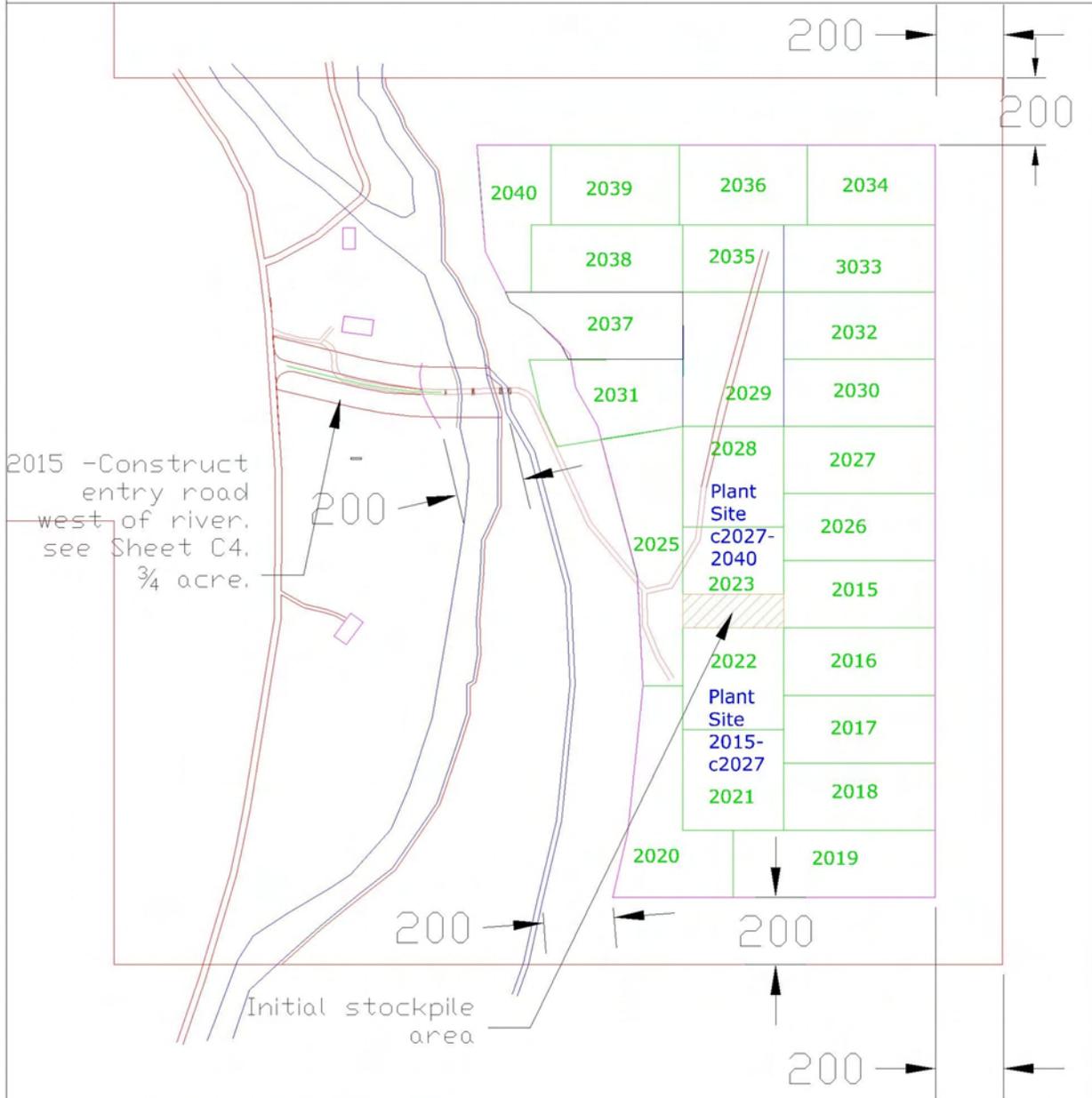
Nathan A. Barton
Nathan A. Barton, PE (CO-82630)

Prepared for C&J Gravel by and (c) WASTELINE, INC.
Date: 21DEC14 By: N. Barton Rv: P. Neil
Scale: 1"=500' 40-ft contours Source: USGS Map/Photo.
Portions SW 1/4 Sec 11, T33N, R2W, 10th PM, Archuleta
Co., CO, Pertaining to Application: Two Rivers Pit
M-2015-____ Legend: as indicated

**MAP SHOWING SITE FEATURES
BEFORE MINING**

Drawing/
Sheet No.
C1

C&J Gravel Products, Inc. Two Rivers Pit



2015 Year of mining
 2015-c2027 Year area used for plant site

Nathan A. Barton
 Nathan A. Barton, PE (CO-82630)

Prepared for C&J Gravel by and (c) WASTELINE, INC.
 Date: 21DEC14 By: N. Barton Rv: P. Neil
 Scale: 1"=500' Source: USGS Map/Photo.
 Portions SW 1/4 Sec 11, T33N, R2W, 10th PM, Archuleta Co., CO, Pertaining to Application: Two Rivers Pit M-2015-____ Legend: as indicated

MAP SHOWING MINING SEQUENCE

Drawing/
 Sheet No.
C2

C&J Gravel Products, Inc. Two Rivers Pit

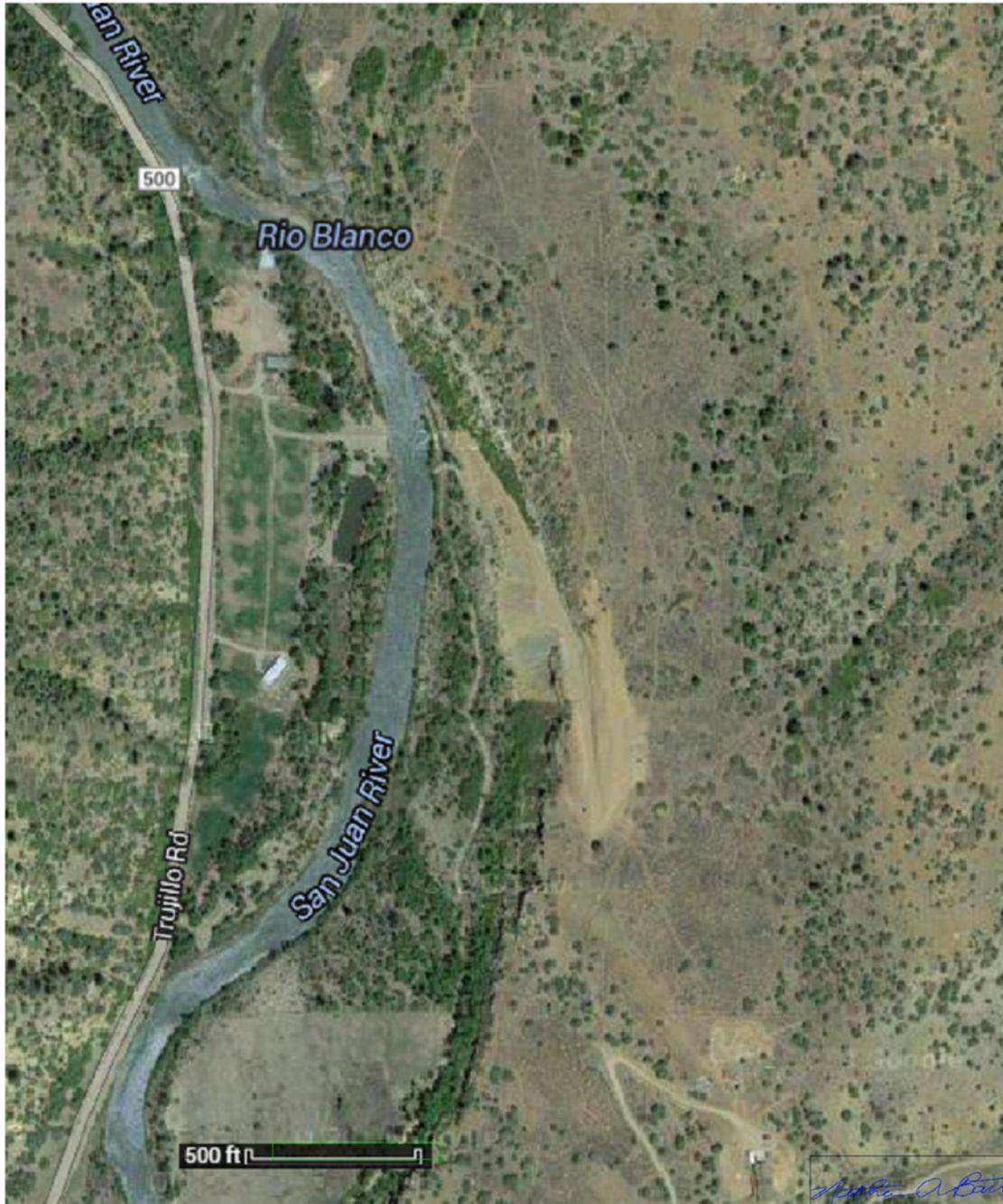


Photo taken before bridge built, but after road to east built

Nathan A. Barton, PE (CO-82630)

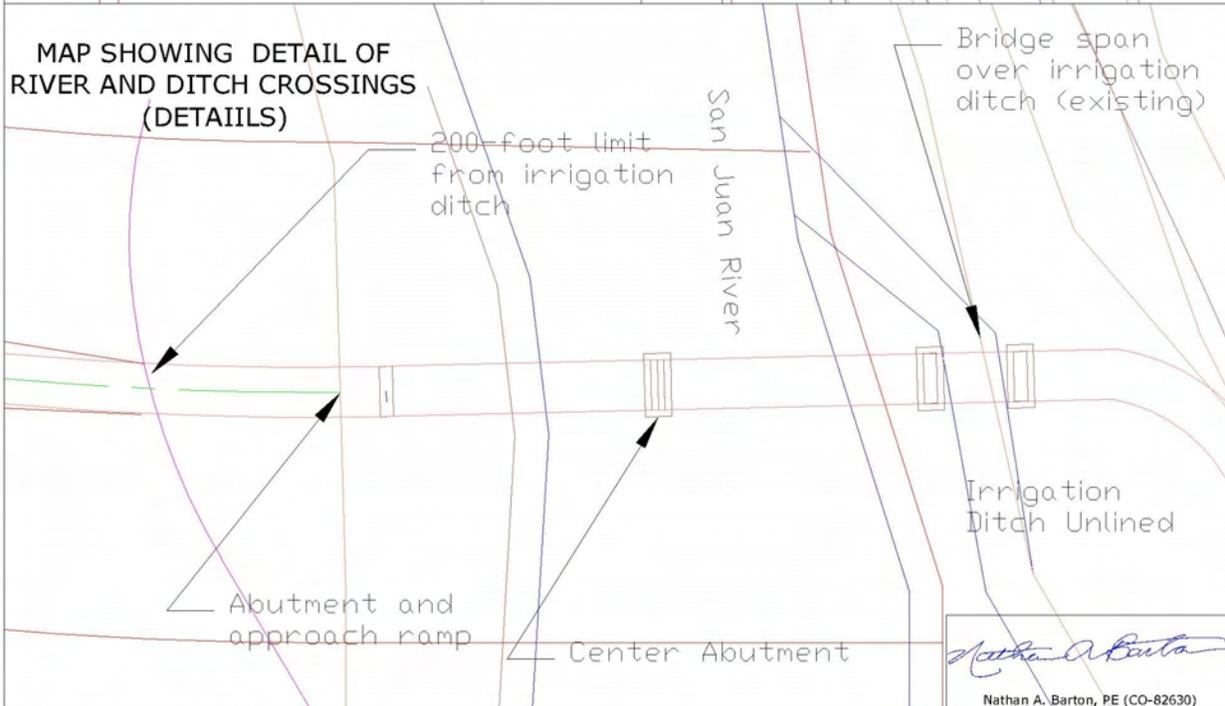
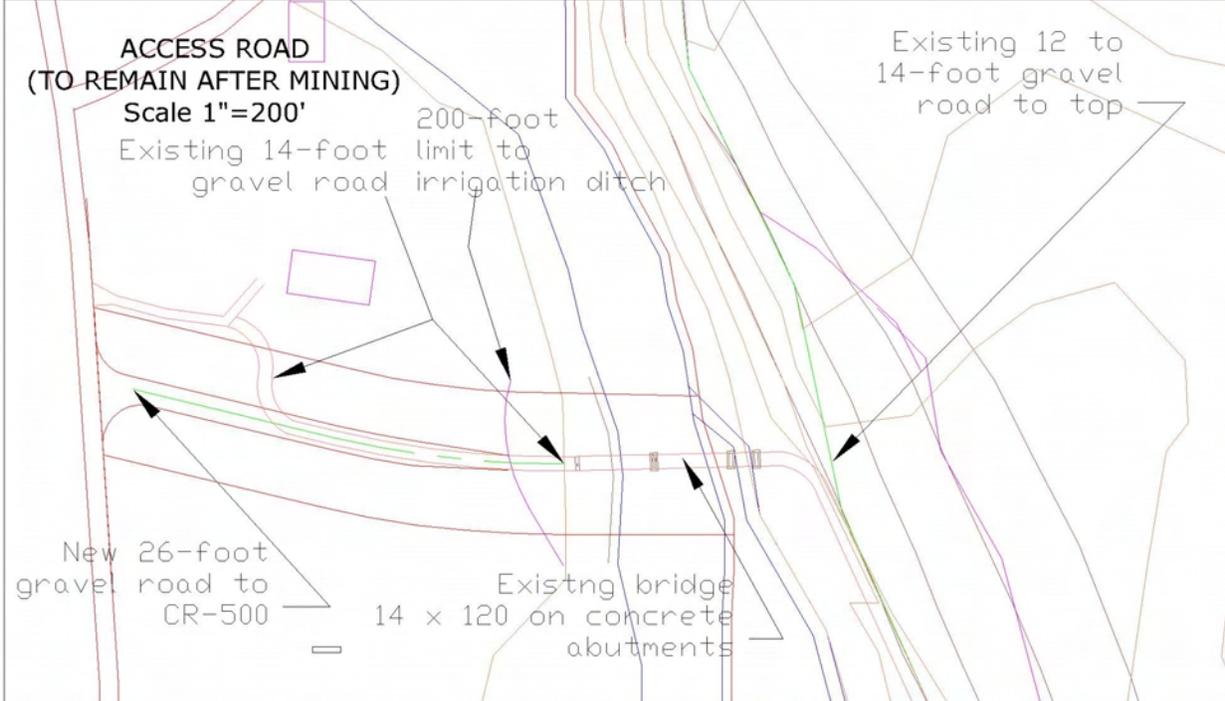
Prepared for C&J Gravel by and (c) WASTELINE, INC.
 Date: Photo 31 MAY 2012 By: N. Barton Rv: P. Neil
 Scale: 1"=500' Source: Google Earth Map/Photo.
 Portions SW 1/4 Sec 11, T33N, R2W, 10th PM, Archuleta
 Co., CO, Pertaining to Application: Two Rivers Pit
 M-2015-_____ Legend: standard USGS

AERIAL PHOTOGRAPHY
OF SITE

Drawing/
Sheet No.

C3

C&J Gravel Products, Inc. Two Rivers Pit

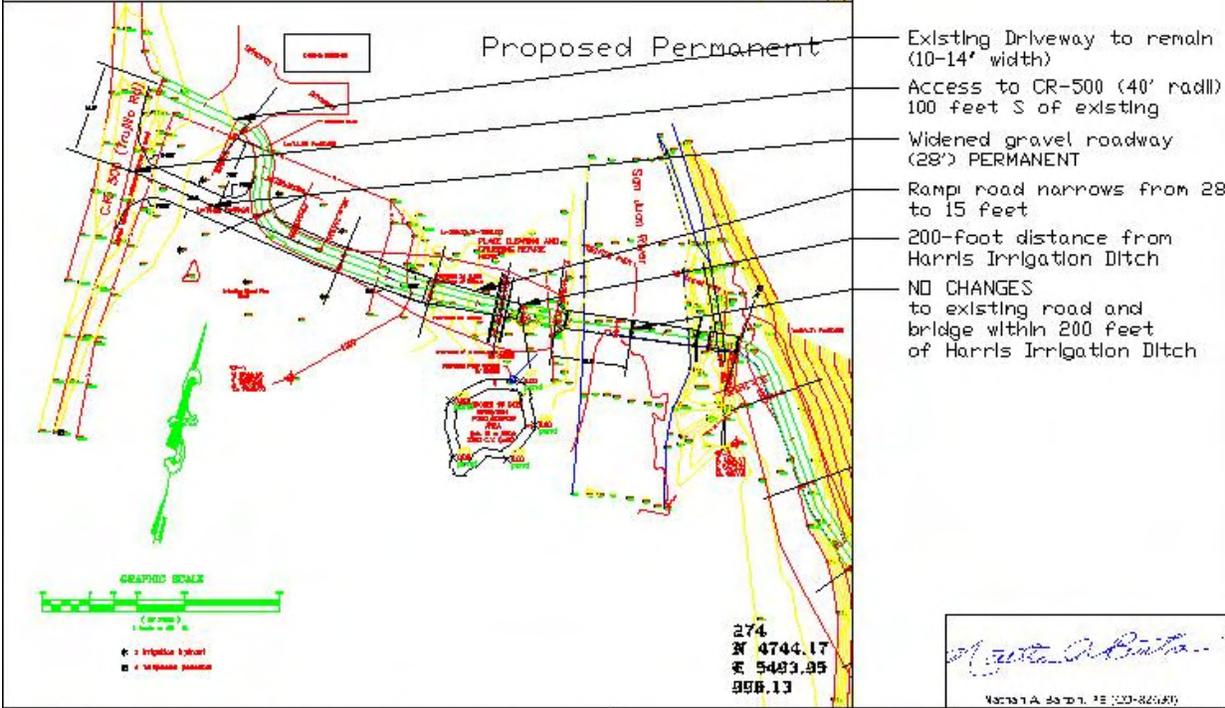
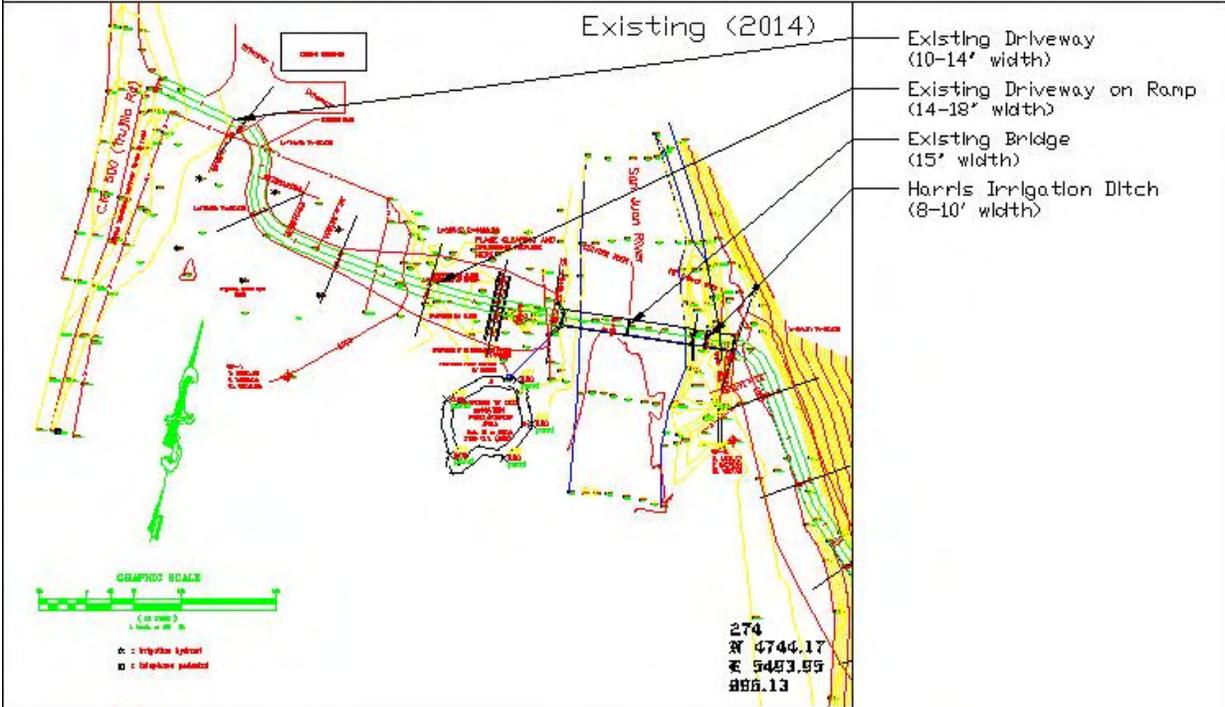


Prepared for C&J Gravel by and (c) WASTELINE, INC.
Date: 21DEC14 By: N. Barton Rv: P. Neil
Scale as shown 20-ft contours Source: USGS Map/Photo.
Portions SW 1/4 Sec 11, T33N, R2W, 10th PM, Archuleta Co., CO, Pertaining to Application: Two Rivers Pit M-2015-____ Legend: standard USGS

MAP SHOWING PERMANENT AND MINING FEATURES (DETAILS)

Drawing/
Sheet No.
C4

C&J Gravel Products, Inc. Two Rivers Pit



Prepared for C&J Gravel by and (c) WASTELINE, INC.
 Date: 21DEC14 By: N. Barton & F. Gibbons, Rv: P. Neil
 Scale: 1"=500' Source: USGS Map/Photo.
 Portions SW 1/4 Sec 11, T33N, R2W, 10th PM, Archuleta
 Co., CO, Pertaining to Application: Two Rivers Pit
 M-2015-____ Legend: as indicated

**PLAN
 DETAIL OF ACCESS
 LAND AND BRIDGE**

Drawing/
 Sheet No.
C5

EXHIBIT D - MINING PLAN

GENERAL CONCEPT:

The site consists of quaternary sand and gravel deposits on top of a bench of the Lewis Shale Mesa Verde Group, located on the East side of the San Juan River Valley, essentially at the Confluence of the Rio Blanco with the Rio San Juan. Mining will be limited to the upper bench, and will not be done below the cliff along the river (or in the floodplain). Except for grading necessary to construct the access road (connecting the existing road and bridge with CR-500) there will be no operations below elevation 6640.

Activities west of the San Juan River will be limited to the construction and use of the access road, and necessary drainage, which will be permanent. This uses part of the existing access road which goes through the ranch headquarters, so that pit traffic goes straight to CR-500. This road, including the bridge, will be maintained by the operator during mining operations. No improvements or additions to this road are within 200 feet of the irrigation ditch or other significant manmade structures other than those of the landowner.

Mining of the site will be done in an estimated 25- to 30-year period, beginning as described above, moving south, then east and north, to mine out the southern portion by 2026 (12 years), then continuing north to finish in the northeast corner in 2040 (26 years). During this period, two general areas will be used for plant operations: in the south 2014-c2027, and north c2027-2040. The main haul road east of the existing intersection at the top of the face of then bench (more than 200 feet from the irrigation ditch) will be shifted as necessary to support the plant area and operations.

The other initial activities on the site will be (1) necessary excavation past the road junction to widen existing trails for access and establish an area to locate scales, (2) clearing and grubbing the initial plant site, stockpile areas, and access to the area to be mined in the first year, which will (3) be stripped. Soil from the plant site and initial area to be mined, as well as from road work on top of the bench, will be stockpiled long-term for reclamation

Access from approximately 200 feet west of the bridge to the top of the face of the bench will be single, one-way alternating traffic. Approximately 300 feet of the access road (immediately east of CR-500) will be two-lane (26+ feet wide) to allow for stacking of trucks as part of the alternating traffic pattern.

Issues of concern: These existing slopes are permanent but will be subject to engineering evaluation to determine safety and what actions (if any) are necessary to stabilize slopes both during and after mining operations. Such actions which might be implemented as necessary include grouting, use of retaining walls (such as sandbags, Keystone™ blocks, wire mesh, and gabions). Evaluation will be done at the beginning and end of each season of operations, and on completion and the Operator commits to stabilizing the slopes as necessary.

The plant site, including raw material and product stockpiles, will occupy approximately 180,000 SF (4.1 acres) and the initial topsoil stockpile will use approximately 30,000 SF (0.7 acres). Soil will be stripped from this site, and the site will be graded and leveled as necessary for stockpiles, traffic, and plant set-up and operations. Soil from this plant site will be stockpiled in the initial soil stockpile; other materials excavated to level and shape the site will be used to create a temporary berm for visual and noise control to the south (nearest neighbor). Some soil may be placed on this berm to allow temporary seeding with grass to further reduce visual impacts.

Actual extraction operations will begin just east of the soil stockpile (east of the initial plant site), approximately 1000 feet north of the southern permit boundary. This will minimize impact by operations at surface level for neighbors to the south. The object is to have as much mining in the south 1/3 of the site to be done by moving the highwall TOWARDS the neighboring properties, to reduce noise and visual impact. For the first four years, excavation will move to the south, with an estimated 2.1 acres mined each year. Due to terrain and geology, depth will vary from 20 to 110 feet, and expected to average about 30 feet. Bench height will be limited to 30 feet and bench width will be a minimum of 2 times bench height, unless engineering evaluation determines that a higher/narrower bench is safe IAW MSHA requirements.

The soil removed from the first year's mining will be stockpiled at the north end of the initial plant site, and will remain in place for an extended period. Soil from subsequent years' mining will be used to reclaim areas previously mined. The soil in the first year's area is expected to be thicker than that in years two to five, because of the location at the small ravine. Soil depth is extremely variable, and initially, the area on which soil is replaced may be smaller than the area stripped; this is expected to be made up as mining is done in the flatter areas of the site, or when the original stockpile is used. Soil will not be removed from buffer areas, but will be removed at least ten feet behind the planned final face of the excavation area. This will both protect in-place soil from erosion and provide for material to create final slopes for reclamation. Prior to placement in stockpiles, soil may be screened to remove cobbles for use as extracted material and improve soil quality.

As demand is expected to vary significantly from year to year and depth of the deposit also varies, mining will also vary greatly during the life of the pit. For planning purposes only, assumptions for average mining are stated below.

The first year, mining will be done on a face approximately 200 feet wide, for a depth of 450 feet (to the eastern limit of the mining area). In the next four years, mining will be done along a face of 450 to 600 feet in width, with areas of roughly 2 acres being mined at any given time, to produce an estimated 100,000 CY of raw material per year. (Crushing and screening will reduce this to an estimated 70,000 CY of product (94,500 Tons dry) at maximum expected production.) Excess overburden and unsuitable materials will be used to bring exterior edges to the planned 2H:1V outer slope.

Access above the highwall to the stripped area will be via adjacent unmined areas. As much as possible, loaders will remove material from the working face and feed directly into the processing plant. The plant site is selected to allow the plant feed system to be located as close to the working face as feasible for each season. Since portable plants will be used, the plant configuration may change each year. Based on production levels, portable conveyors or trucks may also be used to haul from the working face to the plant. As much as possible, the floor of the pit will be left at final grade as mining progresses. Berms and shallow swales may be placed for storm water and erosion control, but these generally will be part of final reclamation. If wash water sediment ponds are necessary, these will be located as much as possible in the plant area, or in areas being reclaimed. No ground water is expected to be exposed in mining, due to the location on the high bench, forty or more feet above the river level and without significant catchments upslope.

TABLE D-1. SUMMARY OF LANDS					
Area	Description/Activity	Acres	Affected Acres	Period Impacted	Remarks
A	Access W of river	2.96		0.42Life of Pit	Affected area permanent
B	Buffer zones	37.07		0.41Life of Pit	Affected area permanent
C	Mining area	62.62		62.62See schedule	Some areas permanent
		102.65			

ASSUMPTIONS:

1. Annual production will be variable, but is assumed excavation is maximum 100,000 CY per year (cpy), average 65,000 cpy, to produce maximum 70,000 cpy average 45,500 cpy, assuming an average of 30% removed by screening and washing.
2. Screenings and wash fines will be used for backfill and attaining final grade.
3. Soil ranges from 0.25 to 2 foot in depth, and averages 6 inches. Soil, including subsoil suitable for rooting zone use will be salvaged and stored or used in reclamation as work progresses.
4. Overburden (clay and loam) varies significantly, but is assumed to occupy about 30% of the profile, or 8-10 feet out of an average 30-foot to be mined, and is expected to be found throughout the profile, in lenses of alluvial terrace deposits.
5. Sand and gravel deposit ranges from 20 to 60 feet in depth, expected to be thinner on the east and north sides of the site and deeper on the bench immediately above the river.

6. Excavation will be above the water table.
7. Slopes for edges of the pit, including the edges along the pipeline easement, will be 2:1 and will be cut as mining progresses, rather than cutting a highwall and using part of the highwall to provide material for the final slope.
8. Pit floors will slope to the west (towards the river) and will allow precipitation to infiltrate; no surface discharge or impoundment is planned. Ephemeral ponds may exist during mining, based on slopes, stages of mining, and the need to control and prevent sediment runoff, with infiltration to ground water and through unmined alluvial materials (above shale) to the river.

MINED, UNMINED, AND DISTURBED AREAS:

A total of approximately 62.6 acres will be mined, or 61% of the total site/permit area.

These areas, totaling 40.0 acres, will not be mined:

1. All areas below natural elevation of 6640, approximately 40 feet above the high water mark (HWM) of the San Juan River and Rio Blanco, and approximately 60 to 90 feet behind that HWM, and also 200 feet from the east bank of the irrigation ditch. This will form a buffer zone to protect the river, ensure that the Harris Irrigation Ditch and riverine wetlands are not impacted, and provide for visual impact mitigation.
2. A 200-foot buffer zone on the north, east, and south boundaries of the site, to provide a buffer for neighboring landowners (and visual impact mitigation), and provide for reservoirs for grass and forbs for reseeding of species not in seed mix.

In addition to the area being mined, a portion of the 150-foot access lane west of the River, (1.60 acres, including 0.42 for a permanent road), will be affected by the permanent access road construction, and stockpile areas, not including areas.

STRIPPING AND MINING TECHNIQUE:

STRIPPING: Soil, and overburden (subsoil and pockets of loam, silt and clay) is expected to be quite variable, as defined by standard NRCS methods. All soil on the mining areas is expected to have a significant amount of large materials (cobbles and smaller stones, 4-inch and larger).

