STATE OF COLORADO

DIVISION OF RECLAMATION, MINING AND SAFETY
Department of Natural Resources

1313 Sherman St., Room 215
Denver, Colorado 80203
Phone: (303) 866-3567
FAX: (303) 832-8106

COLORADO DIVISION OF RECLAMATION MINING & SAFETY

RECEIVED
OCT 04 2013
DIVISION OF RECLAMATION MINING AND SAFETY

CONSTRUCTION MATERIALS
REGULAR (112) OPERATION
RECLAMATION PERMIT APPLICATION FORM

CHECK ONE: ☐ **There is a File Number Already Assigned to this Operation**

Permit # M - 2013 - ___ (Please reference the file number currently assigned to this operation)

☒ **New** Application (Rule 1.4.5) ☐ **Amendment** Application (Rule 1.10)

☐ **Conversion** Application (Rule 1.11)

Permit # M - 2013 - 066 - ___ (provide for **Amendments** and **Conversions** of existing permits)

The application for a Construction Materials Regular 112 Operation Reclamation Permit contains three major parts: (1) the application form; (2) Exhibits A-S, Addendum 1, any sections of Exhibit 6.5 (Geotechnical Stability Exhibit; and (3) the application fee. When you submit your application, be sure to include one (1) complete signed and notarized **ORIGINAL** and one (1) copy of the completed application form, two (2) copies of Exhibits A-S, Addendum 1, appropriate sections of 6.5 (Geotechnical Stability Exhibit, and a check for the application fee described under Section (4) below. Exhibits should **NOT** be bound or in a 3-ring binder; maps should be folded to 8 1/2" X 11" or 8 1/2" X 14" size. To expedite processing, please provide the information in the format and order described in this form.

GENERAL OPERATION INFORMATION

Type or print clearly, in the space provided, ALL information requested below.

1. **Applicant/operator or company name (name to be used on permit)**: Arboles Sand & Stone, LLC.
   - 1.1 Type of organization (corporation, partnership, etc.): Limited-Liability Company

2. **Operation name (pit, mine or site name)**: Lob Lolly Pit

3. **Permitted acreage (new or existing site)**: 171.7 permitted acres
   - 3.1 Change in acreage (+) ___ acres
   - 3.2 Total acreage in Permit area 171.7 acres

4. **Fees**:
   - 4.1 New Application $2,696.00 application fee
   - 4.2 New Quarry Application $3,342.00 quarry application
   - 4.4 Amendment Fee $2,229.00 amendment fee
   - 4.5 Conversion to 112 operation (set by statute) $2,696.00 conversion fee

5. **Primary commoditie(s) to be mined**: Gravel Sand Borrow Matl Earth ___
   - 5.1 Incidental commoditie(s) to be mined: 1. Unknown lbs/Tons/yr 2. ___ / ___ lbs/Tons/yr
     3. ___ / ___ lbs/Tons/yr 4. ___ / ___ lbs/Tons/yr 5. ___ / ___ lbs/Tons/yr
   - 5.2 Anticipated end use of primary commoditie(s) to be mined: Construction
   - 5.3 Anticipated end use of incidental commoditie(s) to be mined: Unknown

6. **Name of owner of subsurface rights of affected land**. Steve and Joyce Wright
   If 2 or more owners. "refer to Exhibit O".

7. **Name of owner of surface of affected land**: Steve and Joyce Wright

8. **Type of mining operation**: [X] Surface [ ] Underground

9. **Location Information**: The center of the area where the majority of mining will occur:

   COUNTY: Archuleta

   PRINCIPAL MERIDIAN (check one): [ ] 6th (Colorado) [X] 10th (New Mexico) [ ] Ute

   SECTION (write number): S 21

   TOWNSHIP (write number and check direction): T 33 [X] North [ ] South

   RANGE (write number and check direction): R 05 [ ] East [X] West

   QUARTER SECTION (check one): [ ] NE [X] NW [ ] SE [ ] SW

   QUARTER/QUARTER SECTION (check one): [X] NE [ ] NW [ ] SE [ ] SW

   GENERAL DESCRIPTION: (the number of miles and direction from the nearest town and the approximate elevation):
   Approximately 5 miles N of Arboles, elevation 6200 feet

10. **Primary Mine Entrance Location** (report in either Latitude/Longitude **OR** UTM):

    Latitude/Longitude:

    Example: (N) 39° 44′ 12.98″
    (W) 104° 59′ 3.87″

    Latitude (N): deg _____ min _____ sec ____._____ (2 decimal places)

    Longitude (W): deg _____ min _____ sec ____._____ (2 decimal places)

    OR

    Example: (N) 39.73691°
    (W) -104.98449°

    Latitude (N) 37 . 09290 (5 decimal places)

    Longitude(W) -107 . 39740 (5 decimal places)

    OR

    Universal Tranverse Mercator (UTM)

    Example: 201336.3 E NAD27 Zone 13
    4398351.2 N

    UTM Datum (specify NAD27, NAD83 or WGS 84) Nad 83 Zone 13

    Easting _____

    Northing _____

[illegible] (post mining) land use (check one)

[ ] Cropland(CR)	[ ] Pastureland(PL)	[ ] General Agriculture(GA)
[ ] Rangeland(RL)	[ ] Forestry(FR)	[ ] Wildlife Habitat(WL)
[ ] Residential(RS)	[ ] Recreation(RC)	[X] Industrial/Commercial(IC)
[ ] Developed Water Resources(WR)		[ ] Solid Waste Disposal(WD)

13. **Primary present land use (check one):**

[ ] Cropland(CR)	[ ] Pastureland(PL)	[ ] General Agriculture(GA)
[ ] Rangeland(RL)	[ ] Forestry(FR)	[ ] Wildlife Habitat(WL)
[ ] Residential(RS)	[ ] Recreation(RC)	[X] Industrial/Commercial(IC)
[ ] Developed Water Resources(WR)		

14. **Method of Mining**: Briefly explain mining method (e.g. truck/shovel): loader/backhoe, truck/conveyor (dry, potential wet)

15. **On Site Processing**: [X] Crushing/Screening

15.1 Briefly explain mining method (e.g. truck/shovel): see above. Processing: crushing and screening, use in ready-mixed concrete, asphalt, other products

List any designated chemicals or acid-producing materials to be used or stored within permit area: Petroleum, oils, and lubricants, other components of asphalt and concrete (see Exhibits)

16. **Description of Amendment or Conversion**.

If you are amending or converting an existing operation, provide a brief narrative describing the proposed change(s).

This application's exhibits incorporate changes/comments based on review of the original exhibits regarding completeness and adequacy,as requested by DRMS, and correct typos/errors in the orginal documents.

[illegible] Correspondence Information

APPLICANT/OPERATOR (name, address, and phone of name to be used on permit)

Contact's Name: Steve and Joyce Wright Title: Managers

Company Name: Arboles Sand & Stone

Street/P.O. Box: 12577 Highway 151 P.O. Box:

City: Pagosa Springs

State: Colorado Zip Code: 81147

Telephone Number: (970) - 883-5454

Fax Number: ( ) -

PERMITTING CONTACT (if different from applicant/operator above)

Contact's Name: Nathan A. Barton, CE, PE, DEE Title:

Company Name: WASTELINE, Inc.

Street/P.O. Box: 11501 CR 34 P.O. Box:

City: Mancos

State: Colorado Zip Code: 81328

Telephone Number: (605) - 939-0650 or (970) 564-1380

Fax Number: ( ) -

INSPECTION CONTACT

Contact's Name: Steve and Joyce Wright Title: Managers

Company Name: Arboles Sand & Stone

Street/P.O. Box: 12577 Highway 151 P.O. Box:

City: Pagosa Springs

State: Colorado Zip Code: 81147

Telephone Number: (970) - 883-5454

Fax Number: ( ) -

IX. STATE OR FEDERAL LANDOWNER (if any)

Agency:

Street:

City:

State: Zip Code:

Telephone Number: ( ) -

IX. STATE OR FEDERAL LANDOWNER (if any)

Agency:

Street:

City:

State: Zip Code:

Telephone Number: ( ) -

2. The Board may suspend or revoke this permit, or assess a civil penalty, upon a finding that the permittee violated the terms or conditions of this permit, the Act, the Mineral Rules and Regulations, or that information contained in the application or your permit misrepresent important material facts;

3. If your mining and reclamation operations affect areas beyond the boundaries of an approved permit boundary, substantial civil penalties, to you as permittee can result;

4. Any modification to the approved mining and reclamation plan from those described in your approved application requires you to submit a permit modification and obtain approval from the Board or Office;

5. It is your responsibility to notify the Office of any changes in your address or phone number;

6. Upon permit issuance and prior to beginning on-site mining activity, you must post a sign at the entrance of the mine site, which shall be clearly visible from the access road, with the following information (Rule 3.1.12):

   a. the name of the operator;

   b. a statement that a reclamation permit for the operation has been issued by the Colorado Mined Land Reclamation Board; and,

   c. the permit number.

7. The boundaries of the permit boundary area must be marked by monuments or other markers that are clearly visible and adequate to delineate such boundaries prior to site disturbance.

8. It is a provision of this permit that the operations will be conducted in accordance with the terms and conditions listed in your application, as well as with the provisions of the Act and the Construction Material Rules and Regulations in effect at the time the permit is issued.

9. Annually, on the anniversary date of permit issuance, you must submit an annual fee as specified by Statute, and an annual report which includes a map describing the acreage affected and the acreage reclaimed to date (if there are changes from the previous year), any monitoring required by the Reclamation Plan to be submitted annually on the anniversary date of the permit approval. Annual fees are for the previous year a permit is held. For example, a permit with the anniversary date of July 1, 1995, the annual fee is for the period of July 1, 1994 through June 30, 1995. Failure to submit your annual fee and report by the permit anniversary date may result in a civil penalty, revocation of your permit, and forfeiture of your financial warranty. It is your responsibility, as the permittee, to continue to pay your annual fee to the Office until the Board releases you from your total reclamation responsibility.

10. For joint venture/partnership operators: the signing representative is authorized to sign this document and a power of attorney (provided by the partner(s)) authorizing the signature of the representative is attached to this application.

Maps and Exhibits

Two (2) complete, unbound application packages must be submitted. One complete application package consists of a signed application form and the set of maps and exhibits referenced below as Exhibits A-S, Addendum 1, and the Geotechnical Stability Exhibit. Each exhibit within the application must be presented as a separate section. Begin each exhibit on a new page. Pages should be numbered consecutively for ease of reference. If separate documents are used as appendices, please reference these by name in the exhibit.

With each of the two (2) signed application forms, you must submit a corresponding set of the maps and exhibits as described in the following references to Rule 6.4, 6.5, and 1.6.2(1)(b):

EXHIBIT A	Legal Description
EXHIBIT B	Index Map
EXHIBIT C	Pre-Mining and Mining Plan Map(s) of Affected Lands
EXHIBIT D	Mining Plan
EXHIBIT E	Reclamation Plan
EXHIBIT F	Reclamation Plan Map
EXHIBIT G	Water Information
EXHIBIT H	Wildlife Information
EXHIBIT I	Soils Information
EXHIBIT J	Vegetation Information
EXHIBIT K	Climate Information
EXHIBIT L	Reclamation Costs
EXHIBIT M	Other Permits and Licenses
EXHIBIT N	Source of Legal Right-To-Enter
EXHIBIT O	Owners of Record of Affected Land (Surface Area) and Owners of Substance to be Mined
EXHIBIT P	Municipalities Within Two Miles
EXHIBIT Q	Proof of Mailing of Notices to County Commissioners and Conservation District
EXHIBIT R	Proof of Filing with County Clerk or Recorder
EXHIBIT S	Permanent Man-Made Structures
Rule 1.6.2(1)(b)	ADDENDUM 1 - Notice Requirements (sample enclosed)
Rule 6.5	Geotechnical Stability Exhibit (any required sections)

The instructions for preparing Exhibits A-S, Addendum 1, and Geotechnical Stability Exhibit are specified under Rule 6.4 and 6.5 and Rule 1.6.2(1)(b) of the Rules and Regulations. If you have any questions on preparing the Exhibits or content of the information required, or would like to schedule a pre-application meeting you may contact the Office at 303-866-3567.

Responsibilities as a Permittee

Upon application approval and permit issuance, this application becomes a legally binding document. Therefore, there are a number of important requirements which you, as a permittee, should fully understand. These requirements are listed below. Please read and initial each requirement, in the space provided, to acknowledge that you understand your obligations. If you do not understand these obligations then please contact this Office for a full explanation.

DW . Your obligation to reclaim the site is not limited to the amount of the financial warranty. You assume legal liability for all reasonable expenses which the Board or the Office may incur to reclaim the affected lands associated with your mining operation in the event your permit is revoked and financial warranty is forfeited;

NOTE TO COMMENTORS/OBJECTORS:

It is likely there will be additions, changes, and deletions to this document prior to final decision by the Office. Therefore, if you have any comments or concerns you must contact the applicant or the Office prior to the decision date so that you will know what changes may have been made to the application document.

The Office is not allowed to consider comments, unless they are written, and received prior to the end of the public comment period. You should contact the applicant for the final date of the public comment period.

If you have questions about the Mined Land Reclamation Board and Office's review and decision or appeals process, you may contact the Office at (303) 866-3567.

Certification:

As an authorized representative of the applicant, I hereby certify that the operation described has met the minimum requirements of the following terms and conditions:

1. To the best of my knowledge, all significant, valuable and permanent man-made structure(s) in existence at the time this application is filed, and located within 200 feet of the proposed affected area have been identified in this application (Section 34-32.5-115(4)(e), C.R.S.).

2. No mining operation will be located on lands where such operations are prohibited by law (Section 34-32.5-115(4)(f), C.R.S.;

3. As the applicant/operator, I do not have any extraction/exploration operations in the State of Colorado currently in violation of the provisions of the Colorado Land Reclamation Act for the Extraction of Construction Materials (Section 34-32.5-120, C.R.S.) as determined through a Board finding.

4. I understand that statements in the application are being made under penalty of perjury and that false statements made herein are punishable as a Class 1 misdemeanor pursuant to Section 18-8-503, C.R.S.

This form has been approved by the Mined Land Reclamation Board pursuant to section 34-32.5-112,C.R.S., of the Colorado Land Reclamation Act for the Extraction of Construction Materials. Any alteration or modification of this form shall result in voiding any permit issued on the altered or modified form and subject the operator to cease and desist orders and civil penalties for operating without a permit pursuant to section 34-32.5-123, C.R.S.

Signed and dated this 2ND day of OCTOBER, 2013.

ARBOLES SAND & STONE

Applicant/Operator or Company Name

If Corporation Attest (Seal)

Signed: STEVE WRIGHT Steve Wright

Signed: _____

Corporate Secretary or Equivalent

Title: MANAGER

Town/City/County Clerk

State of SOUTH DAKOTA)

) ss.

County of PENNINGTON)

The foregoing instrument was acknowledged before me this 2ND day of OCTOBER, 2013, by Steve Wright as Manager of Arboles Sand & Stone

NATHAN A. BARTON
NOTARY PUBLIC
State of South Dakota

Notary Public

My Commission expires: 12 DEC. 2014

SIGNATURES MUST BE IN BLUE INK

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EXHIBIT A - LEGAL DESCRIPTION

No change from 2008 or first 2013 application.

Two parcels of land in Sections 16 and 21, Township 33 North, Range 5 West, N.M. (10th) P.M., Archuleta County, Colorado, portions of county parcel numbers 5959-16-300-012 and 5959-21-100-013, being more particularly described as follows:

NORTH PARCEL 5959-16-300-012):
Beginning at a point S88°00'00"E a distance of 1277.50 feet from the Southwest corner of Section 16, Township 33 North, Range 5 West, N.M.P.M.:
Thence, N02°00'00"E a distance of 1320.33 feet; (Segment 6)
Thence, S88°00'00"E a distance of 2813.92 feet; (Segment 7)
Thence, N14°00'00"E a distance of 986.22 feet; (Segment 8, generally along the river bank)
Thence, N04°00'00"W a distance of 252.63 feet; (Segment 9, generally along the river bank)
Thence, N29°00'00"W a distance of 239.92 feet; (Segment 10, generally along the river bank)
Thence, N88°00'00"W a distance of 2824.09 feet; (Segment 11)
to the point of beginning. Containing 90.0 acres (permitted).
(Also described as the SE ¼ of SW ¼ and S ½ of SE ¼ of Section 16 located W of the Piedra River.)

SOUTH PARCEL (5959-21-100-013):
Beginning at a point S02°00'00"W a distance of 1320.09 feet from the Northwest corner of Section 21, Township 33 North, Range 5 West, N.M.P.M.:
Thence, S02°00'00"W a distance of 1320.09 feet; (Segment 1)
Thence, S88°00'00"E a distance of 2716.78 feet; (Segment 2)
Thence, N04°00'00"E a distance of 649.32 feet; (Segment 3, generally along the river bank)
Thence, N09°00'00"W a distance of 677.68 feet; (Segment 4, generally along the river bank)
Thence, N88°00'00"W a distance of 2605.90 feet; (Segment 5)
to the point of beginning. Containing 81.7 acres (permitted), in Section 21.
(Also described as that portion of the S ½ of N ½ of Section 21 located W of the Piedra River.)

The total of the permitted area being 171.7 acres, more or less.

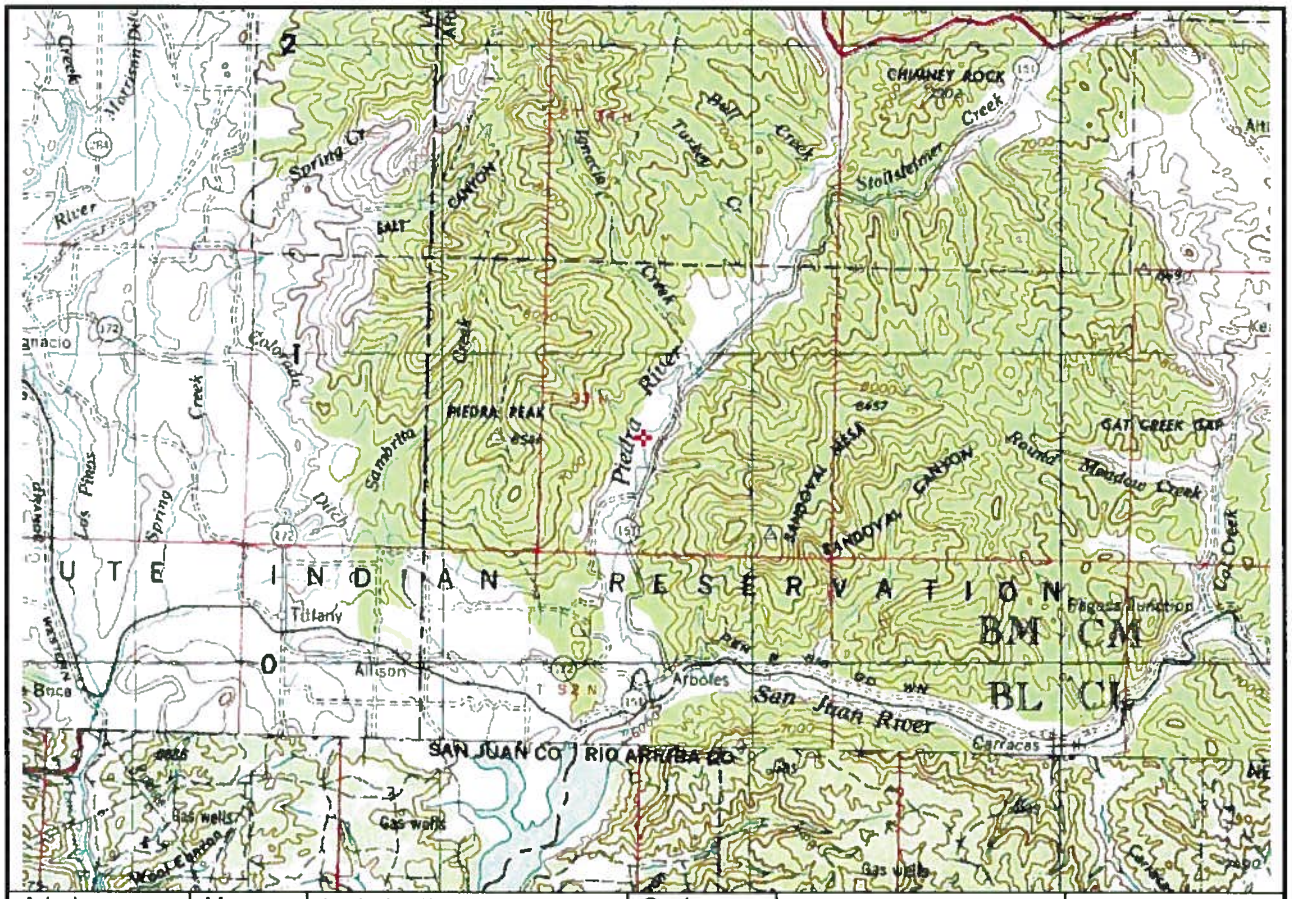
Property corners are marked with standard survey markers; corners which might be disturbed by mining activities will also be marked with witness markers and delineators.

This legal description includes ALL lands currently permitted under Special 111 Operations Reclamation Permit M2013-035 (Lob Lolly 111 Pit) and which were originally in the application of M2008-036

EXHIBIT B - INDEX MAP

No change from 2008 application.