Following harvest of timber and grubbing of woody species, the soil, with grasses and forbs, will be stripped using scraper, dozer, and/or loaders. Soil may be screened to remove roots and larger materials for processing and sale or use, and to improve use for reclamation. After screening, for the first year (+/-), soil will be placed in a stockpile at a convenient location for long-term storage and protection of soil. In following years, soil will be moved to directly to reclaim areas or, when necessary very short-term (4-6 month) stockpiles on the pit floor before moving to reclamation. No excess soil is anticipated.

In general, the stripping will be done on a yearly basis. There will be no discharge of storm water from a stripped area (except for the access road improvements, if necessary) without first flowing through a sediment basin and other storm water controls; most storm water will infiltrate into the ground directly, or flow overland into temporary closed basins to infiltrate; rather than discharge on the surface. The goal is zero discharge from disturbed and un-reclaimed areas, in accordance with the Surface Water Management Plan (SWMP).

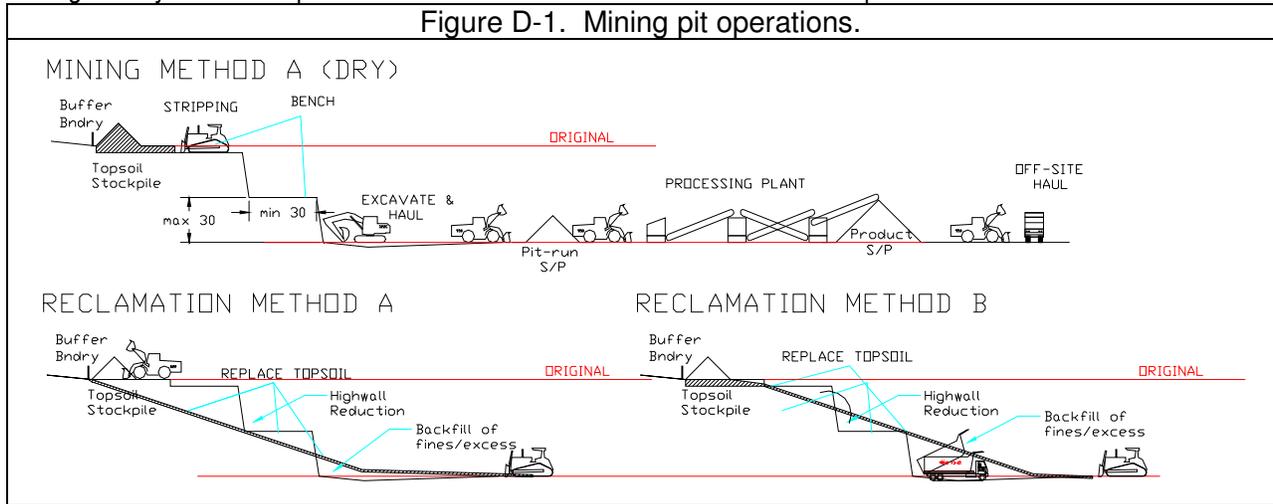
MINING: Mining will be conducted in one to three cuts, each not exceeding 30 feet in depth. Exact depth will vary to ensure proper drainage, convenient reclamation to an acceptable slope, and to allow for storm water control during and after mining. No dewatering is anticipated.

Mining consists of:

1. Cutting of timber and grubbing of woody species;
2. Stripping and conserving soil;
3. As necessary, removing and relocating overburden to backfill areas or stockpiles;
4. Removing the raw material with loaders and/or backhoes/tracks; and
5. Moving these excavated materials by loader or truck directly to plant or to stockpiles for the screening and crushing (processing) plant;

6. Screening , crushing, and/or washing of sand and gravel (using portable plants), moving these to stockpiles in the plant area prior to use in on-site plants (such as ready-mix or hot-mix plants) or shipping from the site; and
7. Placement of excess materials (overburden, fines, and oversize) by loader for backfilling and compaction, generally as soon as possible and as material is made available to final slopes.

Figure D-1. Mining pit operations.



ROADS:

The major road is to be permanent, as requested by the landowner. An existing trail (approximately 1500 feet in length) will be improved and left as a road for access to the upper area. An existing portion of this road (0.4 acres) is located in the west buffer zone. The north part of the site will be accessed via a road of approximately 1000 feet in length, again permanent, connecting to the first at the top of the cliff (just inside the buffer zone).

ACCESS: For mining purposes, access to the pit shall be limited to the road and private bridge over the San Juan River on the west perimeter of the permit area, connecting County Road 500 (Trujillo Road South). This road will be graveled according to Archuleta and user requirements, and may be treated with mag-water or other dust control agents, as part of regular maintenance. This access will also be used for agricultural purposes.

PIT ROADS (HAUL): Various other pit roads will be constructed and used in the permit area for various periods of time. The exact routing of those roads will be identified as mining proceeds, and are not shown on maps. These roads will normally be on a mined surface, but may be on the original ground surface (after stripping). All roads providing access to temporary plant sites will be all-weather, gravel, minimum 24-foot width or as required by MSHA standards for mine haulage, mine access, fire and other emergency purposes; other roads may be narrower but will meet MSHA standards. Roads will include drainage features (ditches, culverts, berms, check dams, etc.) as required by proper design and maintenance requirements, storm water and related permits, safety berms or other devices as required by MSHA, and signage as required by MSHA and OSHA standards for mining and industrial/commercial purposes.

The existing road/trail and new, temporary trails will be used as necessary to provide ranching access to areas of the property not being mined, as well as access where needed on a seasonal, short-term basis for preparation, emergency access, reclamation, and inspection, and are not be shown. Existing bridge and roads (but not trails) are considered significant permanent structures.

TABLE D-2. ROADS

Road	Dim's (ft)	Area (ac)	Const period	Status	Remarks
Access (W of river)	562x24	0.45	Existing/init.	Permanent	Access to CR-500
Access (E of river)	1200x24	1.10	Existing	Permanent	Up side of valley face
	300x24	0.21	2018-2019	Permanent	Final
North Access	1000x20	0.69	2024-2026	Permanent	

MISCELLANEOUS ACTIVITIES:

Plant areas and adjacent areas in which reclamation is delayed may be used during mining operations to provide space for temporary plants, including portable plants which may or may not be directly related to mining activities, including hot mix asphalt facilities and ready-mix plants.

Portable plants will be brought into the site as required. Oversize materials (cobbles) either will be crushed for aggregate, stockpiled and sold as-is, or used as backfill. Clean construction debris (earth, rock, concrete rubble, asphalt pavement) may be classified (characterized), determined to be safe for use in accordance with CDRMS and CDPHE requirements, and brought to the site for processing similar to excavated material for recycling as aggregate or raw material for concrete batch plants and/or asphalt plants, or for use as backfill for reclamation. Certain other materials, such as that produced by clearing and grubbing, or logging operations on the site or other lands (such as lands owned by the landowner), such as bark, sawdust, and woody materials, may be stored on-site and may be used as mulch or organic additives to soil (as part of reclamation activities), or may be processed for sale and use off-site. Livestock manure may be present on-site, and incorporated into reclamation. Such material may be stockpiled until needed.

Concrete (ready-mix), asphalt (hot-mix), and other plants may locate on site on a temporary basis to support various projects in the area which cannot be better supported from elsewhere; these may be either portable or stationary plants and will be located at the designated plant site. Fuel tanks necessary for equipment and plants may be located on-site (in the plant area or on the access road), in adequate secondary containment to meet US EPA, SUIT, CDRMS, CDPHE, and CDLE requirements. Some maintenance of rolling stock may be performed in the permit area. Other chemicals necessary for maintenance, including cleaning, of equipment and rolling stock, may be stored and used on site, and will be kept in suitable containers and secondary containment.

The size of the plant site may vary from year to year, based on demand for material, availability of portable processing plants, requirements for additional plants to be placed in the area, and other factors, but is assumed to remain fairly constant on average at 180,000 SF (20000 SY/4.1 acres). The plant site will be graded to post-mining (reclamation) contours but will not have soil replaced nor revegetated, if there is a significant chance that the area will be used in the next year. The plant site will generally relocate further north, but exact location may shift only slightly from year to year. Plant sites (or portions) will have soil replaced and be reclaimed within 12 months after an area is determined to no longer be needed for plant, stockpile, and traffic use. Exposed (unplanted) areas will use alternative dust- and erosion-control measures, and fencing or other markings will be used to prevent problems with traffic and other activities in such areas. Portions of the site may be leased out to other operators; such leases will include requirements to ensure control of dust, storm water, and other potential pollution problems.

A water pipeline exists across the bridge and alongside or in the access road to allow water to be transported from the river to the upper portion of the site being mined, for use of the water in mining and related activities, and for pre-mining and post-reclamation use for irrigation and/or stock watering.

PREVIOUS SITE DEVELOPMENT AND ACCOMODATION:

Except for prior construction of the bridge and access, construction and operation of an irrigation ditch and related items, and construction of the existing trail, the site has been used only for agricultural purposes. The access corridor west of the river has been farmed and used for pasture; the area east of the river has been used for grazing.

There are virtually no improvements located on the site immediately east of the river other than the bridge, road and the headworks for the Harris Irrigation ditch. Fencing, where it exists, is at least 50 feet from proposed disturbances and excavation. West of the river, in addition to the bridge and road, there are improvements to the pasture (including irrigation lines), fencing, and utilities along the County road.

STOCKPILE CONSTRUCTION:

SOIL: Soil will be stockpiled immediately after removal (unless moved directly to an area being reclaimed). Stockpiles will have a maximum slope of 1:1, and will be stabilized against erosion as necessary as they are

completed. Stockpiles to be in place for less than 12 months will NOT be vegetated (seeded and mulched), although other erosion control measures may be employed. If stockpiles remain significantly longer than this period, seeding would be done in the fall, as recommended by NRCS.

The initial stockpile area (See Figure C-2) of 30,000 SF (0.7 acres) will be able to contain up to 25,000 CY of soil or soil from approximately 675,000 SF (assuming 1 foot of soil), which is far in excess of the maximum area expected to be stripped for mining, plant site, and roads at any one time by a factor of 2.5. Stockpiles will be set back from any highwall a minimum of 20 feet or the height of the highwall, whichever is greater. In case of problems with vegetating (due to drought, severe winter conditions, or other issues), soil will be protected by application of erosion control agents as necessary to prevent erosion and loss.

No other stockpile areas are planned; since the access road is permanent, soil reclaimed from its improvement/construction will be added to the initial stockpile for other reclamation use.

“EXCESS”: Overburden, fines from washing and screening, and other suitable materials will be placed as necessary to enhance reclamation. This includes shallow sediment basins, with the intent of using the filled basins as part of final post-mining grade, and at the toe of highwalls. These materials will be able to be treated and used as subsoil and backfill, for reclamation.

RAW AND PROCESSED MATERIALS: As much as possible, there will be little or no stockpiling of raw materials: excavated material will be moved directly to the plant hoppers and trucks will be loaded directly from outfeed conveyor stockpiles to haul off-site. However, the use of portable plants operating in the site for limited periods of time and the expected demand for material on a year-round basis will require that some stockpiles of processed materials (ready for haul off-site) will be necessary. Temporary operation of ready-mix or asphalt plants on-site will also require stockpiles of aggregate for production of ready-mix and asphaltic cement concrete only immediately before and when plants are present and operating. Material stockpiles will not be placed directly on un-stripped/undisturbed or fully-reclaimed land.

GENERAL: Overburden and soil stockpile areas are placed where the material will be available for reclamation as planned with minimum movement and re-handling. There may be some very temporary stockpiles for soil and excess material, located at various convenient locations along roads, on the floor of the pit, in the plant area, or in stripped areas. The use of silt-fencing at the toe of stockpiles will be avoided as much as possible, but sediment control may be provided by shallow swales at the toe.

SURFACE WATER MANAGEMENT:

See Exhibit G.

EXHIBIT E - RECLAMATION PLAN

GENERAL CONCEPT (6.4.5(2)a.)

The mine will be reclaimed as grazing land, possibly irrigated. In general, soil stripped from mined areas will be replaced and converted to grassland initially; processing fines, overburden, and some construction debris will be used to do shaping to final post-mining grade, and roads (as discussed in Exhibit D) will remain in place for future access to all portions of the site. Acreages are shown in Table E-1. This reclamation plan is in accordance with existing pre-mining land use and land use in the surrounding area; the site and all surrounding property is zoned by Archuleta County as "Agricultural Ranching."

The objective of the reclamation is to create a stable topography and biological community which can sustain the proposed post-mining use of the land and protect downstream water quality and quantities. As much as possible, as they are mined, soil and excess fines will be placed into stockpiles which can be easily moved to their permanent locations as part of the reclamation, and roads are designed to be located properly both for mining and for future post-mining use as access to portions of the site and areas off-site. As much as possible, roads and long-term plant areas are laid out and developed during mining in what is essentially their final post-mining, reclaimed configuration to minimize reclamation requirements.

Area	Nature	Acres	Key features	Actions (Remarks)
A	Access W of river	0.9	Access road, bridge	Permanent
B	Access E of river	1.1	Access road	Permanent
B1	North access road	0.7	Access road	Permanent
C,D,E	buffer zones	32.7	Grazing land	Permanent
F	Grazing land	66.3	Grazing land	Permanent
TOTAL		101.7		

1. A small portion of the various buffer zones will be used for the pre-existing roads as shown above.
2. A small portion of the riparian buffer zones may be used for road and for surface discharge of water, if necessary.

COMPARISON OF LAND USE (6.4.5.(2)b.)

We believe that the proposed post-mining use conforms to present and planned land use for the area. The official zoning classification by the County for the site (Agricultural Ranching, AR) will continue after mining is finished. There are no state or tribal land use plans, to our knowledge.

Zoning to the north:	Agricultural Ranching (private land)
Zoning to the east:	Agricultural Ranching (private land)
Zoning to the south:	Agricultural-Ranching with some residential use (private land)
Zoning to the west:	Agricultural-Ranching with some residential use (private land)
	River floodplain.
Zoning in the general area:	There is some Southern Ute Indian Tribe (SUIT) land in the vicinity but not within 500 feet. There is some land zoned as "Agricultural-Forestry" in the vicinity.

Nearest community is Trujillo, an unincorporated hamlet located approximately one mile to the south.

COMPLIANCE WITH RECLAMATION STANDARDS (6.4.5.(2)c.)

In demonstration of compliance with state standards (Rule 3.1), the following information is provided. Please refer to maps in Exhibit F.

Grading (3.1.5(1)) and Backfilling (3.1.5(2))

Most mining faces will be a vertical slope; with soil stripped approximately 10 feet to the rear of the face. Excess fines may also be stored in stockpiles on the final floor of the pit, until placed in final reclamation areas for backfill. All backfill will be placed as engineered fill and compacted to approximately 75% Proctor density or better, as field-determined. Exterior (perimeter) faces of pits will be mined at a taper, backfilled, or left sufficiently distant from the permit boundary or buffer zone boundary to cut and fill to a 1V:2H slope or flatter, OR where adjacent natural slopes are steeper than 1V:2H, to match adjacent slopes within 20% +/- . There are some areas, which will be left at a permanent steeper slope of 1V:1H or vertical, based on rock conditions as evaluated by an engineer at the time of mining, and stabilized as necessary. This includes cuts for the existing trail climbing the cliff from the river to the bench being mined, and converted to a permanent road. Slope widths and heights will vary from area to area based on total depth of mining accomplished. All final slopes of 1V:2H or flatter will be covered with stockpiled soil. See cross-sections in Exhibit F.

Grading to control erosion, siltation and prevent damage (3.1.5(3))

Grading will be done so that erosion and sediment is controlled on affected lands and so that there is no damage to areas outside the effected land. All highwalls (mining faces) will be eliminated except as noted above. Where highwalls of 1V:1H or steeper (vertical) are left, temporary and permanent storm water management and erosion control features will be used on the uphill side as part of stabilization and reclamation. All slopes greater than 2:1 will be located at least 50 feet from all exterior property boundaries and a horizontal distance equal to or greater than the height of the cut slope and any natural change in elevation between the back of the cut slope and the permit boundary, to prevent off-property damage due to slope failure, and to prevent potential slides or other damage on affected lands or outside the permit boundary. No mining, disturbance, or reclamation is planned within delineated floodplains. No surface discharge is planned; if surface discharge of water is necessary, detention basins, outfall armoring, and other techniques will be employed to prevent discharge of sediment and siltation off-site.

Performance as soon as feasible (3.1.5(4))

Some areas, such as those involved in the replacement/improvement of the San Juan access road and any field drainage performed prior to mining, will be reclaimed immediately upon completion of work. However, for most of the affected area, the time between initial disturbance and final reclamation will be approximately one-two years. Because of the size and the post-reclamation uses, the time to meet reclamation standards will vary. Backfilling, grading, and placement of soil should be accomplished within one year of completion of extraction of construction materials, with seeding to follow as soon as possible based on recommendations, seasons, and weather conditions (See Exhibit J).

Refuse and acid-forming or toxic producing materials (3.1.5(5))

There is no reason to believe that toxic or acid-forming, or toxic producing materials are found or will be brought on site. Therefore no special action is necessary to prevent leaching, protect the drainage system, or prevent unauthorized release of pollutants to surface water or groundwater, beyond that necessary for erosion control and prevention and control of spills and leaks from vehicles and equipment. Fines will be almost immediately moved to final locations for final reclamation surfaces and slopes. Normal municipal solid waste generated during operations will be hauled off-site for disposal, and will not be buried or burned on-site. There may be some use of various wastes, including wood waste (sawdust, bark, similar materials) for reclamation, to provide mulches, sediment control, and for other purposes. Clean construction debris (such as materials from clearing and grubbing, asphaltic cement concrete rubble, Portland cement concrete rubble, and excavated soil and rock) may be used for backfill and related use on site for reclamation and road construction/maintenance, as provided by haulers, and in accordance with CDRMS requirements for verification of nature and condition.

Holes, etc. (3.1.5(6))

There are no drill holes, auger holes, adits or shafts to reclaim.

Maximum slopes (3.1.5(7))

For most areas on the perimeter of the mined areas, slopes of 1V:2H or less, as proposed, are compatible with surrounding conditions and land use. In some locations, such as the western edge of the mined area at the edge of the valley floor, final slopes may be steeper to match adjacent hillside and cliff slopes, as discussed above. See Table E-1. Areas with slopes steeper than 1V:2H will have engineer review for stability and stabilization measures (such as but not limited to: grouting, placement of sandbags, block walls (such as Keystone™ or similar), wire mesh, etc.) or have retaining structures as needed.

Use of farm equipment (3.1.5(8))

There is no intent to use farm equipment except as feasible for seeding as part of reclamation. Access roads is and will be usable by standard ranching vehicles and equipment.

Notice of other backfill (3.1.5(9))

The Applicant will comply with this requirement to notify the Division if other backfill is used. Use of clean construction debris, such as soil, subsoil, waste rock, overburden, clean Portland or asphaltic cement concrete rubble, for backfill, to be covered by soil as appropriate for intended post-mining use, is proposed. No acid-bearing materials, tailings, or other toxic or potentially toxic materials shall be used. When in doubt, standard characterization methods shall be used to evaluate the suitability of such materials for use on site. Records of off-site sources of backfill material shall be maintained for the life of the operation, in accordance with CDRMS requirements, including notarized certification statements as needed.

Prevention of unauthorized release of pollutants to surface water (3.1.5(10))

The Applicant will handle chemicals, equipment, materials, and mined material to be disposed of on-site in a way to prevent unauthorized release of pollutants to surface water, and comply with this requirement.

Prevention of unauthorized release of pollutants to groundwater (3.1.5(11))

The Applicant will handle chemicals, equipment, material mined, handled, or disposed of on-site in a way to prevent unauthorized release of pollutants to groundwater, and comply with this requirement.

General water hydrology and water quality (3.1.6(1))

Hydrology and water quality issues are addressed at length in Exhibit G. The Applicant will comply with applicable water and water rights laws and regulations, and water quality laws and regulations. No dredge or fill in waters of Colorado or the United States is proposed, and no temporary or large siltation structures will be placed except as required by permits,² and will be removed in accordance with those permits. No storm water structures are proposed which are intended to retain storm water for longer than 72 hours.

Earth dams (3.1.6.(2))

Mining will be done only in areas which will not present potential for negative impact on the stability of any off-site earth dams. Except for storm water control systems in and around plant areas, there will be no earth or other dams constructed: for the most part, water features (such as storm water detention and retention basins) will be incised. Those berms and basins will contain less than 1.0 acre-feet of water at any time, including immediately following 24-hour, 25-year storm events, except as approved by the Colorado Division of Water Resources, and are not planned to contain more than 10.0 acre-feet of water. Mining is expected to remain above the normal ground water table. No permanent ponds are planned.

² Primarily CDPS storm water permits.

Erosion control (3.1.6.(3))

All surfaces will be stabilized and protected to control erosion. Stockpiles of soil and excess fines will be protected against erosion, traffic, and weed invasion; either by seeding (temporary seed mix or agricultural products) or application of dust-control and crusting agents (such as polymers or other soil treatments), wind or silt fencing. (See Exhibit J for seeding data, Exhibit D for additional stockpile information.)

Groundwater (3.1.7.)

The Applicant shall comply with all applicable statewide and classified standards, based on existing and reasonably potential future uses, and with new standards which may be applicable in the future. (See Exhibit G.) Based on information from other operations in the area with similar conditions, the operation is designed to have no reasonable potential to adversely impact groundwater quality or quantity, or cause any further lowering of quality. It is not anticipated that tributary water will be encountered in the mining. The Applicant will comply with any conditions as established by permits.

Wildlife safety and protection (3.1.8.(1))

Wildlife issues are addressed at length in Exhibit H. A buffer zone will exist between the pit and major features either on or off site, and the San Juan River. Since mining will be done in annual steps, there will be no long-term, wide barrier to migration. The buffer zones, areas not yet mined, and reclaimed areas will provide space for wildlife to migrate around the pit operations. Weeds shall be controlled. Steeply-sloped stockpiles/berms will assist in deterring wildlife and livestock from nearing the top of highwalls of greater height than cliffs naturally occurring in the area, and temporary fencing will be used to reduce potential for livestock and wildlife to graze on areas being reclaimed. Priority, however, will be given to use for livestock rather than wildlife.

Wildlife habitat management and creation (3.1.8.(2))

In accordance with the wishes of the landowner, and based on current and planned post-reclamation use as grazing land, no actions specifically to create or improve wildlife habitat in the permit area shall be undertaken. Priority shall be given to agricultural use for livestock, not wildlife.

Topsoil (3.1.9.)

Approximately 3-24 inches of soil (based on USDA data) will be removed prior to extraction and stockpiled for protection (See discussion in Exhibit D and above). Any woody vegetation will be removed. (Refer to Exhibit I for detailed information on soil.) Except for the plant areas, relocation of stockpiled soil will be done on an annual basis as mined areas are reclaimed. If necessary, as material is available, and as authorized by DRMS, materials may be added to amend and improve soil, including fertilizers, commercial soil amendments, manure from livestock, soil or non-toxic organic materials from on- or off-site (such as sawdust, fines from sediment basins, and mulch), in accordance with standard agricultural practices and based on soil testing for suitability and benefit. There are not expected to be any heavily textured backfill slopes which could have a potential for instability of soil placed on them. Soil existing on site appears to be of adequate quality and quantity to allow for reclamation to grazing land as appropriate, to include placement of a minimum of 12 inches of bedding, porous material above any solid rock or impermeable layer.

Revegetation (3.1.10.)

Final reclamation will be for use as grazing land, including access roads and water supply. The reclamation on areas suitable for, and planned at the time of reclamation to be used for, grazing land, will include the seeding of a standard agricultural pasture grass and forbs mix, again to be determined by the owners at the time of reclamation, upon advice of the Natural Resources Conservation District and County Extension Agent (see Exhibits I and J). There will be no intentional seeding with native grasses, forbs, or other plant species unless those are determined to be desirable for pasture land. (Portions of the site within permit boundaries and not to be mined will have existing woody vegetation left in place.) Verification of completed reclamation will be done by a statement prepared and signed by the landowner confirming that the site is acceptable for grazing, and upon demonstration of achieving 75% of pre-disturbance vegetative cover. During reclamation, weed control methods (Exhibit J) as approved by Conservation District and County officials will be used on all affected land to

prevent/control weed infestation. Final approval of reclamation will be granted by the Colorado Department of Natural Resources after reporting, submitting the statement and verification of notifications in accordance with DNR procedures, and inspection.

SOIL, SPOIL, AND REVEGETATION (6.4.5.(2)d.)

As discussed above, soil will be removed from the pit and segregated in stockpiles then used for reclamation. Stockpile areas, whether or not subsequently mined, will be reclaimed and revegetated in the same way as other mined areas. Where soil was left at the time of building the stockpile (because soil was placed in the stockpile) and the area will not be mined for more than 12 months, the areas will be chiseled or ripped (scarified) prior to replacement of soil and seeding. Any spoil will be used as subsoil to establish final contours, and will be covered by soil for revegetation (see also Exhibit J). It is anticipated that a minimum of 12 inches of soil or subsoil will be placed on all surfaces of 2H:1V or flatter, above impermeable or bedrock materials, except on steep slopes in the caprock along the access road between the river and the upper area, where topsoil cannot be placed due to steep or vertical slopes in the road cut.

Exhibit F includes cross-sections of various portions of the pit, showing a profile of the surface before and after mining, and after reclamation. Maps in Exhibit F shows scheduled reclamation by year, planned, approximate contours after mining and reclamation, and general drainage information, including probable location of basins and outfalls if necessary for storm water and erosion/sediment control.

PLAN/SCHEDULE (6.4.5.(2)e.)

The following features constructed during mining or reclamation will be left in place as permanent post-reclamation features, as requested by the landowner:

1. Access roads: approximately 3200 linear feet of 20- or 24- foot-wide County Standard roads, with bridge, culverts, berms, embankments, cuts, fills, bridge, ditch crossing, and associated drainage features.
2. Perimeter and internal fencing to secure site, divide pasture areas, and otherwise control access and animal movement.
3. Water pipeline, if installed, between the river and the upper area, whether surface-laid or buried.

Backfilling, grading, and placement of soil should be accomplished within one year of completion of extraction of construction materials from a given area, except for temporary and rebuilt roadways (See Maps in Exhibit F, and Exhibit J). Depending upon the date of completion of the backfill, grading, and placement, the land will remain in fallow until the appropriate planting season for the crop(s) or forage selected, where revegetation is planned.

Items specified for the Reclamation Plan in Rule 6.4.5.(1) and 6.4.5.(2)f. have been included in other items in this Exhibit or have been included in other Exhibits referenced above, and therefore are not separately listed in this exhibit.

EXHIBIT F – Reclamation Plan Maps and Cross-Sections INDEX

SHEET F-1: Entire site showing reclamation sequence and areas by year.

SHEET F-2: Cross-sections before and after mining and reclamation.

SHEET F-3: Entire site showing post-reclamation contours (20-foot intervals) assuming maximum mining depth is possible.

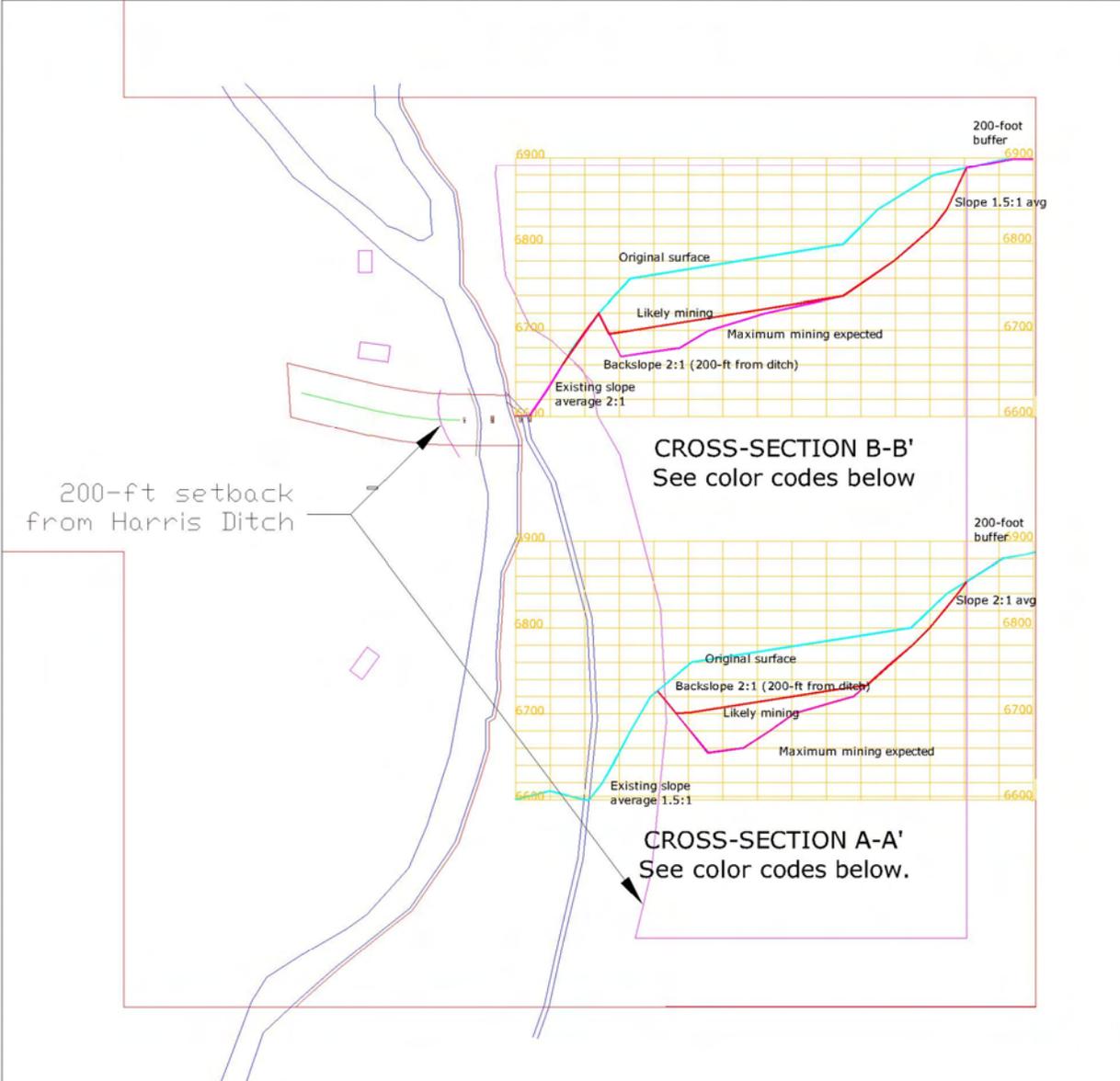
Notes:

Years shown for reclamation assume generally a two year lag from original disturbance (stripping) for areas used strictly for mining, and variable delay for areas used for plant siting.

Cross-section on Sheet F-2 shows existing (pre-mining) profile approximately 500 feet north of S permit boundary and 1000 feet south of N permit boundary, as showing on Sheet F-1.

Existing contours in Exhibit C were shown at 40-foot intervals for clarity. The final contours are shown at 20 foot intervals for permit area and immediately adjacent area, to more accurately describe the terrain. Not all 20-foot contours are shown on the face of the valley.

C&J Gravel Products, Inc. Two Rivers Pit



HORIZONTAL SCALE: 1 block = 100 feet

VERTICAL SCALE: 1 block = 20 feet

Cyan: Original

Red: Likely final contours (60 foot max)

Magenta: Possible maximum contours (110 foot max)

Nathan A. Barton, PE (CO-82630)

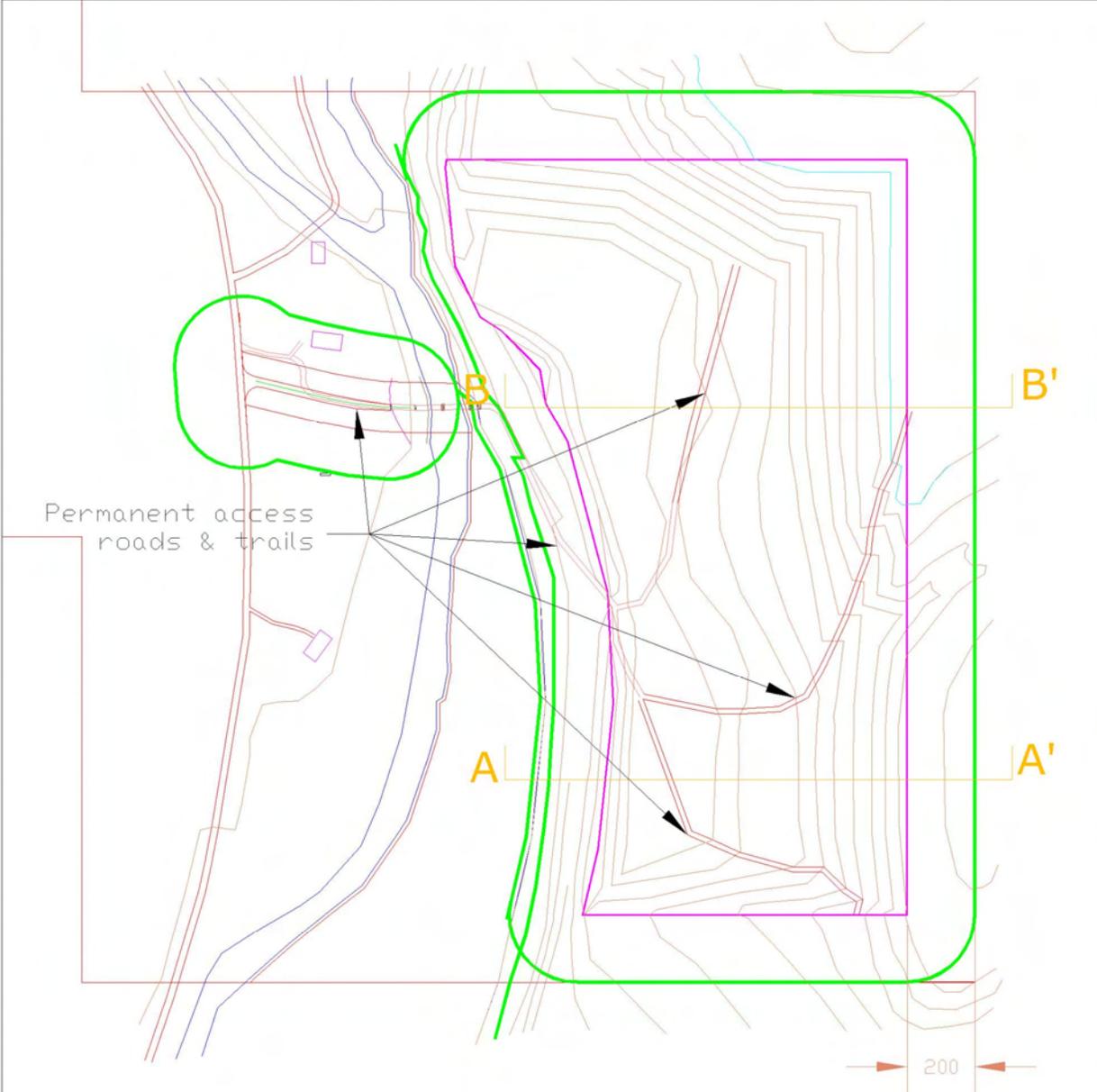
Prepared for C&J Gravel by and (c) WASTELINE, INC.
Date: 21 DEC 2014 By: N. Barton Rv: P. Neil
Scale: 1"=500' 40-ft contours Source: USGS Map/Photo.
Portions SW 1/4 Sec 11, T33N, R2W, 10th PM, Archuleta Co., CO, Pertaining to Application: Two Rivers Pit M-2015-_____ Legend: standard USGS

TYPICAL CROSS-SECTIONS
FOR MINING, RECLAMATION

Drawing/
Sheet No.

F2

C&J Gravel Products, Inc. Two Rivers Pit



A | | A'
CROSS-SECTIONS
SEE SHEET F2

Nathan A. Barton
Nathan A. Barton, PE (CO-82630)

Prepared for C&J Gravel by and (c) WASTELINE, INC.
Date: 21DEC 2014 By: N. Barton Rv: P. Neil
Scale: 1"=500' 20/40-ft contours Source: USGS
Map/Photo. Portions SW 1/4 Sec 11, T33N, R2W, 10th
PM, Archuleta Co., CO, Pertaining to Application:
Constant Pit M-2015-_____ Legend: standard USGS

FINAL COUNTOURS,
RECLAMATION

Drawing/
Sheet No.
F3

EXHIBIT G – Water Information

SUMMARY: This operation is expected to neither directly nor indirectly affect surface and ground water systems. No irrigated land will be taken out of production; separate request will be made to use some irrigation water for dust control, washing of aggregate, and related uses during mining, primarily by using water purchased from water rights holders under a temporary water supply plan. The mining and reclamation as planned has no reasonable potential to significantly and adversely impact on surface or groundwater quality or quantity. Reclamation may leave small basins for infiltration and evaporation of runoff; if water is available and excavation to water table is done in mining, some small ponds may be left as features of final reclamation.

G-1. SURFACE WATER MANAGEMENT:

WATER AND DRAINAGE: Since mining will be executed as sidehill cuts and will slope down into the hillside, including the ridge of 200 feet width between the mining and the Harris Ditch, runoff which has come in contact with exposed bare soil or raw materials will be contained as much as possible to infiltrate, rather than discharge overland or in outfalls. Infiltration areas to allow water to soak into the ground will be maintained at the toe of the face of the pit, and will allow dewatering if necessary, to prevent illicit retention of water, and with permitted discharge to the river if required (as permitted by storm water permit). The plant site will have detention/sediment basins. Drainage through reclaimed areas will be a permanent part of final reclamation.

Temporary structures (swales and berms) will be constructed on the floor of the pit and in stripped areas to (1) prevent erosion, (2) divert water from active mining areas and (3) convey water to reclamation and long-term stockpile areas, or to a discharge point or sediment/infiltration basin. The goal is to prevent any surface discharge of water from disturbed areas which have not been reclaimed. The drainage from the active areas will be controlled and treated as required by water quality regulations³ and permits to ensure that no sediment from the pit is discharged into the San Juan River.

The pit floor and plant site floors are intended to be below the surrounding land and there will be no discharge under normal conditions from these areas during mining and plant operations/materials storage. A berm will be left on the river side of those areas to be mined on the west edge of the mining area, both for storm water control and for safety. Since discharge is to be avoided as much as possible, and only after water has accumulated for a length of time, it is not expected that discharge temperature regulation may be required. The San Juan River is a rated cold-water fishery above Navajo Lake.

No dewatering is anticipated, as ground flow through undisturbed mineable material on the west side of the pit will continue. Prevention or significant limits on surface discharge will minimize erosion, sedimentation, and traffic problems. As necessary, stockpiles may have perimeter ditches/swales and berms with silt fence, straw bales, or rock check dams, to reduce/prevent sediment in any runoff, and reduce soil loss. Water used for washing of material and dust control will not be discharged, but will be recirculated/recycled as much as possible, and otherwise allowed to infiltrate into the ground.

³ This is described in the surface water management plan, prepared for the CDPS (CDPHE-WQCD) permit, which provides detailed information.

G-2. GROUND AND SURFACE WATER INFORMATION:

1. Sources of Ground Water on site or potentially affected by operations on site: None. There are no wells on the site. Table G-1 lists recorded wells located within ½ mile of this site.⁴ Mining at this site will be limited to depths of approximately 60 feet below existing ground level. This places mining well above the known water table,⁵ including any alluvial aquifer of the San Juan River. Construction of bridge and access road in valley bottom will not impact sources of ground water, based on standard engineering design and activities.

Table G-1. Surface and Ground Water

<u>Permit No</u>	<u>Owner</u>	<u>Date</u>	<u>Aqfr</u>	<u>Yield</u>	<u>Depth</u>	<u>Lev</u>	<u>Coord</u>	<u>Qtrs</u>	<u>Sec</u>	<u>Priority</u>	<u>Use type</u>
162495	Constant Jac	22.11.91	Unnamed	10 gpm	12	5	1400N350W	NWSW	11	NA	Domestic
567	Constant Sprk Pump Sta	28.07.59	River	2.5 cfs	NA	NA	NA	SESWNW	11	68-162	18
567	Constant Sprk Pump Sta	28.07.59	River	1.5 cfs	NA	NA	NA	SESWNW	11	68-162	18
567	Constant Sprk Pump Sta	28.07.59	River	1.0 cfs	NA	NA	NA	SESWNW	11	68-162	18
618	Harris Ditch	01.06.07	River	0.5 cfs	NA	NA	NA	SESWNW	11	#198	1
618	Harris Ditch	25.04.67	River	5.5 cfs	NA	NA	NA	SESWNW	11	68-282	19
209546	Constant James A	20.04.98	Unnamed	12 gpm	8	4	2100S 850W	SWNW	11	NA	Domestic
59177F	Constant James A Jr	10.02.03	Unnamed	Pit	NA	NA	NA	SWNE	11	NA	Gravel
515	Baker Sprk Pump Sta	28.07.59	River	1.0 cfs	NA	NA	NA	NWSWSW	11	68-162	1
515	Baker Sprk Pump Sta	28.07.59	River	1.0 cfs	NA	NA	NA	NWSWSW	11	68-162	1
99006	Waterman FO	11.05.78	Unnamed	Expired	NA	NA	NA	SWSW	11	NA	Domestic
193577	Sharp Cynthia L	15.03.96	Unnamed	13 gpm	8	5	0N400W	NWNW	14	NA	Domestic
179469	Sharp Cynthia L	19.05.94	Unnamed	15 gpm	100	NA	100N420W	NWNW	14	NA	Domestic
189389	Sharp Cynthia L	01.09.95	Unnamed	6 gpm	80	NA	100S1300W	SWSW	11	NA	Domestic
211889	Berlanti Richard (Sharp Cynthia)	28.08.98	Unnamed	5 gpm	100	7	200S3380E	SWSE	11	NA	Domestic
211889A	Berlanti Richard	21.12.06	Unnamed	Unav	Unav	NA	100S3380E	SWSE	11	NA	Domestic
79715	Myers Victor V	13.06.75	Unnamed	4	52	38	001S1320E	SESW	2	NA	Domestic
630	Joe Irrigation Ditch	31.10.48	Rio Blanco	1.0 cfs	NA	NA	NA	SEWSE	2	#339	1
978	Joe Irrigation Ditch pump	31.10.48	Rio Blanco	1.0 cfs	NA	NA	NA	SESENW	2	#339	1
632	Joe Maez Ditch	14.05.1895	Rio Blanco	1.0 cfs	NA	NA	NA	SESESE	2	#187	1
632	Joe Maez Ditch	01.05.59	Rio Blanco	2.0 cfs	NA	NA	NA	SESESE	2	68-149	18
632	Joe Maez Ditch	01.05.59	Rio Blanco	2.0 cfs	NA	NA	NA	SESESE	2	68-149	18

Aqfr: Aquifer (GW: Ground Water). Yield in Acre-Feet. D=Depth, Lev (water level), distance in feet (for selected wells). Aqfr: aquifer (creek or basin). Yield in cfs. Size of irrigated area indicated if known.

2. Sources of Surface Water on site or potentially affected by operations on site:
 - Sources within ½ mile of the site are shown on Table G-1.
 - The only source of surface water on the site are the Rio Blanco and San Juan River. The small ravine entering the property from the east permit boundary carries water only immediately after storm events. No springs or potential for springs have been identified.
 - The San Juan River is a major tributary of the Colorado River; the Rio Blanco is a minor tributary of the San Juan. From this point the San Juan flows into Navajo Lake in New Mexico.
 - A single irrigation ditch diverts water from the San Juan River during irrigation season, and has a small amount of water for year-round domestic and animal watering use; the semi-improved headgate for the ditch is located immediately north of the bridge abutment for the access road. The access road is designed, including an open-floor (no-bottom) box culvert, to allow the ditch owner to have access to operate and maintain the ditch and the intake from the river, in accordance with a court-ordered, recorded agreement between the two owners. The access road and bridge is designed to comply with this agreement.
 - Water rights are owned and used by the landowner to water stock and irrigate the field west of the San Juan River in the valley floor, and this will continue except for the area used by the access road, which is a permanent feature to remain after mining and reclamation. The landowner intended to obtain water rights for

⁴Review of Colorado State Engineer records, 23 July 2008 and 20 November 2014.

⁵ Based on test holes dug at the site in 2007 and engineer assessment of the topography and hydrology.

water from the San Juan River to provide stock and irrigation water for use in the area to be mined and reclaimed, via the pipeline (also a permanent feature). The landowner will also provide water, via a suitable agreement, to the mining operator, for dust control, road maintenance, and washing of material (if needed). Irrigation is not required for reclamation.

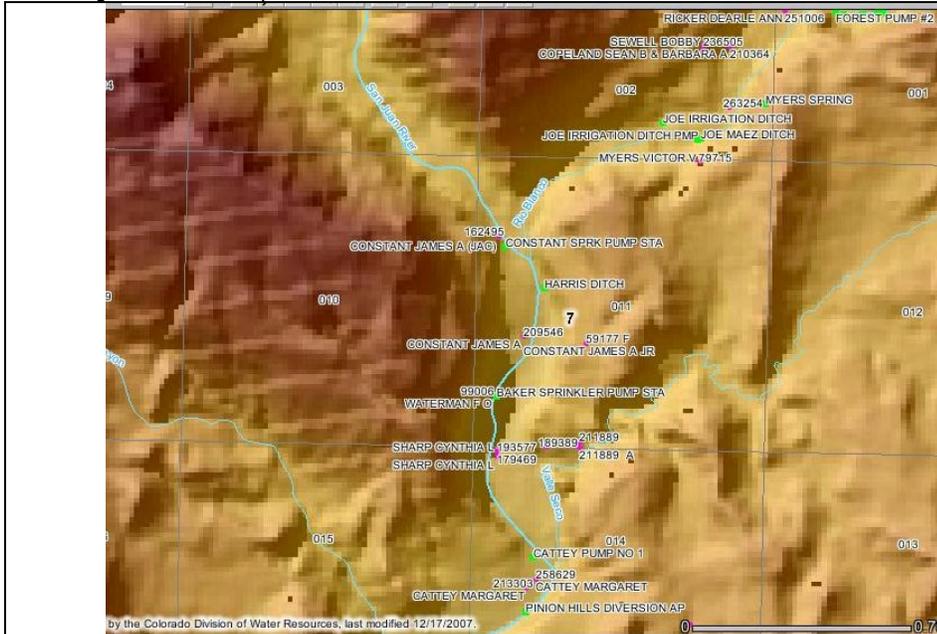


FIGURE G-1.

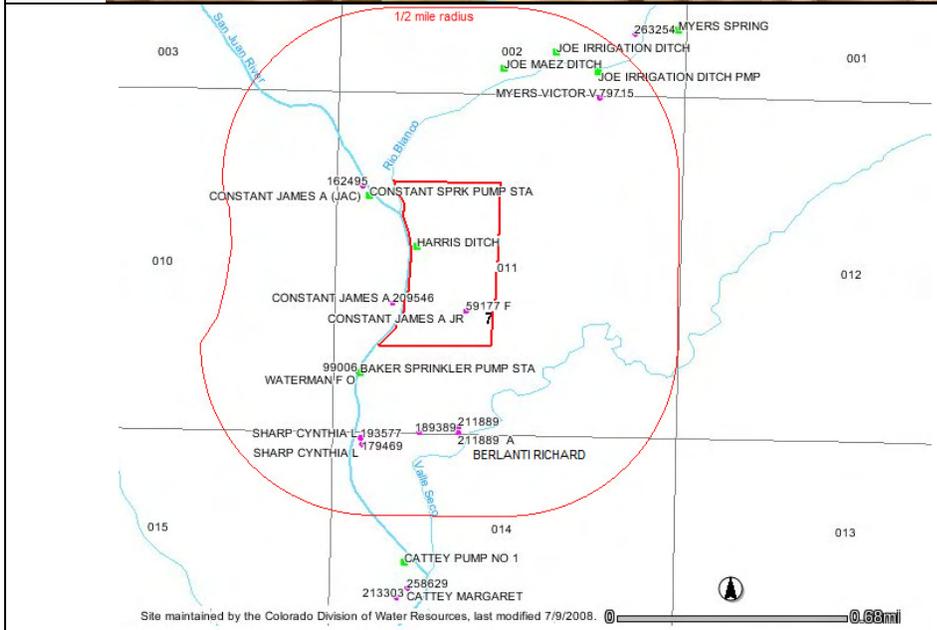


FIGURE G-2.

- References:
 - http://cfpub.epa.gov/surf/huc.cfm?huc_code=14080107
 - <http://biology.unm.edu/stacey/Functional%20Assessment%20of%20the%20Mancos%20River%20Watershed.pdf>
 - http://www.usbr.gov/uc/library/envdocs/ea/mancos_valley/
- State databases: <http://165.127.23.41/website/lttools/index.asp?iw=800&ih=600>
- <http://165.127.23.41-StateIMS> (Colorado's Decision Support Systems)

3. Other available: No other information for recorded water rights was available from published data.

4. Changes to drainage basins caused by operations on site:

There will be no significant and permanent changes in watershed boundaries caused by operations on site. As discussed in the reclamation plan, mining will modify the existing drainages across the property and into the San Juan River and Rio Blanco, but will not significantly impact flows or points of entry.

Other than disturbances in vegetation, area exposed to erosion, and evaporation, the only significant change in drainage basin characteristics is the blocking of potential surface flows from pit and working areas during the life of the pit and after reclamation, resulting in increased infiltration into the surficial alluvial deposits and bedrock beneath the material being mined. The impact will be minimal, as less than 0.001% of the total basin will be blocked from discharging at any one time during mining and reclamation operations.

5. Aquifers and watersheds in this area:

The only recognized aquifer in the area is the Morrison Formation, approximately 500 feet below surface; the alluvial aquifer associated with the Rio Blanco and San Juan River is potentially a significant source of water, but is not expected to be impacted by operations, which are limited to 6640 feet, or more than 40 feet above the high water mark of the San Juan River at this point. Construction and maintenance of the road, bridge, and pipeline, and use of stockpiles, will not impact on the river or aquifer. However, river water may be useable for water for plant and pit operations. Based on depths of existing wells in the area, there are no bedrock formations used as aquifers in the area which will be mined which would be affected by the mining of the sand and gravel. The overburden (soil) and the sand and gravel are not significant aquifers in this area⁶. Based on the location and depth of other known wells in the area, the mining activities proposed will have no reasonable potential for any adverse impact. There will be no blasting at this site.

6. Prevention and mitigation actions:

As discussed above, the area to be mined is at least 200 feet away horizontally, and 40 feet or more vertically, from all bodies of water (rivers and Harris Ditch). There will be no planned surface discharge of storm water which has come in contact with exposed stripped areas, mining areas, or stockpiles of extracted materials, waste materials, or topsoil. As necessary, storm water pollution prevention and management actions, including erosion and sedimentation control, will be implemented as required by the National Pollution Discharge Elimination System and/or Colorado Discharge Permit System storm water general permit for which coverage has been obtained for this site (prior to beginning mining), in case discharge is necessary. This meets the requirement for an NPDES permit and covers dewatering and process (wash) water as well as storm water, and application has been made for coverage. Since surface water flow will instead infiltrate into the bench's alluvial deposits at the west edge of pit and reclaimed areas (along the top of the cliff) and is presumed to flow into the San Juan River as subsurface flows, no net impact on river flow is anticipated. Overall design of the pit was done to plan for a minimum impact on surface and ground water. Pit area is not being currently irrigated, nor is irrigation necessary for reclamation.

7. Prohibited actions necessary to protect water systems:

None known at this time, other than compliance with best management practices and specific items to protect the irrigation ditch as listed above. Best management practices (BMP) forbid the discharge of heavily sediment-laden waters and implementation of spill control and countermeasures actions to prevent discharge of a spilled substance. The buffer zones are established for a variety of reasons, including protection of drainage, preservation of river bottomlands, wildlife, neighbors, and prevention of downstream water degradation due to sedimentation. No discharge of surface water is planned. The mining is planned to prevent negative impacts on ground and surface water and to make maximum use of existing water resources in accordance with state water law.

⁶ Per conversations with Soil Conservation District personnel.

G-3. PROJECT WATER REQUIREMENTS:

Water use for extracting and processing aggregates from the pit will be low, amounting to less than 6 acre-feet per year under worst case conditions. This water will come from the temporary industrial use of agricultural water from existing water rights for the property, from the San Juan River. Based on data available on historic irrigation of the property, of irrigated land, it may be necessary for the landowner to dry up approximately 3 acres of land in order to provide augmentation, if such is necessary, and the landowner is willing to do so. However, to the best of our knowledge, the San Juan River is not overappropriated and no augmentation or substitution is required.

The primary use of water on the site is for dust control and other pollution control, with secondary use for washing (if washing is done on site) and compaction of backfill. Use of dust control chemicals will reduce water use on site. If materials are washed, water will be recycled, reducing use and discharge, as well as protect water quality. For evaluation purposes, based on the assumptions listed below Table G-4, the estimated operating losses of water for the Constant Pit are shown in this table.⁷

Table G-4. Maximum Project Water Requirements

Activity	Acre-Feet per year	Period	Flow (gal/day)	Remarks
Dust control of roads	2.0	0.1 in/day, 120 days	5,430	2.0 acres max
Dust control of plant sites	1.0	0.1 in/day, 30 days	11,132	4.1 acres max
Dust control of pit area	1.0	0.1 in/day, 60 days	5,702	2.1 acres max
Water removed with materials mined	0.03	Variable	11,191	4% of weight of product
Washing of materials	1.2	30 days	6,667	Evaporative loss
Total water required	5.23	acre-feet	40,122	Worst-case
Water available	9.00	As needed		Not including direct precipitation

This is based on the following assumptions:

- 70,000 tons per year produced.
- Maximum (all roads in operation): total affected area for roads is 2.0 acres.
- Plant areas include long-term stockpiles, storm water structures, and other areas with no traffic and no need for dust control. Total plant areas are 4.1 acres, but only 1/2 (2 acres) will require regular dust control. Plant sites are also seasonal: the asphalt plant would usually only operate approximately 8 months per year, the concrete plant approximately 9 months per year.
- Maximum pit area with exposed surface including temporary topsoil stockpiles is 2.1 acres for any given year, which are assumed to be completely open and require application of water for the entire period of their use, but actual mining and processing (crushing/screening) is expected to take approximately 60 days per year.
- No precipitation during any operations on site. (In actuality, as many as 30 days per year we can expect at least 0.1 in/day and so require no watering.) (Annual precipitation in the area is 17 inches per year.)
- No dust control chemicals be used. (In actuality, air permit requirements will have to be met and magnesium chloride brine, sodium lignite, or other dust control chemicals will be applied to areas with high traffic.
- No water from any source other than the San Juan River to be used for dust control.
- No open water except wash pits (included in wash water use).

As no ground water is exposed (by mining below the water table) and no water is retained in surface impoundments (actually incised basins), no requirement for a substitute water supply plan to be prepared and submitted to the State Engineer, pursuant to SB 89-120 and SB 93-260 has been identified. A temporary water use agreement will probably be necessary to allow landowners' irrigation water to be used on a temporary basis each year for the above purposes, with such water to be provided together with irrigation water delivered for the normal irrigation season. Any water needed would be taken from the River DOWNSTREAM from the neighbor's irrigation ditch intake to prevent disturbance of that water system.

⁷ Based on assumptions as discussed in Exhibit M.

Based on preliminary calculations, the unappropriated water from the San Juan River appears to be adequate for water used for mining purposes.

Colorado soil management and conservation rules will be implemented to protect surface and ground water quality and improve watershed management.

Colorado water law is based on the prior appropriation doctrine, which states that the first appropriator in time has the first priority to take and apply water to beneficial use without waste. The right to divert the unappropriated waters of any natural stream to beneficial uses is never to be denied under Colorado's constitution; the Colorado water courts grant decrees to use water and set priorities. The Colorado State Engineer and the Division of Water Resources administer the water rights according to the priorities, measure flows, and record the use of water. Colorado's compact apportionment can be derived from many river sources, including the San Juan River. Numerous water rights exist in Colorado on the San Juan River mainstem upstream of Navajo Dam and on tributaries to the San Juan River.

The original Ute Indian reservations were carved out of the historical Ute homelands in 1868. The present lands of the Ute Mountain Ute and Southern Ute Indian Tribes are in southwestern Colorado and northwestern New Mexico. The Ute Mountain Ute lands include 890 square miles in Colorado and New Mexico. Southern Ute Indian trust lands include 470 square miles within the Tribe's 1,250 square miles of checkerboard reservation. Seven rivers in southwestern Colorado flow through the Southern Ute Indian and Ute Mountain Ute reservations. The Colorado Ute Indian Water Rights Final Settlement Agreement was signed on December 10, 1986, and quantified the Colorado Ute Tribes' water rights.

G-4. WATER REGULATORY INFORMATION:

1. Storm water management/discharge: The Applicant will obtain coverage under a NPDES or CDPS permit for any discharge of storm water, dewatering flows, and process water, before initiating mining activities. Coverage will be requested under a general storm water discharge permit issued by CDPHE-WQCD or EPA, as required for mining and land disturbance of this size. The CDPS permit is the equivalent of an NPDES permit for the state of Colorado. It is not planned to discharge such waters, but rather, to allow that water to infiltrate into undisturbed permeable bedrock.
2. Water rights/use: The landowner will provide water for mining operations from existing water rights or by obtaining additional water rights as necessary from the State Engineer, and filing appropriate plans and agreements for temporary use of agricultural water for municipal and industrial uses, as needed.
3. Waste water disposal and treatment: No sanitary waste water is expected to be generated by mining activities; chemical latrines and holding tanks for sanitary facilities will be used as necessary. No non-sanitary waste water is expected to be discharged from the site; if waste water is generated by mining or related activities (such as wash water), it will be retained on-site, and recycled or allowed to evaporate/infiltrate.
4. Wetlands information (USACE, NRCS, or FWS jurisdiction): Review of NRCS maps for the area show no wetlands delineated and inventoried in the area. Requests for information from SUIT were not answered. A review of the US Department of Interior, National Wetlands Inventory Maps on the website (<http://www.fws.gov/wetlands/Data/Mapper.html>) shows that the only inventoried wetlands are the river and immediately adjacent to it. The upland area was inspected on the ground and via aerial reconnaissance photography for the presence of wetlands, and none were observed. The presence of several areas with seasonal water and some wetland plants along the Harris Ditch were noted; soils are not hydric in nature in these areas, which potentially may be created wetlands. These potential areas are in the buffer zone, where no mining is proposed. There are no features above the HWM which are subject to regulation by USACE or other agencies as “waters of the United States” under sections 10 or 404 of the Clean Water Act. Map below accessed 24 Dec 2014.



5. Floodplain information: There is a basic Flood Insurance Rate Map (FIRM)⁸ for this portion of the SUT Reservation available from FEMA at this time; although the site is within the external boundaries of the reservation. Based on the FIRM, local information and inspection of the site, as well as previous county approvals of construction, no area to be mined is located within the 100-year floodplain of the San Juan River or Rio Blanco. The bridge itself is above the estimated base flood elevation (BFE) of the 100-year floodplain and the abutments are outside the floodway of the river. Portions of the access road west of the river are in the floodplain but are not raised significantly to cause flood outside the Constant property. Therefore, there will be no significant impact on floodplain boundaries.



6. There is no mining proposed in the floodplain (Zone A in the above FIRM).

⁸ Prepared by Federal Emergency Management Agency, Flood Insurance Administration

EXHIBIT H – Wildlife Information

1. Agricultural land, coniferous forests, drainages, wetlands, and brush land combine to provide a high diversity of wildlife habitat in the area in which the pit is located. Much of this diversity has been induced by irrigated agriculture, which began in the 1890s. There is no critical habitat in Archuleta County as identified for threatened and endangered species.⁹ All wildlife and wetland resource information is being reviewed with both the US Fish and Wildlife Service and Colorado Division of Wildlife. The project will not affect any Federally-listed or state-listed threatened or endangered species or their critical habitat that are protected by the Endangered Species Act or similar legislation.

2. Wildlife species common in area:

LOWER SAN JUAN RIVER VALLEY, ARCHULETA COUNTY

The area's wildlife habitat corresponds to the ecosystems and plant communities present, which are part of the Sedimentary Mid-Elevation Forests ecoregion. The two communities which make up most of the site are the Southern Rockies River Bottom and the Pine-Juniper community. (See Exhibit J for more information.) Each plant community provides various wildlife needs (e.g., thermal and escape cover, forage, travel routes, etc.).