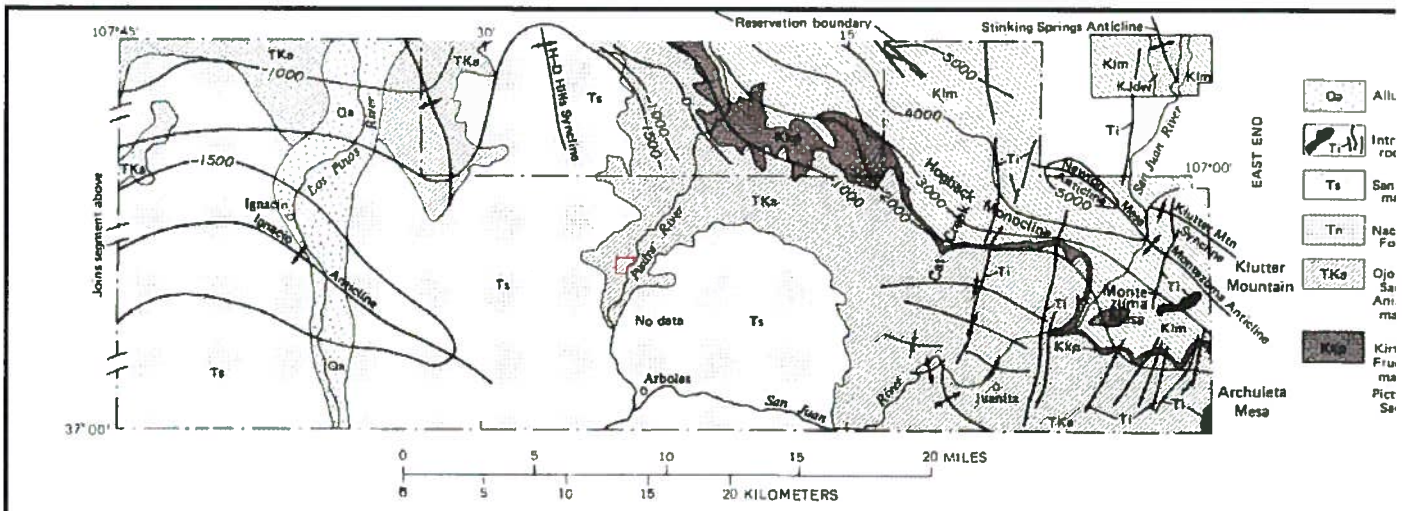
LOB LOLLY PIT AREA MAP



Arboles Sand & Stone LLC	Map Title	Lob Lolly Pit Index Map	Scale	1:500,000	North ↑ Date: 15OCT07
	Source of Map	TopoZone.com Durango 1:250,000 1953	Permit No. & Name	M-2008-036 Lob Lolly Pit	Drawn by NAB Checked by NAB
	Legend	Standard USGS	Ref	Red cross marks pit	File No. B-1

Address: 12577 Highway 151, Arboles, CO
Entrance to Site (Bridge across River): Lat 37.0929° Long -107.3974°

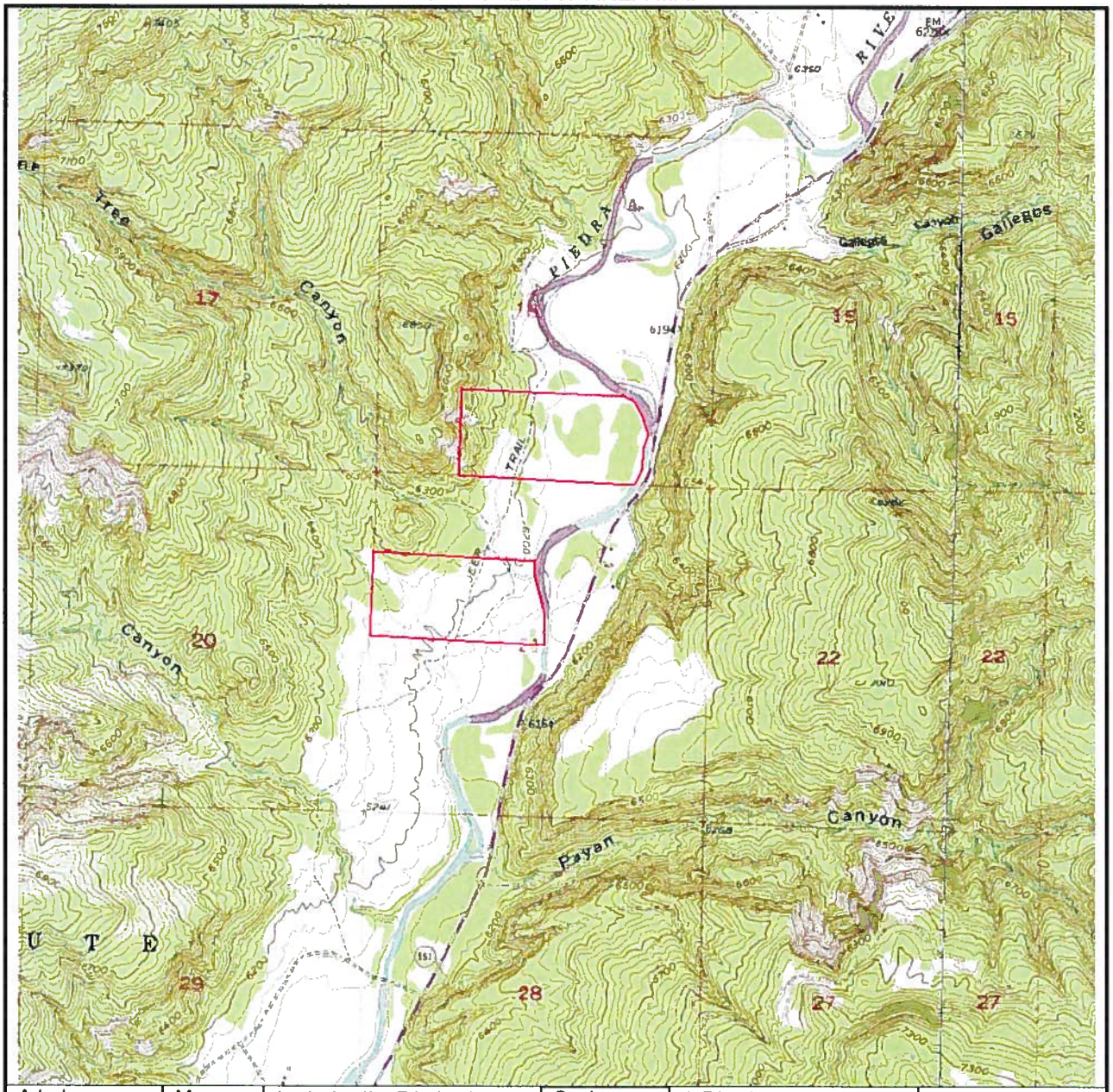
Lat/Long: – 44.52000, -104.55175



Arboles Sand & Stone LLC	Map Title	Lob Lolly Pit Area Surficial Geologic Map	Scale	As shown
	Source of Map	BIA Resource Info Report, 1976 http://www1.eere.energy.gov/tribalenergy/guide/pdfs/southern_ute_19.pdf	Permit No. & Name	M-2008-036 Lob Lolly Pit
	Legend	As shown above. Red box marks pit.		

Attachment 1 to Exhibit B (Operation Location Map) USGS 1:24,000 map.

LOB LOLLY PIT AREA MAP



Arboles Sand & Stone LLC 12577 Hwy 151 Pagosa Springs	Map Title	Lob Lolly Pit Index Map	Scale	1:50,000	North Date: 02NOV07
	Source of Map	USGS Allison 7.5-min topo quad 1:24,000	Permit No. & Name	M-2008-036 Lob Lolly Pit	Drawn by NAB Checked by NAB
	Legend	Standard USGS. Permit boundary in red.	Ref		File No. B-1-1

Map is circa 1973: some features have changed.

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

Maps updated from 2008 application.

INDEX

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

MAP C-2: Entire site showing proposed mining and facilities. Refer to detail maps for years of mining.

MAP C-3: Entire site showing roads.

MAP C-4: Detail map of plant site

MAP C-5: Detail map of Area A

MAP C-6: Detail map of Area B

MAP C-7: Detail map of Areas C and D

MAP C-8: Detail map showing area currently impacted as of 2013

FIGURE C-1: Aerial (satellite) photo. *2004.*

FIGURE C-2. Aerial (satellite) photo 2012.

Notes:

There are no recorded easements except the easement for the natural gas pipelines. Although the existing ~~and planned~~ access road is connected to adjacent property to the west, there is no access easement across this property granted to any person: use of the road is through a contractual agreement only. There is no common-law easement established for the jeep trail: this property and adjacent properties are posted.

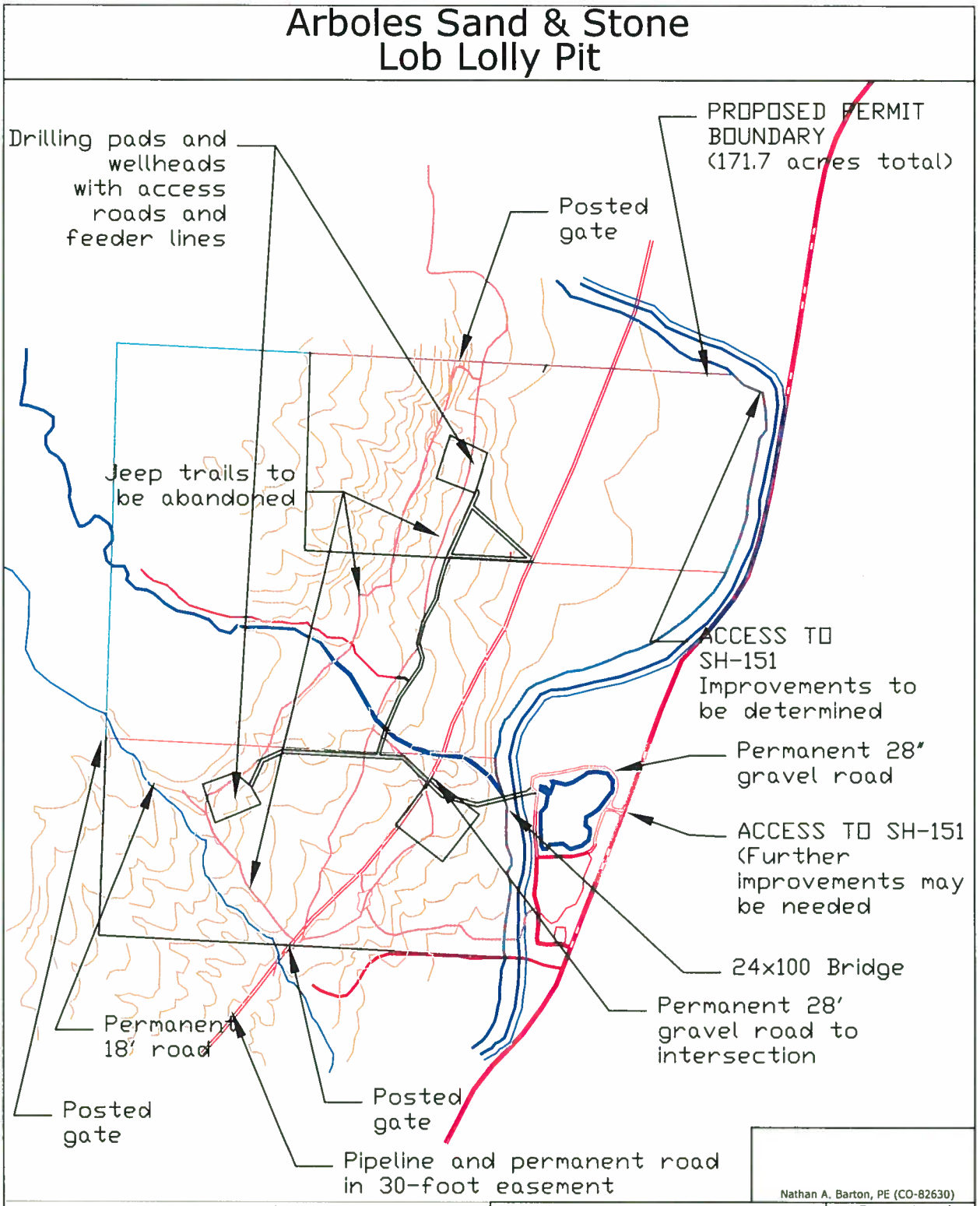
Information on soils is shown on Map in Exhibit I.

Information on vegetation is shown on Map in Exhibit J.

Adjoining surface owners of record are shown on Map in Exhibit O.

Information on permanent or man-made structures is shown in Table in Exhibit S.

Arboles Sand & Stone
Lob Lolly Pit



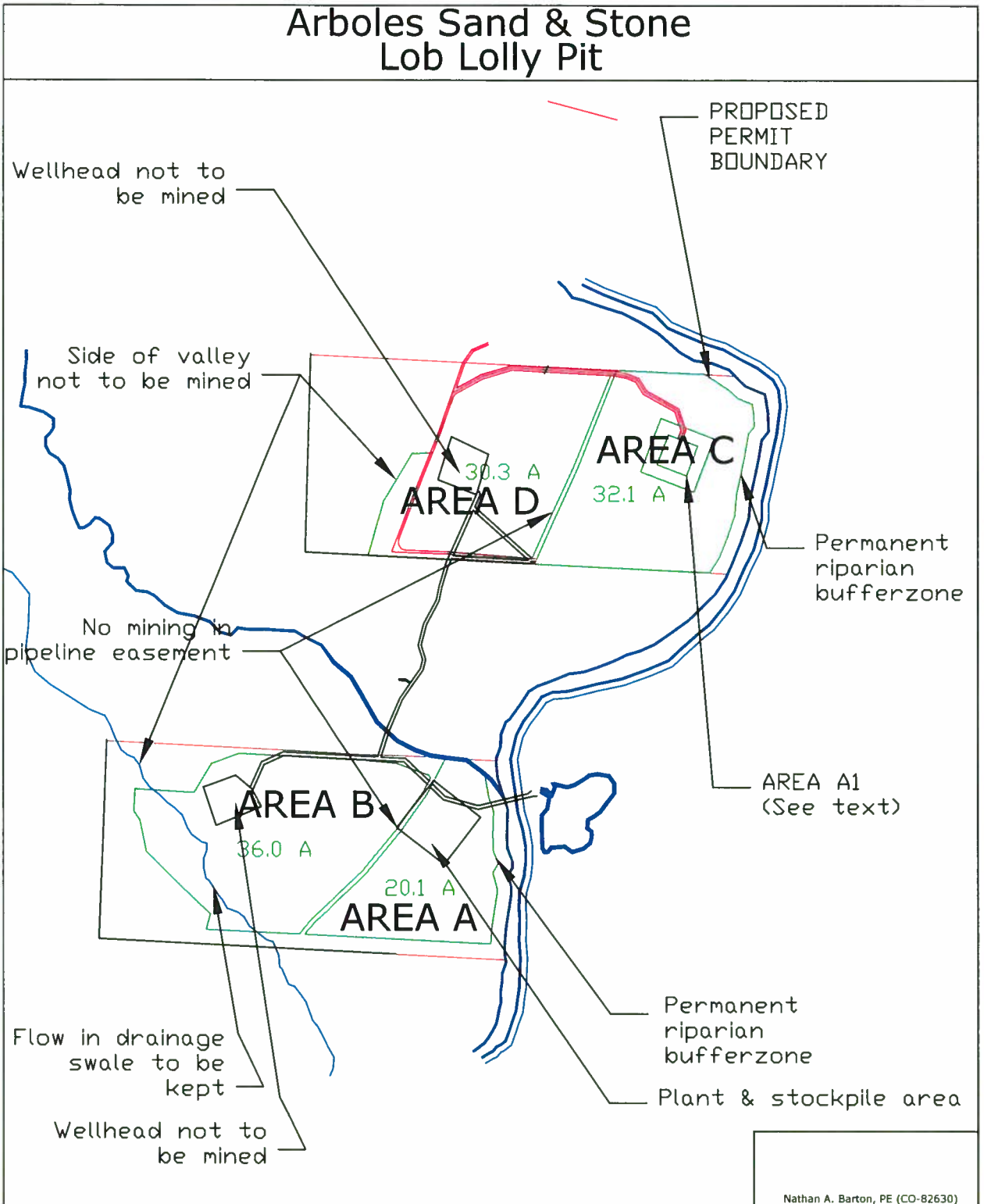
Nathan A. Barton, PE (CO-82630)

Prepared for AS&S by and (c) WASTELINE, INC.
Date:30MAY08 Rev:30MAY13
By: N. Barton Review: S. Wright
Scale: 1"=1000' Source: USGS Map/Photo.
Portions Sec 15,16&21, T33N, R5W, 10th PM,
Archuleta Co., CO, Pertaining to
Application: M-~~2008-036~~

MAP SHOWING SITE FEATURES AND CONTOURS BEFORE MINING

Drawing/ Sheet No.
C1

Arboles Sand & Stone
Lob Lolly Pit



Nathan A. Barton, PE (CO-82630)

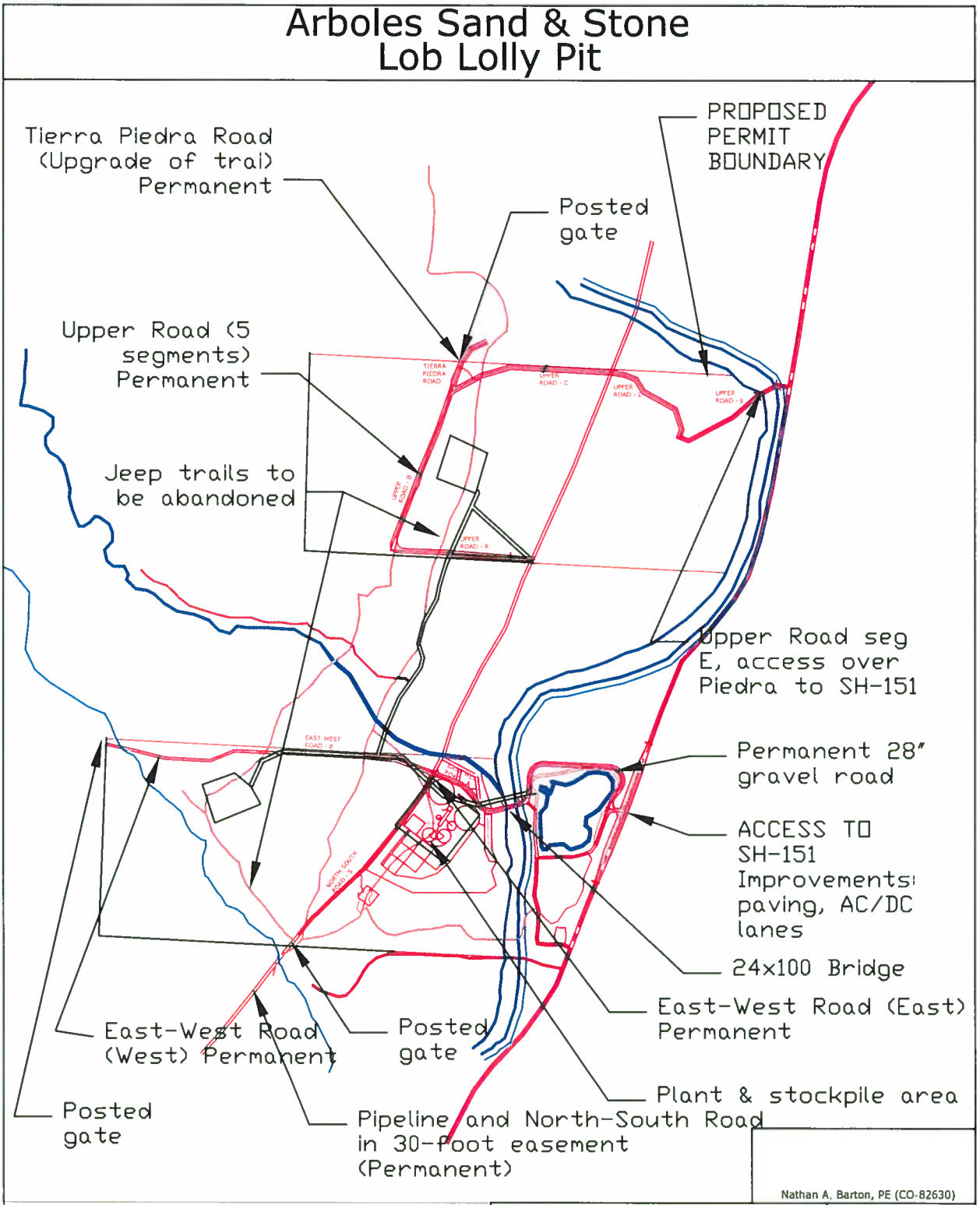
Prepared for AS&S by and (c) **WASTELINE, INC.**
Date: 30 MAY 08 By: N. Barton Rv: S. Wright Rev 30MAY13 By NAB Scale: 1"=1000'
Source: USGS Map/Photo.
Portions Sec 15,16&21, T33N, R5W, 10th PM,
Archuleta Co., CO, Pertaining to Application: M-~~2008-036~~

MAP SHOWING AREAS TO BE MINED

Drawing/ Sheet No.