Game species found in the area include: mule deer, elk, Merriam's turkey, cottontail rabbit, black bear, and mountain lion.

Non-game species are widely represented in the area with a variety of birds, small mammals, reptiles, and amphibians adding diversity to the wildlife in the area.

The site is on the western edge of a Colorado DOW-designated elk migration route, and on the northwestern fringe of a DOW-designated elk winter concentration area (range for elk for severe winters). It is also on the north-northwestern edge of a DOW-designated mule deer winter concentration area. The river bottom is a summer and fall concentration area for black bear.

Other Fish and Wildlife Resources-Other Fish Species

Fish species inhabiting streams near the project area include such game fish as rainbow trout, brook trout, largemouth bass, and catfish. Native fish include cutthroat trout, round tail chub, flannel mouth sucker, bluehead sucker, speckled dace, fathead minnow, and mottled sculpin.

Other Wildlife Species

Various waterfowl and shorebirds inhabit or frequent the area, including: several species of ducks, Canada geese, great blue heron, sora rail, red-winged blackbird, yellow-headed blackbird, and marsh wren. The various raptors found in association with the area include: Bald eagle, Red-tailed hawk, Cooper's hawk, sharp-shinned hawk, northern harrier (marsh hawk), peregrine (prairie) falcon, rough-legged hawk, ferruginous hawk, and great horned owl, and others. Amphibians and reptiles inhabiting the valley include: chorus frog, leopard frog, woodhouse toad, spadefoot toad, tiger salamander, wandering garter snake, black (garter) snake, Western green snake, Western bull snake, (Western kingsnake), Western prairie rattlesnake, (fence lizard), sagebrush lizard, and mountain short-horned lizard. While more common lower down the San Juan River valley, these may be found in this vicinity.

2. Threatened and endangered species impacted:

Suitable habitat for the following threatened or endangered species may be found in or near the project site: Southwestern willow flycatcher (*Empidonax traillii extimus*), Colorado pikeminnow (*Ptychocheilus lucius*), razorback sucker (*Xyrauchen texanus*), and Pagosa skyrocket (*Ipomopsis polyantha*). None of these species have been observed on-site in areas to be impacted by mining.

⁹ <http://crithab.fws.gov/> visited 21OCT08 and 24DEC14.

Bald eagles nest, roost, and perch in large cottonwood trees adjacent and rivers. These types of suitable habitat are found within the San Juan watershed and on-site, but most cottonwood trees will not be removed or impacted by proposed operations. (An area of approximately 100 feet by 50 feet may be cleared of cottonwoods for the construction of the access road.) The nearest known nest sites are located well to the west of this site in Archuleta County, but this is considered within the winter range of the bird. Mining will not have an effect on these habitat types.

Southwestern willow flycatchers utilize dense willow, cottonwood, and buffaloberry thickets (preferably a layered system of all three) with surface water or saturated soil adjacent to or nearby the stand. Flycatcher habitat is interspersed throughout the area along ditches and the perennial drainages such as the Rio Blanco and San Juan River. No effect on possible flycatcher habitat is expected: the sole area which might be suitable is in the riparian buffer zones, where the access road crosses the river and the Harris Ditch (see above).

Colorado pikeminnow and Razorback sucker habitat is associated with the downstream riverine system entering into and including the San Juan River. Such habitat exists but is within the buffer zones established to protect the river, floodplain, and wetlands, and will not be affected by proposed mining.

Pagosa skyrocket is a flowering plant known to exist in a very limited area within Archuleta County with Pagosa-Winifred soils derived from Mancos shale; these conditions are not present in the site.

Northern and Botta's pocket gophers use a variety of habitats including pasture land and agricultural fields. Either species could occur in this part of Colorado. The mining could have an effect on pocket gopher habitat if gopher burrows are intersected by earthmoving equipment, but such impact on habitat is unlikely to have an impact on the species due to the limited area being disturbed.

Ferruginous hawks may use the watershed area for foraging and to meet other habitat needs.

Agricultural areas may be more important to these hawks in the winter. They may use cottonwoods and other tall trees for perches. The value of these habitats for hawks should not be affected by the activities proposed.

American peregrine falcons use cliffs and forested areas for breeding habitat. They also use riparian forested areas, grasslands, and agricultural fields in the area for foraging. This site has cliffs, but these cliffs will be mostly left intact by proposed activities. Although much of the forested area on the site will be disturbed by mining, forested areas will be protected in buffer zones and progressive mining will be slow enough to permit relocation by the birds. Mining progressively in small areas, and post-mining reclamation to irrigated agricultural fields should not change the availability of prey species taken by falcons. The end result is that falcon habitat will be maintained with the project.

Northern river otters use riparian habitats where fish and crustaceans are found. These habitats located on site are within buffer zones and will not be disturbed by mining.

Gunnison's prairie dog is discussed above. No prairie dogs are known on-site.

3. Assessment of mining impact on wildlife:

Although past use of the land has been primarily grazing, the planned sequence of mining on the site will have some potential impact on wildlife because of the removal of woody vegetation. Although a relatively small area will be disturbed at any one time, the mixed tree-shrub-grass ecological site on the upper area will be replaced by mostly-open grassland, thus changing suitability for some species. However, overall, short-term impact on wildlife will be beneficial, since the site will be available for other species, and the reduction in mixed-vegetation habitat will not be significant given the abundance of such habitat in the vicinity, and livestock will be restricted from much of the site for safety reasons during mining operation. In the long term, reclamation should improve the capability of the area to sustain wildlife, although this is not the

intent of reclamation. The siting and operation of the project will allow for continued migration of wildlife both up and down the rivers and across the valley (indeed, slightly improving cross-valley routes with improvements to the access road), and therefore should have no significant potential for adverse impact on migration patterns. While claims are often made regarding the negative effect on wildlife from increased human activities, and from side effects such as noise, we have found that wildlife, particularly deer, elk, and various predators, tend to be very common around operations such as quarries and sand and gravel pits, and even around operations which have a greater impact, such as landfills. Based on the location and area impacted, there should be no significant water depletion which would impact wildlife or their habitat and therefore require consultation. See Exhibit G.

4. Proposed mitigation measures, including reclamation, for wildlife habitat: Since there is no reasonable potential of significant impact, no mitigation measures are planned for the sake of wildlife habitat mitigation.

5. Name, Title, Address and Phone of Person preparing wildlife statement:
 Nathan A. Barton, P.E., D.E.E., Environmental Engineer
 P.O. Box 88, Cortez, CO 81321-0088 Phone: (970)218-4133
 Prepared for C & J Gravel Products, Inc.

Table H-1. Summary of listed species and their status

Scientific Name	Common Name	State Status	Federal Status	Occurrence
Empidonax traillii extimus	Southwestern Willow Flycatcher	E	E	Migrate through the area. No known nesting but possible in the area.
Coccyzus americanus	Yellow-billed Cuckoo	SC	C	Possible, but none observed. Suitable habitat exists in area.
Ptychocheilus lucius	Colorado Pikeminnow	T	E	No suitable habitat in area. No impact on habitat downstream.
Xyrauchen texanus	Razorback Sucker	E	E	No suitable habitat in area. No impact on Habitat downstream.
Rana pipiens	Northern leopard frog	SC	#	May occur in aquatic habitats. Project should not impact habitat.
Thomomys spp.	Pocket gopher	SC	#	May occur in agricultural land, but not in cultivated land. Potential but unlikely minor impact.
Buteo regalis	Ferruginous hawk	SC	#	May use the area for hunting, especially in winter.
Falco peregrinus anatum	American peregrine falcon	SC	#	May be in the area. No effects expected.
Lontra Canadensis	River otter	ST	#	May occur in the area. No impact on downstream habitats.
Ipomopsis polyantha	Pagosa skyrocket	C	SC	Habitat does not occur on site; no impact on habitat in region.

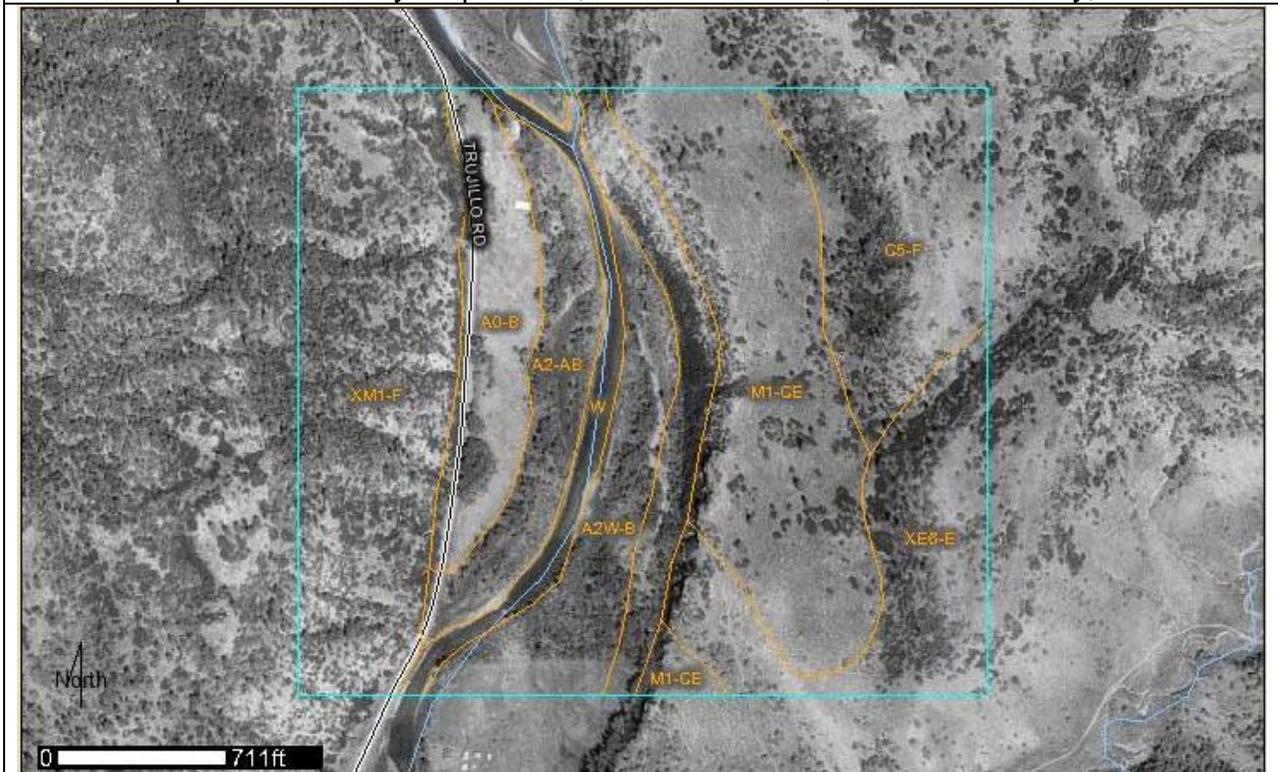
Abbreviations for species status include E = Endangered, T = Threatened, P = Proposed, C = Candidate, SC = Species of concern, # = No Status.

Prepared OCT 2008, Updated DEC 2014.

EXHIBIT I – Soils Information

1. Source(s) of Information: USDA Soil Survey of Southern Ute Indian Reservation, Colorado, (Parts of La Plata and Archuleta Counties), issued 2006.¹⁰
2. Significant concerns in soils management: Prevention of water and wind erosion, and downstream siltation.
3. Reclamation seed mix as proposed is based on NRCS and/or Extension Service recommendations. Seed mix for temporary stabilization and non-crop areas discussed in Exhibit J. Method of application: Standard agricultural seeding technique.

Map I-1 Soil Survey Map of Soil, Constant Ranch, Archuleta County, CO



4. The soils map is drawn from the soil survey and on-line data available from NRCS on Web Soil Survey.
5. The soils descriptions provided in Table B-2-1 are taken from the Survey. Field surveys have confirmed the general accuracy of the mapping. This is typical for the
6. Soil stripping, storage, and replacement: For planning purposes and based on test pits, it is assumed that an average of 1 foot of material will be removed. In all areas where soil is removed, the following will be done as much as possible:
 - As much as possible, to include the upper 24 inches of soil, will be removed and stockpiled.
 - If necessary, the larger cobbles will be removed from the soil prior to placement in the final location.
 - Soil will placed to a depth of 12 inches or more for reclamation.The objective is to provide as high a quality cropland as feasible at the end of mining activities.

¹⁰ Available on-line:

FIGURE I-1 Soils Map Legend

Archuleta County Area, Colorado (CO668) 			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
A0-B	Steimer loam, 1 to 3 percent slopes	12.9	7.7%
A2-AB	Vigil very gravelly loamy fine sand, 0 to 3 percent slopes	12.1	7.2%
A2W-B	Fluvaquents, 0 to 3 percent slopes	14.6	8.7%
C5-F	Camado-Ishkoten-Nutrita complex, 5 to 45 percent slopes	21.2	12.7%
M1-CE	Valto very stony fine sandy loam, 3 to 25 percent slopes	34.2	20.4%
W	Water	6.6	3.9%
XE6-E	Payan-Rock outcrop complex, 12 to 65 percent slopes	20.3	12.1%
XM1-F	Valto-Rock outcrop complex, 30 to 65 percent slopes	45.7	27.3%

Soils, Constant Ranch East Area, Archuleta Co, Colorado

Map Unit: A0-B—Steimer loam, 1 to 3 percent slopes

This map unit is found only in the access road area west of the river and the bosque.

Component: Steimer (85%)

The Steimer component makes up 85 percent of the map unit. Slopes are 1 to 3 percent. This component is on flood-plain steps. The parent material consists of alluvium derived from mixed sources. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is rarely flooded. It is not ponded. A seasonal zone of water saturation is at 30 inches during April, May, June, July. Organic matter content in the surface horizon is about 2 percent. This component is in the R036XY327CO River Bottom ecological site. Nonirrigated land capability classification is 3w. Irrigated land capability classification is 3w. This soil does not meet hydric criteria. The calcium carbonate equivalent within 40 inches, typically, does not exceed 2 percent.

Map Unit: A2-AB—Vigil very gravelly loamy fine sand, 0 to 3 percent slopes

This map unit is found in the bosque, which is crossed by the access road west of the river.

Component: Vigil (80%)

The Vigil component makes up 80 percent of the map unit. Slopes are 0 to 3 percent. This component is on flood-plain steps. The parent material consists of alluvium derived from mixed sources. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is very low. Shrink-swell potential is low. This soil is rarely flooded. It is not ponded. A seasonal zone of water saturation is at 48 inches during May, June. Organic matter content in the surface horizon is about 1 percent. This component is in the R036XY327CO River Bottom ecological site. Nonirrigated land capability classification is 6e. This soil does not meet hydric criteria.

Map Unit: A2W-B—Fluvaquents, 0 to 3 percent slopes

This map unit is found east of the river in the buffer zone, and will not be mined.

Component: Fluvaquents (85%)

The Fluvaquents component makes up 85 percent of the map unit. Slopes are 0 to 3 percent. This component is on flood plains. The parent material consists of alluvium derived from mixed sources. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 16 inches during April, May, June. Organic matter content in the surface horizon is about 2 percent. This component is in the R036XY327CO River Bottom ecological site. Nonirrigated land capability classification is 7w. This soil meets hydric criteria.

Map Unit: C5-F—Camado-Ishkoten-Nutrita complex, 5 to 45 percent slopes

This map unit is found on the ridge in the northeastern portion of the site and will be mined (except for north and east buffer zones).

Component: Camado (35%)

The Camado component makes up 35 percent of the map unit. Slopes are 5 to 45 percent. This component is on hills. The parent material consists of slope alluvium derived from shale and sandstone. Depth to a root restrictive layer, bedrock, paralithic, is 10 to 20 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is very low. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. This component is in the F036XY925CO Pinus Ponderosa-Juniperus Scopulorum/quercus Gambelii-Cercocarpus Montanus/poa Fendleriana-Festuca Arizonica ecological site. Nonirrigated land capability classification is 6e. This soil does not meet hydric criteria.

Component: Ishkoten (30%)

The Ishkoten component makes up 30 percent of the map unit. Slopes are 5 to 45 percent. This component is on hills. The parent material consists of slope alluvium derived from sandstone and shale. Depth to a root restrictive layer, bedrock, paralithic, is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is low. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 85 percent. This component is in the F036XY925CO Pinus Ponderosa-Juniperus Scopulorum/quercus Gambelii-Cercocarpus Montanus/poa Fendleriana-Festuca Arizonica ecological site. Nonirrigated land capability classification is 6e. This soil does not meet hydric criteria.

Component: Nutrita (25%)

The Nutrita component makes up 25 percent of the map unit. Slopes are 5 to 45 percent. This component is on hills. The parent material consists of slope alluvium derived from shale and sandstone. Depth to a root restrictive layer, bedrock, paralithic, is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is moderate. Shrink-swell potential is high. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. This component is in the F036XY925CO Pinus Ponderosa-Juniperus Scopulorum/quercus Gambelii-Cercocarpus Montanus/poa Fendleriana-Festuca Arizonica ecological site. Nonirrigated land capability classification is 6e. This soil does not meet hydric criteria.

Map Unit: M1-CE—Valto very stony fine sandy loam, 3 to 25 percent slopes

This map unit makes up the major portion of the area to be mined, on the upland bench between the cliff and the eastern ridges.

Component: Valto (75%)

The Valto component makes up 75 percent of the map unit. Slopes are 3 to 25 percent. This component is on hills. The parent material consists of slope alluvium derived from sandstone. Depth to a root restrictive layer, bedrock, lithic, is 10 to 20 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 85 percent. This component is in the R048AY255CO Pine Grasslands ecological site. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria.

Map Unit: W—Water

Component: Water (100%) [River]

Generated brief soil descriptions are created for major soil components. The Water is a miscellaneous area.

Map Unit: XE6-E—Payan-Rock outcrop complex, 12 to 65 percent slopes

Component: Payan (55%)

The Payan component makes up 55 percent of the map unit. Slopes are 12 to 65 percent. This component is on ridges, hills, mountain slopes. The parent material consists of slope alluvium derived from shale and sandstone. Depth to a root restrictive layer, bedrock, paralithic, is 10 to 20 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is very low. Shrink-swell potential is high. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. This component is in the F036XY926CO Pinus Edulis-Juniperus Scopulorum/quercus Gambelii-Artemisia Tridentata Ssp. Vaseyana/poa Fendleriana-Hesperostipa Comata ecological site. Nonirrigated land capability classification is 7e. This soil does not meet hydric criteria.

Component: Rock outcrop (30%)

Generated brief soil descriptions are created for major soil components. The Rock outcrop is a miscellaneous area.

Map Unit: XE6-E—Payan-Rock outcrop complex, 12 to 65 percent slopes

This map unit is found in the southeast corner of the permit area, and will be mined (except for the south and east buffers).

Component: Payan (55%)

The Payan component makes up 55 percent of the map unit. Slopes are 12 to 65 percent. This component is on ridges, hills, mountain slopes. The parent material consists of slope alluvium derived from shale and sandstone. Depth to a root restrictive layer, bedrock, paralithic, is 10 to 20 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is very low. Shrink-swell potential is high. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. This component is in the F036XY926CO Pinus Edulis-Juniperus Scopulorum/quercus Gambelii-Artemisia Tridentata Ssp. Vaseyana/poa Fendleriana-Hesperostipa Comata ecological site. Nonirrigated land capability classification is 7e. This soil does not meet hydric criteria.

Component: Rock outcrop (30%)

Generated brief soil descriptions are created for major soil components. The Rock outcrop is a miscellaneous area.

Map Unit: XM1-F—Valto-Rock outcrop complex, 30 to 65 percent slopes

This map unit is the cliffs just east of the river in the permit area, and will not be mined.

Component: Valto (60%)

The Valto component makes up 60 percent of the map unit. Slopes are 30 to 65 percent. This component is on hills, mountain slopes. The parent material consists of slope alluvium derived from sandstone. Depth to a root restrictive layer, bedrock, lithic, is 10 to 20 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 85 percent. This component is in the F036XY925CO Pinus Ponderosa-Juniperus Scopulorum/quercus Gambelii-Cercocarpus Montanus/poa Fendleriana-Festuca Arizonica ecological site. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria.

Component: Rock outcrop (30%)

Generated brief soil descriptions are created for major soil components. The Rock outcrop is a miscellaneous area.

EXHIBIT J – Vegetation Information

1. Source(s) of information: USDA Soil Conservation Service, Soil Conservation District, USDA National Forest Service
 2. Vegetative communities and conditions: As shown in tables J-1 and -2.
- This site is located within the Sedimentary Mid-Elevation Forests ecoregion, which is characterized by forests, savannahs, and limited grass-, and shrublands.

Table J-1. Vegetative communities:

<u>Community (Ecological site)</u>	<u>Vegetation layer and dominant species</u>
Riparian Woodland and River Bottom (Bosque)	<p>Most of the riparian woodland and river bottom on the site is located within the buffer zones and will not be disturbed. The Rocky Mountain Lower Montane Riparian Woodland and Ponderosa-Juniper types often occur as a mosaic of multiple tree-dominated communities with a diverse shrub component, but on this site the Riparian Woodland is distinct from the upland ecological sites because of the rimrock cliffs. Most of the Riparian Woodland has been restricted to the bosque along the river (both the west bank in the access corridor and the triangle of land in the southwest corner of the permit area), in order to maximize irrigated pasture on the rest of the valley floor; which is kept in grasses with minimal tree or shrub presence. Type occurrences are found within the flood zone of rivers (as found here), on islands, sand or cobble bars, and immediate streambanks. They can form large, wide occurrences on mid-channel islands in larger rivers or narrow bands on small, rocky canyon tributaries and well drained benches. It is also typically found in backwater channels and other perennially wet but less scoured sites, such as floodplains swales (the bosque) and irrigation ditches. Dominant trees may include Box elder, narrowleaf cottonwood, balsam cottonwood, plains cottonwood, Fremont cottonwood, Douglas-fir, blue spruce, peachleaf willow, or Rocky Mountain juniper. Dominant shrubs include Rocky Mountain maple, speckled alder, water birch, red-osier dogwood, river hawthorne, desert olive, chokecherry, skunkbush sumac, park willow, Drummond's willow, coyote willow, bluestem willow, shining willow, silver buffaloberry, or snowberry. Russian olive and tamarisk (both noxious weeds) are common in some stands.</p>
Ponderosa-Pinyon-Juniper Woodlands	<p>This community includes the eastern portions of the site to be mined, as well as the buffer zones on the east, north, and south, as may be noted on aerial photography of the site and the NRCS soils survey. Characteristic vegetation includes Twoneedle pinyon (15%), Utah juniper (15%), Big sagebrush (20%), Ponderosa pine (10%) Muttongrass (10%), Western wheatgrass (10%), and Indian ricegrass (5%). Production varies from 500 to 700 pounds per acre. Most of these areas will be mined, but the buffer areas will be not mined and will remain as reservoirs and habitat for wildlife, while the mined area is reclaimed as pine-grassland (possibly irrigated) for grazing. Pinyon-Juniper Woodland type occurs on warm, dry sites on mountain slopes, mesa, plateaus, and ridges at elevations from 5000 to 8000 feet, while Ponderosa-Juniper Woodland type occurs on wetter, cooler sites on mountain slopes and ridges at elevations of 6000 to 9000 feet. Soils vary in texture from stony, cobbly, gravelly sandy loams to clay loam or clay. Pinyon and/or Utah juniper dominate the tree canopy. Rocky Mountain juniper may codominate or replace Utah juniper at higher elevations, as appears to be the case here. Understory layers are variable and may be absent or may be dominated by shrubs, or grasses. Associated species include greenleaf manzanita, big sagebrush, mountain mahogany, blackbrush, cliffrose, antelope bitterbrush, Gambel oak, blue grama, galleta, or muttongrass. Specimen Ponderosa may be found throughout the community, but the highest part of the site (the west-facing slopes in the eastern buffer zone) has significant numbers of Ponderosa pine in thick stands mixed with the Pinyon-Juniper; these areas may have once been (prior to grazing and fire suppression) purely Ponderosa, until invasion of pinyon and juniper took place. (USBR 1999)</p>
Pine-Grassland (shown	More properly an ecotone, this interface between the semi-arid grasslands and shrublands

<p>as Savannah and Forest at scale of maps)</p>	<p>(of which a large isolated pocket is found to the west of the San Juan River in this area) and the Pinyon-Juniper woodlands is characterized by an open, savannah setting, especially on flatter slopes, where grass predominates over trees and shrubs which are, nonetheless, still present in significant numbers. It is typical for this community to have been greatly reduced in area through a decline in herbaceous vegetation (grasses and non-woody flowering plants) while forests thicken and brush invades. This is caused by a combination of fire suppression and grazing, particularly overgrazing by cattle and horses; however, this site shows fewer signs of that progression than most similar sites in Archuleta County. This community is also a mix of two different grasslands types: Plains grasslands are commonly dominated by Blue Grama or other gramas that extend across southern Colorado into northwestern New Mexico, while Great Basin grasslands are dominated by Galleta Grass and Indian Rice Grass and reach down to the Colorado Plateau from the northwest. Other species are common with the Pinyon-Juniper community. Most of the area to be mined (the bench above the rimrock cliffs) is this community: grassland with scattered trees and shrubs. Production varies from 600 to 800 pounds per acre. This community will be effectively restored and expanded by reclamation after mining, as areas that are now Pinyon-Juniper are reclaimed as grassland, but some invasion of woody species continues.</p>
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3. Comments and remarks:
a. Seed mixes for soil protection and reclamation.

Species	Variety (table 6: PMTN 59)	PLS Rates Irr/Non-Irr	PLS/Ac to use (100%)	% in mix	Rate (PLS lb/ac)
Thickspike wheatgrass	0.0	10.0 / 5.0	70.0	14	5.0
Slender wheatgrass	0.0	11.0 / 5.5	11.0	24	5.5
Western wheatgrass	0.0	16.0 / 8.0	16.0	9	8.0
Sandberg bluegrass	0.0	2.0 / 1.5	2.0	18	1.5
Meadow brome grass	0.0	17.0 / 11.0	17.0	20	11.0
Sideoats grama	0.0	9.0 / 4.5	9.0	15	4.5
Totals			125.0	100.0	35.5

From NRCS, Shaan Bliss, Rangeland Management Specialist, PO Box 419, 505A County Road 600, Pagosa Springs, Colorado 81147-0419: 30 JULY 2008

For temporary seeding for stabilization and protection of stockpiles:

<u>Species, Variety</u>	<u>Rate in lbs/acre, PLS, Broadcast</u>	<u>Rate in lbs/acre, PLS, Drilled</u>
Slender Wheatgrass, Pryor	8.25	4.13
Sideoats Grama	8.25	4.13
TOTAL	16.50	8.25

Seeding will be done immediately after application of erosion control polymers, usually within seven days of completion of a stockpile or length of stockpile, and followed by watering to establish the stand of grass.

- b. General instructions regarding seeding and care: Not applicable.
- c. Weed control will be standard for the crop selected, and coordinated with the land owner and County weed and pest control agency.

Guidance from NRCS: Revegetation:

1.) Seedbed Preparation: Seedbed should be firm and free of weeds and other non-desirable vegetation. Areas where there is excessive compaction will be tilled, such as chiseling and disking, to break up the compaction and then harrowed down. If seedbed is soft after tillage operations allow 2 to 4 weeks following the last operation for the soil to settle and firm up.

2.) Planting period: Dormant planting is possible anytime after November 1st or when temperatures are cold enough to prevent seed germination and therefore frost damage to young seedlings. Planting may also be done between July 1st and August 15th or during the spring if irrigation water is available.

3.) Planting Method: Planting should be done with a grass drill or modified grain drill preferable with depth bands and packer wheels. Depth of seed placement shall be between 1/2 to 3/4 inch and row spacing shall be 7 to 12 inches. In areas where the use of a drill is not feasible, broadcasting seed is acceptable at double the seeding rate. Raking will be required to cover the seed to a depth of 1/2 to 3/4 inch.

4.) Seeding Mixture: See attached CO-ECS-5 Grass Seeding Planned for recommended upland (dryland) native seed mix and for irrigated pasture and hayland seed mix using a drill application method. For wetland species follow Army Corp of Eng. recommendations.

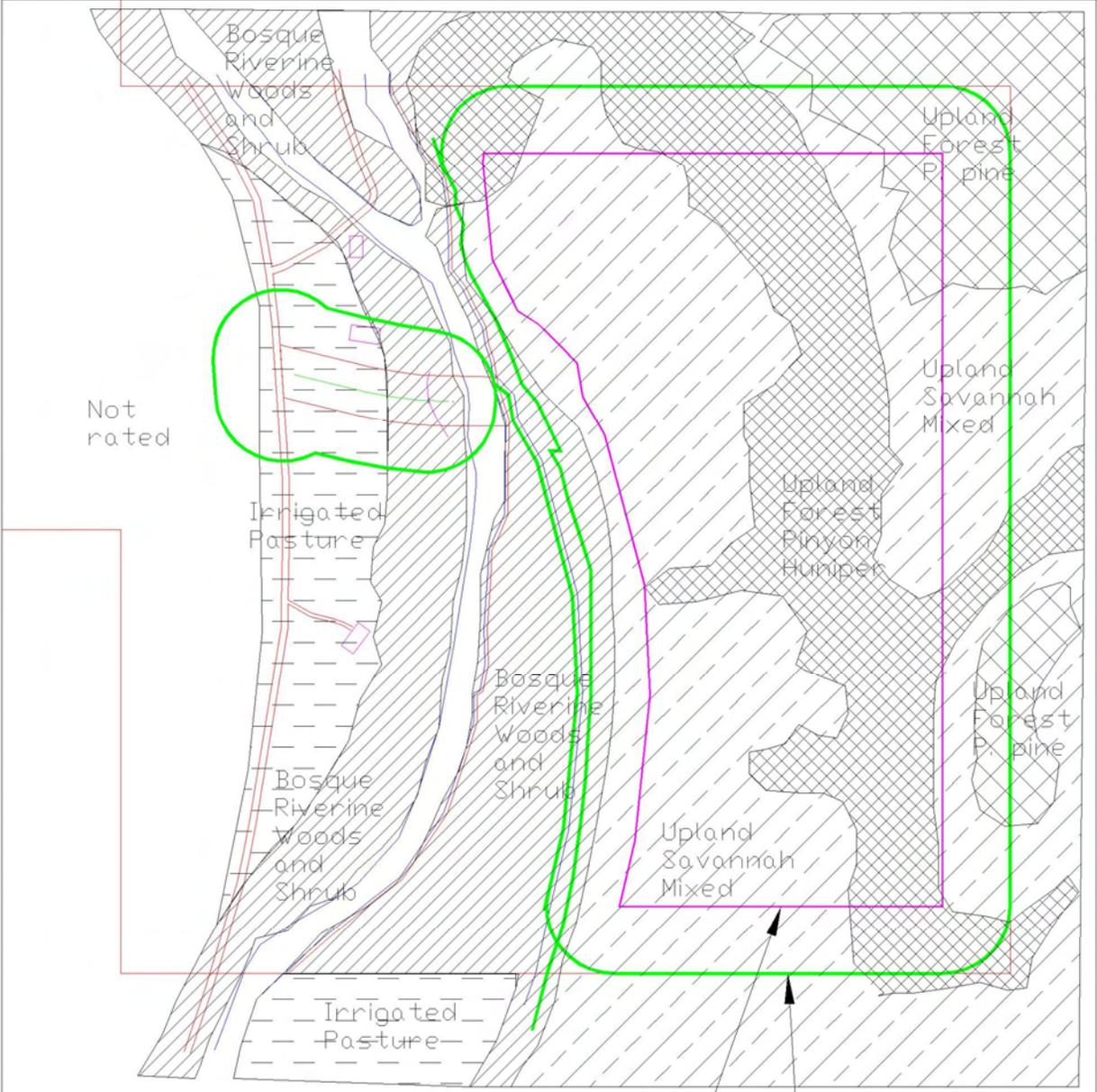
5.) Fertilization: Fertilization should be based on soil tests. In the absence of a soil test, apply a starter fertilizer at a rate of 40 pounds of available nitrogen and phosphorus per acre (harrow into the soil) during the last operation of seedbed preparation.

6.) Mulching: Clean, weed free mulch such as grass or straw hay averaging at least 8 inches in length should be applied at a rate of 3000 lbs./ac, with a goal of obtaining 50-60% cover. Anchoring by crimping should be done to a depth of approximately 4 inches.

7.) Post Emergent Weed Control: Mowing to control competitive weeds shall be done to improve the establishment of the seeding. Once grass reaches the 3 to 4 leaf stage, herbicides can be used to control weeds, especially noxious weeds. Follow all instruction on herbicide labels. If you seed in the fall and notice weed emergence the next year, wait till the grasses are at least in the third or fourth leaf stage of growth before applying any herbicide. These early emerging grasses can be setback by herbicide if applied too early in their development.

8.) General Additional Comments from NRCS: I looked over your plan and it looks like that seeding recommendation and revegetation will work fine for your new project. This mulch will allow the soils to hold moisture, but not excessively thick which would slow soil temperatures from warming in the spring. If you find noxious weeds in the area please let me know and we can do a site visit to see what the best eradication methods are. I would not determine success or failure of a seeding until after 2 growing seasons are complete following the seeding. The brome should come on relatively quickly and the western wheatgrass may take a little longer. Keeping the weed competition in check will greatly speed establishment. Once these grasses get a foothold they will spread by underground rhizomes filling the voids over time. The seed mix contains both drought tolerant and very durable grasses, and they should persist indefinitely with proper management. (5 NOV 2008 communication)

C&J Gravel Products, Inc. Two Rivers Pit



Buffer zone bdr
Permit boundary

Nathan A. Barton
Nathan A. Barton, PE (CO-82630)

Prepared for C&J Gravel by and (c) WASTELINE, INC.
 Date: 21 DEC 2014 By: N. Barton Rv: P. Neil
 Scale: 1"=500' Source: USGS Map/Photo.
 Portions SW 1/4 Sec 11, T33N, R2W, 10th PM, Archuleta Co., CO, Pertaining to Application: Two Rivers Pit M-2015- _____ Legend: as noted

VEGETATION (ECOSITES)

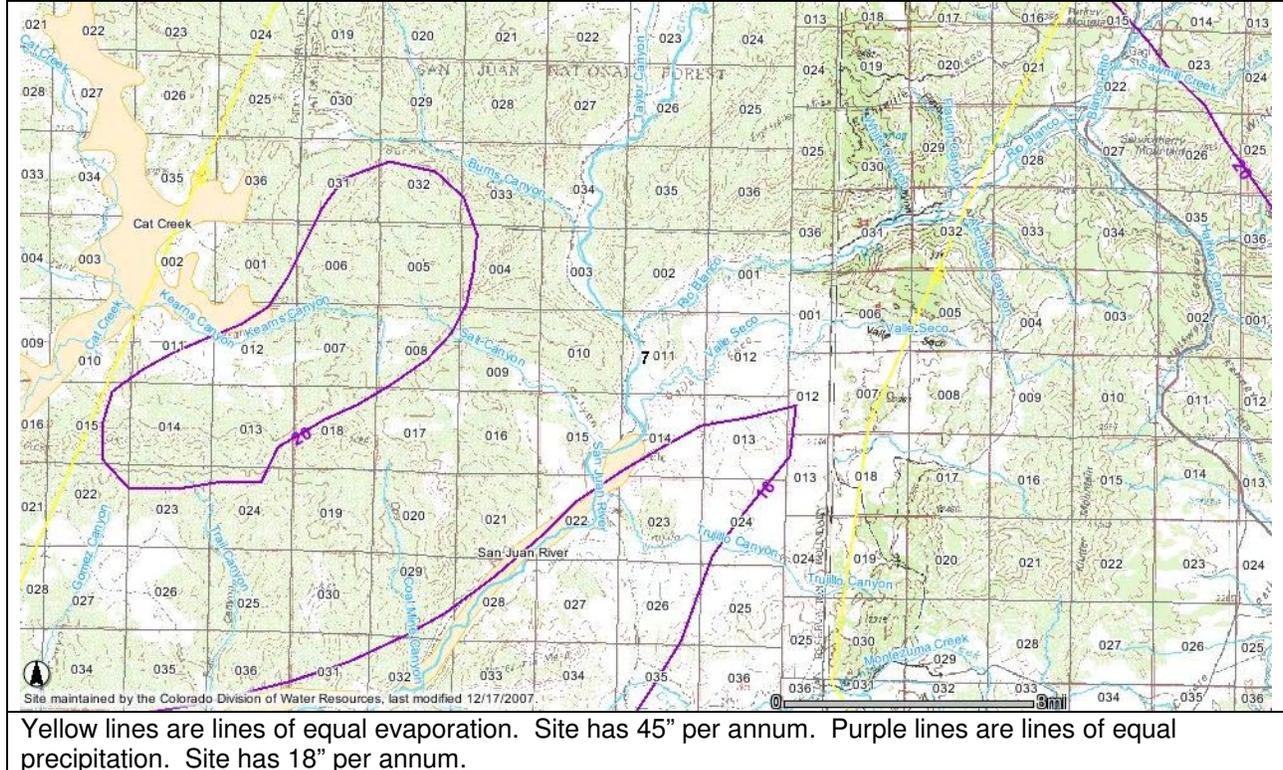
Drawing/
Sheet No.
J1

EXHIBIT K – Climate

SAN JUAN RIVER VALLEY AREA, ARCHULETA COUNTY, COLORADO:

SUMMARY: Average annual precipitation is 18 inches of which approximately 50% falls during the growing season. Optimum growing season for native plants is from April to September. The frost-free period varies from 100 to 140 days. Temperature ranges from -20's to +90's F. Much of the precipitation falls as snow but winters are generally open. Summers are warm or hot, winters cold. Site has little or no water table above the rimrock cliffs, but ponding may occur immediately after precipitation events where terrain permits.

Figure K-1. Regional Climate



1. Source(s) of Information:
 - a. Archuleta County Economic Development (personal conversations);
 - b. The Weather Channel (website);
 - c. USDA Natural Resources Conservation Service (various publications, website),
 - d. Colorado Division of Water Resources (website),
 - e. Chapman, S.S., Griffith, G.E., Omernik, J.M., Price, A.B., Freeouf, J., and Schrupp, D.L., 2006, Ecoregions of Colorado (color poster with map, descriptive text, summary tables, and photographs): Reston, Virginia, U.S. Geological Survey (map scale 1:1,200,000).
 - f. Data based on Pagosa Springs and modified by state climate maps

Table K-1. Two Rivers Pit General and Regional Climate Data

<i>Data Item</i>	<i>Quantity</i>	<i>Units</i>	<i>Remarks</i>
2-yr, 24-hour storm	0.06	inches of precipitation/hr	County/NOAA
100-yr, 24-hour storm	0.12	inches of precipitation/hr	County/NOAA
Depth of freezing	42	Inches	County
Annual average lake evaporation, site	45	inches/year	Schwab et al.
Precipitation, Pagosa Springs, average	20.21	inches/year	WRCC
Snowfall, Pagosa Springs, average	101.4	inches/year	WRCC
Snow depth, Pagosa Springs, average	3	Inches (high Feb: 10)	WRCC
Precipitation days, Pagosa Springs	65	Days/year	Weather.com
Sunny days, Pagosa Springs	300	Days/year	Weather.com
Avg. July High	83	Degrees, F	Weather.com
Avg. January Low	4	Degrees, F	Weather.com
Mean Annual Temperature	42.3	Degrees, F	1929-1996
Daily Maximum Temp	99	Degrees, F	1989
Daily Minimum Temp	-46	Degrees, F	1951
Growing Season, Site	90-95	Days	USDA
Elevation of site	6800	Feet above sea level	USGS

Table K-2. Two Rivers Pit Precipitation Table¹¹

In Inches	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Precipitation	1.75	1.26	1.43	1.21	1.07	0.85	1.67	2.24	1.65	2.04	1.24	1.59	18
Snowfall	17.5	12.6	10.0	3.7	0.6	0	0	0	0	2.1	6.6	14.1	67.4

Table K-3. Two Rivers Pit Temperature Table (Pagosa Springs)

Deg F	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Maximum	37.9	42.6	49.2	59.2	68.3	78.3	83.1	80.7	74.3	63.7	49.7	39.6	50.5
Minimum	1.4	7.0	15.9	23.9	30.2	36.3	45.2	44.6	36.6	26.3	15.4	5.0	24.0
Average	19.65	24.8	32.55	41.55	49.25	57.3	64.15	62.65	55.45	45	32.55	22.3	37.25

¹¹ Calculated by taking ratio of 16.4 inches for Mancos Pagosa Springs and 1518.0 inches for Constant Pit Ranch and applying to both total and snowfall.

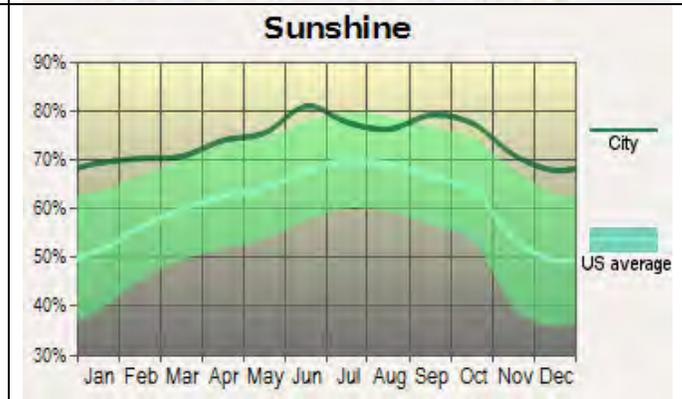
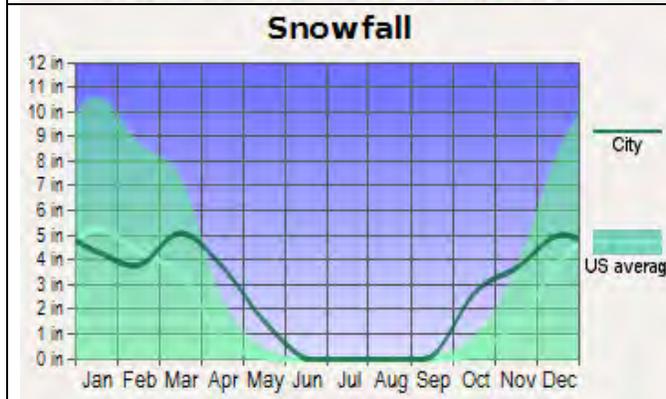
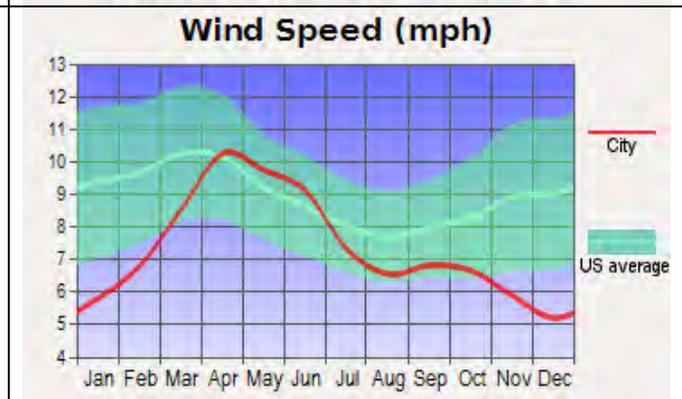
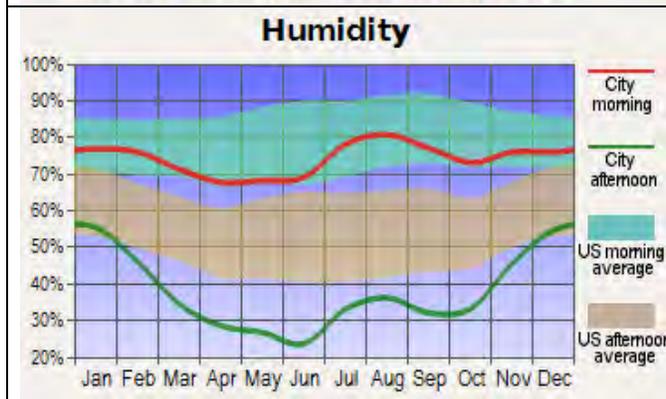
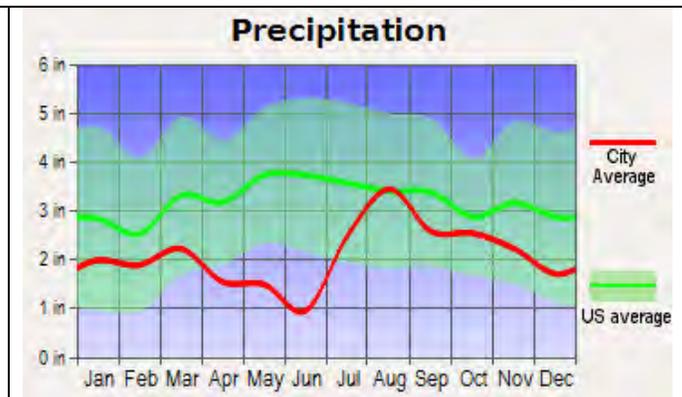
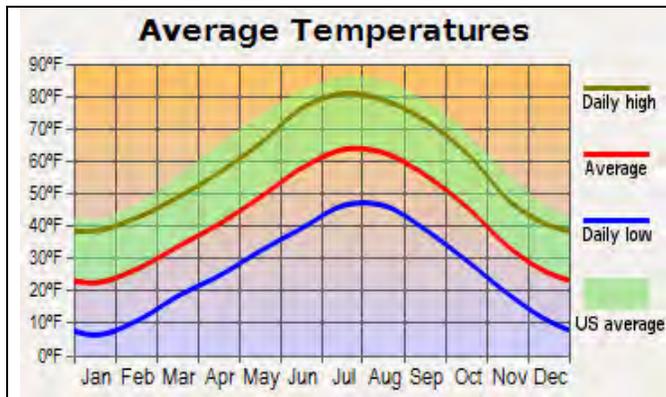


EXHIBIT L – Reclamation Costs

Based on worse-case in first ten years of operations, which occurs at year 5 (2019).

MAXIMUM SITUATION YR 1-5	Backfill to final grade	Finish grading	Place topsoil	Seed	Reseed, maintain	TOTAL
Years 2008-2009	Done	Done	Done	Done	Released	4.14
Year 2010	Done	Done	Done	Done		2.07
Year 2011	Done	Done		2.07		2.07
Year 2012	800 ft highwall		2.75	2.75		2.75
Years 2017,2018, 1/2 2015	Done		5.18	5.18		5.18
West of river (access/stockpile)	Done	Done		0.41		0.41
Total	800	7.93	10.41	10.41		12.48
ESTIMATED COST PER ACRE	\$8,276	\$1,145	\$9,915	\$6,763	\$2,027	\$28,125
BACKFILL						\$2,813
Length of highwalls, ft max	800					\$863
Height of highwalls, ft avg	20					\$4,000
Volume of h/w, CY in place	5926					\$35,801
Swell factor	1.33					\$500
Total loose backfill	7881					\$1,522
Push distance	40					\$1,790
Gradient	-30%					\$39,613
Unit prod (D9R) (CY/Hr)	200					
Unit hourly cost	\$210					
Unit hours	39.4					
Unit cost	\$8,276					
FINISH GRADING						
Hourly prod (grader) A/hr		0.9				
Unit hourly cost		\$130				
Unit hours		8.8				
Unit cost		\$1,145				
PLACE TOPSOIL						
Topsoil depth			12"			
Placed topsoil vol (CY/acre)				1,613		
Total placed topsoil				16787		
Swell factor				1.125		
Total loose topsoil				18,885		
Unit prod (D9R) (CY/Hr)				400		
Unit hourly cost				\$210		
Unit hours				47.2		
Unit cost				\$9,915		
FERT, TILL, SEED MULCH						
Cost per acre (incl. equipt)					\$650	
Unit cost					\$6,763	
RESEED						
Cost per acre (25% failure)						\$650
Unit cost						\$2,027

2015 estimated cost data; no inflation factor added.

EXHIBIT M – Other Permits and Licenses

The following other permits are required for this project:

Type of Permit Required	Permit number/date	Status and remarks
Colorado Air Quality	Not required: inside exterior boundary of Southern Ute Indian Reservation	Consulting with SUIT Environmental Office, EPA requires submission of a "notification" for non-Title V sources.
County Air Quality	None required: uses state	
Colorado Mining	M-2015-	This application now in review.
County Mining	Not applicable	See also County Land Use
Colorado Storm Water	Not required: inside exterior boundary of Southern Ute Indian Reservation	Current MSGP (permit) being republished (anticipated January 2015); NOI will be submitted when new permit is issued.
Colorado Process Water	Not required.	No use of process water is anticipated. If washing is done, other permits will be amended as necessary.
Bio-solids Application	Not required	No use planned
County Land Use (Planning and Zoning)	# _____	Conditional Use: by Commissioners
Water Rights for Pit	58177F, issued 10FEB03	No ground water expected to be exposed
Water Appropriation for dust control	To come from water rights	To be included in substitute water supply plan, to allow ag water to be used
Above-ground storage tanks (AST)	To be assigned if required.	Equipment to be used on site will be portable and will have own notifications and/or permits
CDOT Access Permit	NONE REQUIRED	Access to County Road
County Access Permit County Bridge Permit	Issued. 2013-16BP	Copy available on request
Federal	Other than those listed above, none required.	Site is not (a) on or adjacent to federal lands, (b) effecting inventoried wetlands, (c) potentially taking of wildlife, including T&E species, or (c) in Waters of the United States.
Tribal	NONE REQUIRED	Site is not on Indian-owned (trust) land, although it is within the external boundaries of the Southern Ute Indian Reservation.

OPERATIONS

See Exhibit C. Operations will be conducted during daylight hours, generally Monday through Friday, with some extended hours and weekend work as needed for specific projects.

TRAFFIC AND TRANSPORTATION

Materials mined and processed at the Two Rivers Pit will be processed on site and then transported by truck to plants or construction sites for further processing and use. Material transported will use county highways, and is not expected to increase traffic from county highway onto state highways by more than 15% at any location.

ROUTES

Based on anticipated markets during the life of the pit, traffic on public highways is assumed to be 90 percent northbound and 10 percent southbound on CR-500. CR-500 connects to various county roads and city streets before connecting to either SH-160 west of or in Pagosa Springs or SH-84 southeast of Pagosa Springs.

TRUCKS

A variety of trucks will be used to haul materials from the Pit, including single dump trucks, semi-dump trucks, and trucks with pups. Most commonly used will be dump trucks with pups. Average haul for all vehicles will be 25 tons per vehicle. All trucks are properly permitted for highway use and meet weight requirements for county and state highways. All drivers have CDL (Commercial Drivers License) if required for the vehicle being operated.

TRAFFIC COUNTS AND SCHEDULES

Assuming an average hauled of 70,000 tons per year, 25 tons/vehicle, and 120 hauling days per year, average truck traffic will be 23.33 trucks per day: 21 north and 2 south, with peak traffic counts of less than 4 per hour. Of 21 north, an estimated 6 will go to SH-160 in Pagosa West, 8 to Pagosa Springs itself, with various routes through the town, 5 east through Pagosa Springs to SH-84 for delivery to County or State shops, and 2 to delivery locations in the vicinity not requiring travel on state highways. County zoning and conditional use permits are expected to dictate exact routes and traffic limits.

DUST CONTROL DURING HAULS

Dust control practices to be used in the pit, including the access road, will be based on pit traffic, and will include traffic control, water spraying (see Exhibit G), and use of dust control agents such as magnesium chloride brine (magwater) or ligneous sulfide, as needed. When hauling material less than 1/4-inch, haul trucks will be controlled to prevent dust, including tarping (chemically or physically) or wetting of material in accordance with state and local requirements. If necessary, hauling will be curtailed during extreme high wind conditions.

BLASTING AND NOISE CONTROL

Actions will reduce the impact of noise caused by the mine and associated activities.

BLASTING There will be no blasting done on site for the Pit.

NOISE POTENTIAL

Due to the location of the site, east of the San Juan River and well above the valley floor, little if any problem with noise is expected, as discussed above, and noise reduction is taken into account in the overall design and selection of stockpile and plant locations, direction of working, and other noise control measures integrated into the operation.

Typical sources of noise associated with sand and gravel extraction include operation of mobile and stationary equipment (engine, conveyor and like noises), back-up alarms, movements of vehicles inside and to and from the site (brakes, acceleration, etc.), and noises associated with heavy machinery and construction. During periods when traffic is not present on CR-500, other sounds carry well, but trees and the terrain help contain noise.

The nearest dwellings are the "hunting cabin" approximately 200 feet south of the south permit boundary (and 400 feet from the proposed affected area) and the two Constant family houses to the west. The ridge along the north and east side of the permit area will serve to attenuate noise which might be carried to the Rio Blanco Cabin Sites subdivision to the northeast, and the buffer and an off-site ridge will have a similar benefit for the Pinon Hills Ranch sites to the south. For the most part, the various buffers (along the river and north and south boundaries) ensure that operations are separated from all potential receptors, and noise levels will remain under the state-mandated 55 dBA at those receptors.

NOISE CONTROL

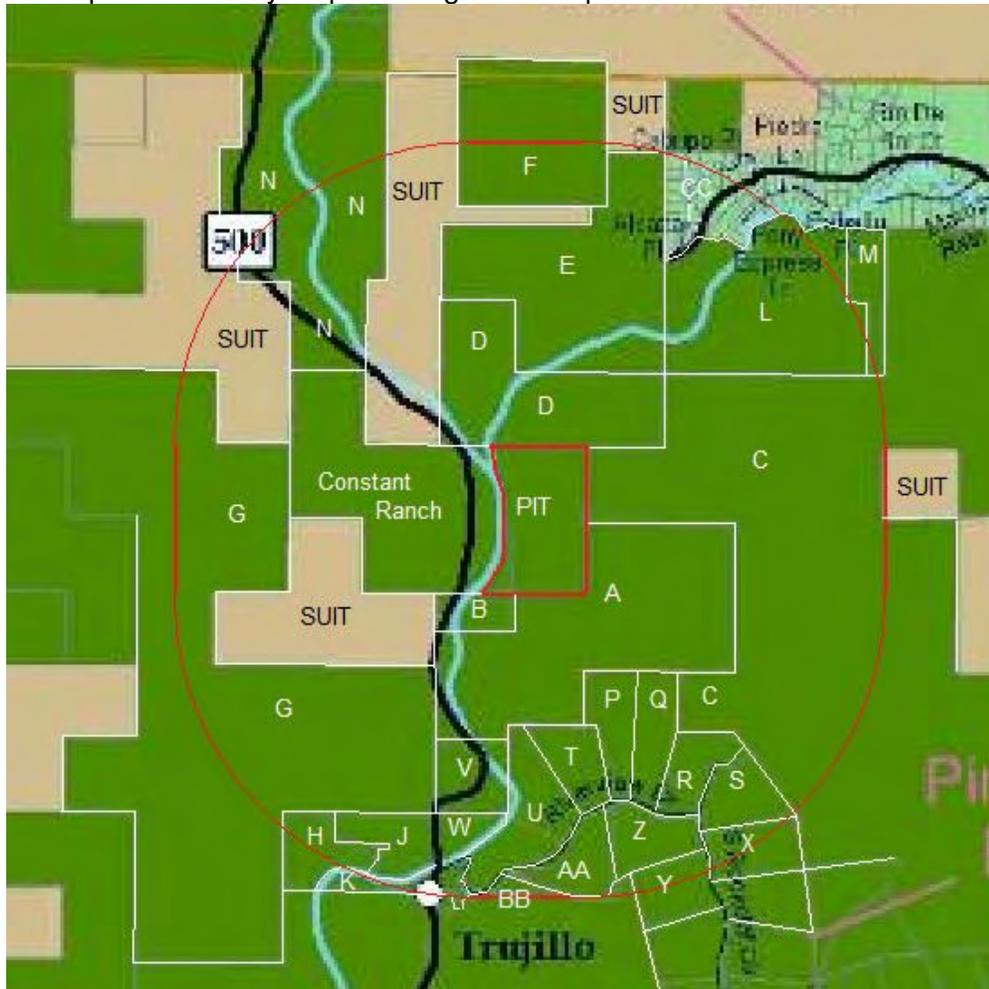
The proposed layout of the pit takes noise control and reduction into account. Most noise from excavation, loading, screening, washing, crushing, and other operations at the

quarry will be done in areas below grade, so that the walls of the pit will reflect sound up and away from adjacent properties and roads and other areas where people are often present. Only stripping will be conducted above grade. This will allow the terrain features on site and off-site to act as sound barriers.

Operating procedures for all C&J Gravel Products work sites are designed and implemented to reduce the impact of noise in the area and for neighbors. There will be no blasting. Operating hours, maintenance of noise controls on equipment, and training of personnel will be conducted in accordance with local requirements. Operations will move constantly away from the house located to the south (and the nearest house not occupied by the landowner), and wooded areas, as well as the terrain, will buffer this locations. Other neighbors are not located where general pit operations will be heard, but may be affected by traffic noises.

All complaints received by C&J Gravel Products will be recorded and investigated immediately. New methods of noise control will be regularly considered and adopted when feasible.

Map M-1. County Map showing ownership and land use within 1 mile.



HISTORIC AND CULTURAL RESOURCE EVALUATION

SUMMARY:

There are no identified or known significant historic or cultural resources which will be impacted by mining on the site. There are no structures of historic significance on the site which will be affected by mining. There are no known prehistoric or paleontological sites on the property. There are no known sites of religious or cultural significance on the site.

DISCUSSION:

No prehistoric sites, historic sites, cultural resources, or burial sites have been identified in the permit area, at this time. While there are likely artifacts present on site, due to intermittent occupation and travel through the area, there are no evidences of significant prehistoric use of the site.

Personnel have received and will continue to receive training on procedures in case of discovery of archeological or paleontological resources to protect such finds, even though they are not expected.

BRIEF HISTORY OF THE AREA:

Southern Ute Indian Tribe.—The Southern Ute Indian Reservation encompasses an area of more than 450 square miles (750,000 acres) in La Plata and Archuleta Counties, Colorado. Tribal headquarters are located adjacent to the town of Ignacio. The Tribal enrollment in 1997 was 1,330, with the majority of members living on the reservation in La Plata County. The Tribal census shows that 38 percent of the membership is under 20 years of age and 76 percent is under 40 years of age. Natural resources on the reservation include extensive gas reserves, coal, timber, and water for agriculture. These resources provide the basis for the establishment of a diversified Tribal economic base. Tribal energy resources in the form of natural gas have played the largest role in the reservation economy over the past decade (93 percent of Tribal revenues in 1994 came from energy resource development) (Reclamation, 2000a). The reservation's proximity to Durango and other tourist destinations in southwestern Colorado allows for tourism development. The reservation land includes part of the Navajo State Park, Lake Capote, and the Sky Ute Casino and Motel. The Tribe sponsors casino gaming, cultural tours, fishing, hunting, and the Tribal Cultural Center and Museum. These enterprises play a role in diversifying the overall economy. The Southern Ute Indian Tribe employs more than 1,000 people and is a significant contributor to the regional economy. (Reclamation, 2000a).

The Anasazi (Ancestral Puebloan) people were the earliest known inhabitants of Archuleta County and the surrounding area. Archaeological evidence at the Chimney Rock ruins indicates a thriving community in and around the site until about 1125 AD. Following the Anasazi were the Ute, Apache, and Navajo peoples who have lived and hunted in the area for centuries. Revered by the Indians, the Pagosa (a Ute word meaning boiling water) Hot Springs were frequented by many of the tribes. Accounts from the early Anglo explorers describe well-worn trails from all directions converging on the springs, and "Red-men's bathing houses", depressions and sweat lodges, were located around the seeps and cavities near the big spring.

Spanish explorers and missionaries, as well as the French, visited the area seeking gold and converts prior to 1848 when Mexico ceded the area to the United States. The U.S. Government then established relations with the Indians and through a series of Treaties (1848, 1868, 1873, 1880), "bought" most of their land. In the Brunot Treaty of 1873, the Southern Ute Reservation was established in its present location, which included the southwestern part of what later became Archuleta County, formed from part of Conejos County in 1885. Fort Lewis was established in 1878 near the Pagosa hot springs to protect settlers and travelers from the Indians. The town grew around the fort and remained after the fort moved west. The Town of Pagosa Springs was platted and surveyed in 1883 and incorporated in 1891. It remains the only incorporated town in the county. Ranchers moved into the area to supply the mines in the San Juans and the military, then the lumber industry.