C2

Arboles Sand & Stone
Lob Lolly Pit

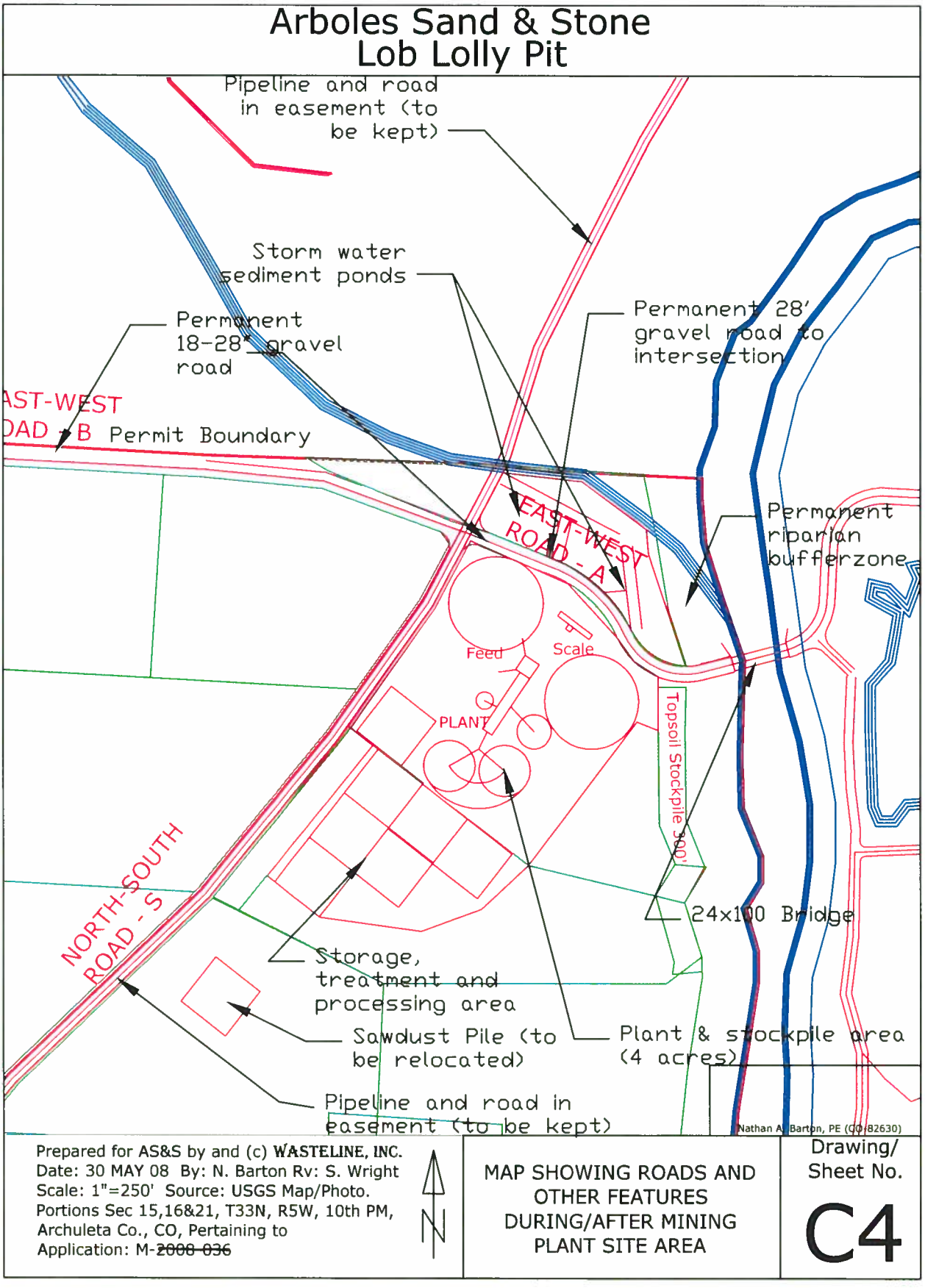


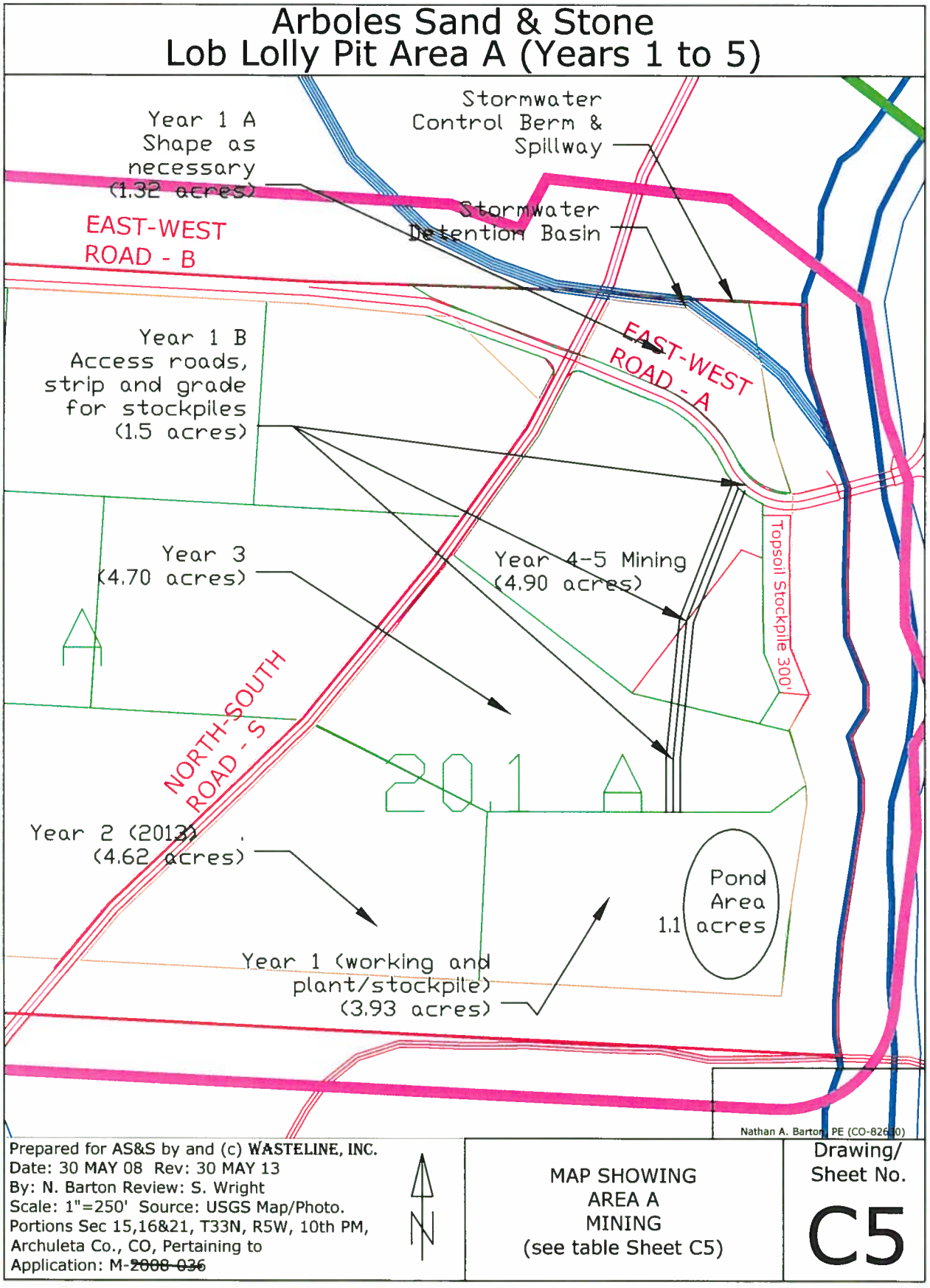
Nathan A. Barton, PE (CO-82630)

Prepared for AS&S by and (c) **WASTELINE, INC.**
Date: 30 MAY 08 By: N. Barton Rv: S. Wright
Scale: 1"=1000' Source: USGS Map/Photo.
Portions Sec 15,16&21, T33N, R5W, 10th PM,
Archuleta Co., CO, Pertaining to
Application: M-~~2008-036~~

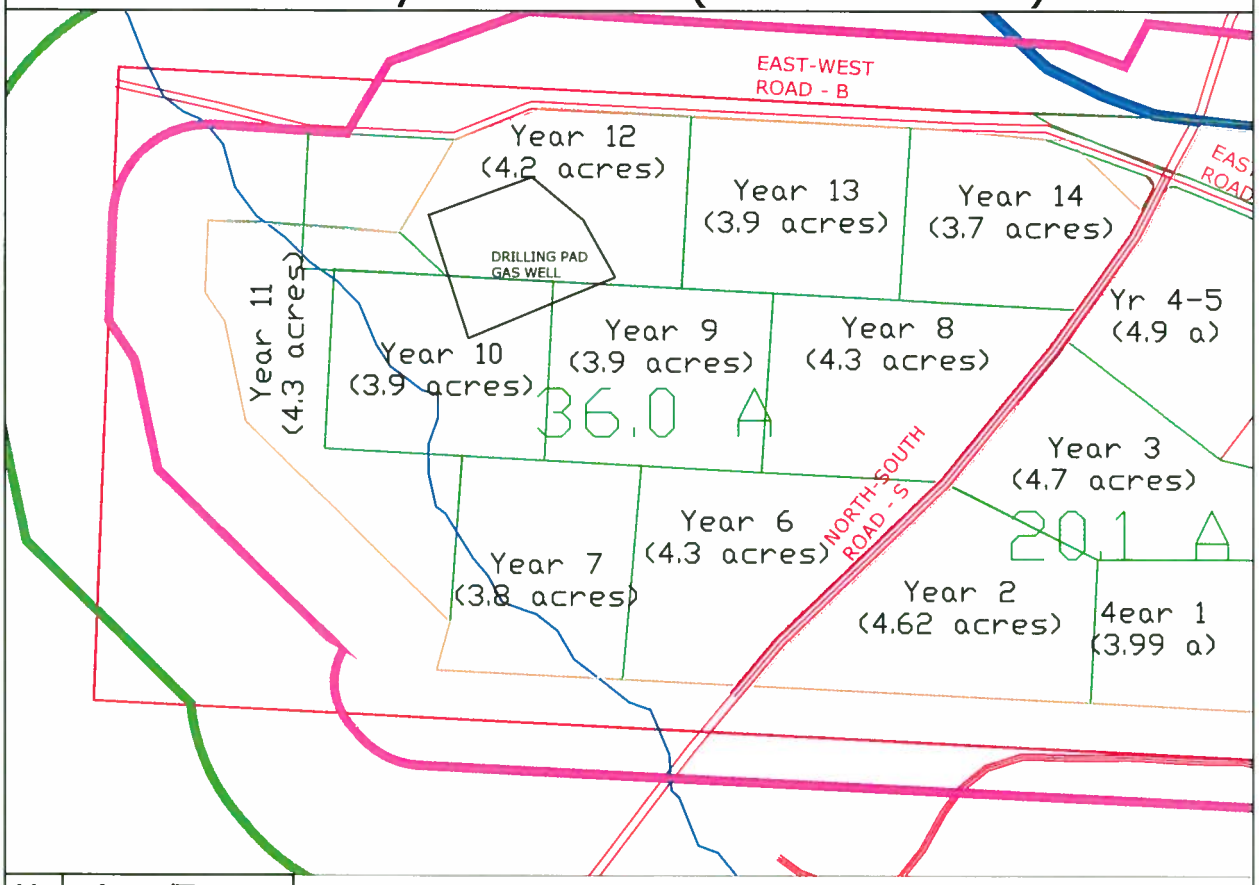
MAP SHOWING ROADS AND OTHER FEATURES DURING/AFTER MINING

Drawing/ Sheet No.
C3


Arboles Sand & Stone
Lob Lolly Pit
Pipeline and road in easement (to be kept)
Storm water sediment ponds
Permanent 18-28' gravel road
Permanent 28' gravel road to intersection
AST-WEST
OAD - B
Permit Boundary
EAST-WEST ROAD - A
Permanent riparian bufferzone
Feed
Scale
PLANT
Topsoil Stockpile 300'
24x100 Bridge
NORTH-SOUTH ROAD - S
Storage, treatment and processing area
Sawdust Pile (to be relocated)
Plant & stockpile area (4 acres)
Pipeline and road in easement (to be kept)
Nathan A. Barton, PE (CO 82630)
Prepared for AS&S by and (c) WASTELINE, INC.
Date: 30 MAY 08 By: N. Barton Rv: S. Wright
Scale: 1"=250' Source: USGS Map/Photo.
Portions Sec 15,16&21, T33N, R5W, 10th PM,
Archuleta Co., CO, Pertaining to
Application: M-2008-036
MAP SHOWING ROADS AND OTHER FEATURES DURING/AFTER MINING PLANT SITE AREA
Drawing/ Sheet No.
C4


Arboles Sand & Stone
Lob Lolly Pit Area A (Years 1 to 5)
Year 1 A
Shape as
necessary
(1.32 acres)
Stormwater
Control Berm &
Spillway
Stormwater
Detention Basin
EAST-WEST
ROAD - B
EAST-WEST
ROAD - A
Year 1 B
Access roads,
strip and grade
for stockpiles
(1.5 acres)
Year 3
(4.70 acres)
Year 4-5 Mining
(4.90 acres)
Topsoil Stockpile 300'
NORTH-SOUTH
ROAD - S
201
Year 2 (2013)
(4.62 acres)
Pond
Area
1.1 acres
Year 1 (working and
plant/stockpile)
(3.93 acres)
Nathan A. Barton, PE (CO-826[illegible])
Prepared for AS&S by and (c) WASTELINE, INC.
Date: 30 MAY 08 Rev: 30 MAY 13
By: N. Barton Review: S. Wright
Scale: 1"=250' Source: USGS Map/Photo.
Portions Sec 15,16&21, T33N, R5W, 10th PM,
Archuleta Co., CO, Pertaining to
Application: M-~~2008-036~~
N
MAP SHOWING
AREA A
MINING
(see table Sheet C5)
Drawing/
Sheet No.
C5

Arboles Sand & Stone
Lob Lolly Pit Area B (Years 6 to 14)



Yr	Area/Tons
1	9.24/320,000
2	4.62/250,000
3	4.70/219,000
4	2.45/183,000
5	2.45/183,000
6	4.27/173,000
7	3.82/150,000
8	4.30/150,000
9	3.91/127,000
10	3.93/107,000
11	4.25/120,000
12	4.23/103,000
13	3.91/127,000
14	3.72/151,000

NOTE: ONLY 5.4 A disturbed as of 30 MAY 2013, remainder to be in Year 1 and 2 area; tonnage estimated at avg 70,000 tons per year.

Nathan A. Barton, PE (CO-82630)

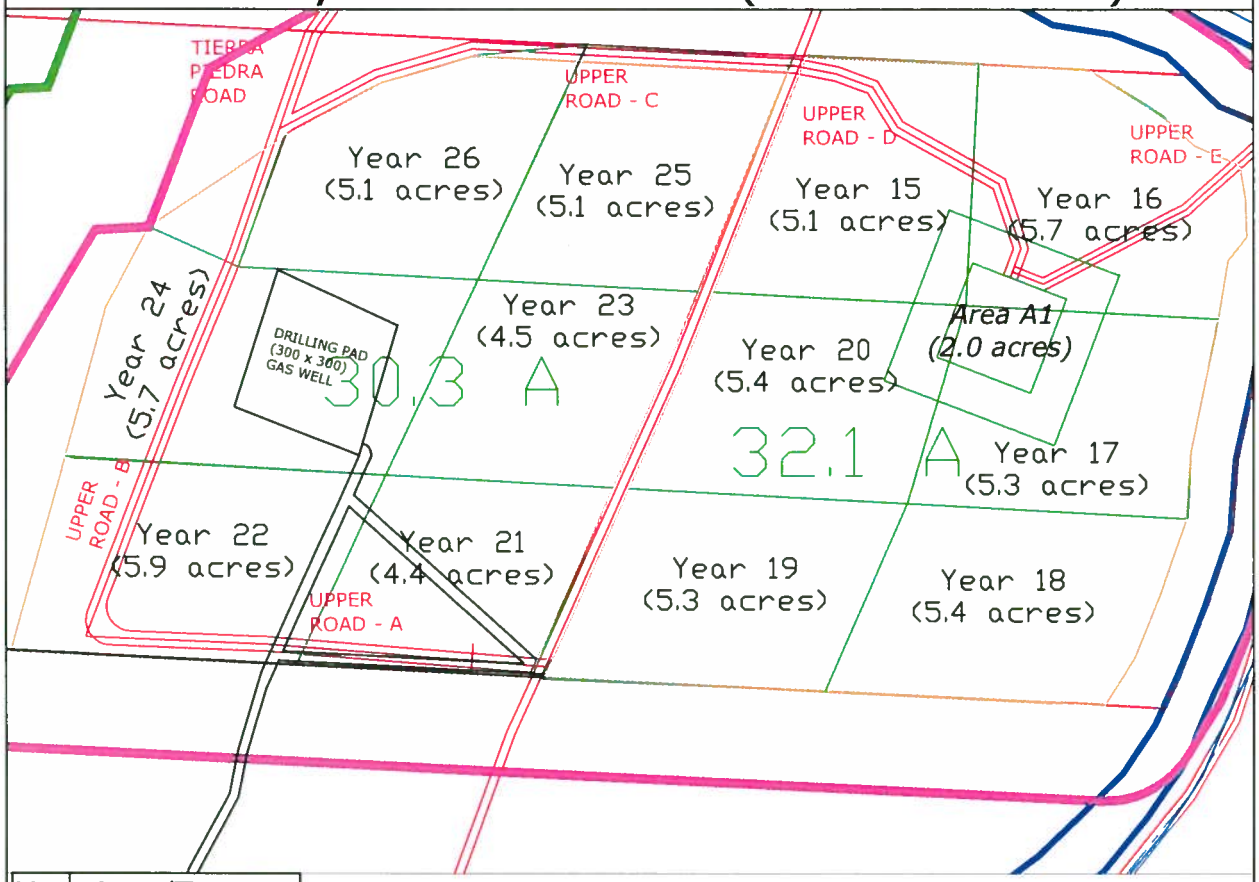
Prepared for AS&S by and (c) **WASTELINE, INC.**
Date: 30 MAY 08 Rev 30 MAY 13
By: N. Barton Review: S. Wright
Scale: 1"=400' Source: USGS Map/Photo.
Portions Sec 15,16&21, T33N, R5W, 10th PM,
Archuleta Co., CO, Pertaining to
Application: M-~~2008-036~~

N

MAP SHOWING
AREA B
MINING

Drawing/
Sheet No.
C6

Arboles Sand & Stone
Lob Lolly Pit Areas C & D (Years 15 to 25)



Yr	Area/Tons
A1	2.0 / 40,000
15	5.1 / 370,000
16	5.7/ 290,000
17	5.3 / 350,000
18	5.4 / 290,000
19	5.4 / 340,000
20	5.3 / 230,000
21	4.4 / 180,000
22	5.9 / 190,000
23	4.5 / 180,000
24	5.7 / 180,000
25	5.1 / 170,000
26	5.1 / 125,000
27	End of mining

Nathan A. Barton, PE (CO-82630)

Prepared for AS&S by and (c) WASTELINE, INC.
Date: 30 MAY 08 Rev: 30 MAY 13
By: N. Barton Review: S. Wright
Scale: 1"=400' Source: USGS Map/Photo.
Portions Sec 15,16&21, T33N, R5W, 10th PM,
Archuleta Co., CO, Pertaining to
Application: M-~~2008-036~~

MAP SHOWING
AREAS A1, C & D
MINING

Drawing/
Sheet No.
C7

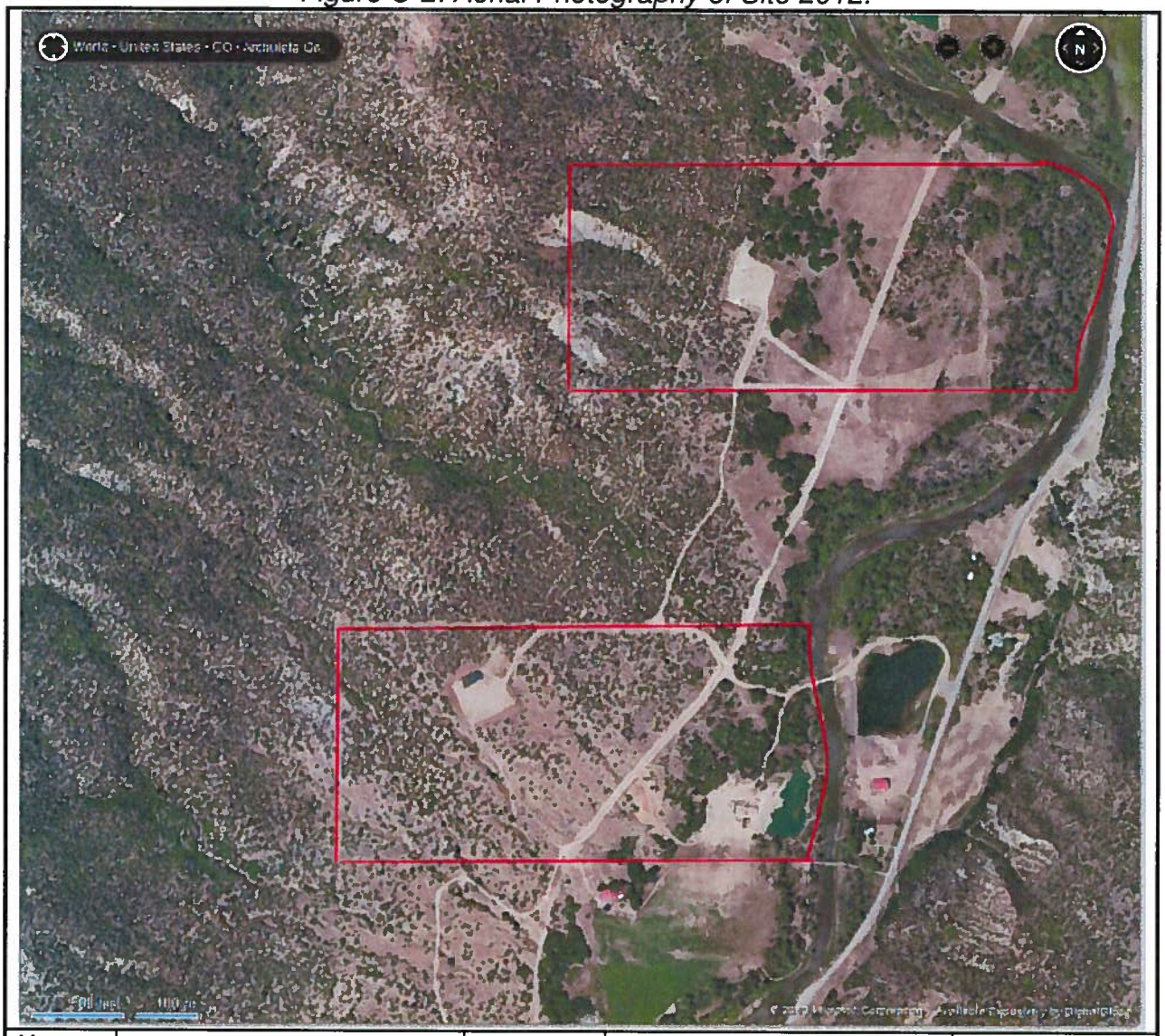
C-8

The above map (based on Fall 2012 satellite photography (Courtesy Bing and Archuleta County) shows the SE corner of Area A, including areas listed in Section D.12. It also shows the North-South Road (along pipeline) and part of the East West Road including the bridge. The red line is the permit boundary, and the green line the 200-foot set off from affected areas. The hatched areas are stockpiles of soil and overburden.

Figure C-1: Aerial Photography of Site.

Map Title	Aerial Photo 2004	Scale	1:10,000	North ↑
Source of Map	USGS via GoogleEarth	Permit No. & Name	M-2008-036 Lob Lolly Pit	Drawn by NAB Checked by NAB 15 NOV 2007
Legend	Taken 2004. Red: permit boundary line.	Ref	Exhibit D.	
Prepared by N. A. Barton, PE, DEE, #27342 for Arboles Sand & Stone, LLC Applicant		SIGNATURE		File No. C-1

Figure C-2: Aerial Photography of Site 2012.



Map Title	Aerial Photo 2012	Scale	1:10,000	North ↑
Source of Map	USGS via Bing Maps	Permit No. & Name	M-2008-036 Lob Lolly Pit	Drawn by NAB Checked by NAB 26 MAY 2013
Legend	Taken Fall 2012. Red: permit boundary line.	Ref	Exhibit D.	
Prepared by N. A. Barton, PE, DEE, #27342 for Arboles Sand & Stone, LLC Applicant		SIGNATURE		File No. C-1

EXHIBIT D - MINING PLAN

Updated from 2008 application.

D.1. GENERAL CONCEPT:

D.1.1. The site consists of quaternary alluvial sand and gravel deposits of the Piedra River Valley, and is located on the Northwest/West side of the Valley. See Map C-1.

D.1.2. Mining will be done in four areas, A, B, C, and D. See Map C-2. Mining operations will begin adjacent to the natural gas pipeline easement and the East-West Road in the South Parcel.[1] Initial stripping and mining will establish the area for plant and stockpile area as shown on the maps, and to construct roads.

D.1.3. Stripped topsoil will be placed in stockpiles adjacent to roadways and convenient to areas being mined to reduce effort to replace soil after mining is completed in an area. Actual extraction will begin in the southeast corner of the site. Mining in each of the areas will be sequenced slightly differently, with stripping of topsoil from areas mined in later years replacing topsoil in areas mined in earlier years. Prior to placement in stockpiles, topsoil may be screened to remove cobbles which will be extracted material. Mining of the main area will then commence; large pockets of sand, silt, and mud may be expected to be found. In some cases, isolated pockets of sand may be mined partially or completely out of the sequence shown in maps, to meet specific customer needs.

D.1.4. 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.

D.1.5. Working faces will range from 20 to 60 feet in height (but will be terraced to a maximum height of 20 feet for safety purposes), and mining will be done along a face of 200 to 600 feet in width, with areas of 5 to 10 acres being mined at any given time. Access above the highwall to the stripped area and the topsoil stockpiles will be via a ramp from the floor of the pit or directly off permanent roads. As much as possible, loaders will remove material from the working face and feed directly into the processing plant, located as close to the working face as feasible. Based on production levels, portable conveyors or trucks may also be used to haul from the working face to the plant.

D.1.6. 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. Where necessary, especially in the lower areas (closer to the river), mining may be done in ponds using backhoes to the planned depth. Again, such ponds (below the normal ground water table) will be a permanent part of reclamation.

D. 2. ASSUMPTIONS:

1. Annual production will be variable, but is assumed to be up to average *70,000* tons per year.
2. Screening and washing will remove 10% (*7,000* tons per year on average), fines which will be used for backfill and reclamation (together with overburden).
3. Soil ranges from 0.25 to 2 foot in depth, and will be salvaged and stored or used in reclamation as work progresses.
4. Overburden (clay and loam) ranges from 0 to 20 feet in depth, and averages 5 feet in depth, but is expected to be found throughout the profile, in lenses of alluvial deposits.
5. Sand and gravel deposit ranges from 20 to 60 feet in depth, averaging 60 feet deep east of the pipeline and 30 feet deep west of the pipeline. (Mining east of the pipeline *will* be done in several phases based on ~~potential for~~ encountering alluvial groundwater.)
6. Excavation *is expected to* be above the water table west of the pipeline.
7. Slopes for edges of the pit, including the edges along the pipeline easement, will be a maximum of 2:1 (or benched with a maximum height of 20 feet and a minimum width of 30

[1] Mining did begin in this area, as shown in Exhibit C maps.

feet, with average 2:1) and will be cut as mining progresses. Normally, the edge will be mined at the 2:1 slope, rather than cutting a highwall and using part of the highwall to provide material for the final slope, but this will vary based on material encountered.

8. Pit floors will slope to the east (towards the river) and will allow precipitation to infiltrate; no surface discharge is planned. Permanent and ephemeral ponds are expected to exist during mining, with infiltration to ground water and to the river, through unmined alluvial materials under the pipeline and in the buffer zone along the river.

D.3. PHASES OF MINING:

Mining of the site will be done in four broad phases, with the assumptions discussed above:

D.3.1. In Phase A (Years "0" to 5), Area A (the Lower South Area) will be mined (Map C-5). The East-West Road between the pipeline and the river will be mined out and replaced as necessary based on traffic flow. This includes the permanent plant, stockpile area, and storm water/water reclamation basins as shown. It is anticipated that all trees will be logged from this area at one time, unlike in other phases. Sawdust stockpile will be removed or relocated prior to stripping *that area*. Estimated maximum depth of mining is 60 feet, but may vary significantly depending on need to slope exterior edges and ground water levels.

D.3.2. In Phase A1, (Years "0" to 1) depending on demand and provided there is access granted (including easements on a temporary basis), a small portion of Area C may also be mined during this and other phases for purposes of getting specific grades of sand and other materials, and as convenient for permanent road construction both in the North Parcel and on adjacent properties. This is estimated to require 1-2 acres.

D.3.3. In Phase B (Years 5 to 12), Area B (the Upper South Area) will be mined (Map C-6). Mining will proceed from generally southeast to northwest, starting at the Southeast corner of the area. In this and subsequent phases, trees and brush will be logged/removed only for one to three years mining at a time.

D.3.4. In Phase C (Years 12 to 19), following CDOT grant of an access permit to SH-151 and construction of a bridge or low-water crossing as shown on maps, *or based on the landowner in between authorizing use of the access road for haul of material*, Area C (the Lower North Area) will be mined (Map C-7). Mining will proceed from east to west, starting in the Northeast corner (by the highway access) just at the corner of the 100- foot buffer zone along the river. Assuming that there is no direct access between the North and South Parcels, on either a permanent or temporary basis, a small plant area will be established in Area C. There is a small portion of Area C which may be mined as soon as Phase A, based on demand for the sand available there.

D.3.5. In Phase D (Years 19 to 23), Area D (the Upper North Area) will be mined (Map C-7). Mining will proceed from southeast to northwest, starting in the Southeast corner and working uphill. Also during the period, and assuming approval by the adjacent landowner, the north 100-foot buffer zone may be mined and sloped for final reclamation.

D.3.6. In each year of mining (ranging from 5 to 10 acres, based on assumptions), the same routine will be followed. As needed, a temporary haul road will be extended to the planned depth of mining. The entire area will be cleared, grubbed, and stripped, with saved topsoil moved either to an area being reclaimed, or a long-term storage stockpile. The area will then be mined in one or more lifts, and reclamation for much of the area (except that needed for processing plant(s) and for the temporary haul road) will begin immediately. A stockpile/plant area in Area A will remain in use for the life of the pit and will be used for other industrial use during mining and after mining operations cease.

D.4. MINED, UNMINED, AND DISTURBED AREAS:

D.4.1. A total of approximately 118.5 acres will be mined, 69% of the total site/permit area. Map C-2.

D.4.2. These areas, totaling 53.2 acres, will not be mined:

1. All areas within 100 feet of the high water mark (HWM) of the Piedra River, which will form a buffer zone to protect the river, ensure that the riverine wetlands are not impacted, and provide for visual impact mitigation.

2. A 100-foot buffer zone at the extreme south boundary 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.
3. The steeper, exposed, and visible slopes of the west side of the valley, due to difficulty and quality of materials, for visual impact mitigation, and to provide seed reservoirs.
4. The easements for the natural gas pipeline *and the drilling pads.* This will be used for a permanent road which will be used and maintained as a haul road connecting the north and south areas, but will not be mined, as required by the easement agreement.

D.4.3. The major roads are to be permanent in nature. Where necessary, the East-West Road will be mined out section by section and rebuilt at the lower level as necessary; it is included in the affected acreage: the western portion of the East-West Road *was* ~~will be~~ constructed on the north edge of the South Parcel and will not be in an area to be mined. The North-South Road along the pipeline will remain undisturbed during the life of the mine, and is not included in the disturbed acreage. The North-South Road extends onto adjacent properties.

D.5. STRIPPING AND MINING TECHNIQUE:

D.5.1. STRIPPING: See Exhibit I for detailed information on soil. Soil and overburden will be stripped, stockpiled, and preserved for use in reclamation. Most soil on the mining areas has a significant amount of large materials (cobbles and smaller stones, 4-inch and larger), which may be screened out either before placing in stockpiles or before moving from stockpiles to placement for reclamation. Soil and overburden will be stockpiled separately.

D.5.2. Following harvest of timber and grubbing of woody species, the topsoil, with grasses and forbs, will be stripped using scraper, dozer, and/or loaders. Most topsoil may be screened to remove roots and larger materials for processing and sale or use. NOTE 1: DRMS REVIEW. [2] After screening, for the first one to four years, topsoil will be placed in stockpiles at convenient locations for long-term storage and protection of topsoil. Both larger stockpiles (50 feet or more wide, and several hundred feet long, with heights of up to 25 feet) and smaller windrows/dikes (20-30 feet wide, heights of up to 15 feet, various lengths) will be used to store topsoil and also assist in control of erosion and drainage. As soon as possible as mining progresses, topsoil will be immediately moved (following stripping and any screening) to areas which are at final grade, where it will be used to replace topsoil on these locations, to reduce handling and improve quality. Based on planned reclamation to ponds and other purposes, and

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[2] Original DRMS comment: 2. *The submitted Mining Plan states, "After screening for the first one to four years, topsoil will be placed in stockpiles at convenient locations fro long-term storage and protection of topsoil." The topsoil at the site will need to be stripped and savaged upon commencement of mining activities, and not after one to four years. Please specify this in the Mining Plan.*
Summary of original response to DRMS comment 2 [changes to original shown in italics): It is not and never has been our intent NOT to strip ("salvage") and stockpile soil during ANY phase of operations. As stated in the opening paragraphs of Exhibit D *[D.1.3.]*, the removal and preservation of soil will be done in two different methods:
a. Initially, during the first one to four years of mining operations, all stripped soil will be placed into long-term stockpiles. Before being placed in these long-term stockpiles, the soil may be screened to remove oversize materials (cobbles) which are mineable materials.
b. After the first period (of up to four years), it is our intent that all stripped soil will be moved directly to areas to be reclaimed, again possibly after stripping to remove oversize materials.
c. This is also discussed in Exhibit D (Section 10) *[D.10.1] [Quote in original removed here.]*
d. The reason for the placement in long-term stockpiles initially is to open enough area for plant and stockpile operations and because soil will be stripped from roads, as stated in *D.1.2. (Quote in original removed here].*
e. Please note the statement in *D.3.6. (Quote in original removed here].*

replacement of topsoil (on top of suitable substrate for a minimum of 18 inches of soil), there may be excess topsoil which may be made available for off-site use.[3]

D.5.3. 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 bar ditches for the access road if necessary). All surface discharge of storm water will first flow through a sediment basin and other storm water controls; most storm water will infiltrate into the ground directly, or flow overland into 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).

D.5.4. MINING: Mining will be conducted in one to three cuts, each not exceeding 20 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, due to expected infiltration capacity of remaining materials and the shape of the pits.~~ Where ground water is exposed in mining, excavation will generally be "wet" with backhoe or other method of extracting material from at or below the water level. Dewatering *may be required, based on materials being produced.*[4] ~~is not anticipated. A technical revision will be submitted if dewatering is needed. The EPA storm water permit allows such.~~

D.5.5. Mining consists of:

1. Stripping and conserving soil;
2. As necessary, removing and relocating overburden to backfill areas or stockpiles;
3. Removing the sand and gravel with loaders and/or backhoes, either in open air or from water;
4. Moving these excavated materials by loader or truck to stockpiles for the screening and crushing (processing) plant (Normally the plant will be in the area being mined, or in the area most recently mined and immediately adjacent to the area being mined, but a central plant area to stockpile processed materials for loadout and shipping, and oversize materials for periodic crushing *may* be established);
5. 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
6. Placement of excess materials (overburden, clean construction debris, fines, and oversize) by loader for backfilling, generally as soon as possible and as material is made available to final slopes.

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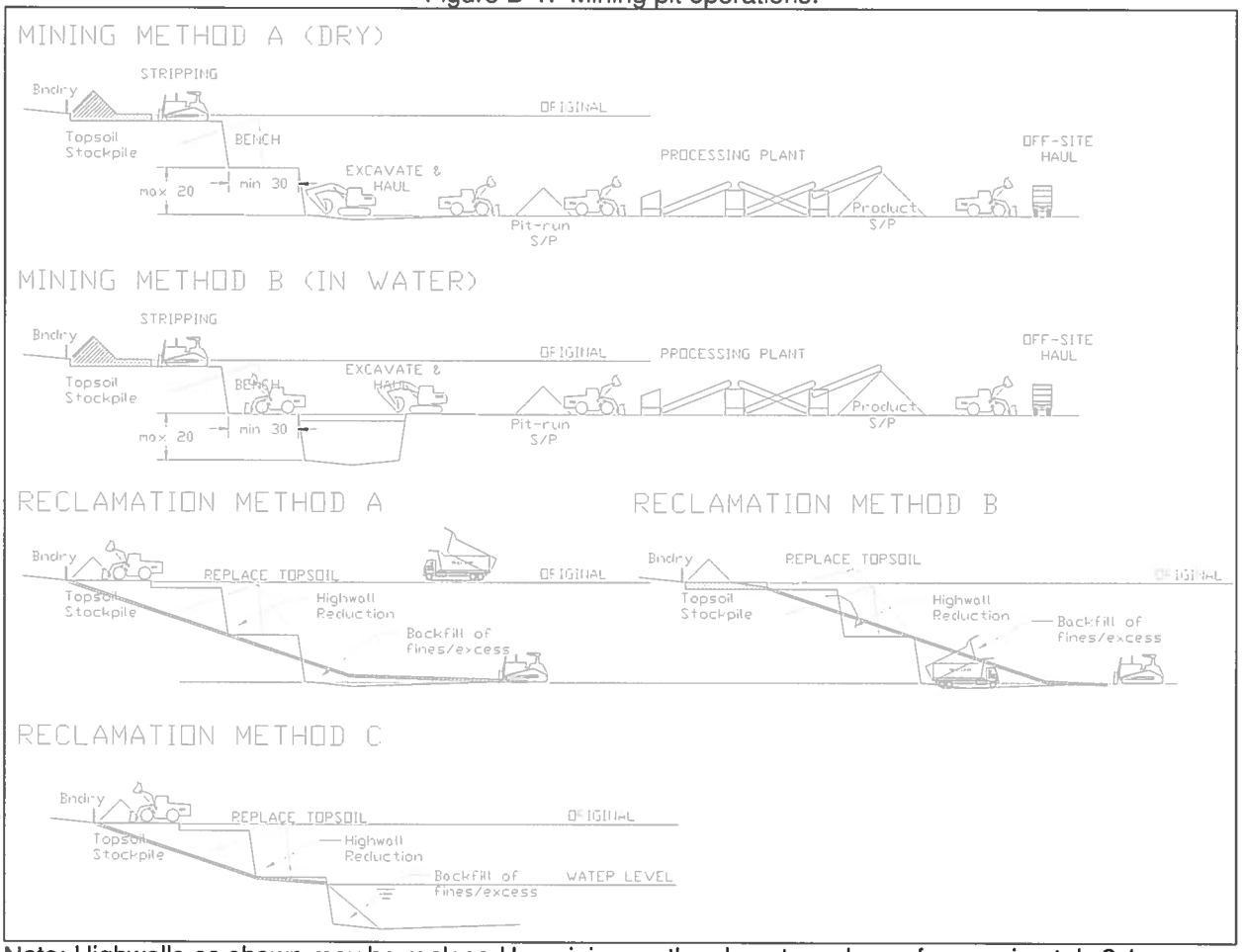
[3] The Operator understands that the burden of proof lies on them to substantiate that there is adequate topsoil. (This was the response to Original DRMS comment 3.)

[4] Original DRMS comment: *4. The submitted Mining Plan states in numerous places that the proposed mining method for locations where groundwater will be exposed will be wet mining, although dewatering may be necessary. The Operator should be aware that in order to conduct dewatering at the site, a revision to the permit will be required.*
Wet mining will be required only IF groundwater is exposed; it is not certain that groundwater will be exposed, and the Operator may choose NOT to mine deep enough to expose ground water. It is the intent of the Operator, in this application, to include provisions for dewatering if necessary so that a revision to the permit at some later date is NOT required. Since we are unsure at this time whether dewatering will be necessary at some time in the future (just as we are unsure if wet mining will be necessary), we do not believe it is appropriate or reasonable to obtain a special permit for dewatering at this time.
In addition, most dewatering activities at a sand and gravel operation like this are covered under
the CDPHE general permit for storm water associated with sand and gravel mining, which we are obtaining at this time. If we have not provided enough information to make this possible, please tell us what additional information is needed at this time so that a future revision is not necessary.

Figure D-1. Mining pit operations.



Note: Highwalls as shown may be replaced by mining on the slope to a slope of approximately 2:1.

D.6. ROADS (MAP C-3):

D.6.1. EXISTING: Except for the *East-West Road and* North-South Road along the pipeline *and roads to drill pads*, all trails and roads on the site as of 1 May *2013* are unimproved and will not be kept or maintained. The North-South Road along the 30-foot easement of the pipeline *was improved in 2008-09 and is an* all-weather gravel and 24 feet in width, with culverts and drainage. *These are* not required for the pit operations and not considered part of mining activity, *but belong to the landowner and will be maintained and used for mining.*

D.6.2. ACCESS:

D.6.2.1. South Parcel: East-West Road: This road *was* built for well drilling and use *to* connect the private bridge over the Piedra River on the southeast perimeter of the permit area to the North-South Road, the wellhead located on the property, and the west edge of the property, where it will allow access to SUIT-owned lands to the west in the future. This will initially be the sole access for pit traffic to CO-151, located about ¼ mile to the east.

D.6.2.2. North Parcel: Upper Road: This road *exists for well drilling and use, and connects* the North-South Road (at two points), the wellhead located on the property, the Terra Piedra Road (a private road), and a private bridge across the Piedra River (on the north edge of the property, to be constructed at sometime in the future) connecting to SH-151 (approximately 100 yards to the east).

Tierra Piedra Road: This road connects to the Petrox Energy lands to the north. This road *connects* the North-South Road with more well development sites to the north, since the pipeline crosses the Piedra River just north of this site.
Portions A-D of the Upper Road and the Tierra Piedra Road *have been* constructed; Upper Road Portion E is expected to be constructed in Year 14 of the mining plan, prior to planned large-scale mining operations in the North Parcel.
D.6.2.3. General: The North-South Road and the Tierra Piedra Road *are* used for delivery of materials mined at the Lob Lolly Pit, and for backfill materials to be accepted at the pit, when such materials are used for or generated by well drilling, pipeline-laying, and other work associated with the pipeline for which an easement has been obtained by Xcel, Petrox, or other firms through the Lob Lolly Pit and adjacent properties. This road is necessary for purposes other than hauling of materials to/from the Lob Lolly Pit and therefore improvements are not considered part of mining activities. All above access roads are permanent in nature. These roads will be graveled according to Archuleta County and user requirements, and may be treated with mag-water or other dust control agents.
D.6.2.4. Due to requirements for construction of drilling roads and pads, in the HD Mountains, much of the truck traffic will use the private roads to the west, north, and south connecting to BIA/SUIT roads, via the North-South Road. This drilling and well/pipeline maintenance traffic is NOT part of regulated mining *or oil-gas* operations.
D.6.2.5. Note: Although not within the permit area, the intersections of the East-West Road with CO-151 and the Upper Road with CO-151 are subject to access permits from CDOT to serve this pit and *current/future* industrial activities, and agricultural operations (including oil and gas drilling and operations). These intersections *are or* will be improved to meet CDOT requirements, and at least the south access may ultimately include full acceleration/deceleration lanes (turn lanes) and 30-foot radii to meet requirements for traffic safety and volumes. These roads are required and planned regardless of the mining to be done on the site. CDOT *has issued the south access permit*; the north access road application will be filed within one year of planned construction of the access and bridge, which is expected to be at the time major mining operations commence in the North Parcel, about year 14-15.[5]

D.6.3. PIT ROADS (HAUL): Various pit roads will be constructed and used in the permit area for periods of from one to ten years or more; none are permanent. The exact routing of those roads will be identified as mining proceeds, and are not necessarily shown on maps. These roads may either be on the original ground surface or on a mined surface. All roads providing access to temporary plant sites will be all-weather, gravel, minimum 24-feet 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 and emergency services 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.

D.6.4. OTHER ROADS:
D.6.4.1. In the industrial area Plant Site, various roads *exist or* will be constructed as necessary to access the various plant locations; these roads are considered permanent in nature and are part of the proposed reclamation of the area. These are subject to change based on plant needs, and locations cannot be determined at this time.

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[5] A CDOT application can only be obtained one year in advance of planned construction.

D.6.4.2. Existing trails and new, temporary trails will be used as necessary to provide 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 will not be shown. No existing trails except the "jeep trail" identified on USGS maps are considered permanent structures, and the "jeep trail" will be replaced by the permanent North-South Road.

TABLE D-1. MAJOR PERMANENT ROADS

Road	Dim's (feet)	Area (acres)	Construction Period	Status	Remarks
North-South N	1390x24	0.77	Existing	Permanent	Access to off-site
North-South S	1416x24	0.78	Existing	Permanent	Access to off-site
East-West-A (Entry)	566x28	0.36	Existing	Permanent	Access to off-site
East-West-B	2230x28	1.43	Existing	Permanent	Well use
Upper Road-A	967x24	0.53	Existing	Permanent	Well use
Upper Road-B	1132x24	0.62	Existing	Permanent	Well use
Upper Road-C	1110x24	0.61	Existing	Permanent	Well use
Upper Road-D	716x24	0.39	Year 0 or 1	Permanent	On-site use
Upper Road-E	840x24	0.46	Year 14 or 15	Permanent	Access to off-site
Tierra Piedra Road	216x24	0.12	Existing	Permanent	Access to off-site

D.7. MISCELLANEOUS ACTIVITIES:

D.7.1. The South Parcel (Mining Areas A and B) is currently zoned Industrial by Archuleta County *have been* and will be used during and after mining operations to provide space for temporary and permanent plants, including portable plants which may or may not be directly related to mining activities, and staging of plants and equipment, such as drilling, construction, and processing equipment which may not be operated on-site, and for other industrial activities. [6]

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[6] Original DRMS Comment *5. The submitted Mining Plan states that other activities and materials may be onsite during the mining operation. Some of the items listed include drilling equipment and activities related to maintenance and storage of this equipment; and storage, treatment, and recycling of materials associated with oil and gas exploration and production. Please be aware that such materials,activities, and equipment related to oil and gas exploration and production are regulated under the Colorado Oil and Gas Conservation Commission and an Permit to Drill must be obtained by the company conducting such activities prior to commencement of these activities.*
Additionally, all materials, equipment, products, by-products, and wastes associated with the drilling and production activities must remain within the designated well pad limits and will be regulated by the COGCC. If the Operator desires to become a receiving facility for such materials, the Operator must first obtain the necessary permits through CDPHE and any other regulatory agency necessary to become such a facility. Such a change in the designation of the site will also require a revision to the mining permit.
The Operator is aware of the need to have other applicable permits for certain activities on site, as discussed in detail in the eighth paragraph of Exhibit D (Section 7): "*(in accordance with other permits, as necessary),...*" As discussed during the site visit, the oil/gas drilling operations are separate from the mining, and will take place whether the mining and reclamation permit are issued or not. The Operator will not be doing such drilling and related activities; professional oil and gas exploration and production companie(s) will be doing that work in accordance with a contract with the landowner. That agreement requires that those companies obtain COGCC permits and comply with COGCC regulations. Therefore, it is a reasonable assumption that those companies will comply with COGCC and other state and local requirements for exploration and production of oil and gas.

D.7.2. Due to the location and nature of the site, and based on ~~planned~~ oil and gas exploration and production activities in the area, as well as the existing industrial zoning on the site, a number of other activities will or may be occurring on the site at the same time that mining is being done. These include:

a. Transportation, storage, cleaning, refurbishment, replacement, and maintenance of oil and gas well drilling equipment, oil and gas production equipment, pipeline construction/installation, road construction, and maintenance equipment.
b. Transportation, storage, treatment, and recycling of materials associated with oil and gas exploration and production, including fresh and used water, drilling mud (bentonite clays and admixtures), pipes, petroleum-contaminated soils, and other materials.

Industrial activities such as the storage, maintenance and repair of equipment, supplies, and materials used for drilling and related operations (such as construction and maintenance of pipelines) may be conducted on the property, which is zoned "Industrial" by Archuleta County and is suitable for such use. However, to our knowledge, there is no requirement for a COGCC permit, and the COGCC does not regulate facilities used to store and maintain drilling equipment, supplies, and materials not actually in use at a drilling site. (If such permits ARE required now or in the future, either the landowners or the leasing companies would of course obtain those.)