Hispanic settlers reached the area about the same time as Anglo settlers. They settled the southern part of the county along the rivers. Hispanic communities such as Trujillo, Juanita, Pagosa Junction, and Carracas were established with the arrival of the Denver & Rio Grande Railroad in 1881. According to the 1990 Census, the Hispanic population comprised about 23% of the total population.

With the advent of the railroad running between Silverton, Durango, Chama and points east along the southern boundary of the county, the lumber industry flourished and became the dominant sector of the economy. The railroad also boosted ranching by providing a practical way to ship cattle and sheep to

market. The growth of cattle and sheep ranching, as well as the development of the lumber industry, led to a booming economy in the 1890s and early 1900s. With the opening of Wolf Creek Pass on August 21, 1916 the entire San Juan Basin was opened to greater economic development and commerce.

The establishment of two large lumber mills, and many smaller ones, helped to bring the railroad to Pagosa Springs in 1900, facilitating travel and movement of trade and commerce. The lumber boom lasted almost into the 1920's, by which time the easily accessible timber had all been logged. The exploitation of natural resources (such as ranching, mineral production, lumber and recreational attractions), supported Archuleta County up to the mid-to-late 1970s. In 1970, manufacturing (primarily wood products) provided 30% of the county's total work income and generated \$7.4 million in earnings. Over the next 20 years, manufacturing wages declined to \$1.5 million in 1992. The decline of the timber industry in the late 1970s played a large role in this decrease. The 1980s were a time of relative stability in terms of population and economy, reflecting the "flat" state and national economies.

Since that time Archuleta County has been in transition from a traditional rural community to a more urban environment in which tourism is the number one industry. Primarily, people moving in for quality of life issues or "amenity migration" drove population growth in the 1990s. The natural environment, and the amenities it provides, are behind much of the growth and have become the larger region's chief economic asset. In the first decade of the 21st Century, tourism and the expansion of the Internet economy have encouraged growth of the County, and the expansion of gas fields in the region has added a new dimension to the economy.

Archuleta County is comprised of 872,960 acres (1,364 sq. miles). Only 34% of lands in Archuleta County are in private ownership. In 2006, Archuleta County adopted a Land Use Code and a zoning map. Tribal lands comprise 14.4% of the county and any decisions regarding their development (i.e. mineral and timber resources) could be crucial to impacts on county resources and economic development. Most of the northern and eastern portions of the county (51.6%) are within the San Juan National Forest and are under the management of the U.S. Forest Service. Federal lands continue to be managed under a policy of multiple use.

From 1990 to 2000, the population of Archuleta County grew by 8.5% annually, and was ranked 5th of 63 Colorado counties (14th nationwide) for rate of growth. Since 2000, the estimated rate of growth has slowed down to about 3.7% annually, with most of the growth in the unincorporated areas of the county. The estimated population in 2005 was 11,716.

This rate of growth is expected to continue through 2030, presenting challenges for the provision of adequate facilities and infrastructure.

Archuleta	2005	2010	2015	2020	2025	2030
Population	11,716	14,108	16,632	19,546	22,880	30,538
Avg. Annual % Change		3.8%	3.3%	3.3%	3.2%	3.2%

Source: Colorado Demography Section estimates 8-06

These population figures, however, do not reflect the large number of seasonal residents in the area. A local study on 2nd homes indicates that 60% of properties are owned by people that live outside of the county.

**EXHIBIT N – SOURCE OF LEGAL RIGHT-TO-ENTER
and Damage and Indemnification Agreement**

This Agreement is made and entered into, effective as of the 2nd day of July, 2008 ("Effective Date") by and between James A. Constant, Jr. Revocable Trust and Leila B. Constant Revocable Trust, whose address is 12500 Road 500, Pagosa Springs, CO 81147, and owners of parcel # 5965-10-100015, ("Landowners") and C & J Gravel Products, Inc. ("Operator").

RECITALS

A. Colorado Revised Statutes 34-32.5-115 (4) states, in part: "The [Mined Land Reclamation] board or office shall not deny a permit except on one or more of the following grounds: ...

(e) The mining operation will adversely affect the stability of any significant, valuable, and permanent manmade structures located within two hundred feet of the affected land; except that the permit shall not be denied on this basis where there is an agreement between the operator and the persons having an interest in the structure that damage to the structure is to be compensated for by the operator or, where such an agreement cannot be reached, the applicant provides an appropriate engineering evaluation that demonstrates that such structures shall not be damaged by proposed construction materials excavation operations.

B. Landowner owns the construction materials leases and rights and surface estate or otherwise controls the surface rights in and to the parcels of property described above ("Property").

C. Operator intends to obtain a county conditional use permit and state reclamation permit and conduct mineral extraction and related activities ("Operations") in a portion of the Property described in Exhibit A ("Two Rivers Pit")

D. Landowner owns or operates potentially significant, valuable, and permanent manmade structures ("Structures") located in or adjacent to Property which have some potential for the stability adversely affected by the Operator's Operations.

E. Operator and Landowner desire to stipulate and agree on the Operator's right to conduct Operations within the Property, including access to CR-500, to be included within the permit boundaries of the Two Rivers Pit as required by applicable Colorado Revised Statute and Archuleta County Ordinances and Land Use Plans, in accordance with their agreement of 13 NOV 2007.

F. Operator and Landowner desire to stipulate and agree on the compensation and damages to be paid for such potential adverse affect on stability of the Structures, should it occur during the period of said Operations.

AGREEMENT

In consideration of the foregoing recitals and the terms, covenants and conditions contained herein, Landowner and Operator agree as follows:

1. Right-of-Way. Landowner grants to Operator, and all of its parent, subsidiary, or other affiliated companies, their agents, employees, and others authorized by them, a private right of way upon and across the Property and lands adjacent to Property as Operator may reasonably require for roads and associated facilities, related to its Operations ("Right-of-Way"). Landowner warrants that it is the owner of the Property and has the legal right to grant the Right-of-Way described herein and that Operator shall have the quiet use and enjoyment of the Right-of-Way in accordance with the terms and conditions of this Agreement.

2. Right to Mine. Landowner grants to Operator, the legal right to conduct Operations on the property; to mine the property for sand, gravel, and borrow materials and to conduct other activities related to that mining.

3. Operator agrees to indemnify and hold harmless Landowner from any and all claims, demands, causes of action and damages ("Claims") related to Operator's Operations.

4. Services. Landowner grants to Operator, the right to use up to 10 acre-feet of water per year, from water rights owned by the Landowner, in accordance with Colorado water law.

EXECUTED as of the date of acknowledgement, but this Agreement is effective as of the first date mentioned above.

James A. Constant, Jr. and Leila B. Constant James A. Constant, Jr. and Leila B. Constant, Trustees
John Gilleland John Gilleland, President, C&J Gravel Products Inc.

State of Colorado)
 County of Archuleta)ss

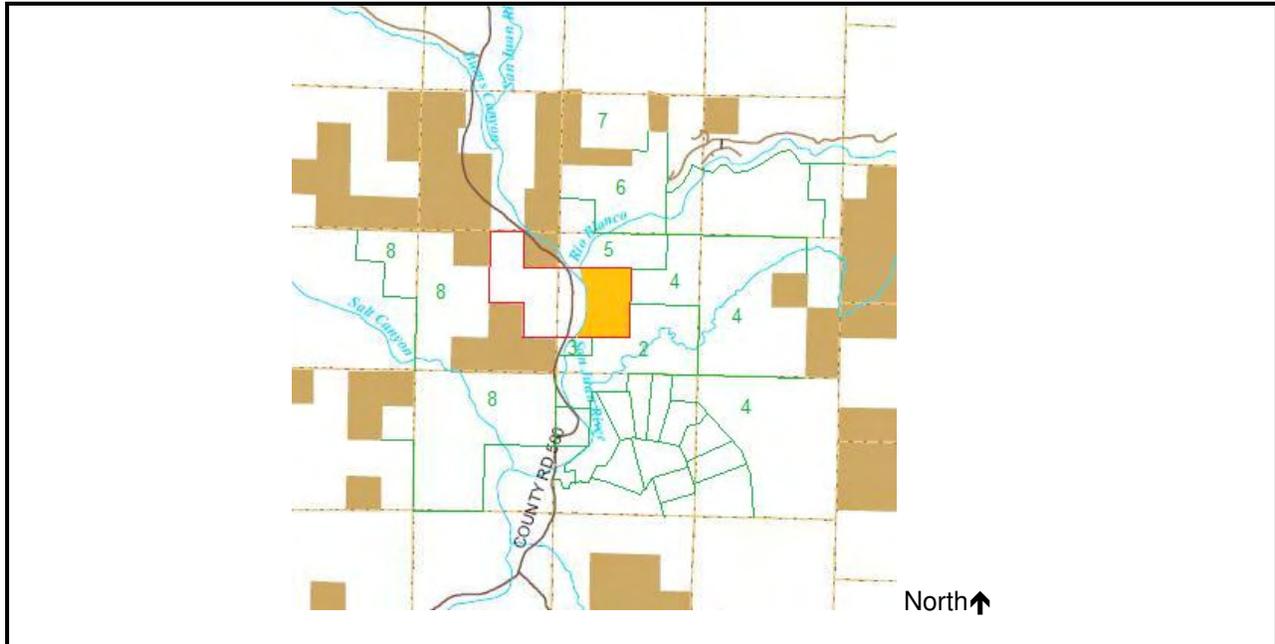
The foregoing instrument was acknowledged before me this 15th day of August 2008, by the above individuals as known to me.

[SEAL]
 My commission expires: _____



Nathan A. Barton
 Nathan A. Barton, Notary Public

EXHIBIT O – Owners of Record



C&J Gravel Products, Inc.	Map Title	Constant Pit Index Map	Scale	1:63,360 (1in=1mi)	Date: 02DEC07
	Source of Map	CDOT Archuleta County Highway Map 2007	Permit No. & Name	M-2008-_____ Constant Pit	Drawn by NAB Checked by NAB
	Legend	Brown is SUIT trust land. Site is orange.	Ref	See Section O-1 for Owner Information	File No. O-3

SECTION O-1. ADJACENT SURFACE OWNERS OF RECORD

The following is the list of all adjacent and nearby properties:

Map	County Parcel No.	Brief Description	Owner	Land Address
1	5965-10-100015	Constant Ranch: Site of permit area 320ac	Constant 12500 CR-500, Pagosa Springs	12500 CR 500
2	5965-11-400018	Berlanti Property to S and SE 290.31ac	Richard A Berlanti 777 S Wadsworth Blvd Suite 4-280, Lakewood, CO 80226	12800 CR 500
3	5965-13-100017	Waterman House to S 20.00 ac	James O Waterman 12664 Road 400, Pagosa Springs	12664 CR 400
4	5765-01-400005	Diamond T Ranch to E, 1462.36 ac	Diamond T Ranch 13790 Road 500, Pagosa Springs	13790 CR 500 13830 CR 500
5	5765-11-200016	Runyan Property to N 160.00 ac	Charles E & Dennis E Runyan 6130A Road 335, Pagosa Springs	6130A Road 335
6	5965-02-300004	N of Runyan Prop. 235.18 ac	Northern Trust Bank of CA 355 S. Grand Ave Suite 2600 Los Angeles, CA 90071	6130 CR 335
7	5965-02-200003	N of Runyan Prop. 158.07 ac	Northern Trust Bank of CA 355 S. Grand Ave Suite 2600 Los Angeles, CA 90071	6130 CR 335
8	5965-09-100013	Grindstaff Ranch SW 1194.31 ac	D Alan Grindstaff POB 4027, Crossville, TN 39557	CR 500

Information from Archuleta County Assessors Office,

EXHIBIT P – Municipalities Within Two Miles
NONE.

Trujillo, the nearest town, is located approximately one mile to the south. The hamlet is not incorporated and has no governing board or organization. There are no organized or unorganized communities within two miles.

**EXHIBIT Q – Proof of Mailing Notices to Board of County
Commissioners and Conservation District**

Section Q-1. Archuleta County Commissioners

A copy of the “Notice to the Board of County Commissioners”, including an attached copy of the application to the Colorado Division of Reclamation, Mining, and Safety (DRMS) for the “Two Rivers Pit” to be located in Archuleta County, Colorado, has been mailed to hand-delivered by (check one)

_____ (insert name) on the _____ day of December 2014, to

_____ (insert name) of the Archuleta County Management Office, County Courthouse, Pagosa Springs, CO 81147, for presentation to the Board of County Commissioners at their next convenience.

SIGNATURE: _____

TITLE: _____

(SEAL IF USED)

NOTICE TO THE BOARD OF COUNTY COMMISSIONERS

ARCHULETA COUNTY

C&J Gravel Products, Inc. (the “Applicant/Operator”) has applied for a Regular (112) reclamation permit from the Colorado Mined Land Reclamation Board (the “Board”) to conduct the extraction of construction materials operations in Archuleta County. The attached information is being provided to notify you of the location and nature of the proposed operation. The entire application is on file with the Division of Reclamation, Mining, and Safety (the “Division”) and the local county clerk and recorder.

The applicant/operator proposes to reclaim the affected land to RANGE use. Pursuant to Section 34-32.5-116(4)(m), C.R.S., the Board may confer with the local Board of County Commissioners before approving of the post-mining land use. Accordingly, the Board would appreciate your comments on the proposed operation. Please note that, in order to preserve your right to a hearing before the Board on this application, you must submit written comments on the application within twenty (20) days of the date of last publication of notice pursuant to Section 34-32.5-112(10), C.R.S.

If you would like to discuss the proposed post-mining land use, or any other issue regarding this application, please contact the Division of Reclamation, Mining, and Safety, 1313 Sherman Street, Room 215, Denver, Colorado 80203, (303) 866-3567.

Section Q-2. Archuleta County Conservation District

A copy of the "Notice to the Board of Supervisors of the Local Soil Conservation District", including an attached copy of the application to the Colorado Division of Reclamation, Mining and Safety (DRMS) for the "Two Rivers Pit" to be located in Archuleta County, Colorado, mailed to hand-delivered by (check one)

_____ (insert name) on the _____ day of December, 2014,

to _____ (insert name) at San Juan Conservation District, 505A County Road 600, Pagosa Springs, CO; for presentation to the Board of Supervisors of the Conservation District, at their next convenience.

SIGNATURE: _____

TITLE: _____

NOTICE OF FILING APPLICATION
FOR COLORADO MINED LAND RECLAMATION PERMIT

FOR **REGULAR (112) CONSTRUCTION MATERIALS EXTRACTION OPERATION**

NOTICE TO THE BOARD OF SUPERVISORS
OF THE LOCAL CONSERVATION DISTRICT
SAN JUAN CONSERVATION DISTRICT

C&J Gravel Products, Inc. (the "Applicant/Operator") has applied for a Regular (112) reclamation permit from the Colorado Mined Land Reclamation Board (the "Board") to conduct the extraction of construction materials operations in Archuleta County. The attached information is being provided to notify you of the location and nature of the proposed operation. The entire application is on file with the Division of Reclamation, Mining, and Safety (the "Division") and the local county clerk and recorder.

The applicant/operator proposes to reclaim the affected land to RANGE use. Pursuant to Section 34-32.5-116(4)(m), C.R.S., the Board may confer with the local Conservation Districts before approving of the post-mining land use. Accordingly, the Board would appreciate your comments on the proposed operation. Please note that, in order to preserve your right to a hearing before the Board on this application, you must submit written comments on the application within twenty (20) days of the date of last publication of notice pursuant to Section 34-32.5-112(10), C.R.S.

If you would like to discuss the proposed post-mining land use, or any other issue regarding this application, please contact the Division of Reclamation, Mining, and Safety, 1313 Sherman Street, Room 215, Denver, Colorado 80203, (303) 866-3567.

EXHIBIT R – Proof of Filing with County Clerk and Recorder

A copy of the “CONSTRUCTION MATERIALS REGULAR (112) OPERATION RECLAMATION PERMIT APPLICATION FORM, and All Exhibits thereto, for the “Two Rivers Pit” to be located in Archuleta County, Colorado, mailed to hand-delivered by (check one)

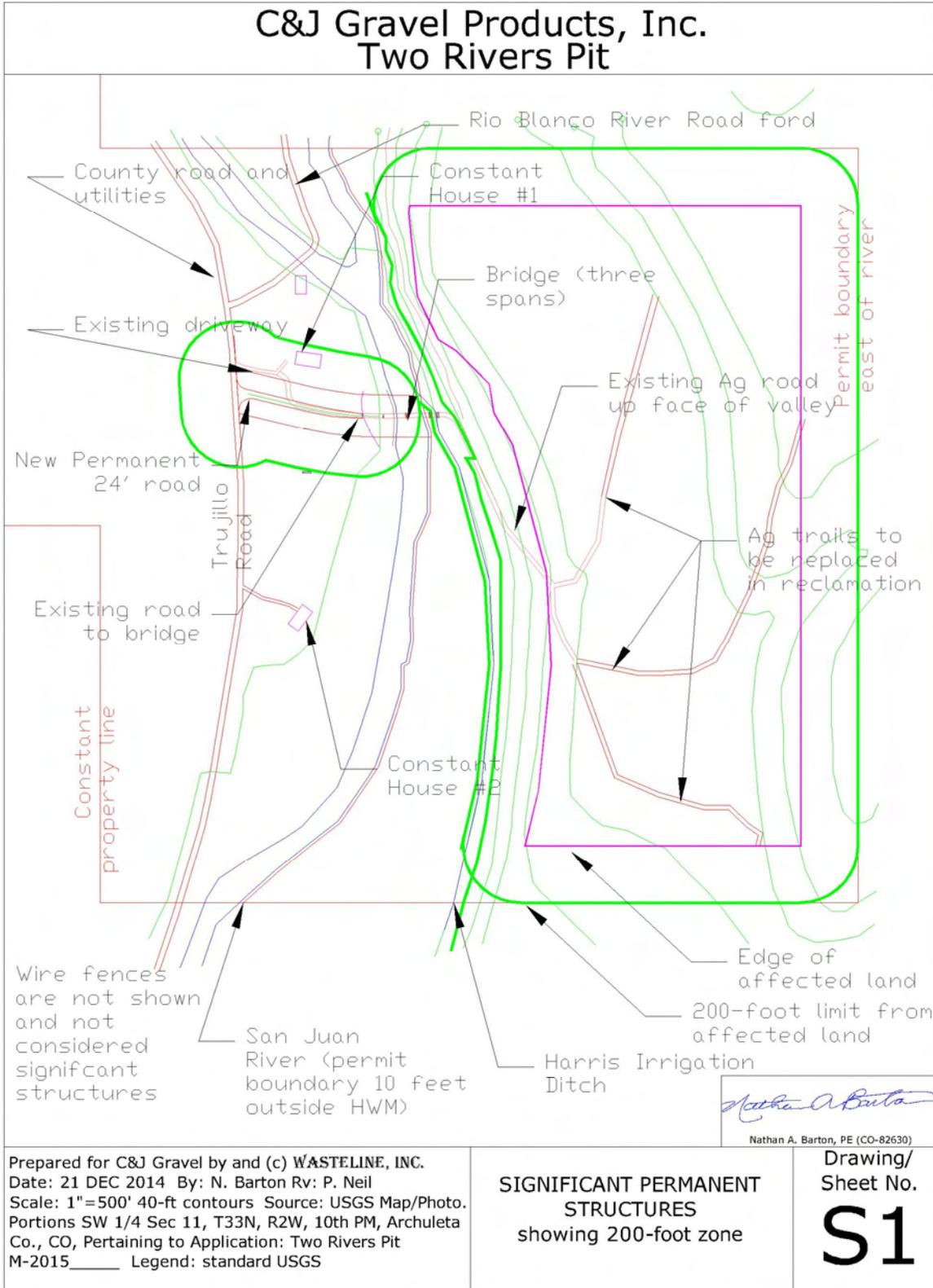
_____ (insert name) on the _____ day of December, 2014, to _____ (insert name) of the Archuleta County Clerk’s Office, Archuleta County Courthouse, Pagosa Springs, Colorado 81147.

This copy will be available for public review during normal business hours to all interested persons, until requested to be returned by the applicant, C&J Gravel Products, Inc., expected to be 60 days after a decision by the Colorado Division of Minerals and Geology.

SIGNATURE: _____
TITLE: _____
DATE-TIME STAMP/SEAL

This page will be replaced with a page with copies of proof of mailing when that is complete.

EXHIBIT S – Permanent Manmade Structures
MAP S-1: Vicinity of pit showing manmade permanent structures.



1. General (Refer to Sheet S-1):
 - a. Except for dwellings owned by the landowner (see Exhibit N), there are no dwellings within 200 feet of any land to be affected by mining.
 - b. There are no significant manmade structures except the bridge within 200 feet of any affected land.
 - c. All occupied dwellings are more than 500 feet from the edge of the affected area except as noted.
 - d. Mining activities are limited by the County Conditional Use Permit.
 - e. No impact on utilities or fencing is expected.

2. This Exhibit is the engineering evaluation as required by the Colorado Division of Reclamation, Mining, and Safety, prepared by Nathan A. Barton, CE, PE, DEE, a licensed Professional Engineer in the State of Colorado.
 - a. Based on my (the engineer's) inspection of the site, the proposed mining operational activities and reclamation activities proposed, and inspection of similar operations in the vicinity with similar soil, topography, and other features, I (the engineer) hereby certify that the significant, valuable or permanent man-made structures are not expected to be damaged or negatively affected by activities occurring at the mining operation.
 - b. There are a number of permanent manmade structures within 200 feet of the affected area, some of which extend beyond that 200-foot limit. All significant, valuable or permanent man-made structures inside the permit boundary have been analyzed for their significance, value, and permanence, and are included in this evaluation.
 - c. All fencing inside the property is considered temporary and expendable by the landowner.
 - d. Soils: The soils on which the various permanent structures and the mining area itself are located range in texture from cobbly loam to silty loam, are variable in depth but average about two feet thick, and underlain by similar subsoils and Mancos shale. The soils do have some shrink-swell potential, but very low potential for mass movement at proposed slopes of 3H:1V.
 - e. This evaluation was prepared based on site inspections and investigations conducted April through November 2007.

3. Detailed analysis of all permanent manmade structures within 500 feet (refer to Figure S-1 for letter designations, which may refer to several related or adjacent structures):

<u>Structure</u>	<u>Description/notes</u>	<u>Owner</u>
A. Constant Houses	The Constant family owns and occupies two houses on the valley floor west of the San Juan River, and within 200 feet of the access road corridor.	Landowner (Constant, Jac and Lee)
Evaluation	Construction, maintenance and use of the haul road, and possible scalehouse, scale, and stockpile areas will not require significant changes to topography, in the area, and the road is designed to minimize impact to the floodplain in the valley floor. No impact on the geological stability of the structures, yards, and outbuildings is anticipated. Noise and vibration impacts from truck traffic can be mitigated by controlling speed and proper maintenance of the roadway.	
Conclusion and recommendations	Landowners have signed a damage and compensation agreement (Exhibit N) which covers these structures. Care should be given to proper design, construction, and maintenance of the roadway, bridge, bridge approach, and drainage systems to minimize potential negative impacts on the structures and use thereof.	

<u>Structure</u>	<u>Description/notes</u>	<u>Owner</u>
B. Bridge and Access Road	The double-span bridge over the San Juan River was constructed in 2013, with an additional span over Harris Ditch.	Landowner (Constant, Jac and Lee)

Evaluation Bridge is designed and constructed for use by heavy equipment and haul trucks using the sand and gravel pit. Bridge also meets USACE and FEMA requirements for floodplain and waters of the US. Assuming proper maintenance, bridge will not be significantly impacted by use in mining and will be available for landowner use after mining is completed.

Conclusion and recommendations Landowners have signed a damage and compensation agreement which covers these structures. Care should be given to proper inspection and maintenance of the roadway, bridge, bridge approach, and drainage systems to minimize potential negative impacts on the structures and use thereof.

<u>Structure</u>	<u>Description/notes</u>	<u>Owner</u>
C. County Road 500	Trujillo Road South is a fairly standard county gravel road averaging 22 feet wide, connecting Pagosa Springs with Trujillo and the lower San Juan River Valley.	Archuleta County

Evaluation The only activities within 200 feet of the Trujillo Road are the construction and maintenance of the access road and stockpile areas. No excavations of more than 2-3 feet (for ditching and drainage) will be done. No reasonable expectation of impacts.

Conclusion and recommendations No negative impact on County Road 500 is expected. No action necessary, except to keep sight triangles clear of obstructions, and to set fence back minimum 70 feet from edge of travelled way to prevent traffic problems with road.
NOTE: Public Works Department was requested to review and enter into an indemnity agreement on 29 DEC 2014 via E-mail. As of 01 JAN 2015, no response has been received.

<u>Structure</u>	<u>Description/notes</u>	<u>Owner</u>
D. Utilities	Various utilities are located along the right-of-way of CR 500, including telephone cable and electric overhead power line.	CenturyTel (phone cable) LaPlata Electric Association (power line)

Evaluation The only activities within 200 feet of the Trujillo Road are the construction and maintenance of the access road and stockpile areas. No excavations of more than 2-3 feet (for ditching and drainage) will be done. No reasonable expectation of impacts.

Conclusion and recommendations No negative impact on utilities along County Road 500 is expected. No action necessary, except to notify and obtain markings by One-Call for buried utilities, and to verify safe clearance distance (overhead) for power line.
NOTE: La Plata Electric Association and CenturyTel were requested to review and enter into an indemnity agreement on 29 DEC 2014 via E-mail. As of 01 JAN 15, no response has been received.

<u>Structure</u>	<u>Description/notes</u>	<u>Owner</u>
F. Irrigation ditch	An unimproved (earth/gravel lined) irrigation ditch and headgate with weir is located on the east bank of the San Juan River near the point at which the bridge will cross the river. The ditch follows an old river channel at the base of the cliffs, and is located 200 feet horizontally from the affected area and 40-60 feet vertically from the planned floor of the pit.	Berlanti

Evaluation Actions necessary to protect the ditch, including inlet, and associated features from road construction have been evaluated by engineers and approved by a court of competent jurisdiction. No impacts expected provided work is done as required.

Conclusion and recommendations No negative impact on the ditch and associated structures is expected. Ensure that all design and notification requirements for ditch owner and land owner are followed. Coordinate work with irrigation season and requirements. The existing court-mandated agreement serves as an indemnity agreement.

<u>Structure</u>	<u>Description/notes</u>	<u>Owner</u>
M. Fencing	Property line fencing partially on all sides, and internal pasturage fencing. The fence varies, but in most places is a standard 4-strand barbed wire in various states of repair, with wood and steel posts of various sizes and condition. Various 3-strand barbed-wire fences divide pasture areas. Fences in very poor to good condition.	Landowners (Constant, Jac and Lee)
Evaluation	Fencing ranges from fair to good condition. Buffer zones along property/permit lines will keep excavations back 200 feet from property line fence lines.	
Conclusion and recommendations	The fencing is not expected to be damaged by proposed operations, based on slopes, soil conditions, and fence condition. Some fencing will require replacement during the period of mining due to existing conditions and expected use and normal deterioration. See Exhibit N.	

4. Based on my review, there is no need for slope analysis or evaluation at this time.
5. This report is submitted in lieu of Attachment S-1 to Exhibit S.

CERTIFICATION (ENGINEERING EVALUATION) FOR EXHIBIT S: 4 pages.

(SEAL)



SIGNATURE

NATHAN A. BARTON, PE, DEE Colorado Registered P E 27342, DATE: 24 DEC 2014

Exhibit S-2. EXAMPLE INDEMNIFICATION AND DAMAGE AGREEMENT

This Agreement is made and entered into, effective as of the _____ day of _____, 2008 ("Effective Date") by and between STRUCTURES owner, whose address is __, ("**OWNER**"), and, C&J Gravel Products, Inc., whose address is 27661 Hwy 160-E, Durango, CO 81303 ("**OPERATOR**").

Colorado Revised Statutes **34-32.5-115** (4) states, in part: "The [Mined Land Reclamation] board or office shall not deny a permit except on one or more of the following grounds: ...

(e) The mining operation will adversely affect the stability of any significant, valuable, and permanent manmade structures located within two hundred feet of the affected land; except that the permit shall not be denied on this basis where there is an agreement between the operator and the persons having an interest in the structure that damage to the structure is to be compensated for by the operator or, where such an agreement cannot be reached, the applicant provides an appropriate engineering evaluation that demonstrates that such structures shall not be damaged by proposed construction materials excavation operations."

OPERATOR agrees to indemnify and hold harmless OWNER from any and all claims, demands, causes of action and damages ("Claims") related to OPERATOR's operations on the Pit or Operation Name, as such pit may be expanded. This Indemnification and Damage Agreement includes, but is not limited to, Claims relating to specific items or structures within two hundred (200) feet of areas to be mined with locations generally shown on the map attached to this Agreement as Exhibit A, and detailed in Exhibit B. This Agreement is signed by authorized representatives of OPERATOR and OWNER.

EXECUTED as of the date of acknowledgement, but this Agreement is effective as of the first date mentioned above.

OWNER:

OPERATOR:

By: Signer for Owner:

Title: Landowner or structure company

By: Perry Neil

Title: Pit Manager

Exhibit A is Sheet S-1. Exhibit B is an extract from Exhibit S of the information specifically pertaining to the property. Notary statements are added to the end of this agreement. Executed agreements will be added to this Exhibit as they are available.

GENERAL REFERENCES

1. <http://websoilsurvey.nrcs.usda.gov/app/> US Department of Agriculture, Access 22 July 2008.
2. Colorado Mammal Distribution Latilong Study, Colorado Division of Wildlife and Denver Museum of Natural History, OCT 1990
3. Colorado Bird Distribution Latilong Study, Colorado Division of Wildlife and Colorado Field Ornithologists, DEC 1987
4. Colorado Reptile & Amphibian Distribution Latilong Study, Colorado Division of Wildlife, MAY 1981
5. Caterpillar Performance Handbook, 30th Edition
6. <http://cpw.state.co.us/learn/Pages/SOC-ThreatenedEndangeredList.aspx> Access 20 DEC 2014, <http://www.fws.gov/engangered/map/state/CO.html> Access 20 DEC 2014, and http://ndis.nrel.colostate.edu/aspresponse/spxbycnty_res.asp (for Archuleta County) Access 20 DEC 2014.
7. T&E Species: http://ecos.fws.gov/tess_public/SpeciesReport.do?lead=6&listingType=L Access 11 FEB 2008 and 20 DEC 2014.