It is sometimes mistakenly believed that it is necessary that products, by-products, and wastes associated with drilling and production activities must remain on a designated well pad. Products may be moved by truck or pipeline from the well to refining and processing facilities, and of course, to end users. By-products and wastes may also be moved by truck or pipeline to off-site treatment and disposal facilities. These facilities, called centralized or commercial facilities (like impoundments), generally require a "certificate of designation" to be obtained from the County, a process in which CDPHE participates, and which is governed by 30-20-109 C.R.S. and other state statutes. Again, in accordance with those applicable permits, such a facility may be constructed and operated on the site, which is zoned industrial by Archuleta County and is suitable for the activity. In the same way, the construction of pipelines and/or roads for transporting such materials through the mining permit area may require various local, state, and/or federal permits, in order to take the materials to an off-site treatment/disposal facility.

We do not view the permitting, construction, and operation of such facilities, either for transportation or for treatment/disposal, nor for storage and maintenance of equipment, supplies, and materials, particularly of a centralized nature, to be a "change in designation" of the site, but rather, an additional designation.

It is the intent of the Operator, in this application, to identify the fact that both drilling operations and industrial activities are planned for the site, so that a revision to the permit at some later date is NOT required. If we have not provided enough information or commitments to make this possible, please tell us what additional information is needed at this time so that a future revision is not necessary. It is very difficult to obtain multiple permits from various agencies simultaneously, and inevitably, one or the other must be obtained first. No activities related to oil and gas exploration and production would be done on site without first obtaining necessary permits from the appropriate agencies: it was not the intent of the Operator to try and use the mining and reclamation permit to cover such activities, and the need for other permits is stated in multiple locations in the Exhibits (Example, eighth paragraph of Exhibit D (Section 7): "...**(in accordance with other permits, as necessary),...**".

Additional information for 2013 application: Drilling of the two gas wells was completed in 2010, as was the initial pipeline construction, and associated road work. These are shown in the current mining and reclamation maps (Exhibits C and F). Operation, maintenance, and limited construction activities related directly to gas production are expected to continue throughout the life of the pit.

c. On-site production of ready-mix concrete, drilling mud materials, asphaltic cement concrete, and other construction materials.

D.7.3. Plant Site: Portable plants will be brought into the site as required. Oversize materials (cobbles) will either be crushed for aggregate, stockpiled and sold as-is, or used as backfill. Clean construction debris (earth, rock, concrete rubble, drill cuttings, treated drilling mud, asphalt pavement) may be 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. ~~Petroleum-contaminated soil may be stored and treated on site before use for reclamation.~~ Certain other materials, such as bark, sawdust, and woody materials, will continue to be stored on-site and may be processed for sale and use off-site. Such materials may be used, as appropriate and in accordance with reclamation regulations, as mulch on-site, for treatment of petroleum-contaminated soils, and other uses consistent with the quality of material and limits on use as authorized by DRMS, CDSHWM, and Archuleta County requirements. Such material will be stockpiled until needed *and the Operator will maintain records of sampling, analysis, and acceptance of all materials, regardless of ultimate use on or off-site.* See Map D-1.

D.7.4. Concrete (ready-mix), asphalt (hot-mix), and other plants[7] may operate 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. Except for fuel tanks necessary for plants, other fuel storage and maintenance of rolling stock will be performed outside the permit area (at the Lob Lolly Lumber facility across the river, outside the permit boundary). *There is some potential for these plants to operate on the Loblolly Property outside the permit boundary (the river), since this property is zoned Industrial and can be used for such activities.*

D.7.5. The realignment of the Pine Tree Canyon creek just before its confluence with the Piedra *was done* as part of the construction of the permanent East-West Road, but may *require more modification for* mining. In addition, this area will be used as a location for necessary water collection, storage, sedimentation, and detention to support the plant site and mining activities. This water basin *may* supply washing operations and collect water to prevent surface discharge of water carrying sediment, as well as an essential element of storm water management.

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[7] Original DRMS Comment: **6. The submitted Mining Plan states that concrete, asphalt, and other plants may operate on the site. Please specify what other plants may be operating on the site.** Response to Comment #6: In addition to concrete plants (such as ready-mix central and truck mix plants, block plants, precast operations, and like facilities) and hot-mix asphalt facilities (either batch or continuous), we anticipate the following plants may be located on-site for varying times and as allowed by applicable local and state regulations and permits: crushing and/or screening plants, pugmills (used for mixing materials), material recycling and mixing plants, drying systems, tub grinders, trommel screen plants, and sawmills, as stated in the paragraphs above the one referenced in the comment. Although obviously some of these plants might be located on the site due to the availability of sand and gravel on site, others may be located here because it is zoned "industrial" by the County. Because the mining and reclamation will be taking place over an extended period of time, it is impossible to anticipate exactly what plants may be necessary in the area, and there are not many sites in this part of Archuleta County so zoned. It is the Operator's intent to provide the Division with as much information as possible, and avoid the need for technical revisions in the future, as much as possible.

D.7.6. 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. The plant site will be graded to post-mining (reclamation) contours but will not have soil replaced nor be revegetated, if there is a significant chance that the area will be used. Alternative dust- and erosion-control measures will be used, and fencing or other markings will be used to prevent problems with traffic and other activities in such areas. Map C-4 shows a general configuration for the plant site, and Map D-1 provides additional information. 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.

D.7.7. Oil/Gas Well Sites: The well sites shown on the Mining Plan ~~are planned and are not currently~~ *have been completed and are* in existence. Mining will of necessity be done in a way to prevent damage to these wells and their supporting pipelines, and to provide access at all times to these well sites. Activities on these well pads will be typical for exploration and production of oil and gas, and are regulated by the COGCC and Archuleta County.

D.7.8. General: Materials[8] with any potential toxicity or potentially acid-forming or producing of toxicity which may be transported to the site for storage or treatment will be stored and handled in such a way as to prevent leaching, protect the drainage system, and prevent any unauthorized release of pollutants to surface water and ground water, as determined by the operator, and in compliance with best management practices and permit conditions as

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[8] Original DRMS Comment: *7. The submitted Mining Plan states that clean construction debris may be stored and treated onsite. Please be aware that any materials imported from off site must be inert and conform to Rule 3.1.5(9) of the Construction Materials Rules and Regulations. Also, please submit more specific information with regard to the nature of the types of materials that may be hauled onsite for treatment and what type(s) of treatment are being proposed.*
As stated in the ninth paragraph of Exhibit E (Section 3), the Operator is aware of the requirement to conform to Rule 3.1.5(9) and that the material is "inert." The types of materials are specifically listed in the third and eighth paragraphs of Exhibit D (Section 7). Such materials come from construction and demolition projects, such as highway projects, residential, commercial, and industrial sites, ruins, and farm or ranchsteads. Material is delivered by truck, normally in large quantities, and in various sizes. Material will normally be pre-treated and segregated prior to delivery to the site, to comply with requirements for inert materials and to reduce incidents of municipal solid wastes being mixed and requiring removal and disposal. These materials are types that are normally recycled or disposed of in construction-debris sites in urban areas; the distance to landfills and markets in this part of southwestern Archuleta County makes it more difficult and expensive to get to such facilities. Treatments for these materials will vary from material to material. Old concrete may be either crushed and screened (and in those cases will normally be used as aggregate and not left onsite), or broken into smaller (but still large pieces) and used together with on-site material for backfill and for construction of erosion and sediment controls such as berms, dikes, and swales. Old asphaltic cement concrete (asphalt paving) will normally be crushed, and screened, and then used (either on or off site) for production of new hot mix asphalt or laid down as reclaimed asphalt surfacing (RAS). Sawdust, wood chips, and similar materials will be ground, screened, and either allowed to dry or mixed with other materials to compost or create mulch. Petroleumcontaminated soil will be mixed with sawdust or straw, windrowed, blended, spread in drying and treatment beds to allow sunlight and microorganisms to break down residual petroleum products, and then either shipped off-site or mixed with other materials and used on or off-site. In such cases, the petroleum-contaminated soil would have to met or exceed CDPHE standards for de minimus petroleum and petroleum byproducts.

established by the regulating agency, including CHMWMD and COGCC. This may include but not be limited to:

a. Normal municipal solid waste generated during operations will be hauled off-site for disposal, and will not be buried or burned on-site. Prior to haul off-site it will be stored in proper waste containers.
b. Normal municipal solid waste generated during other, non-mining operations, both on-site and off-site but accessed through this property may also be present, stored, and hauled off-site; and will not be burned or buried on-site. *Wood waste from clearing and grubbing may be burned on-site in accordance with state/local regulations.*
c. Various clean wastes, including wood waste (sawdust, bark, shredded material from grubbing, *clean soil and rock from construction and recycling sites*, similar materials) may be used to provide mulches, erosion control, and for other purposes.
d. Clean construction debris (such as other materials from clearing and grubbing, asphaltic cement concrete rubble, Portland cement concrete rubble, drill cuttings, drilling mud, and excavated soil and rock) may be temporarily stored and treated on-site (in accordance with other permits, as necessary), then either crushed and used as aggregate, hauled off-site or used for road construction/maintenance.
e. Materials and products stored on-site will be stored and handled in a manner to prevent any release or discharge of pollutants. This includes materials used for production and other activities as well as materials generated by those activities. This may include materials for which an MSDS is required by federal law, and materials which may be listed or characteristic hazardous materials/wastes as defined by federal law.
f. *This has been removed, reference Comment 8 in the initial DRMS review.*

D.7.9. ~~No~~ Off-site materials ~~will~~ may be used as backfill.[9] If off-site materials are used on site (for example, topsoil stripped from nearby construction sites), the material will examined and certified (via affidavit) to be clean and free from toxic materials prior to acceptance. Estimated annual amount less than 1,000 CY.

D.8. PREVIOUS SITE DEVELOPMENT AND ACCOMODATION:

D.8.1. Land included in the permit area is part of two larger parcels of land which extend across the Piedra River to the east, to and beyond SH-151. The south parcel is zoned industrial, and existing industrial uses will continue, on both sides of the river, inside and outside the mining permit area. No development or use is planned, at this time, for the land east of the river in the north parcel. The two parcels were originally homesteaded as part of 160-acre parcels when portions of the Southern Ute Indian Reservation were opened to non-AmerInd settlement in the late 1800s, and have been used for agricultural and industrial purposes since that time. The reconstruction of CO-151 in the 1970s or 1980s did involve mining of sand and gravel from the southern parcel, between CO-151 and the river, leaving the existing pond. There is expected to be no impact by mining operations on any land or facilities east of the Piedra River. *Mining performed in 2008-2010 was limited to the 5.4 area shown in Map C-8 and Figure C-2, including excavation of the basin which is tied hydraulically to the Piedra River (so that water rises and falls with the river). (See Section D.12)*

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[9] Original DRMS comment: *9. The submitted Mining Plan states that off-site materials used as backfill will be certified to be clean and free from toxic materials prior to acceptance. Please be aware that in the event such materials are to be brought on-site, the Operator must comply with all aspects of Rule 3.1.5(9) of the Construction Materials Rules and Regulations.*
Response: As stated in the ninth paragraph of Exhibit E (Section 3), the Operator is aware of the requirement to conform to Rule 3.1.5(9) and that the material is "inert."

D.8.2. A portion of approximately 1 acre (roughly 150 x 300 feet) of the south portion of the site has been used for the storage and composting of sawdust and other non-treated wood from sawmill operations, prior to further use either on- or off-site. This use would continue, though at a different location, during mining activities. At the time this area is mined, any remaining wood on the site would be relocated to a new stockpile, used as mulch/compost for revegetation of mining areas, or blended with soil to use as subsoil for reclamation. Other portions of the site, to be designated at the time, would be used for this purpose during mining. Part of the reclamation plan includes a future site for similar wood treatment/disposal.

D.8.3. There are virtually no improvements located on the site other than the pipeline and fences, the new permanent roads *(2008-2010)*, and the bridge. This site is a mixture of non-irrigated grazing land and potentially irrigated cropland, which is intended as most of the post-mining land use, *together with County-zoned industrial use.*

D.8.4. The boundary of the affected area has been laid out to create a 100-foot buffer along the river, and to avoid steeper slopes on the west side of the valley. *Up to 50 feet of this buffer zone (that is, at least fifty feet away from the river bank) may be disturbed as part of reclamation, to obtain acceptable slopes for post-mining use and to meet requirements for reclamation. as discussed in Exhibit E.* There are no documented wetlands found outside the river buffer zone *or more than 50 feet from the river bank.* The areas to be mined are also designed to prevent any negative impact on the pipeline. Any feeder lines connected to well sites (as shown on the Mining Plan) ~~will be~~ *have been* designed to work with mining.

D.9. SUMMARY:

TABLE D-2. SUMMARY OF AFFECTED LANDS

Area	Description/Activity	Acres	Affected Acres	Period Impacted	Remarks
	Total Site	171.7	118.5	Life of pit	Includes all areas
	South Parcel (w/river)	81.7	56.1		
	South buffers	21.9	0		River and south boundary
A	South lower	20.1	20.1	Life of pit	
	Plant Site w/drainage	3.99	included in A		
	South Pipeline	3.8	0		Access road
B	South upper	36.0	36.0	Years 6-16	
	North Parcel (w/river)	90.0	62.4		
	North buffers	24.3	0		River and north boundary
C	North Lower	32.1	32.1	Years 15-22	
	North Pipeline	3.2	0		Access road
D	North Upper	30.3	30.3	Years 21-28	
	Site A1	2.0	included in C		Area for material for north

D.10. STOCKPILE CONSTRUCTION:

D.10.1. Longterm Soil Stockpiles: Because of the sequencing of mining, the North and South Parcels will each have designated locations for long-term storage of topsoil removed and to be used for reclamation. See Map D-2. In the South Parcel, *one or more* long-term stockpile will be constructed where materials stripped from the plant site will be placed during years 1-5, and then used as appropriate for reclamation for areas not to be left with paved, graveled, or water surfaces as part of the long-term industrial use of the site. A second area will be used to place soil stripped during mining year 6 until mining is done in year 14 and the soil is used to reclaim areas mined in year 14. In the North Parcel, material stripped during mining (Phase 1A, mining years 0 and 1) will be stockpiled as a berm around the

disturbed area until used for reclamation, probably in mining year 16. Another stockpile will be created in mining year 15 to store material until reclamation of areas mined in year 28 is done.

D.10.2. Temporary Soil Stockpiles: Soil will be stockpiled immediately after removal. Stockpiles will have a maximum slope of 1:1, and will be stabilized against erosion as necessary as they are completed. Since mined areas will generally be stripped immediately prior to mining, and have topsoil replaced as part of reclamation within 12-18 months of stripping, stockpiles 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. Stockpile sizes will vary based on terrain. 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), topsoil will be protected by application of erosion control agents as necessary to prevent erosion and loss.

D.10.3. Excess Materials Piles: 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.

D.10.4. 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.

D.10.5. General: Overburden and topsoil 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 topsoil 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.

TABLE D-3. MAJOR LONGTERM SOIL STOCKPILE AREAS

#	Area (acres)	Volume (CY)	Type Material	Period of use	Period of Removal	Source/Use of Materials
A1	0.98	16,000	soil	Year 1-6	Year 5	Plant and Area A reclam, landscape
A2	0.44	7,000	soil	Year 6-15	Year 15	Area B, reclaim
C1	0.9	3,300	soil	Year 1-15	Year 16	Area A1, reclaim
C2	0.52	8,500	soil	Year 14-28	Year 28	Areas C&D, reclaim

See Map D-2 for locations of stockpiles.

D.11. SURFACE WATER MANAGEMENT:

See Exhibit G

D.12. EXISTING DISTURBANCE:

As of 20 May 2013, due to work done in 2009-2010, the following areas are disturbed and will be included in reclamation requirements and costs (Refer to Map C-8)

A	*Access Road from East-West Road to work area 500 ft x 30 ft*	*0.3*	*Acres*
B	*Open water*	*1.1*	*Acres*
C	*Stockpile areas (4 each)*	*0.8*	*Acres*
D	*Work area (plant and storage)*	*2.3*	*Acres*
	Total	*4.5*	*Acres*

D.13. OTHER ACTIVITIES ON/NEAR PERMIT AREA

D.13.1. [*This information was originally provided (in slightly different form) in response #3 to the DRMS Comments*]. The Applicant will, for the time being, will continue to use those portions of the Lob Lolly (Wright) property which are not located within the boundaries of the CDRMS permit, that is, east of the Piedra River. CDRMS has no jurisdiction over those areas for various activities not related to the mining of construction materials.[i]

a. Please note that the Applicant did not indicate nor intend to indicate "that there is the potential for storage, maintenance and repair of equipment and supplies and materials used for drilling and development related to oil & gas operations within the permit boundary but outside of the well pad areas within the permit." Rather, the Applicant has consistently and several times stated that these items and activities might support of oil and gas operations in the area around and including the permit area: that is, nearby areas of Archuleta and La Plata Counties and San Juan County, New Mexico. At the time, we did not anticipate any storage, maintenance or repair of any items used exclusively for the well-sites located within the permit boundary.

b. The Applicant has attempted in every way to provide detailed information regarding activities which have been, are being, and might be carried out on the property, even if those are not directly related to mining and reclamation activities. We were concerned that the review letters create an impression that the Applicant or the landowners (who own the Applicant) are attempting to circumvent some regulatory requirements by including such information. This is not the case. The landowners and Applicant will file and obtain all necessary applications, approvals, permits, registrations, etc. required by agencies with authority over those activities and items. We simply are attempting to minimize duplication of effort and resolve potential conflicts. Existing operations related to lumber milling and transportation, and to oil and gas operations which have been performed both prior to 2008 and 2013 will continue to be conducted, either or land not yet disturbed by mining or on land affected by mining, whether reclaimed to final condition or not. These activities will be documented in annual reports to ensure that mining impacts are able to be distinguished from other activities and their impacts.

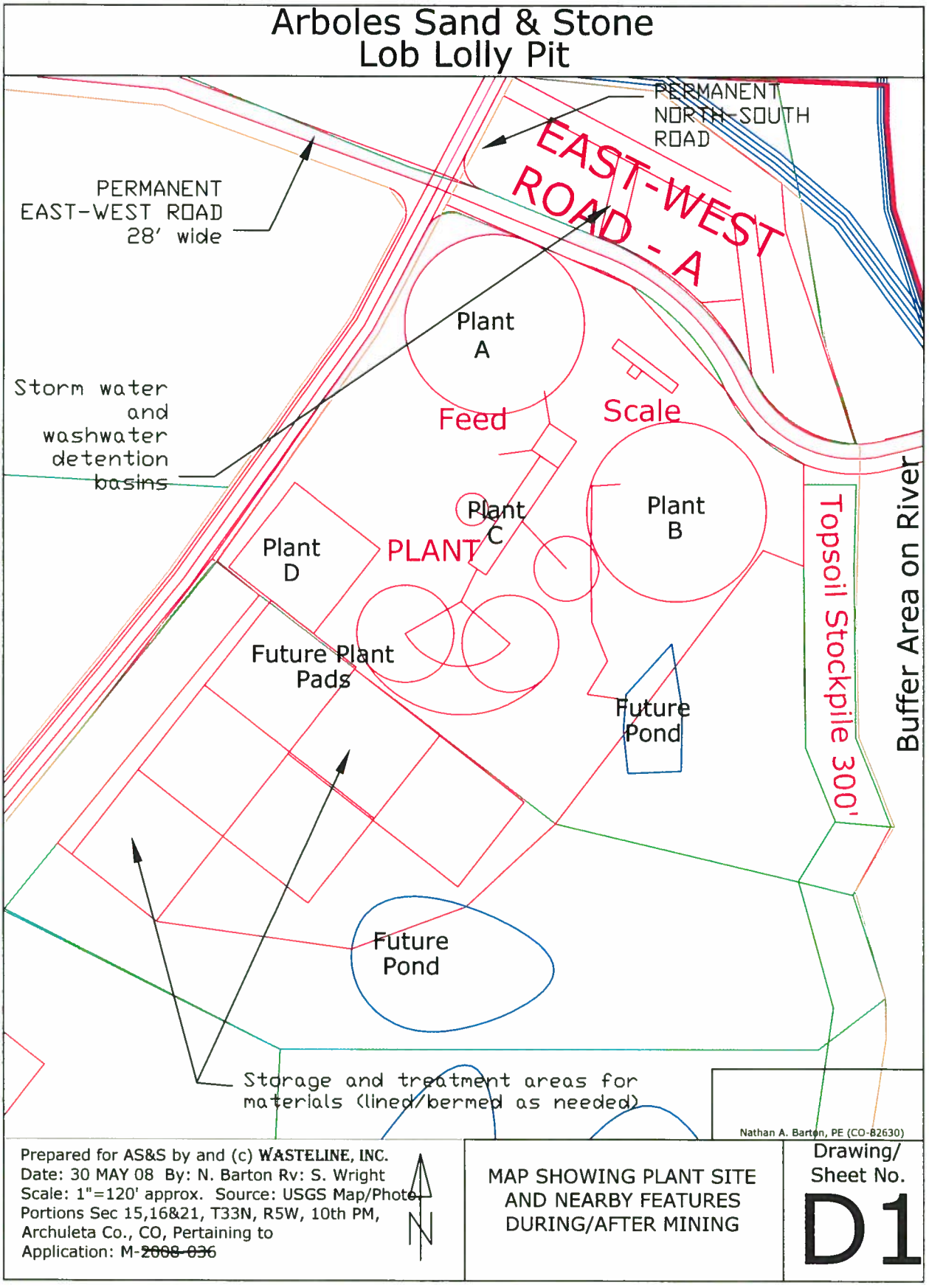
c. As stated in the Exhibits, the south parcel of the property, part of which is proposed to be located within the permit boundaries, is zoned by Archuleta County as "industrial" and that many activities which are related to oil and gas operations in Archuleta and La Plata Counties, not just on the property, as well as timber and transportation activities, may be performed on the site. These activities are not necessary regulated by CDPHE, COGCC or any other state or federal agency agency. This is no different than activities on the site related to agricultural operations.

d. Much of the activities and items related to the oil and gas industry (see end note) is very similar to standard practice in both the timber industry and the sand and gravel mining industry. Many (if not most) permitted sand and gravel operations in the State of Colorado have areas where the operator (or vendors or customers of the operator) perform the storage and maintenance and repair of equipment, materials and

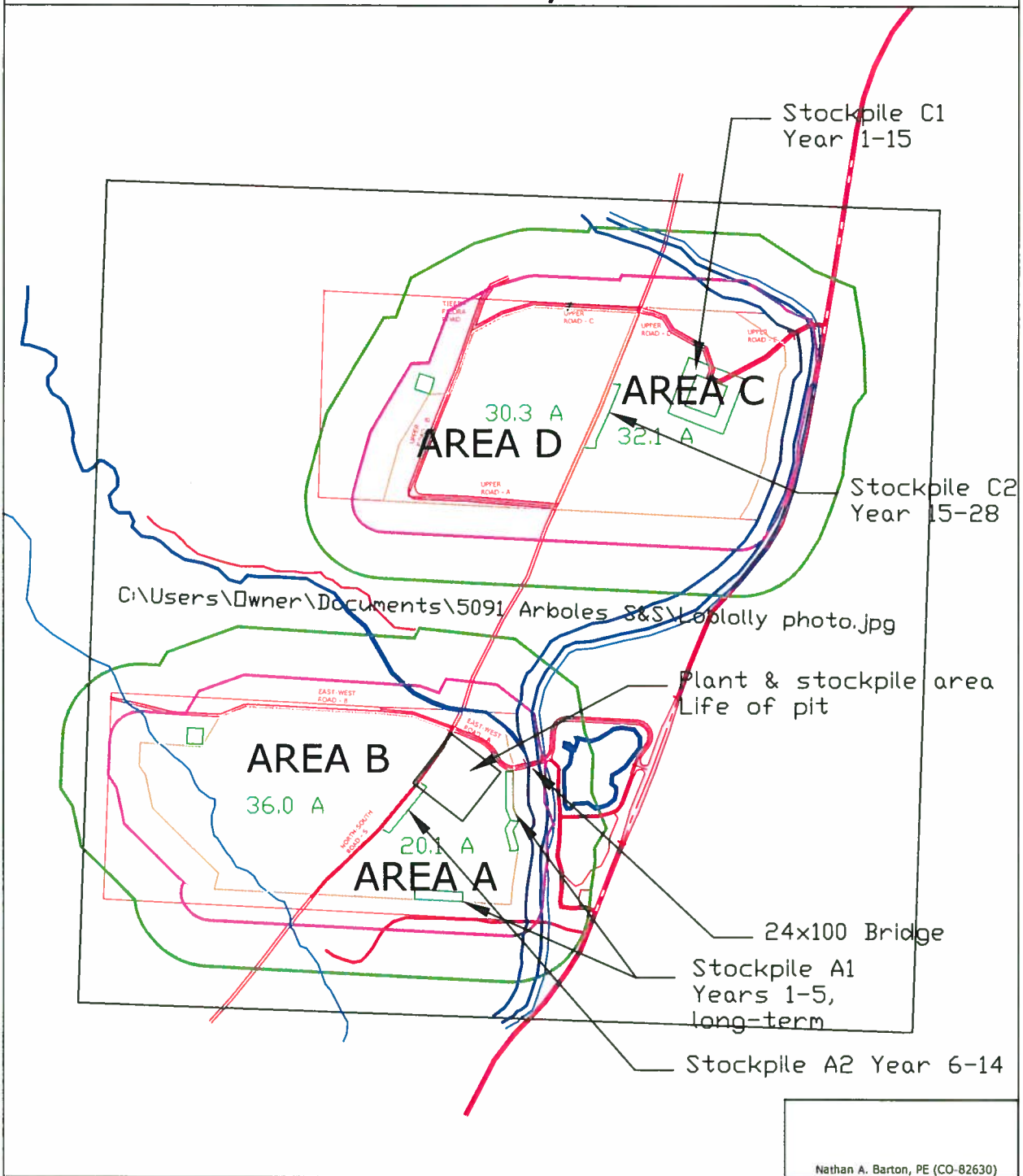
supplies associated with the actual mining, processing, transportation, and use of sand and gravel and other construction materials, and to construction and maintenance activities off-site.

e. The Applicant/Operator/Landowner fully understand that they are responsible for the proper resolution of ALL activities and incidents within the permit boundaries and on their property, including any contamination from ANY activities, whether related to mining, agricultural activities, timbering, or oil and gas-related activities.

f. As discussed elsewhere in these exhibits, the temporary location of various portable plants, including ready-mixed concrete plants and hot mix asphalt facilities, with appropriate storage of materials, within the permit boundaries is requested to be considered a basic part of this reclamation permit. Such facilities will have all necessary federal, state, and local permits in effect, or will be covered under permits for the site. When economically and operationally feasible, the operator will locate these sorts of activities outside the permit area on other industrial-zoned portions of the site, to reduce the impact.


Arboles Sand & Stone
Lob Lolly Pit
PERMANENT
NORTH-SOUTH
ROAD
EAST-WEST
ROAD - A
PERMANENT
EAST-WEST ROAD
28' wide
Plant
A
Storm water
and
washwater
detention
basins
Feed
Scale
Plant
C
Plant
B
Plant
D
PLANT
Topsoil Stockpile 300'
Buffer Area on River
Future Plant
Pads
Future
Pond
Future
Pond
Storage and treatment areas for
materials (lined/bermed as needed)
Nathan A. Barton, PE (CO-B2630)
Prepared for AS&S by and (c) WASTELINE, INC.
Date: 30 MAY 08 By: N. Barton Rv: S. Wright
Scale: 1"=120' approx. Source: USGS Map/Photo
Portions Sec 15,16&21, T33N, R5W, 10th PM,
Archuleta Co., CO, Pertaining to
Application: M-2008-036
N
MAP SHOWING PLANT SITE
AND NEARBY FEATURES
DURING/AFTER MINING
Drawing/
Sheet No.
D1

Arboles Sand & Stone
Lob Lolly Pit



Nathan A. Barton, PE (CO-82630)

Prepared for AS&S by and (c) **WASTELINE, INC.**
Date: 30 MAY 08 By: N. Barton Rv: S. Wright
Revised: 30MAY13 to show change in Stockpile A1
Scale: 1"=1000' Source: USGS Map/Photo.
Portions Sec 15,16&21, T33N, R5W, 10th PM,
Archuleta Co., CO, Pertaining to
Application: M-~~2008-036~~

MAP SHOWING MAJOR
SOIL STOCKPILE AREAS

Drawing/
Sheet No.
D2

EXHIBIT E - RECLAMATION PLAN

E.1. GENERAL CONCEPT (6.4.5(2)a.)

E.1.1. The mine will be reclaimed as industrial land and grazing, irrigated pasture and cropland, with possible future use (for all or part) as a recreational or residential facility. The south portion of the site (already zoned industrial) is expected to remain as long-term or permanent light industrial areas (such as ready-mixed concrete plant, asphalt plant, retail and commercial sale of materials, lumber production, soil treatment, equipment shops, and related or similar uses). Portions of the site will be reclaimed as ponds, in accordance with terrain and water rights available for the ponds, to complement other activities on the site after mining is completed. In general, soil stripped from mined areas will be replaced (See Exhibit I). Most areas will be converted to cropland or grassland initially; processing fines and some construction debris will be used to do shaping to final post-mining grade, and some roads (as discussed in Exhibit D.6) will remain in place for future access to all portions of the site as well as through the site to other properties. The length of the planned mining (25+ years) and changing market conditions require that considerable flexibility be identified and allowed from the beginning. 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; Archuleta County does not have a master plan for development and zoning.

E.1.2. 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 other materials (excavated and not used as fill, sand, or gravel) will be placed into stockpiles which can be easily moved to their permanent locations as part of the reclamation. Roads are designed to be located properly both for mining and for requirements both during and after mining, as access to portions of the Lob Lolly property 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.

TABLE E-1. Summary of reclamation areas (complete project)

Area/Nature	Length, ft	Acres	Key Features	Actions/Remarks
Plant Site (Industrial)		6.7	Platform, berms, access, basins	Permanent post-mining
East-West Road	2800	1.8	Standard Gravel Road, 18-28'	Permanent post-mining
North-South Road	5500	3.4	Standard Gravel Road, 18-28'	Permanent post-mining
Upper Road	4765	2.6	Standard Gravel Road, 18-28'	Permanent post-mining
Area A (minus)		13.6	Farming/Additional industrial sites	Based on market conditions
Area B		35.4	Grazing/farming	May or may not be irrigated
Area C		29.5	Grazing/farming	May or may not be irrigated
Area D		26.9	Grazing/farming	May or may not be irrigated
TOTAL		120		
Special areas not included in the above, which are not mined or converted permanently				
South buffer zone		4.4	Buffer for viewshed, neighbor	Continue to use for grazing
North riparian buffer		3.4	Buffer for viewshed, floodplain	Continue to use for grazing
South riparian buffer		3	Buffer for viewshed, floodplain	Continue to use for grazing
West valley slope		39.2	Buffer for viewshed, slope	Continue to use for grazing
Areas included in the above reclaimed areas				
Ponds (open water)		3.5	Six: 1.5 A South, 2.7 A North	Permenent if needed for water table
Basins (storm water)		1.4	Three: in NE corner of South	Permanent post-mining

1. A small portion of the various buffer zones will be used for the various roads shown above.
2. A small portion of the riparian buffer zones may be used for surface discharge if dewatering is necessary.

Ponds and basins are shown at maximum anticipated water surface, not total basin size.

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

E.2.1. 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 will continue after mining is finished. There are no state or tribal land use plans, to our knowledge.

	Current/Future Zoning:
South Parcel:	Industrial
North Parcel:	Agricultural-forest
Zoning to the north:	Agricultural-forest (private land)
Zoning between the north and south parcels:	Agricultural-forest (private land)
Zoning to the south:	Agricultural-forest with some residential use (private land)
Zoning to the east of the north parcel:	Industrial west of SH-151, Agricultural-forest and SUIT[10] land beyond.
Zoning to the west:	SUIT land

- SUIT land is used for forestry, mineral production (oil and gas), livestock grazing, and wildlife.
- Nearest community is Arboles, an unincorporated town located approximately five miles to the south.
- Ownership information is provided in Attachment O.
- Oil and gas production is considered compatible with both industrial and agricultural-forest zoning.

E.3. 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.

E.3.1. Grading (3.1.5(1)) and Backfilling (3.1.5(2))

Most mining faces will be either a 2:1 or vertical slope. If necessary, topsoil stockpiles are placed above the face, and at least 20 feet to the rear of the face, but are usually moved directly to long-term stockpiles or used immediately for reclamation. Excess fines may also be stored in stockpiles on the final floor of the pit, until placed in final reclamation areas. 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:3H slope or flatter, OR where adjacent natural slopes are steeper than 1V:3H, to match adjacent slopes within 20% +/-.. Slope widths and heights will vary from area to area based on total depth of mining accomplished. All final slopes will be covered with stockpiled topsoil. See cross-sections in Exhibit E-1 and Exhibit I.

E.3.2. 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, and final slopes will be below the angle of repose for the material and construction involved, 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.

E.3.3. Performance as soon as feasible (3.1.5(4))

Some areas will be reclaimed immediately, as work is done. 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. For industrial land, reclamation standards can be met immediately; most grazing land will require a two- or three-year wait to meet reclamation standards. Backfilling, grading, and placement of soil (where planned) should be accomplished within one year of completion of extraction of construction materials, with seeding (where planned) to follow as soon as possible based on recommendations and weather conditions *The exception to this is when additional overburden is needed to fill excavated areas with exposed groundwater to proposed final grade* (See Exhibit J).

[10] Southern Ute Indian Tribe

E.3.4. 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 will be found on-site during mining. 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. *Such materials brought or used on site for maintenance and operations will be handled, stored, and disposed of in accordance with regulations.*

E.3.5. Holes, etc. (3.1.5(6))

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

E.3.6. Maximum slopes (3.1.5(7))

For most areas on the perimeter of the mined areas, reclaimed slopes of 1V:3H 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 *(1V:2H)* to match adjacent hillside slopes, as discussed above. See Table E-1. Permanent industrial areas and roads will either have slopes of 1V:3H or less, or have retaining structures as needed.

E.3.7. Use of farm equipment (3.1.5(8))

Slopes will be compatible with such use in the area, when farm equipment is necessary for post-mining uses.

E.3.8. 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, drill cuttings, drill mud, clean Portland or asphaltic cement concrete rubble, for backfill, to be covered by topsoil as appropriate for intended post-mining use, *may be used. All material will be characterized prior to acceptance at the site, and will not include toxic or water-priority hazard materials.*

E.3.9. Prevention of unauthorized release of pollutants to surface water (3.1.5(10))

The Applicant will handle all material to be stored, hauled, excavated, and/or disposed of on-site in a way to prevent unauthorized release of pollutants to surface water, and comply with this requirement.

E.3.10. Prevention of unauthorized release of pollutants to groundwater (3.1.5(11))

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

E.3.11. 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,[11] and will be removed in accordance with those permits.

E.3.12. 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.

E.3.13. 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.)

[11] Primarily CDPS storm water permits.

E.3.14. 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. The Applicant will comply with any conditions as established by permits.

E.3.15. 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 such as the adjacent properties to the south, and the Piedra River. Since mining will be done in phases, there will be no long-term, wide barrier to migration. The buffer zones 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, and temporary fencing will be used to reduce potential for livestock and wildlife to graze on areas being reclaimed or in crops. Forested hillside areas (primarily on the west edge of the site) will be left mostly undisturbed, although fringe areas shall be trimmed and roadways cut through the buffers and other areas. Priority, however, will be given to use for livestock and cropland rather than wildlife.

E.3.16. Wildlife habitat management and creation (3.1.8.(2))

In accordance with the wishes of the landowner, and based on planned post-reclamation use as industrial and grazing land, no actions specifically to create or improve wildlife habitat in the permit area shall be undertaken. Priority shall be given to industrial use, cropland, and livestock, not wildlife. Buffer zones are identified for continued wildlife habitat and protected from disturbance as such.

E.3.17. Topsoil (3.1.9.)

Various amounts of soil will be removed prior to extraction and stockpiled for protection (See discussion in Exhibits D.5, .10 and I). Any woody vegetation will be removed, and as necessary and effective, soil will be screened to remove cobbles. Relocation of soil to locations requiring replacement of soil will be done on an annual basis as mined areas are reclaimed, except for long-term stockpiles as discussed in Exhibit D. Although unlikely, if it is necessary and as material is available, materials may be added to amend and improve soil, including fossil soils found on-site, fertilizers, commercial soil amendments, manure from livestock, soil or non-toxic organic materials from on- or off-site (such as mulch (including sawdust) and fines from sediment basins), in accordance with standard agricultural practices and as based upon soil tests to determine improvements needed and feasible. 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. If surplus soil is determined to be available on-site, some may be sold for use off-site. Soil will be replaced at depths as compatible with the planned post-mining use, as explained in Exhibit I.

E.3.18. Revegetation (3.1.10.)

See Exhibit J. Final reclamation will be for use as industrial land, crop- and grazing land, and roads. Some areas may be reclaimed as cropland for hay or other crops for grazing use. The reclamation on areas suitable for, and planned at the time of reclamation to be used for, cropland, will be complete when the first crop is sown in the area; the exact crop is to be determined by the owners and farmer at that time. 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. There will be no intentional seeding with native grasses or other plant species unless those are determined to be desirable for pasture land. The landowner has no desire to plant trees or shrubs of any type, except potentially for shelterbelts for windbreaks and snow fences for industrial areas and roads. (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 *include* a statement prepared and signed by the farmer confirming that the site is acceptable for farming. During reclamation, weed control methods as approved by Conservation District and */or*

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.

E.4. TOPSOIL, SPOIL, AND REVEGETATION (6.4.5.(2)d.)

E.4.1. As discussed above, topsoil will be removed from the pit and either placed directly on areas requiring replacement of topsoil for reclamation, or segregated from subsoil (as much as possible) and other materials 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, but will use seed mix as specified for non-irrigated grazing land purposes. Where soil was left at the time of building the stockpile (because *it is a* soil 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 topsoil and seeding. Any spoil will be used as subsoil to establish final contours, and will be covered by topsoil for revegetation (see also Exhibit J). *Excess soil (due to permanent water areas, plant site, or permanent roads not requiring soil) may be sold for use off-site.*

E.4.2. Maps F-1, F-2, and F-3 show phases of reclamation. Map F-4 shows planned, approximate contours after mining and reclamation. Map F-5 shows general drainage information, including ponds. Map F-6 shows cross-sections of various portions of the pit as identified in Exhibit E-2 and maps F-1 et al, showing a profile of the surface before and after mining, and after reclamation.

E.5. PLAN/SCHEDULE (6.4.5.(2)e.)

E.5.1. The following features constructed during mining or reclamation will be left in place as permanent post-reclamation features, as requested by the landowner:

1. Roads and associated drainage features: See Exhibit D.6.
2. Plant Site including all features and facilities, including but not limited to drainage features (basins, ditches, berms, etc.), roads and parking/storage areas (graveled or otherwise improved), fencing, buildings, utilities, and other systems. See Exhibit D.7.
3. Utilities necessary to support plant site and well heads (alignment to be determined)
4. Perimeter and internal fencing to secure site, divide pasture areas, and otherwise control access and animal movement.
5. Ponds and basins (approximately 4.9 acres, total) for livestock, storm water, and recreational use. See Table E-1 and Exhibit G.

E.5.2. Backfilling, grading, and placement of soil (as applicable) should be accomplished *as discussed in section E.3.3.* (See Map, 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.

E.5.3. Based on the mining plan (Exhibit D), the reclamation is proposed as shown on Table E-2.

E.5.4. 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.

TABLE E-2. Schedule of reclamation areas (complete project)

LOB LOLLY PIT		MINING AND RECLAMATION TABLE						
Area	Zone	Size, SF	Acres	Reclaim	Special	Disturbed	Reclaimed	Open
A	Year 1A	57535	1.32	N/A		9.24		9.24
	Year 1B	173681	3.99	Year 6				9.24
	Year 1	171330	3.93	Year 3	Pond			9.24
	Year 2	201114	4.62	Year 4		13.86		13.86
	Year 3	204795	4.70	Year 5	Pond	18.56	3.93	14.63
	Year 4	213545	4.90	Year 7*	Plant site	23.46	8.55	14.91
	Year 5	in 4	in 4	Year 7*	Plant site	23.46	8.55	14.91
Area B	Year 6	185876	4.27	Year 8		27.73	13.25	14.48
	Year 7	166187	3.82	Year 9		31.54	18.15	13.39
	Year 8	187255	4.30	Year 10		35.84	22.42	13.42
	Year 9	170306	3.91	Year 11		39.75	26.24	13.52
	Year 10	171239	3.93	Year 12		43.68	30.53	13.15
	Year 11	185238	4.25	Year 13		47.94	34.44	13.49
	Year 12	184123	4.23	Year 14		52.16	38.38	13.79
	Year 13	170306	3.91	Year 15		56.07	42.63	13.44
	Year 14	162044	3.72	Year 16		59.79	46.86	12.94
Area C	Year 15	222785	5.11	Year 17	Pond	64.91	50.76	14.14
	Year 16	248812	5.71	Year 18		70.62	54.48	**16.13**
	Year 17	229824	5.28	Year 19	Pond	75.90	59.60	16.30
	Year 18	235647	5.41	Year 20		81.30	65.31	15.99
	Year 19	233922	5.37	Year 21	Pond	86.68	70.59	16.09
	Year 20	230441	5.29	Year 22		91.97	76.00	15.97
Area D	Year 21	192157	4.41	Year 23		96.38	81.37	15.01
	Year 22	256102	5.88	Year 24		102.26	86.66	15.60
	Year 23	195803	4.50	Year 25		106.75	91.07	15.68
	Year 24	249234	5.72	Year 26		112.47	96.95	15.52
	Year 25	221629	5.09	Year 27		117.56	101.44	16.12
	Year 26	221893	5.09	Year 27		122.65	107.16	15.49
	Year 27	-	-	Year 27		122.65	117.35	5.31
	Year 28	FINAL CLOSURE				122.65	122.65	0.00

Due to work done in 2008-2010, as discussed in Exhibit D, approximately 5.4 acres of land has been disturbed and is included in Year 1 amounts above. Peak disturbance for years 1-14 is still expected to be 14.91 acres.

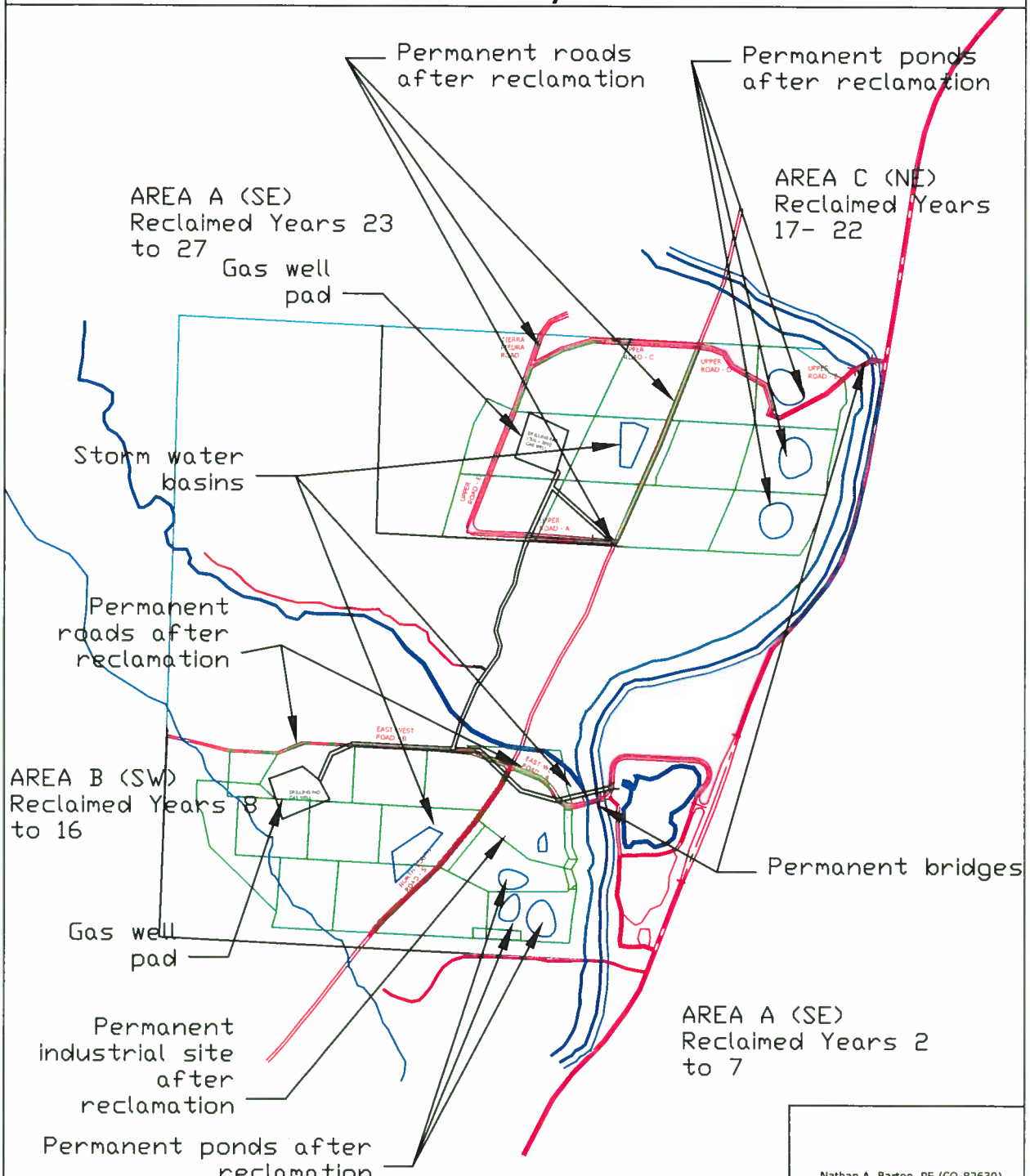
EXHIBIT F – Reclamation Plan Maps

Information updated from 2008.