Existing bridge to be used for Two Rivers Pit.



Approach ramp west of bridge to CR-500.

TRAFFIC IMPACT STUDY (PRELIMINARY)

TWO RIVERS PIT (12500 County Road 500 (Constant Ranch))

Introduction

This preliminary study provides information necessary for the County Staff to recommend conditions of approval for the Two Rivers Pit project to the Planning Commission to in turn recommend to the Board of County Commissioners. Due to limited availability of data and seasonal constraints, this preliminary study will need to be replaced by a final traffic impact study once sufficient data can be collected, and it is suggested that one condition of the approval of the project by the BOCC be the completion of that final study, followed by review and approval of additional or revised conditions for traffic and mitigation of impacts, by the BOCC, within the first year of operations.

Portions of this study are extracted from the DRMS and County Applications.

Requirements

The Archuleta County Road and Bridge Engineering Standards state:

27.0.6.1: Upgrading Needed to Accommodate New Development

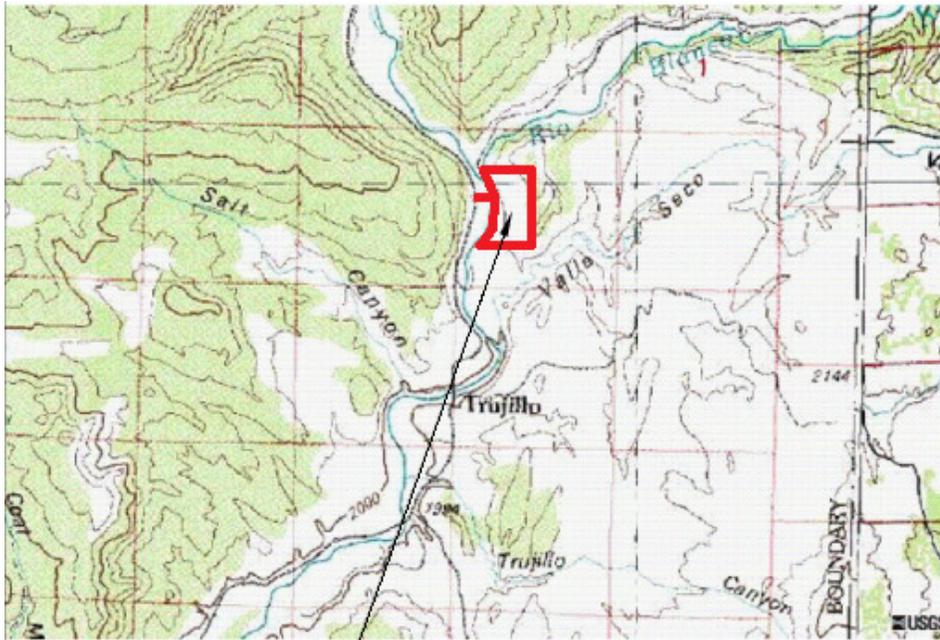
For the purposes of this section, and when considering the need for upgrading existing County roads, new development shall include, but not be limited to, the creation of residential, commercial, and industrial properties, mining, logging, drilling, and recreational activities. New development shall be required to mitigate its proportionate share of the impacts of the proposed activity on the County's road system.

Where new development is proposed along existing County roads, the Applicant's proposal shall include an analysis of the projected traffic volumes, along with information on existing road widths, curves, intersections, and surface drainage. The traffic study shall be performed by a qualified registered professional engineer licensed in the State of Colorado knowledgeable in traffic engineering at the expense of the Applicant. The County Engineer shall review the analysis and may request additional information or studies or make recommendations for improvements necessary to accommodate the additional [sic] traffic to be generated by the new development.

The County Engineering Technician provided the preferred format for a traffic impact study (Attachment 1). As much as possible, this format has been supplemented to match standard ITE traffic impact study format and contents. Additional items, not typically included in an ITE TIS (as established by CDOT) have been included to address specific Archuleta County and Town of Pagosa Springs concerns.

Site Information

The Two Rivers Pit is a gravel pit proposed to be constructed on the ridge east of the San Juan River on the Constant Ranch, accessed via an existing road and bridge across the river to County Road 500. Sand and gravel will be excavated and



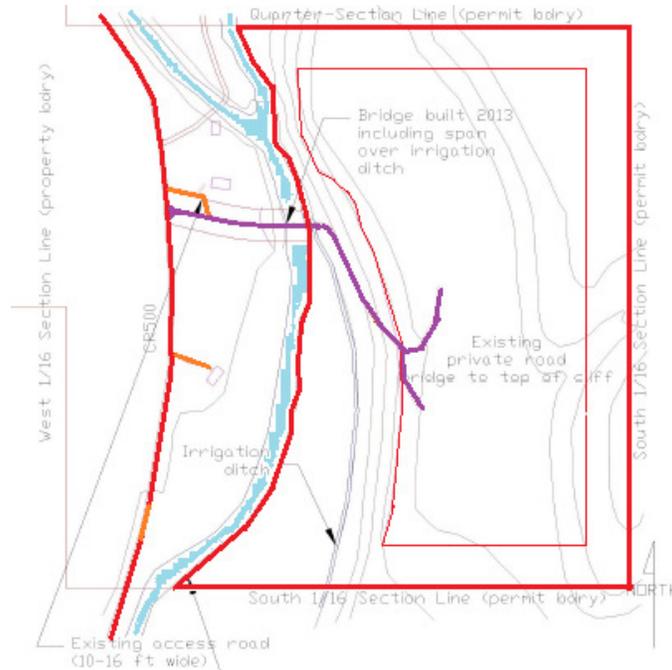
Two Rivers Pit

Map 1. VICINITY MAP North Scale 3/4" = 1 mile

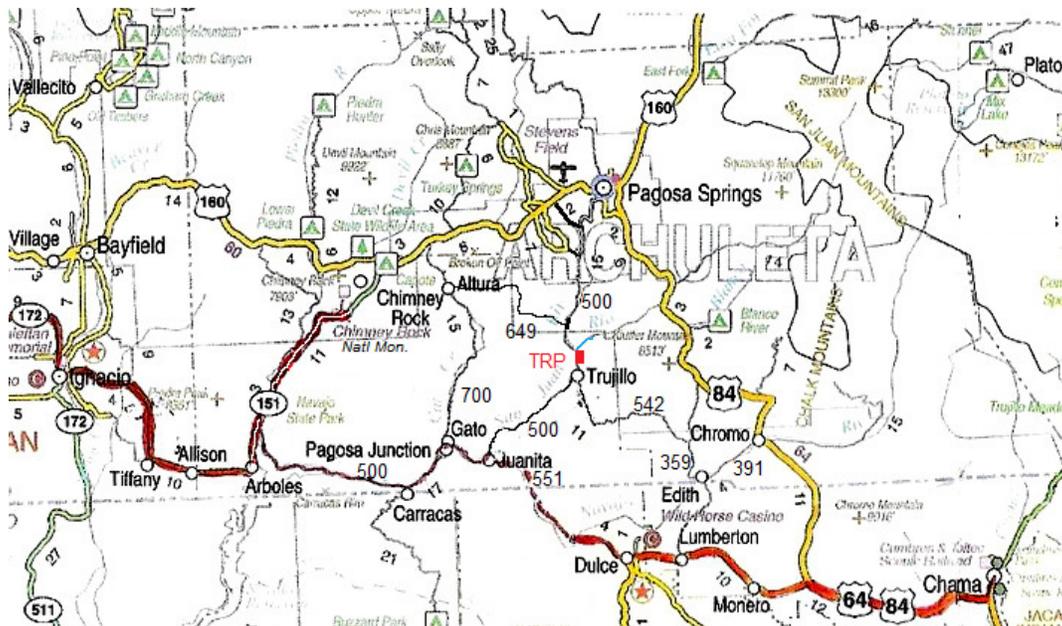
processed on the site, and then transported by truck to construction, maintenance and repair projects in Archuleta County. Proposed operating hours are Monday-Friday, 0700 to 1800 hours during daylight only. Extended hours may be requested, subject to County approval, for specific projects for limited, specific periods. The number of employees will vary from two to eight persons, as actual production (excavation, crushing, and screening) will be limited to short periods when equipment is present on-site, and much of the time, one or two employees will be present to load trucks, operate the scale, and perform maintenance and preparation/reclamation work on-site.

Annual production is to be limited to 70,000 tons per year, shipped from site, either as sand and gravel or as components of asphalt hot-mix or Portland cement concrete. Anticipated shipping is expected to be 120 days per year. A portable crushing and screening plant is to operate on the site for a single run each year, brought to the site, setting up and producing material to be placed in stockpiles, and then broken down and moved from the site. Shipping will be from stockpiles.

(From DRMS permit: TRAFFIC AND TRANSPORTATION - Materials mined and processed at the Two Rivers Pit will be processed on site and then transported by truck to plants or construction sites for further processing and use. Material transported will use county highways, and is not expected to increase traffic from county highway onto state highways by more than 15% at any location.)



Map 2. SITE MAP North Scale 1"=800 feet



Map 3. REGIONAL MAP North Scale 1"=10 miles

Potential haul routes (From DRMS permit: **ROUTES** - Based on anticipated markets during the life of the pit, traffic on public highways is assumed to be 90 percent northbound and 10 percent southbound on CR-500.

To the north, CR-500 connects to various county roads and city streets before

connecting to either SH-160 west of or in Pagosa Springs or SH-84 southeast of Pagosa Springs.) The route(s) to be used will be done in coordination with the Town of Pagosa Springs, Archuleta County, and CDOT, based on destination of materials, construction, season, and other requirements.

Hauls on CR-500 to the south may connect to SH-151 at the upper end of Navajo Lake or (rarely) to CR-542 (CR-359 to Edith then CR-391 to Chromo, or CR-359 to Alpine Lakes Ranch), to CR-551 at Juanita, or to CR-700 at Gato (access to Altura).

Possible Restrictions: The study examines the following restrictions (conditions) to mitigate impact:

No truck traffic to/from the Two Rivers Pit on the following roads/streets except for

- Delivery to destinations ON those streets and roads, or
 - After coordination and approval with County Planning, County Road & Bridge, and Town Planning/Subdivision Homeowners Associations as appropriate, when the route between a construction project and Two Rivers Pit may be justified on safety, environmental, and cost conditions, or in case of emergency requirements.
1. West of CR-500 to US-160, using either Bristlecone Drive or Cascade Avenue (through the Meadows Subdivision). (For any truck traffic THROUGH the subdivision, only the Cascade Avenue entrance is proposed.)
 2. CR-359 north of the intersection with CR-391 (through Alpine Lakes Ranch) to US-84.
 3. Any street in the Pagosa Springs Town Limits except:
 - a. Apache Street (which connects directly to CR-500 and CR 119)
 - b. South 8th Street between Apache Street and San Juan Street (US-160), with South 6th Street as an alternative in case of construction or other town concerns with South 8th Street, for limited periods; possibly alternating between the two streets and possibly with one-way truck traffic (for example: Southbound on 8th and Northbound on 6th)
 - c. Hot Springs Boulevard (aka Light Plant Road) which connects directly to CR-119 (old Chama Highway) and US-160).
 4. FSR-649 (west of CR-500) to Altura or US-160.
 5. CR-700 between Gato and Altura (CR-500 and US-160).



Map 4. Pagosa Springs Town Detail  North Scale not stated

When coordinating and requesting approval to use any of the normally off-limits roads, the following conditions would be established:

- Specific dates, days of the week, hours, and frequency of truck traffic.
- Specific alternating or “one-way-in, one-way-out” routing.
- Inspection before and after project to determine physical impacts, and maintenance before/after project.
- Special speed limits and other appropriate signage.
- Dust control and mitigation (application of mag-water, watering, etc.)

(From DRMS Permit: **TRUCKS** -A variety of trucks will be used to haul materials from the Pit, including single dump trucks, semi-dump trucks, and trucks with pups. Most commonly used will be dump trucks with pups. Average haul for all vehicles will be 25 tons per vehicle. All trucks are properly permitted for highway use and meet weight requirements for county and state highways. All drivers have CDL (Commercial Drivers License) if required for the vehicle being operated.) Due to the location and its distance from Pagosa Springs and subdivisions in the County, little “retail” traffic (such as buying and obtaining a small pick-up or trailer-load of gravel by a homeowner or business) is expected. In addition, due to other sources, little or no material is expected to be sold for projects outside Archuleta County.

Existing Site Conditions

Existing conditions on the Constant Property are discussed in the Engineering Report (TRP Access Road) submitted with other portions of the application (Attachment 2), and summarized here. The driveway/access road from CR-500 to the bridge is two-lane, with adequate stacking for at least four multi-unit trucks both entering and exiting.

Roadway network: summary of roadway classification and a description of study area.

This study addresses County Road 500 (CR-500) from the town limits of Pagosa Springs to the intersection with SH-151 near Navajo Lake. This is a primary county road serving ranches and rural residences and some commercial activities in the south

Per information provided by County Staff on 27 JAN 2016, the following classifications exist:

Bristlecone Drive	Major Collector
Cascade Avenue	Major Collector
County Road 119 (Apache to US-84)	Major Collector
County Road 359	Major Collector
County Road 391	Rural Access Road
County Road 500 (Trujillo Road) from Landfill to CO-151	Rural Access Road
County Road 500 (Trujillo Road) from Town Limits to Landfill	Minor Arterial
County Road 542	Rural Access Road
County Road 551 (to state line) including access off CR-500	Rural Access Road
County Road 649	No information
County Road 700 Extension (East Entrance)	Major Collector
County Road 700 from US-160 to Orange Court	Major Collector
South Pagosa Boulevard	Major Collector

County Road 500 (Trujillo Road) is a two-lane road with lanes varying in width from 10 feet to 12 feet, and shoulders in width from zero to four feet. As of January 2016, CR-500 is paved from the Town Limits South for 0.4 miles.

Key Segments of CR-500:

Town Limits to end of pavement	0.4 miles
EOP to Transfer Station	1.1 miles
Transfer Station to Archuleta County Landfill	8.0 miles
Archuleta County Landfill to Constant Ranch (Two Rivers Pit)	4.5 miles
Constant Ranch to Trujillo (Junction with CR-542)	2.5 miles
CR-542 to CR-700	11 miles
CR-700 to SH-151	17 miles

Based on driving experience on the road, all curves are safe, although may require reduction of speed from the posted speed, for multi-unit and single-unit trucks.

Archuleta County Speed Limits (as posted): 40 MPH Open Range, 20 MPH Tight Curves. Based on posted speed limits for individual locations, CR-500 is assumed to have a speed limit of 40 MPH except for the tight curves near Juanita and

Gato/Pagosa Junction, unless specifically posted. Speed limits in the Town of Pagosa Springs are 25 MPH unless otherwise posted: speed limit near the school (on Apache from 8th to 6th Street) is 20 MPH when children are present.

S. 8th Street and Hot Springs Boulevard intersections with US-160 are signalized. Apache is the priority street to the stop sign at Hot Springs Boulevard/CR-119.

Radii of intersections are adequate for trucks except as noted:

Intersection	NE	NW	SE	SW	Widths A & B
S. 8 th St and Apache St	20R	20R	20R	20R	8 th : 32' Ap: 36'
S. 8 th St and US-160 (San Juan St)(S)	10R	16R	23R	33R	8 th : 34' 160: 50'
Apache St and Hot Springs Blvd (CR-119)	NA	60R	NA	16R	Ap: 26' HSP: 24'
Hot Springs Blvd and US-160 (Pagosa St)(S)	05R	05R	16R	16R	HSB: 36' 160: 62'
S. 6 th St and Apache St	20R	20R	20R	20R	6 th : 28' Ap: 28'
S. 6 th St and US-160 (San Juan St)	NA	NA	06R	30R	6 th : 24' 160: 53'

(S): Signalized intersection. Not all radii are significant for proposed routes of traffic. For signalized intersections, since US-160 at both intersections is 4-lanes or more, curb radii are not as critical and actual turning radii for trucks is actually significant greater. Street widths do not include throat for intersection as at 6th and US-160.

Analysis of periods:

For purposes of this preliminary TIS, morning and afternoon peak hours is assumed to each carry 1/6 of average annual daily traffic (AADT), and daytime traffic between peak hours is assumed to be 50% daytime and 1/6% nighttime. These assumptions will be verified during the traffic counts to complete the final TIS.

There is no data currently available which can be used to detail actual traffic counts by days of the week or times of day. Detailed raw traffic is not available: if it had been, it may have been possible to analyze that data to at least determine approximations of traffic period, and types of vehicles. Without that, this preliminary report will use standard CDOT/ITE/FHWA assumptions and information available. Any additional information obtained will be included in the complete traffic impact study.

There is no data currently available on weekend/holiday traffic. Two Rivers Pit does not propose to operate on Sundays or Holidays, and on Saturdays only with advance approval of County for specific projects and periods, to meet construction deadlines and provide for emergency.

Existing traffic data:

The existing traffic data (Attachment 4) is very limited. Traffic Data is available for 2000, 2005, 2009, and 2012-2014. However, data sets are incomplete, and there are many points at which counts were not done for most of the years. There were significant declines in traffic at many same or nearby locations between 2000 and more recent data: this may either be due to seasonal variations and/or to the economic slowdown in recent years and other factors (such as water levels on Navajo Lake and oil and gas development). The traffic count for the complete traffic impact study will need to compare various locations and attempt to take seasonal variations into

account. 2014 data will be used for this preliminary analysis.

Since the existing County traffic data includes traffic information collected specifically at the Constant Ranch (site of the Two Rivers Pit) in 2014 (ADT 157), this shall be used for the primary analysis for this preliminary report. It is at this location that the traffic generated by Two Rivers Pit will be the greatest percentage of traffic, since traffic on CR-500 from Town to the Landfill is significantly greater (ADT 238), and increases at both Bristlecone and Cascade intersections, and again at the Transfer Station (1.5 miles outside of the Town Limits). It is assumed that the ADT includes traffic in both directions on the road.

2014 Traffic: (From available County data, most recent available):

Location	ADT	AM peak	Daytime	PM peak	Nighttime
Constant	157	26	79 (9/hr)	26	26
Landfill	238	40	118 (13/hr)	40	40
Near SH-151	138	23	69 (8/hr)	23	23

There is no information available on levels of service, actual traffic speeds, truck percentages, or crash data.

It should be noted that available information on traffic does NOT match or come close to standard ITE generation data: for example, the number of rural residences and ranches on CR-500 should (at the standard ITE and county rate of 10 trips per day) generate significantly more than the traffic counts reported, especially with other activities (oil and gas, tribal, forestry, tourism, etc). This may be due to seasonal occupancy and traffic patterns, or other factors.

In Pagosa Springs Town, both Apache Street and South 8th Street serve both the public schools south of Apache and the La Plata Electric Association (LPEA) shops and offices at the corner of 8th and Apache, all of which generate significant small vehicle and truck traffic.

Existing drainage, including structures:

Observation and information available about drainage and structures (including bridges, culverts, ditches, diversion berms/dikes/levees, on CR-500 and immediately adjacent that road, including connecting roads, indicates that the structures are capable of handling the impact of the Two River Pit truck traffic with no negative impact on safety, function, and operations. While obviously increased traffic will potentially impact service life, it is not possible to accurately forecast this, as data is not readily and cost of full inspection and evaluation is outside the normal scope of work and the ITE standard studies.

Future Conditions and Impacts

This preliminary report provides a detailed analysis of traffic generated by the Two Rivers Pit, but due to lack of data and the need to obtain additional data on traffic counts, provides only preliminary analysis of anticipated future (non-pit) traffic. Please refer to recommendations.

In Pagosa Springs Town, the Town Planner has pointed out that South 8th Street and Apache Street west of 8th are to be improved and reconstructed in the Summer of 2016, requiring very short term and temporary adjustments in traffic patterns and issues that will require coordination and careful communications, including possible use of alternative routes through the Town and subdivisions in the County not otherwise desirable.

Trip Generation Daily Peak Hour trips:

There is no ITE Trip Generation Manual data for construction materials extraction and processing operations.

Traffic generated by Two Rivers Pit

Analysis of periods: Average Annual Daily Traffic (AADT) count: 24.33 truck RT, 3 small vehicle RT. (Generated by Two Rivers Pit). Total average (rounded) ADT $27 \times 2 = 54$ movements (in or out).

Morning (to 0900 hours) (2 hours): Arrival of workers (1-3 small vehicles) immediately before opening (0700 or later). Anticipated 3 trucks per hour, arrival and departure. (6 trucks, 3 private vehicles) For purposes of analysis, this traffic is assumed to all be peak hour. Total average 9 (6 in, 3 out)

Midday (0900-1600 hours) (7 hours): Average 2 trucks per hour, arrival and departure. (14 trucks) May include a single-unit fuel truck and/or small maintenance truck. Total average 36 (18 in, 18 out)

Afternoon (1600 to 1800 hours) (2 hours): Anticipated 2 trucks per hour, arrival and departure. Departure of workers (1-3 small vehicles) immediately upon closing/last truck departure. (6 trucks, 3 private vehicles). For purposes of analysis, this traffic is assumed to all be peak hour. Total average 9 (3 in, 6 out)

Nighttime: No anticipated traffic expected to be generated by Two Rivers Pit.

Two River Pit Traffic (2016 to end of project (20-34 years))

Location	ADT	AM peak	Daytime	PM peak	Nighttime
Constant	54	9	36 (5.1/hr)	9	0

Note that the peak count 9 is for two hours and includes 6 truck movements and 3 small vehicle movements.

Increase to 2014 Traffic with Two Rivers Pit generated traffic

Location	ADT	AM peak	Daytime	PM peak	Nighttime
Constant	157	26	79 (9/hr)	26	26
To North (Town)					
To South					
Landfill	238	40	118 (13/hr)	40	40
Near SH-151	138	23	69 (8/hr)	23	23

2014 Traffic extrapolated (increase of 5% per year) to 2024 and 2034:

Location	ADT	AM peak	Daytime	PM peak	Nighttime
Constant	236/314	39/52	119/158	39/52	39/52
Landfill	357/476	60/80	178/236	60/80	60/80
Near SH-151	207/276	35/46	104/138	35/46	35/46

Trip distribution:

As discussed in the original DRMS application, the assumed trip distribution (annual average daily traffic for trucks) is:

Direction	North (22 RT)				South (2 RT)	
Destination	West	East	Town	Off 500	West (151)	East (84)
AADT	6 RT	6 RT	8 RT	2 RT	1 RT	1 RT

Support vehicles and staff non-truck (commuting) traffic is assumed to all be from Town on CR-500 (average 3.5 RT/day).

Short Term background traffic and peak hours (5-years):

2014/2016 data is used for short-term analysis.

Two River Pit Traffic (2016 to end of project (20-34 years))

Location	ADT	AM peak	Daytime	PM peak	Nighttime
Constant	54	9	36 (5.1/hr)	9	0

Note that the peak count 9 is for two hours and includes 6 truck movements and 3 small vehicle movements.

2014 Traffic:

Location	ADT	AM peak	Daytime	PM peak	Nighttime
Constant	157	26	79 (9/hr)	26	26
Landfill	238	40	118 (13/hr)	40	40
Near SH-151	138	23	69 (8/hr)	23	23

Long Term background traffic and peak hours (10-20 years) Trip distribution:

2014 Traffic extrapolated (increase of 5% per year) to 2024 and 2034 (without TRP):

Location	ADT	AM peak	Daytime	PM peak	Nighttime
Constant	236/314	39/52	119/158	39/52	39/52
Landfill	357/476	60/80	178/236	60/80	60/80
Near SH-151	207/276	35/46	104/138	35/46	35/46

Two River Pit Traffic (2016 to end of project (20-34 years) As distributed

Location	ADT	AM peak	Daytime	PM peak	Nighttime
Constant	54	9	36 (5.1/hr)	9	0
North on 500	50	9	32	9	0
South on 500	4	<1	4	<1	0

Note that the peak count 9 is for two hours and includes 6 truck movements and 3 small vehicle movements.

2014 Traffic extrapolated (increase of 5% per year) to 2024 and 2034 with TRP:

Location	ADT	AM peak	Daytime	PM peak	Nighttime
Constant	290/368	48/61	119/158	39/52	39/52
Landfill	407/526	69/89	178/236	60/80	60/80
Near SH-151	211/280	35/46	104/138	35/46	35/46

Level of Service Analysis:

Current and forecast traffic counts are so low that LOS Analysis does not make sense for this analysis. In addition, insufficient data is available on traffic counts, especially in Pagosa Springs on Town streets.

Level of Service Deficiencies:

Current and forecast traffic counts are so low that LOS Analysis does not make sense for this analysis. In addition, insufficient data is available on traffic counts, especially in Pagosa Springs on Town streets.

Signal Warrant Analysis:

Signals already exist at the intersections of 8th and San Juan, and Hot Springs Boulevard and Pagosa, both in the Town. Current and forecast traffic counts are so low that additional Signal Warrant Analysis does not make sense for this analysis. In addition, insufficient data is available on traffic counts, especially in Pagosa Springs on Town streets.

Auxiliary (Turn) Lane Warrant Analysis:

Current and forecast traffic counts are so low that Auxiliary Lane Warrant Analysis does not make sense for this analysis, as standard trigger levels of traffic do not exist on County Roads. In addition, insufficient data is available on traffic counts, especially in Pagosa Springs on Town streets.

Sight Distance Analysis:

Sight distance analysis has been completed for the intersection of the Two River Pit access road and CR-500, and has determined that adequate sight distances exist. Details of that analysis are provided in Attachment 2.

Other Impacts:

Inadequate information on school bus traffic is available for any detailed analysis, although current and forecast traffic counts are so low that review and analysis is not expected to identify any significant problems with school buses. There will be no change in school bus routes required for Two Rivers Pit.

There are no identified pedestrian or bicycle routes identified on CR-500. Pedestrian crossings (especially near schools) in Pagosa Springs are well-marked and easily identified, with posted speed limits to be obeyed by all traffic. No changes required.

There is no known public transit on CR-500.

Reference to original application:

(From DRMS application: **TRAFFIC COUNTS AND SCHEDULES** - Assuming an average hauled of 70,000 tons per year, 25 tons/vehicle, and 120 hauling days per year, average truck traffic will be 23.33 trucks per day: 21 north and 2 south, with peak traffic counts of less than 4 [RT] per hour. Of 21 north, an estimated 6 will go to SH-160 in Pagosa West, 8 to Pagosa Springs itself, with various routes through the town, 5 east through Pagosa Springs to SH-84 for delivery to County or State shops, and 2 to delivery locations in the vicinity not requiring travel on state highways. County zoning

and conditional use permits are expected to dictate exact routes and traffic limits.)

Please note that this assumption is based on annual averages for the 120 haul days, and is based on experience: specific contracts and sales (including competition) may cause this to vary.

(From DRMS application: **DUST CONTROL DURING HAULS** - Dust control practices to be used in the pit, including the access road, will be based on pit traffic, and will include traffic control, water spraying (see Exhibit G), and use of dust control agents such as magnesium chloride brine (magwater) or ligneous sulfide, as needed. When hauling material less than ¼-inch, haul trucks will be controlled to prevent dust, including tarping (chemically or physically) or wetting of material in accordance with state and local requirements. If necessary, hauling will be curtailed during extreme high wind conditions.

Mitigations

Structural/geometrical mitigation measures are generally not warranted. The primary mitigations needed to avoid negative impacts on existing and future traffic on both CR-500 and within the Town of Pagosa are communications and planning/coordination on delivery of construction materials to construction sites and end-users.

Auxiliary lanes:

None needed.

Corrections for LOS deficiencies:

None needed.

Corrections for any access deficiencies:

New access: to be built to County standards (see Attachment 2).

Signing & Striping:

Signing: “Truck Traffic” symbol warning signs (W-16, 24-inch) should be placed at 500 foot distance on each side of the Two Rivers Pit entrance on CR-500. As discussed in Attachment 2, entry will have standard stop sign (R-1, 24-inch). Due to low traffic counts and good sight distances, an “Intersection Ahead” sign is not warranted.

Striping: no pavement: no striping proposed.

Pavement Maintenance:

None needed. (NOTE: Town and County new paving projects on CR-500 near Town Limits (between Town and Transfer Station) are being designed: the Town and County Engineering departments are aware of this project.

Intersection Radii for Truck Turn Movements:

None needed. On CR-500, all curves and intersections have adequate radii when roads are maintained.

In Town of Pagosa Springs, as discussed above, tight radii limit some turning movements. Although S. 6th Street can be considered to relieve congestion on South 8th Street, its use may need to be carefully limited because of small radii at both Apache and San Juan. This will need to be addressed with the

Town on a regular basis. For example, 6th may be more suited for limited truck traffic outbound from the TRP (north on 6th) and going west on San Juan, but not east or for incoming traffic.

Conclusions and Supporting Analysis

Structural/geometrical mitigation measures are generally not warranted. The existing County roads, with standard practices of maintenance and repair, can adequately support the transportation of 70,000 tons (approximately 3,200 truck movements) per year. This is clearly an increase in impact on the actual condition of roads due to the weight of the vehicles, but is still a very small amount of total vehicle traffic on most segments of the County roads to be used.

Existing truck and bus traffic on Town streets (due to school, utilities (including solid waste), logging, and other enterprises already has a significant impact on Town streets, which the Town is proactively addressing. Although the Two Rivers Pit will generate more traffic, it is within the capability of the existing system and is a relatively small increase to estimated existing traffic. Plans to rebuild and improve existing streets do need to take into account not just Two Rivers Pit traffic but traffic from other activities on CR-500, and the present lack of alternatives to vehicles going through various portions of the Town.

The primary mitigations needed to avoid negative impacts on existing and future traffic on both CR-500 and within the Town of Pagosa are communications and planning/coordination on delivery of construction materials to construction sites and end-users.

There are no major improvements or construction required on CR-500. While existing speed limits are restrictive, obeying those limits will keep CR-500 safe for all traffic using it now and in the future, including the increased use by Two Rivers Pit traffic.

General:

Overall, on CR-500, the average annual daily traffic increase due to truck traffic from the Two Rivers Pit is not a significant increase in traffic in any segment of CR-500 where there is already fairly high volumes of traffic (essentially those segments from the Bristlecone Drive intersection north into Pagos Springs.