Map F-1: Reclamation sequence and post reclamation features (entire site)
Map F-2: Reclamation sequence, south parcel
Map F-3: Reclamation sequence, north parcel
Map F-4: Final (post-reclamation) contours (entire site)
Map F-5: Final contours (detail maps)
Map F-6: Cross-sections

Individual Areas A through D of the site are shown in various maps to allow being shown at scale as required by DRMS. Original contours are shown before construction of drill and well pads and excavation work done in Area A in 2009-2010.

Arboles Sand & Stone
Lob Lolly Pit



Nathan A. Barton, PE (CO-82630)

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Date: 30 MAY 08 Rev: 30 MAY 13
By: N. Barton Review: S. Wright
Scale: 1"=1000' Source: USGS Map/Photo.
Portions Sec 15,16&21, T33N, R5W, 10th PM,
Archuleta Co., CO, Pertaining to
Application: M-2008-036

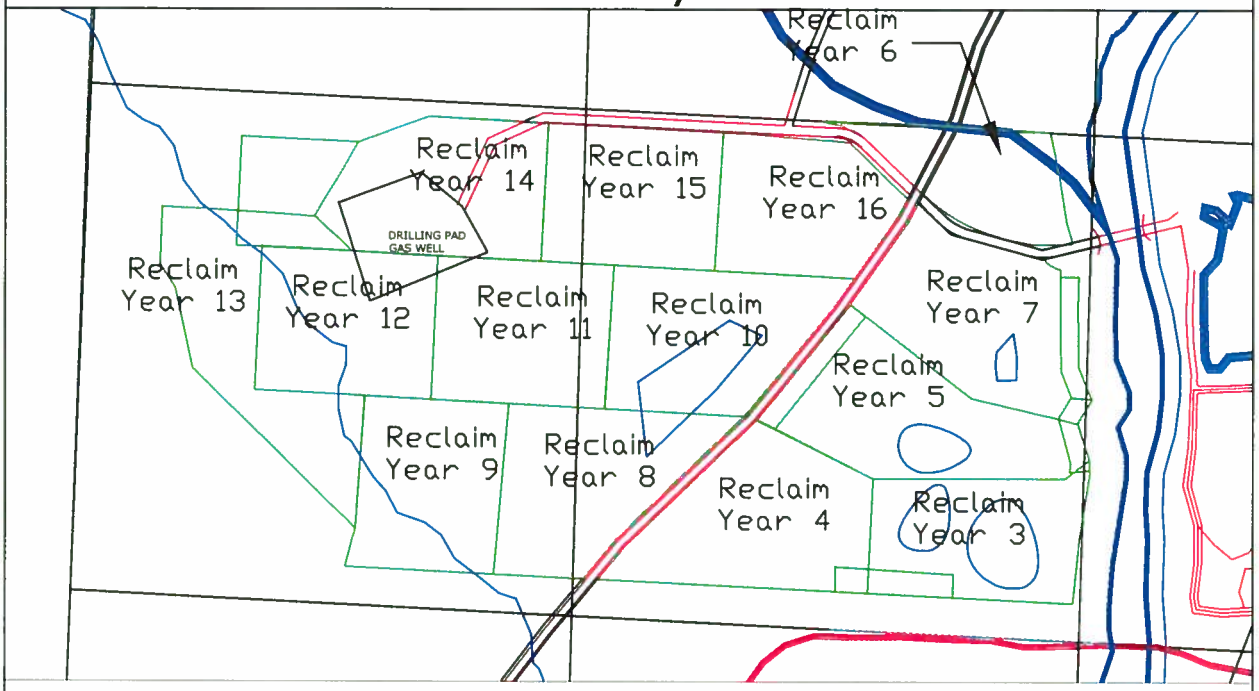
N

MAP SHOWING ORDER OF RECLAMATION AND FEATURES AFTER MINING

Drawing/ Sheet No.

F1

Arboles Sand & Stone
Lob Lolly Pit



Post-reclamation use: southern area: Industrial complex (same as pre-mining use) as zoned by Archuleta County. Industrial activities may begin immediately after reclamation and will not necessarily wait until all mining in this area or on the permit is completed.
Additional roads to serve industiral use may be constructed as permanent roads, which are not shown.
Reclamation years shown are based on assumption that reclamation will be done beginning the second year after mining, and that mining each area will take one year.

Nathan A. Barton, PE (CO-82630)

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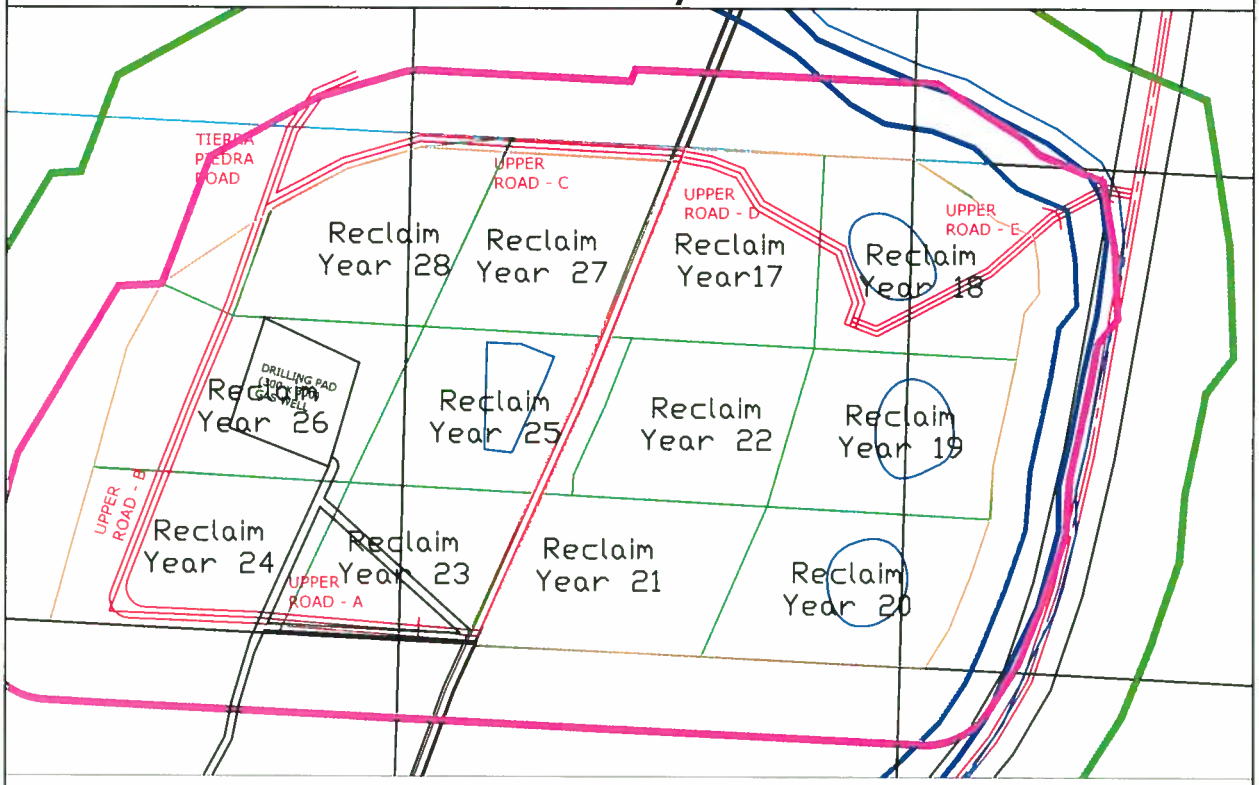
Archuleta Co., CO, Pertaining to
Application: M-~~2008-036~~

N

MAP SHOWING ORDER OF RECLAMATION AND FEATURES AFTER MINING (SOUTH)

Drawing/ Sheet No.
F2

Arboles Sand & Stone
Lob Lolly Pit



Post-reclamation use: northern area: agricultural (grazing, possible tree-farming) as zoned by Archuleta County.
Years are based on a two-year delay after mining operations, and assume that mining will require one-year.

Nathan A. Barton, PE (CO-82630)

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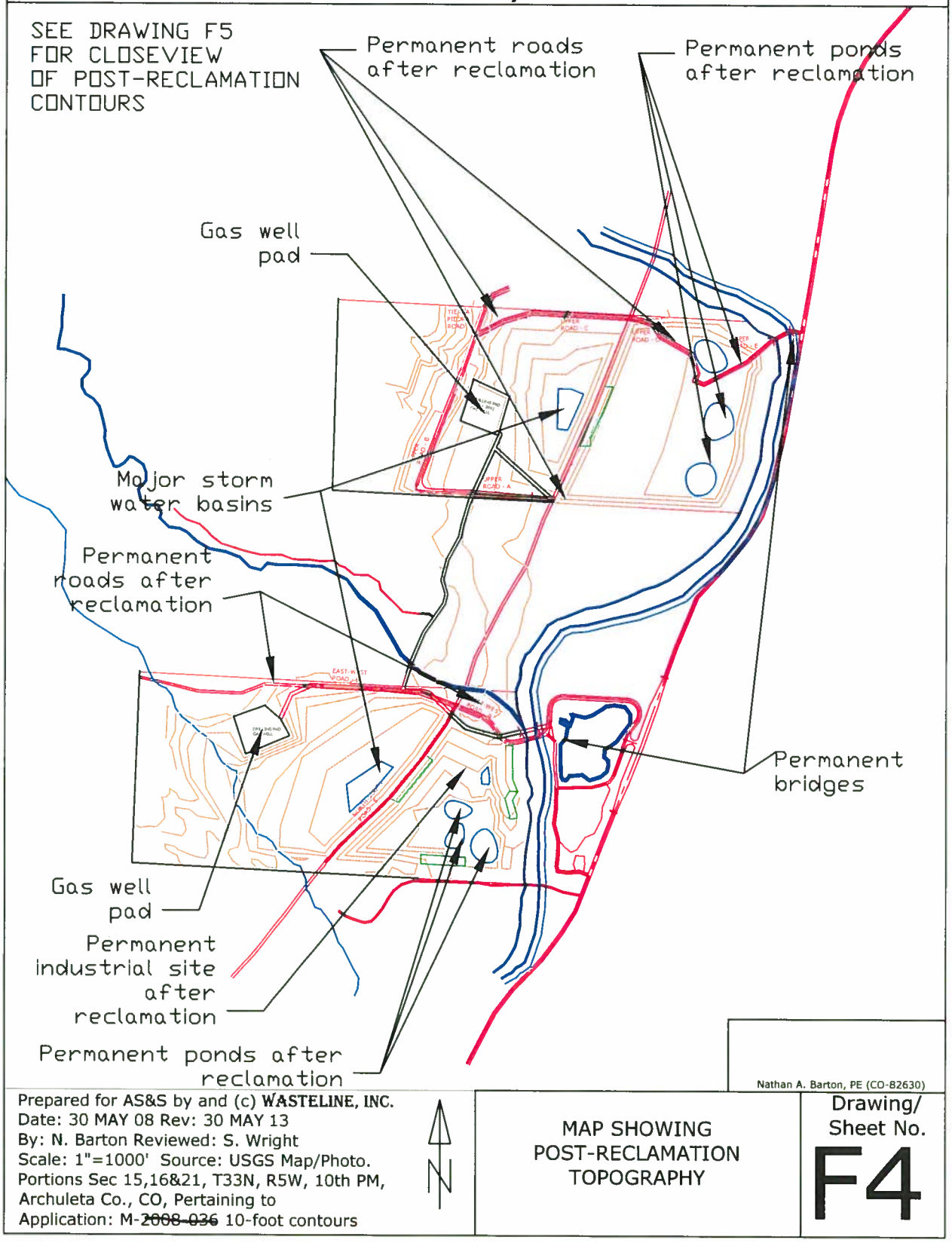
MAP SHOWING ORDER OF RECLAMATION AND FEATURES AFTER MINING (NORTH)

Drawing/ Sheet No.
F3

Arboles Sand & Stone
Lob Lolly Pit



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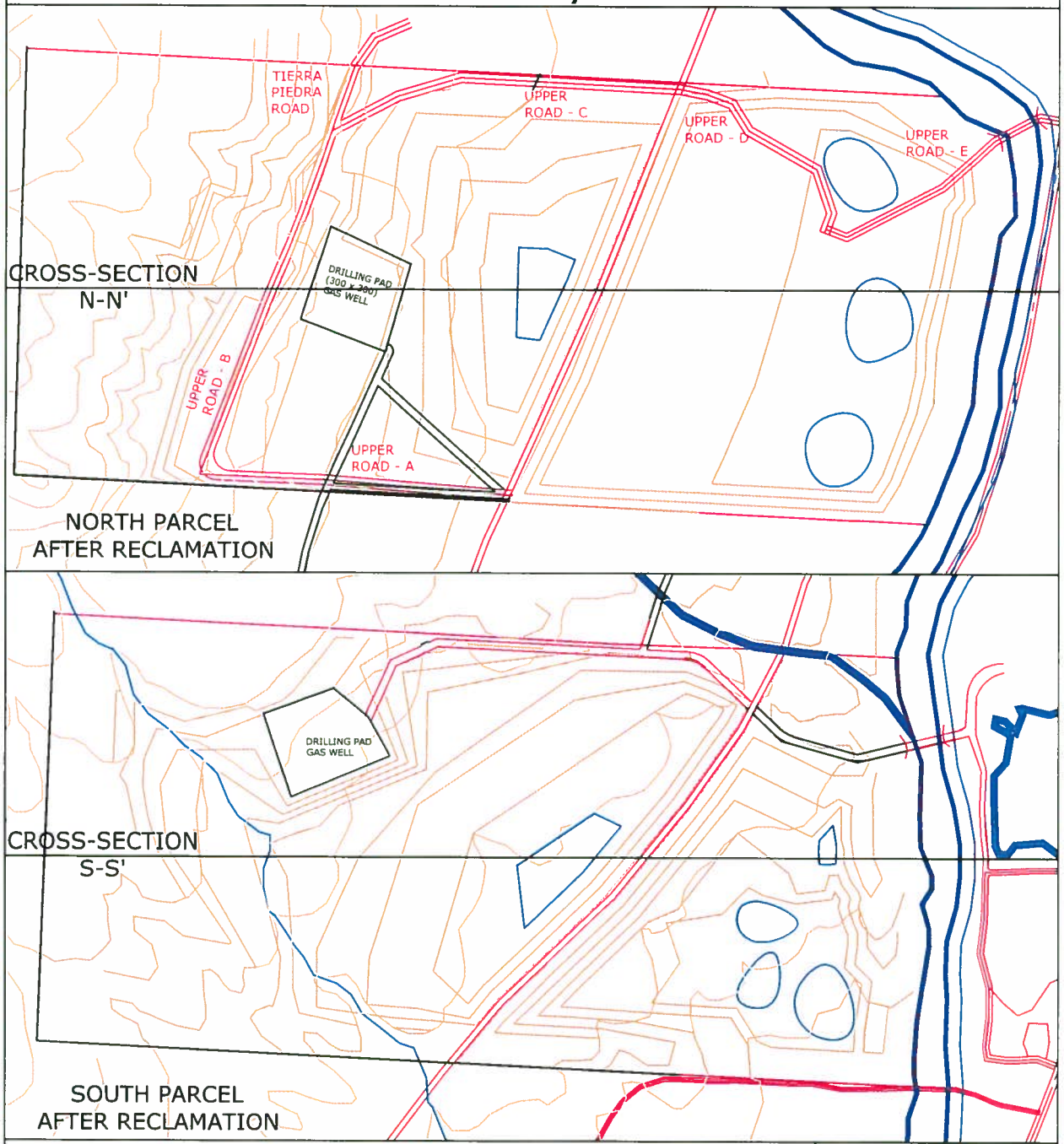
Archuleta Co., CO, Pertaining to
Application: M-~~2008-036~~ 10-foot contours

MAP SHOWING
POST-RECLAMATION
TOPOGRAPHY

Drawing/
Sheet No.
F4

Arboles Sand & Stone
Lob Lolly Pit



Nathan A. Barton, PE (CO-82630)

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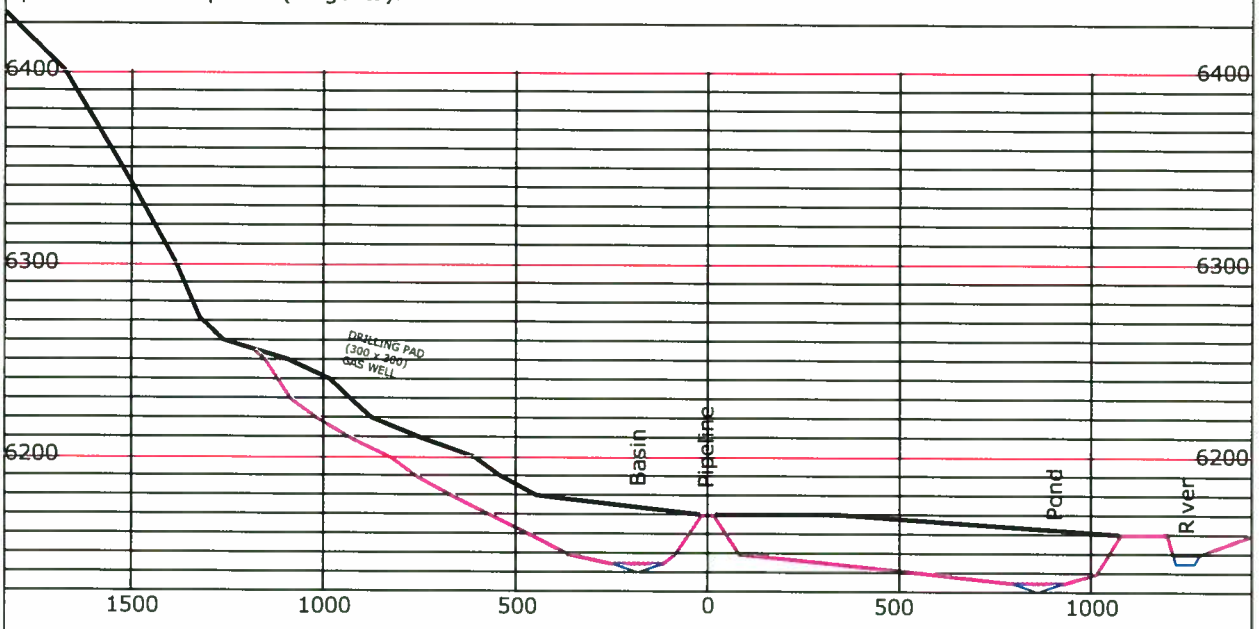
Application: M-~~2008-036~~ 10-foot contours

MAP SHOWING TERRAIN AFTER RECLAMATION
Pre-mining contours shown in light brown, post-reclamation shown in dark brown: 20-foot contours

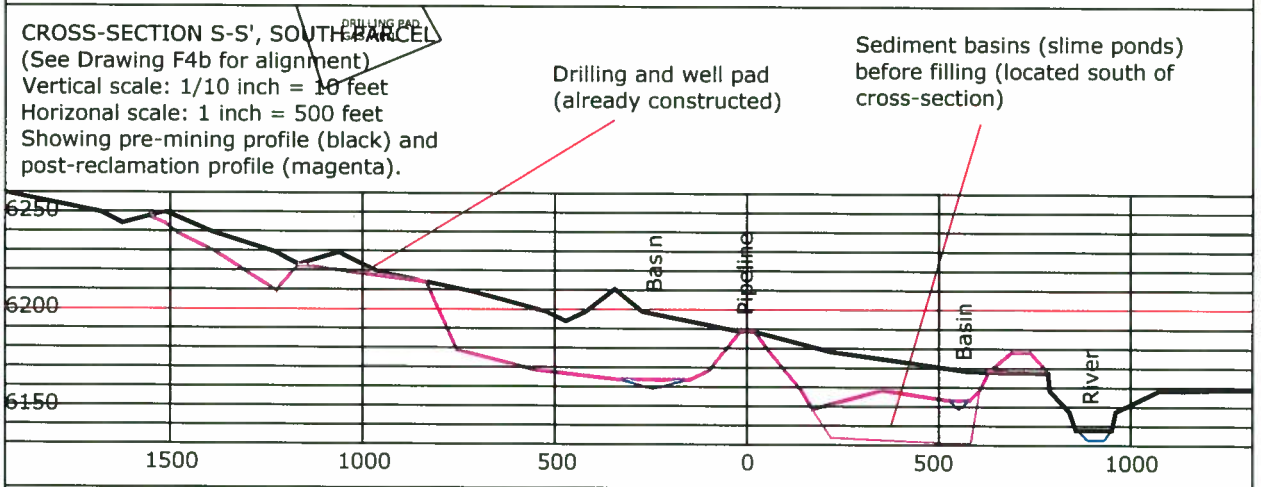
Drawing/ Sheet No.
F5

Arboles Sand & Stone
Lob Lolly Pit

CROSS-SECTION N-N', NORTH PARCEL
(See Drawing F4b for alignment)
Vertical scale: 1/10 inch = 10 feet
Horizontal scale: 1 inch = 500 feet
Showing pre-mining profile (black) and
post-reclamation profile (magenta).



CROSS-SECTION S-S', SOUTH PARCEL
(See Drawing F4b for alignment)
Vertical scale: 1/10 inch = 10 feet
Horizontal scale: 1 inch = 500 feet
Showing pre-mining profile (black) and
post-reclamation profile (magenta).



Maximum reclaimed slope 3:1.
Contour interval 10'
Vertical exaggeration X50.