Based on assumptions and estimates as stated, in the County (as contrasted to the Town) there are actions which can be taken by the operator of Two Rivers Pit, customers (including contract haul trucks), and the County Road and Bridge Department to mitigate any negative impacts on the roads themselves, other traffic on the roads, and residents and owners of properties on the roads.

Adding up to six truck movements per hour during peak hour periods of normal working days does not create a significant impact on other traffic on the County roads. This amounts to one more vehicle every ten minutes in either direction, and is well within the capacity of the existing roadways, both short-term and long-term.

Specific Actions to Reduce Impacts:

Those actions can include, but are not limited to:

1. Operator and customers ensure that drivers are made familiar with routes being used and understand the importance of obeying speed limits, observing damage or other problems,

- and reporting conditions promptly, before hauling.
2. Operator and large customers coordinate with County and Town officials on planned and unplanned construction, maintenance, and repair, including observations by truck drivers and Operator personnel when using the roads.
 3. Providing a standard system to track and address complaints raised by third parties either to the Operator or the County,
 4. Distributing truck traffic over approved routes as much as possible to spread and reduce impact, including responding to other traffic, events, activities, and maintenance, repair, and construction projects on routes.
 5. Ensuring that loads are properly loaded, covered, and kept to load limits (including any necessary seasonal limits) to protect roads, other vehicles and drivers, and properties.

Specific Actions to Follow Up and Complete a Full Traffic Impact Study and Address Issues:

Those actions as recommended include:

1. When weather and road conditions allow, conduct a more standard traffic count using standard ITE/CDOT methods and equipment to get accurate counts including vehicle sizes, hourly counts, and counts based on day of the week.
2. Obtain detailed information on traffic for other major users, including the County Landfill, County Transfer Station, LPEA facility, and School System.
3. Cross-reference new traffic count data with pit traffic data to accurately identify changes due to Two Rivers Pit and due to other factors.
4. Coordinate at the beginning, midway, and at the end of the primary operating and hauling season with the County Planner, County Engineer, and County Road and Bridge Department, to discuss any known or perceived problems and recommend changes to permit requirements.
5. Within one year, and following traffic counts and additional information not readily available at this time, complete the traffic impact study (replacing this preliminary study).
6. Following completion and review of the traffic impact study, conduct a permit review meeting with the County Planning and Zoning Commission and/or Board of County Commissioners to revise as necessary any conditions related to use of County roads and Town streets.

FINAL DRAFT FOR COUNTY AGENCY REVIEW.

PREPARED BY NATHAN A. BARTON, CE, PE, DEE, Colorado Licensed Professional Engineer, 29 JAN 2016



Attachment 1. County Format for TIS (Traffic Study Checklist)

<p>Traffic Impact Study (TIS) Checklist</p>

 Site Information

- Description of Use-Residential, Gravel pit, Oil & Gas Facility, etc.
- Hours of operation
- Number of Employees
- Potential haul routes
- Vicinity map
- Site Plan

 Existing Site Conditions

- Roadway network-Summary of Roadway Classification and a description of study area.
- Analysis of Period-AM; Mid-day, PM, and/or Saturday
- Existing Traffic Data-traffic counts, level of service, speeds, truck percentages, crash data, etc.

 Future Conditions and Impacts

- Trip Generation-Daily Peak Hour trips by site development and ITE Trip Generation Manual
- Trip distribution
- Short Term background traffic and peak hours (5-years)
- Long Term background traffic and peak hours (10-20 years)
- Level of Service Analysis- projected LOS w/ site build out, existing traffic, background traffic growth
- Level of Service deficiencies-identify existing, short term and long term LOS deficiencies
- Signal Warrant Analysis
- Auxiliary Turn Lane Warrant Analysis
- Sight Distance Analysis- at site entrance or access points
- Other Impacts-Identify any impacts to school bus routes, pedestrian/ bicycle access, or public transit

 Mitigation

- Describe auxiliary lanes lengths and storage capacity
- Corrections for LOS deficiencies
- Corrections for any access deficiencies
- Signing & Striping
- Pavement Maintenance
- Intersection Radii for truck turn movements

 Figures & Tables

- Existing peak hour turn movements volumes (counts conducted within the previous 18 months)
- Trip distribution (%) including added project peak hour traffic volumes
- Comprehensive plan future year turn movement volumes
- Intersection performance existing conditions
- Project trip generation
- Intersection level of service

 Conclusions & Supporting Analysis

Note: Obviously if All Does Not Apply - For Example: Level of Service, Signal Warrant Analysis, etc

Attachment 2. Revised Engineering Report on Two Rivers Pit road.

EXISTING SITE CONDITIONS:

TO BE UNCHANGED: West bank access ramp to Bridge, Bridge, and Access Road on east bank from Bridge to top of valley face. Existing Constant ranchstead yard access to CR-500. To be used for both ranching and mining.

PROPOSED TO BE MODIFIED: Access road from bridge through Constant ranchstead yard: no non-farm truck traffic to be on this road. To be limited to ranch/residential use only.

PROPOSED NEW CONSTRUCTION: Access road from curve (approximately 300 feet W of Bridge) to CR-500, including new access to County Road. To be used for both ranching and mining.

PROPOSED CLASSIFICATION: The proposed road will allow access *ONLY* to the Constant Property (although of course, access will be allowed across the property for firefighting and other emergencies). Therefore, no right-of-way and no easement is requested. Based on proposed temporary and permanent use, and discussions with County Planning and County Engineer, we believe the appropriate classification is as a “Primitive Road.” (Section 27.1.2.7) (See calculations below: anticipated traffic expected to be less than 400 vehicles per day).

ROAD DESIGN:

I am a qualified Colorado Licensed Professional Engineer, per Section 27.1.3. I am a graduate of the Colorado School of Mines (1979), have been licensed in Colorado since 1990, have 37 years service in the United States Army Corps of Engineers (11 active duty, 26 reserve), and recent experience includes design of highway improvements and new construction on Colorado and South Dakota state/federal highways, as well as on private property. I have done the design, plans and specifications for this project, myself or by persons responsible to me and under my immediate and direct supervision.

FUTURE PLANNING:

A. Design period: As stated in DRMS Application Exhibits, the Two Rivers Pit will operate for an estimated 25 to 30 years. This is being used as the design period.

B. Projected development: As stated in the DRMS Application Exhibits, the Two Rivers Pit will be a temporary (estimated 25-30 years), and will include annual mining of approximately 2 acres (100,000 tons/year of pit run, producing 70,000 tons of construction material shipped from the site, either as sand and gravel or in products such as hot-mix asphalt or ready-mixed concrete/concrete products). Areas not actively mined and not in reclamation status will continue to be used for agriculture (grazing), and following mining, the site will be used entirely for grazing. The site is not located near areas anticipated to be developed for residential, commercial, or industrial purposes, and access roads to the Pit are not anticipated to be used in the future to provide access to other properties.

C. Projected Traffic Volumes. Standard categories for traffic volumes do not apply to this project. Traffic volumes are calculated based on average and maximum anticipated shipment of construction materials from the Two Rivers Pit, plus allowances for support traffic (inspection, maintenance and repair, employee commuting, etc.) to the pit. These assumptions and calculations are found in the DRMS Application Package, Exhibit M. and restated here, with additional comments and information in italics:

TRUCKS

A variety of trucks will be used to haul materials from the Pit, including single dump trucks, semi-dump trucks, and trucks with pups. Most commonly used will be dump trucks with pups. (Sometimes called tandems.) *Semi-dump trucks may include end, side, and belly dump. All loads will be tarped before departing the pit.* Average haul for all vehicles will be 25 tons per vehicle.

TRAFFIC COUNTS AND SCHEDULES

Assuming an average haul of 70,000 tons per year, 25 tons/vehicle, and 120 hauling days per year, average truck traffic will be 23.33 trucks per day: 21 north and 2 south, with peak traffic counts of less than 4 per hour. Of 21 north, an estimated 6 will go to SH-160 in Pagosa West, 8 to Pagosa Springs itself, with various routes through the town, 5 east through Pagosa Springs to SH-84 for delivery to County or State shops, and 2 to delivery locations in the vicinity not requiring travel on state highways. County zoning and conditional use permits are expected to dictate exact routes and traffic limits. During normal operations, inspection, maintenance, and employee commuting traffic is expected to consist of 2-axle vehicles of 5 tons gross vehicle weight or less, for an average of three round trips per day to the Pit. Seasonally, depending on contracts for materials, additional truck and small vehicle

traffic can be anticipated for several days, to bring in equipment (crushing and screening equipment and other processing equipment), fuel, and other support needs. This will add an average of 0.5 round trips per day, mostly to and from Pagosa Springs.

Total annual average daily traffic count estimated: 24 single or multi-unit trucks, 3 small vehicles: total 27 round trips, or 54 movements. *This is the sum of the above movements.*

This estimate of traffic is based on information from the Institute of Transportation Engineers, CDOT data, and experience with sand and gravel operations, particularly in southwestern Colorado.

General Design Elements

Design Capacities

No information is available on the category of County Road 500 (*Trujillo Road*), nor existing traffic counts for the road. *(Traffic data obtained from the County Engineer in January 2016 is limited and will require supplementation.)* Based on observations from 2008 to present, this design assumes that the increased traffic in both directions from this operation will not exceed the range specified for its functional category. *(It is assumed to be a “Major Collector Road” based on connections to local access roads and residences/ranches along the road itself).*

The traffic count is also not expected to exceed the planned capacity of the access road itself.

Design Speed

Interior to project: Based on the bridge, radius of existing curves, traffic control, grade of the ramp E of the bridge and the ramp to the Pit W of the bridge, sight distances (from the top of the hill and bridge), as well as environmental and miner safety and health requirements (such as dust control and traffic management) the speed limit on the access road is proposed to be made 15 mph, going uphill, and 10 mph going downhill when loaded.

Exterior to project (CR-500): Semi-trucks can operate safely at existing posted speed limits, based on observation of trucks.

Surfacing Requirement

The anticipated traffic, even during peak periods, is significantly less than 700 ADT. Therefore, paving is not planned. However, for environmental requirements (dust control) and to reduce potential nuisance and safety issues, the entire access road will have dust chemicals (mag-water or equal) applied regularly. The road surface will be graveled, using Class 6 base-course material, compacted in accordance with CDOT/County specifications. *Minimum of 6 inches of compacted aggregate base course will be used, exceeding county standards of 4 inches.*

Right-of-Way

As this is a private access road, there is no right-of-way proposed.

One-Way Roads

The access road will be a two-way road. The portion of the road from the toe of the ramp W of the Bridge to the top of the ramp up to the Pit itself will have automatic/remote-control traffic signals to provide for alternating traffic, for safety and environmental considerations. Roads within the pit itself will be one- or two-way based on safety and traffic control requirements (MSHA and DRMS).

Striping

As the road is proposed to be unpaved, no striping is proposed.

Specific Design Elements

Alignment

Alignment is dictated by the terrain and location of the Bridge. The terrain allows for both horizontal and vertical alignment to comply with County requirements, together with the proposed posted speed limit. Curbs will not be used, except that existing on the bridge deck itself, where a W-rail protects against going over the curb.

The radii of the intersection of the access road with CR 500 is proposed to be 40 feet, due to truck traffic. This exceeds County requirements of 35 feet (27.1.3.3.).

Sight distance is estimated to be greater than 1500 feet to the S on CR-500, and 1200 feet to the N on CR-500. Traffic in both directions on CR-500 has a clear view of the access road (Bridge to CR-500).

The grades proposed are as follows:

Within 200 feet of the intersection with CR-500: between 0.5 and 2%. (Note: bridge abutment is approximately 500 feet from CR-500.)

Bridge approach from the West (direction of CR-500): 8% (16 feet in 200 feet)

Bridge approach and ramp to the top of the hill (Pit): 8% (100 feet in 1200 feet)

Geometric Cross Sections *See Sheets C4 and C5 in DRMS Exhibits.*

It is proposed that the travel lane widths be as follows:

Between Bridge Ramp on W and CR-500 (400 feet): 2 each 13-foot lanes (26 feet total) with 1-foot shoulders each side: in last 100 feet (single-lane, alternating traffic) before Bridge, total width narrows to 15 feet. *This will provide a minimum of 360 feet of two-lane road for queuing of vehicles.*

Bridge, including E approach: 15-foot lane (single-lane, alternating traffic) (not including curve widening)

Ramp from E approach to Bridge to top of hill (Pit): 16-foot lane (single-lane, alternating traffic).

Roads on the operating area of the Gravel Pit: for haul trucks (one or two-way traffic): minimum 11-foot lane, with 2-foot minimum shoulder or berms.

Crown slope except at the bridge will be between 2 and 3 percent. Superelevation will be limited to 0.08 feet per foot.

Curve Widening at the E approach to the Bridge and at the top of the hill (Pit) will have a driving lane width minimum of 16 feet, with 2-foot shoulders on the outside of the curve.

A “bulb-type” turnaround will be provided at the top of the hill (Pit) and at the plant site, with a minimum exterior radius of 105 feet and a minimum interior radius of 90 feet, clear space, to meet requirements for emergency vehicles. Haul roads in the working area of the pit will normally terminate in cleared working face and pit floor areas at least 100 feet on a side.

Note: Although existing vegetation on site should be considered to have a “high wildfire hazard” rating, construction of the plant site and areas actually being mined will have all vegetation grubbed and the soil stripped and placed into berms (stockpiles) for reclamation, so fire hazard will be reduced to a minimum. See fire safety plan discussion.

Structural Sections

Not applicable (no paving). If paving is done in the future, structural sections will be designed and built in accordance with County requirements.

Drainage

The intersection of the access road will be at or near a crest in CR-500's vertical alignment, and the intersection, including radii, will be constructed to ensure that water continues to flow away from the County Road and access road in both directions, and the crown of the access road will be modified in

the approach to ensure that the crown of CR-500 is protected. Total fill to match the access road with the existing edge of driving lane of CR-500 has been surveyed at less than 2 feet vertical height. Therefore, no culvert is needed at the access point.

Crown of the access road between the Bridge and CR-500 will be matched with bar ditches to catch and allow flow off the roadway to infiltrate or be transported as sheet flow to the surrounding irrigated pastureland (on both north and south sides of the access road. Water from the ramp to the Bridge will continue to flow into the bosque on the west bank of the San Juan River: no changes are proposed. Therefore, no culvert is needed for that portion of the access road which is located between the CR-500 intersection and the Bridge.

The existing road from the E approach of the Bridge to the top of the hill (Pit) has existing drainage ditches on both sides of the road; the one on the uphill side flows into the river north of the bridge, near the mouth of Harris Ditch. The one on the downhill side flows into grassed areas between the face of the hill and the Harris Ditch, and either infiltrates or flows into Harris Ditch. At present, an area of approximately 1.3 acres at the top of the Hill is part of the basin which drains into these two ditches, or down the road itself. With grubbing and stripping and construction of roads in the Pit, including access to the plant site and initial areas to be mined, this will be reduced to approximately 0.4 acres in size or less, thus reducing surface water runoff along the road and in its ditches. Maintenance and inspection (M&I) of these ditches is included in the surface water management plan (SWMP) for the Two Rivers Pit. The M&I of the roadway itself is included in the operating plan for the Pit.

Side slopes

The side slopes for the radii of the intersection with CR-500, and along the 400 feet between CR-500 and the W Bridge Ramp shall be 3:1 or flatter.

No change is proposed for existing side slopes of the road E of the Bridge to the top of the hill (Pit). These slopes have been examined by a licensed civil engineer qualified in soils and rock analysis and are stable since their construction in 2013, or earlier.

Side slopes for roads in the Pit itself may be steeper than 3:1 during active mining operations, but shall be reclaimed to 3:1 or less as required by DRMS.

Sidewalks

No sidewalks are proposed. Pedestrian traffic is not expected.

Traffic Control and Safety

Guardrails: None proposed, except for existing guardrails on Bridge, which meet CDOT standards and specifications.

Traffic Control Devices (Signage and Signals)

All signage shall be in conformance to the MUTCD, including CDOT addenda as applicable. During construction of the access to CR-500, all construction signage shall be in accordance with MUTCD and CDOT policy, and flaggers and other traffic control personnel shall be qualified in accordance with CDOT requirements.

Signage and traffic signals proposed:

R-1 STOP 24-inch, on standard breakaway post, to be installed 40 feet from edge of CR-500 (outside ROW and radii).

R-2 (15) SPEED LIMIT, 24-inch, (3 each) on standard breakaway post, to be installed 100 feet from edge of CR-500, at toe of W Bridge ramp (for outgoing traffic), and on approach E of Bridge.

R-2 (10) SPEED LIMIT, 24-inch, (2 each) on standard breakaway post, to be installed at top of hill and approximately 100 feet W of Bridge (both for outgoing traffic).

W-X 8% GRADE WARNING SIGN, 24-inch, (1 each) to be installed at the top of the hill (for outgoing traffic)

Automated and remote control traffic signals, standard LED 4-inch tri-color lenses, two sets, one at the

top of the hill for outgoing traffic, and one at the toe of the W Bridge ramp for inbound traffic. Signals will be controlled both by remote and by sensors to determine presence and passage of traffic, to control alternating traffic on the Bridge, Bridge ramps, and road to the top of the Hill (total distance approximately 1600 feet).

MSHA and Company Policy, and other (State) Permits require that additional signage be installed for various purposes, including traffic safety.

Delineators shall be installed at 100-foot (or closer) intervals on both sides of the access road between CR-500 and the toe of the road up the hill. Delineators shall be white Carsonite blades with yellow/white retroreflective squares, approved for CDOT projects.

Sight Triangles

At the intersection of the access road with CR-500, a sight triangle minimum of 70 feet shall be maintained in accordance with Section 27.1.6.3.

Aboveground Utility Locations

No aboveground or underground utilities are proposed to be constructed along the access road. All existing aboveground utilities are located on the W side of CR-500, opposite the access road.

Mail Delivery

No USPS mail delivery is proposed to the Two Rivers Pit. Delivery to the Constants' homes will continue unchanged.

Design Standards for Driveways

Although we are requesting classification as a “primitive road” the design meets or exceeds all requirements for driveways for commercial activities in County Road and Bridge Engineering Standards except for paving. Paving does not make sense as CR-500 is not itself paved. As stated above, dust control measures will be instituted and maintained on the roadway between the bridge and CR-500).

Location of Road

The access road is a minimum of 1500 feet from any road intersections with CR-500, and is proposed to be located approximately 60 feet S (center-to-center) of the existing Constant ranchstead driveway, meeting the 30-foot spacing rule. County Road personnel have inspected the proposed site and have indicated that the existing driveway can be left in place.

Stacking: Approximately 360 feet of two-lane access road is available for stacking both to enter onto CR-500 and to cross the Bridge using signal-controlled alternating-traffic pattern, thus providing for stacking of at least five multi-unit trucks (maximum legal length 65 feet). Due to low traffic volumes, left turns are not expected to be an issue.

Other Design Standards for Driveways

The above discussion of standards meets or exceeds requirements for driveways.

This document has been revised on 29 January 2016 and replaces all previous versions. Provided to County Planning, County Engineer, and Town Planning. ©2016 WASTELINE, Inc. & C&J Gravel Products, Inc. All rights reserved. Prepared by Nathan A. Barton, CE, PE, DEE

Attachments:

1. General County Requirements (omitted: see Attachment 5)
2. Copies of Sheets C4 and C5 from DRMS Application Exhibits.

Attachment 3. Standard ITE Traffic Impact Study Outline with annotations

- I. Introduction
- II. Existing Conditions
- III. Proposed Conditions
 - A. Site Trip Generation
 - B. Trip Distribution
 - C. Existing plus Site Generated Traffic
- IV. Future Conditions
 - A. Background Traffic
 - B. Total Future Traffic
- V. Evaluation
 - A. Level of Service (LOS)
 - B. Traffic Control Devices
 - C. Queuing
 - D. Safety
- VI. Conclusions/Recommendations

TABLES

- Trip Generation Summary
- LOS Summary

FIGURES

- Vicinity Map
- Existing Lane Configuration and Traffic Volumes
- Existing Trip Distribution
- Projected Site Traffic Volumes
- Existing plus Projected Site Traffic Volumes
- Future Background Traffic Volumes
- Total Future Traffic Volumes
- LOS for Existing Traffic Volumes
- LOS for Existing plus Site Generated Traffic Volumes at Buildout
- LOS for Existing plus Future Background Traffic Volumes
- Future Lane Configuration and Traffic Control Devices
- Recommended Improvements

APPENDICES

- Traffic Count Data
- Highway Capacity Software Input/Output Data
- Synchro Analysis
- ARCADY Analysis
- Queue Analysis
- Calculations
- Traffic Signal Warrant Study

Attachment 4. County Data Traffic Counts

Here is the ADT data from CR 500 that you requested, and attached is the traffic study checklist (obviously it all does not apply to your project).

Road Name	Location	ADT	Count Year	Hours	Survey By	RID
CR 500 - Trujillo Rd	by passed the Landfield	238	Jun-14	48	Yari	800004
	by Contant resident	157	Jun-14	48	Yari	
	by Rivervied	105	Jun-14	48	Yari	
	by Montezuma Cir	123	Jun-13	48	Yari	
	.45 mi S of Hwy 151	138	Jun-13	48	Yari	
	by Town (week days)	660	Jun-12	120	Yari	
	by Town (weekends)	488	Jun-12	48	Yari	
	by the end of pave (week days)	364	Jun-12	120	Yari	
	by the end of pave (weekend)	270	Jun-12	48	Yari	
	.35 mi W of Town Limits	570	Sep-10	120	Yari	
	4.5 mi S of Town (at Cascade)	302	Sep-10	120	Yari	
	.35 mi W of Town Limits	710	Jun-09	48	Yari	
	4.5 mi S of Town (at Cascade)	321	Jun-09	48	Yari	
	25 mi S (at Cat Creek)	29	Jun-09	48	Yari	
CR 500 - Trujillo Rd (cont)	.35 mi W of Town Limits	650	Aug-05	48	Sheila	
	.35 mi W of Town Limits	557	Mar-05	48	Sheila	
	4.5 mi S of Town (at Cascade)	307	May-05	48	Sheila	
	25 mi S (at Cat Creek)	32	May-05	48	Sheila	
	.45 mi S of Hwy 151	172	May-05	48	Sheila	
	.4 mi S of 10th St	631	2000	24	Bechtolt Eng	
	at Cascade Ave	323	2000	24	Bechtolt Eng	
	at CR 542 - Montezuma Rd	152	2000	24	Bechtolt Eng	
	at CR 700 - Cat Creek Rd	51	2000	24	Bechtolt Eng	
	.45 mi S of Hwy 151	315	2000	24	Bechtolt Eng	
	near City Limits	843	1997	24	Bechtolt Eng	
	near City Limits	745	1993	30 days	Bechtolt Eng	
	near Hwy 151	183	1993	30 days	Bechtolt Eng	

Thanks,

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Note: table reformatted but no changes made in spelling or abbreviations.

Attachment 5. County Regulations

All plans and specifications for new roads and hard surface recreational pathways shall be prepared by a qualified Colorado Registered Professional Engineer proficient in road design and must include the following statement: *"These construction plans for (name of subdivision, development or project) were prepared by me (or under my direct supervision) in accordance with the requirements of those standards and specifications set forth the Archuleta County Land Use Regulations and the Archuleta County Road and Bridge Design Standards and Construction Specifications"*, name of engineer, name of firm. The statement shall be signed and stamped by the Registered Professional Engineer who prepared or directed preparation of the construction plans.

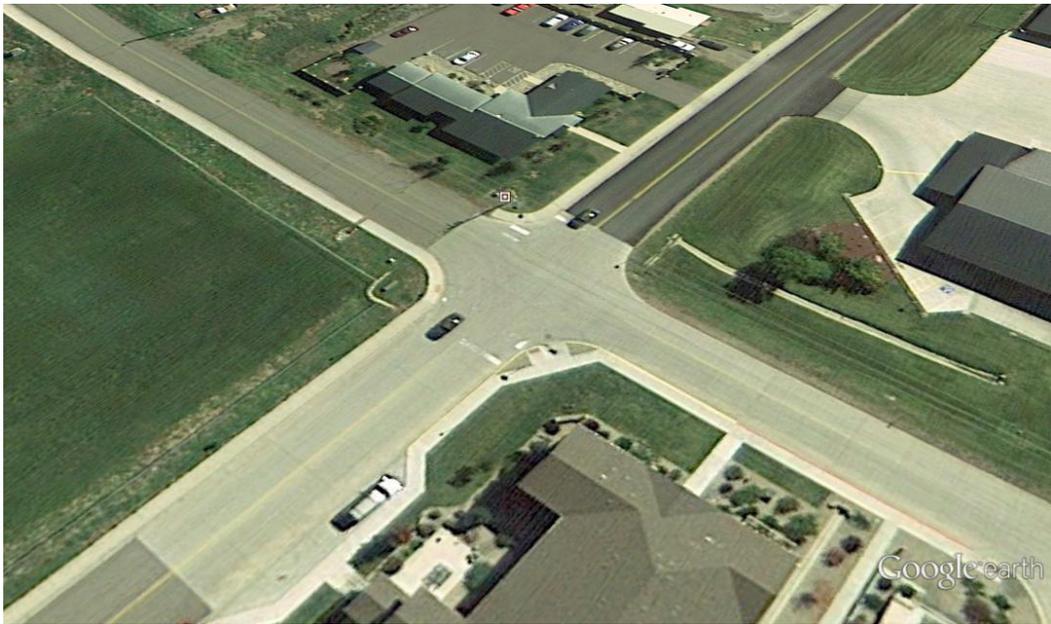
All plans and specifications submitted shall be assumed to comply with the provisions of the Archuleta County Land Use Regulations and the Archuleta County Road and Bridge Design Standards and Construction Specifications. The design engineer shall be responsible for the accuracy and adequacy of the design, dimensions and elevations on the plans and assumes all responsibility for the completeness and/or accuracy of the plans and specifications.

The plans and specifications shall be considered valid for two (2) years from the date of approval by the County Engineer, after which time such plans shall be void and will be subject to re-review and re-acceptance by the County Engineer. There shall be no substantial changes in or deviations from the plans except with the express written consent of the County Engineer.

Upon completion of the installation or construction of the improvements, the project engineer shall deliver to the County Engineer, unless waived by the County Engineer, record drawings of the improvements certified by a Colorado professional engineer proficient in road design stating that the improvements have been completed in accordance with the plans approved by the County are safe, adequate and within County and other legal standards and that he/she knows of no defects in the improvements.

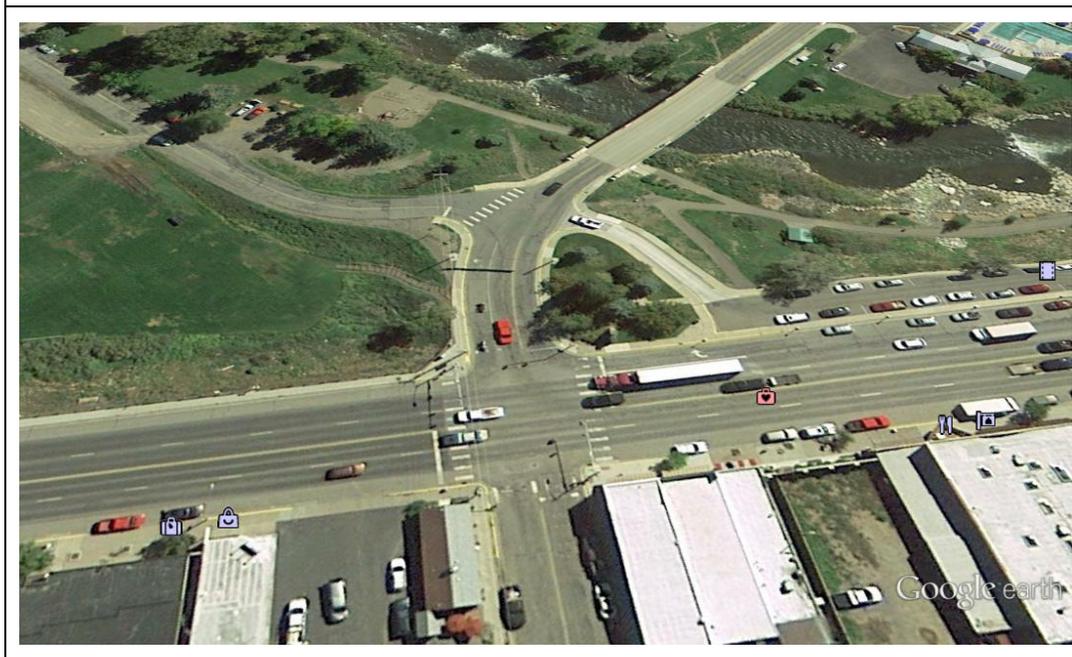
The road design and construction specifications shall be reviewed and approved by the County Engineer in conjunction with the preliminary plan and the County Engineer may request additional studies and information in the course of such review. Actual construction of roads and recreational pathways cannot occur until the project is approved by the Board of County Commissioners and all requirements for bonding and/or insurance are fulfilled.

Attachment 6. Aerial Photos of Key Locations

 An aerial photograph showing the intersection of Apache Street and South 8th Street. The view is from the southwest. Apache Street runs diagonally from the top left towards the bottom right. South 8th Street runs horizontally across the middle. There are several buildings, parking lots, and green spaces visible. A "Google earth" watermark is in the bottom right corner.	<p>Apache Street and South 8th Street (view from southwest) 2013</p>
 An aerial photograph showing the intersection of San Juan Boulevard (US-160) and 8th Street. The view is from the northwest. San Juan Boulevard runs diagonally from the top left towards the bottom right. 8th Street runs horizontally across the middle. There are several buildings, parking lots, and green spaces visible. A "Google earth" watermark is in the bottom right corner.	<p>San Juan Boulevard (US-160) and 8th Street (view from northwest) 2013</p>



View of Apache Street and Hot Springs Boulevard/CR-119 (Light Plant Road) view from northwest, 2013



Pagosa Boulevard (US-160) and Hot Springs Boulevard view from North-northwest, 2013



Southwestern corner of Pagosa Springs town center (center is S 8th Street and Apache Street intersection)

Showing CR-500 to west off Apache Road. Shows offices, institutions, and LPEA 2013



Oblique view of CR-500 and southwest corner of Pagosa Springs town center, view from Northwest. 2013