Nathan A. Barton, PE (CO-82630)

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Date: 30 MAY 08 Rev: 30 MAY 13
By: N. Barton Revised: S. Wright
Scale as shown. Source: USGS Map/Photo.
Portions Sec 15,16&21, T33N, R5W, 10th PM,
Archuleta Co., CO, Pertaining to
Application: M-~~2008-036~~

CROSS-SECTIONS
SHOWING TERRAIN
BEFORE MINING AND
AFTER RECLAMATION

Drawing/
Sheet No.
F6

EXHIBIT G – Water Information

G.1. SUMMARY: *There are two aquifers identified in this area: the Piedra River alluvial aquifer, which is considered to occupy the full width of the valley floor; and the Fruitland aquifer, which is several hundred feet below the surface of the valley floor*. This operation is expected to have ***no significant direct or indirect affect*** [12]on surface and ground water systems. No irrigated land will be taken out of production; *and a* separate request *has been* made to use some water drawn from the Piedra River alluvial aquifer for dust control, washing of aggregate, and related uses during mining, primarily by pumping from dugouts into the water table, and filed with the Division of Water Resources. The mining and reclamation as planned has no reasonable potential to significantly and adversely impact on surface or groundwater quality or quantity. *Short-term dewatering of some portions of the site may temporarily impact the aquifer but this is not expected to have any longterm or significant impact on the aquifer or users of water in the area.* Reclamation may leave small basins for infiltration and evaporation of runoff; if water is available *(and water rights obtained)* and excavation to *or below* water table is done in mining, some ~~small~~ ponds may be left as features of final reclamation. Some water flowing directly into the Piedra River as surface flow from the small drainages intercepted by the mining will instead infiltrate through the ground into the alluvial aquifer.

G.2. Sources of Ground Water on site or potentially affected by operations on site: None. There are no wells on the site. The following recorded wells are located within ½ mile of this site.[13] Mining at this site will be limited to depths of approximately 60 feet below existing ground level. This does place mining potentially below the known water table,[14] and at or below the level of the Piedra River.

Table G-1. Ground water sources and wells located near Lob Lolly Pit

Permit No	Name	Stat Date	Use	Aquifer	Yield	Depth	Level
74593 F	Petrox Resources Inc.	2010	Industrial, irrigation	Fruitland	1.3	2600	n/a
69124F	Tierra Piedra Ranch	2009	Other:gravel pit	Alluvial	n/a	n/a	n/a
248653	Wright, Steve & Joyce	2003	Expired well permit	Alluvial	n/a	n/a	n/a
74589 F	Petrox Resources Inc.	2010	Industrial, irrigation	Fruitland	0.6	2940	n/a
283644	Pena Kenneth	2010	Domestic	Alluvial	n/a	n/a	n/a
37860F	Corn Construction Co	1990	Other:gravel pit	Alluvial	n/a	n/a	n/a
74592 F	Petrox Resources Inc.	2010	Industrial, irrigation	Fruitland	1	2950	n/a
115697	Miller E R	1980	Domestic	AOS	0.5	305	125
202714	Meier Mark	1997	Domestic	Alluvial	13	9	5
74590 F	Petrox Resources Inc.	2010	Industrial, irrigation	Fruitland	2.3	2900	n/a
4006	Munoz Danial	1959	Domestic	Alluvial	3	60	29
46383 F	Bravo Leonora B	1996	Domestic	Alluvial	12	100	22
39024	Magers Dale	1969	Domestic	Alluvial	3	60	18
263228	Bates Charles A	2005	Domestic	Alluvial	n/a	67	18

Notes: AOS: Ojo Alamo Sandstone (rock formation), depth and level in feet, yield in Acre-feet.

G.3. Sources of Surface Water on site or potentially affected by operations on site:

- The only source of surface water on the site are existing feeder ditches of the various irrigation ditches, intermittent streams (such as the Pine Tree Canyon creek), and the Piedra River. The feeder ditches are

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[12] *This phrase was contained in the original application but overlooked in the comments, and therefore is highlighted in this update.*

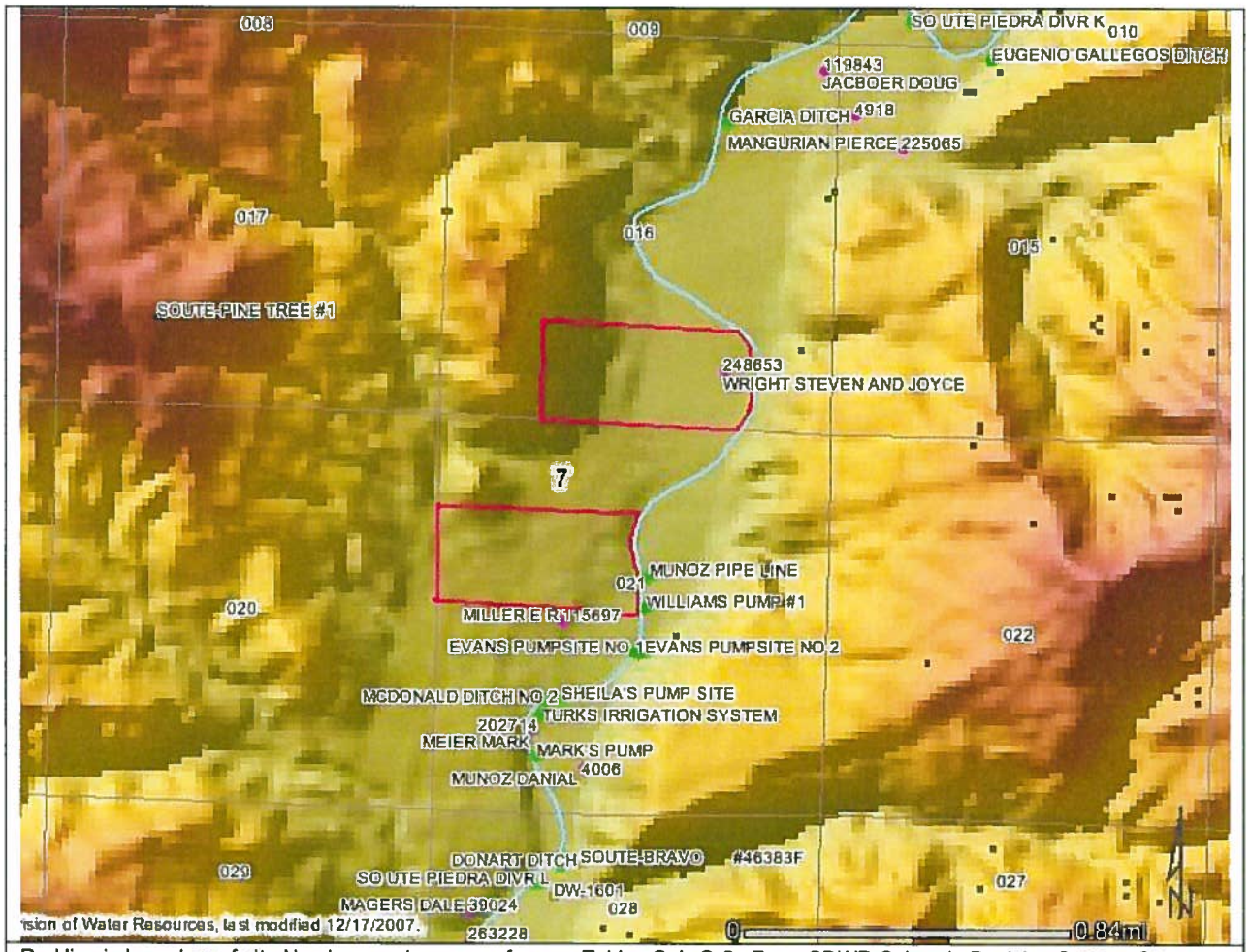
[13] Review of Colorado State Engineer records, 16 APR 2008. *Updated 28 MAY 2013.*

[14] Based on test holes dug at the site in 2007 *and additional observations in 2012-2013.*

located within the buffer zone of 100 feet, along the river, and will not be affected directly or indirectly. As discussed above, intermittent streams will be intercepted and infiltrate; and the pit excavations will be at least 100 feet from the river.

- The Piedra River, flowing south, is one of the major tributaries of the San Juan River, in the Colorado River Basin. It is not currently over-appropriated, and water rights area available upon filing.
- An ephemeral unnamed stream brings flows from Pine Tree Canyon to the northwest. This stream is currently flowing in deeply incised arroyos on the site, and is absorbed (often completely) into the underlying and adjacent alluvium before reaching the river. Except for livestock and wildlife, there are presently no users of this water; but the site is within a short distance of the Piedra River.
- 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)

Fig G-1. Water Wells and Structures (Diversions) in Lob Lolly Area



Red line is boundary of pit. Numbers and names reference Tables G-1, G-2. From CDWR Colorado Decision Support System.

Table G-2. Nearest recorded surface water rights.

Name of Right / Permit No	Owner	Location	Aqfr	Rate	Other Information	Legal
7800588 Munoz Pipe Line	Wright, Steven	SW SW NE	Piedra River	2 cfs abs	Headgate on east bank of river opposite south parcel	33N5W Sec 21 NE
7800726 Williams Pump #1	Miller, Herbert	SW SW NE	Piedra River	0.055 cfs abs	Headgate on east bank of river opposite south parcel	33N5W Sec 21 NE
7800660 Evans Pump Site No 1.	Henderson, Sheila		Piedra River	0.503 abs	Headgate on east bank of river approximately 1000 ft S	33N5W Sec 21 SE
7800661 Evans Pump Site No 2.	Tishner, Herbert		Piedra River	0.503 APEX abs	Headgate on west bank of river approximately 1000 ft S	33N5W Sec 21 SE
7800698 Sheila's Pump Site	Henderson, Sheila		Piedra River	0.25 abs	Headgate on west bank of river approximately 1400 ft S	33N5W Sec 21 SE
7800555 George S McDonald Ditch	Stanfill, Charle	NE SW SW	Piedra River	6 abs	Headgate on west bank of river approximately 1500 ft S	33N5W Sec 21 SW
7800556 McDonald Ditch No 2.	Cox, Bob	NE SW SW	Piedra River	Unlisted	Headgate on west bank of river approximately 1500 ft S	33N5W Sec 21 SW
7800678 Turks Irrigation System	Turk, Johnthan	NW SE SW	Piedra River	0.5 cond	Headgate on west bank of river approximately 1600 ft S	33N5W Sec 21 SW
7800736 Mark's Pump	Meier, Mark	SW SE SW	Piedra River	0.1 abs	Headgate on west bank of river approximately 1700 ft S	33N5W Sec 21 SW

There are no recorded structures in Section 16.

Table G-3. Surface water rights for property.

Name of Right / Permit No	Owner	Date	Aqfr	Yield	Other Information	Legal
7800588 Munoz Pipe Line	Wright, Steve	Unk	Piedra River	2 cfs abs.	Currently used for domestic and livestock water	SW SW NE 21 33N 5W

Aqfr: aquifer (creek or basin). Yield in cfs. Size of irrigated area indicated if known.

G.4. Other information available: No other information for recorded water rights was available from publications or monitoring data.

G.5. 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 Piedra River, 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 0.01% of the total basin will be blocked from discharging at any one time during mining and reclamation operations. There appears to be little problem with increased salinity or other problems related to infiltration of water through the basement sandstone and related formations.

G.6.. Aquifers and watersheds in this area:

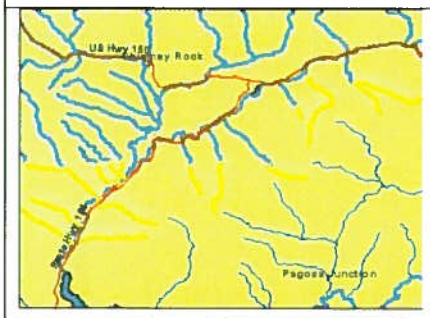
The only commonly utilized aquifer in the area is the alluvial aquifer associated with Piedra River. Due to the geology (the Tertiary Ojo Alamo Sandstone and Animas Formation and the San Jose Formation), depth, and the character of the area, there is little use of water from these formations. Based on depths of existing wells in the area, there are no bedrock formations used as aquifers in the area, and all mining is in the quaternary alluvium above the bedrock. The overburden (soil) and the sand and gravel is a significant aquifer in this area[15]. However, mining will leave large portions of sand and gravel on the site, and will be mostly above the water table. 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.

[15] Per conversations with Natural Resources Conservation District personnel and others in the area.

Existing water quality in the area has not been assessed for this stretch of the Piedra River (EPA: http://iaspub.epa.gov/waters/enviro.wcontrol?p_id305b=COSJPI06B_8800 accessed 15 APR 2008)

Table G-4. Water Quality Attainment Assessments

Assessment Unit ID: COSJPI06B_8800 **Water Name:** Piedra River **Water Size:** 39.91 [miles]



State Designated Use	Attainment Status	Threatened
RECREATION PRIMARY CONTACT	NOT ASSESSED	No
AGRICULTURE	NOT ASSESSED	No
AQUATIC LIFE WARM WATER-CLASS 2	NOT ASSESSED	No
DOMESTIC WATER SOURCE	NOT ASSESSED	No

G.7. Prevention and mitigation actions:

As discussed above, the *affected* permit area is 100 feet away from the Piedra River, and located outside the 100-year floodplain. Potential wetland areas (natural or manmade) are located only in the floodplain and are not being mined. There will be no 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 Colorado Discharge Permit System storm water general permit for which coverage has been obtained for this site (prior to beginning mining). This meets the requirement for an NPDES permit and covers dewatering and process (wash) water as well as storm water, when application has been made for coverage. Since surface water flow will instead infiltrate into the terrace alluvial deposits at the edge of pits and reclaimed areas and is presumed to flow into Piedra 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.

G.8. Project water requirements:

Water use for extracting and processing aggregates from the pit will be low, amounting to 12.4 acre-feet per year under worst case conditions. This water will come from water rights to be obtained by the landowners for mining and future industrial use. The general location and configuration of the site increases the likelihood that water is necessary for dust control on working areas and roads, although use of dust control chemicals and gravelling roads will reduce water use on site. If materials are washed, water will be recycled, reducing use and avoiding surface discharge, as well as protecting water quality. For evaluation purposes, based on the assumptions listed below Table B-5-4, the estimated operating losses of water for the Lob Lolly Pit are shown in this table.[16]

Table G-5. Maximum Project Water Requirements

Activity	Acre-Feet per year	Period (per annum)	Flow (gal/day)	Remarks
Dust control of roads	7.65	0.1 in/day, 120 days	14,662	5.4 acres max
Dust control of plant sites	1.68	0.1 in/day, 30 days	18,192	6.7 acres max
Dust control of pit area	3.75	0.1 in/day, 60 days	20,364	5.0 to 10.0 acres max
Water removed with materials mined	7.49	Assume 200 days	11,990	4% of weight of product (250KT/yr)
Washing of materials	0.61	30 days	6,667	Evaporative loss
Construction water	1.05	60-120 days	2,000	Various on/off-site uses
Total water required	22.23	acre-feet		Worst-case (5.6 days flow @2 cfs)
Water available	476.03	acre-feet (120d @ 2 cfs)		Not including direct precipitation or future water rights obtained

[16] Based on assumptions as discussed in Exhibit M.

G.8.1. This is based on the following assumptions:

- 250,000 tons per year produced (maximum), shipped over 200 days per year, maximum (all roads in operation): total affected area for roads is 5.4 acres, all of which will require application of water during period of haul, except for 30 days with more than 0.1 inch precipitation.
- 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 6.7 acres and will require regular dust control during the thirty-day period plants are located and operating there, and no precipitation during that period.
- Maximum pit area with exposed surface including temporary topsoil stockpiles is 10 acres and average is assumed to be 7.5 acres, which are assumed to be completely open and require application of water for the entire period of their use for actual mining and processing (crushing/screening), approximately 60 days per year, and no precipitation during that period.
- Annual precipitation in the area is 15 inches per year. No watering needed on roads on days with more than 0.1 inch of precipitation.
- 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 off-site will be used for dust control, but water from this site may be used off-site (construction).
- No open water except wash pits (included in wash water use). NWS estimates evaporation from free water surface (shallow lake) to be 48 inches per year for the location of the pit (See Attachment K).
  Expected average water requirements for the project have been provided to DWR in the well/gravel pit application submitted on 30 May 2013, and are significantly lower than this estimate.

G.8.2. ~~Although~~ *Except in the area immediately adjacent to the river, no* ground water is expected to be exposed (~~by~~ *unless there is* mining below the water table)[17] *but* ~~and no~~ water is *expected to be* retained in surface impoundments (actually incised basins) for greater than 72 hours. *However, the Piedra River alluvial aquifer is not over appropriated, and the Munoz Pipeline (2 cfs) is expected to be adequate for all current and future water use, including pond evaporation. However,* if necessary, a substitute water supply plan utilizing water rights will be prepared and submitted to the State Engineer, pursuant to SB 89-120 and SB 93-260 to allow water to be used for the above purposes.

G.8.3. No storage of water is anticipated *except in the incised basin due to excavation, otherwise* water would be drawn from the river as needed. Colorado soil management and conservation rules will be implemented to protect surface and ground water quality and improve watershed management.

G.8.4. *The State Engineer submitted comments which were answered.*[18]

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[17] Original DRMS comment: **10. The submitted Water Information section states that no groundwater will be encountered or exposed. This conflicts with information contained in the submitted Mining and Reclamation Plans. Please clarify this statement.**
That is a typo; the sentence should read, "Although no ground water is expected to be exposed (by unless there is mining below the water table) and no water is retained in surface impoundments." The opening paragraph of Exhibit G states, "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." There is a similar typo in item 9 of Exhibit M, which should read "Water Rights for Pit – Not Required – Unless no ground water is expected to be exposed"

[18] Original DRMS Comment: **11. The Office of the State Engineer has submitted comments regarding the proposed operation (see enclosed letter). Please respond to the enclosed comments.**

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, such as the Piedra River.

This site is within the external boundaries of the Southern Ute Indian Reservation. 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. Use of approximately 20 acre-feet of water per year is not expected to significantly impact tribal water rights.

G.9. Prohibited actions necessary to protect water systems:
None known at this time, other than compliance with best management practices, which 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 Piedra River and other stream 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. No exposure of bedrock formations with potential for downstream water contaminant impact is expected. See also Item 11, this exhibit.

G.10. Wetlands information:
US Department of Interior, National Wetlands Inventory Map, Arboles Quadrangle, 1998, is ~~not~~ *now* available in digital format ~~or hardcopy, despite coordination with NRCS and US FWS~~.[19] Site inspection *and these maps* indicate that vegetation and soil conditions necessary for wetlands do not exist in the area to be affected by mining, *or more than 50 feet from the river banks*. Wetlands are identified as being located along the banks of the Piedra River and no natural wetlands are identified elsewhere, although some manmade areas supporting wetland vegetation are located on the Wright property east of the river, associated with the existing pond and ditches along SH-151. Although riverine wetlands are located within the permit boundary, they are located entirely within the *eastern (riverside) 50 feet of the* 100-foot buffer zone along the river bank and will not be disturbed by proposed operations. See http://wetlandsfws.er.usgs.gov and http://iaspub.epa.gov/waters/enviro.wcontrol?p_id305b=COSJPI06B_8800 for additional information. ~~No map or inventory information provided.~~

Original Response: We believe that Exhibit G addresses all five comments of the State Engineer. If this exhibit was not provided to the State Engineer, we will be glad to do so. In addition, the last comment (concerning wetlands) is also addressed in Exhibits I and J, to some degree.

[19] http://www.fws.gov/wetlands/Wetlands-Mapper.html accessed on 26 MAY 2013

Figure G-2. Wetlands

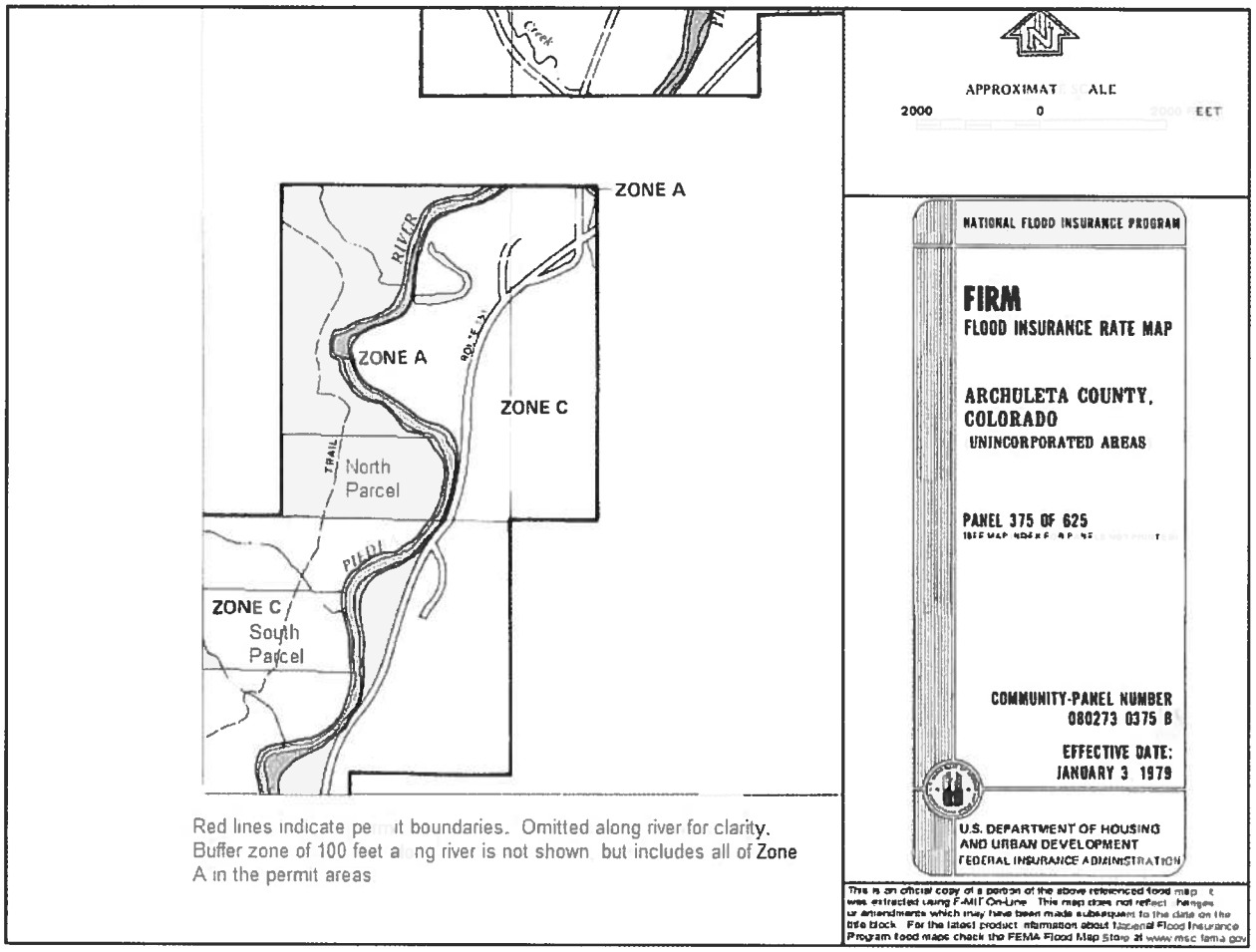
(North)

(South)

G.11. Floodplain information:

Figure G-3 *(formerly G-2)* is the Flood Insurance Rate Map (FIRM) for the area. Based on this, the buffer zone was established as 100 feet from the normal high-water mark of the river's west bank. No part of the Lob Lolly Pit is proposed to be located in the 100-year floodplain of Piedra River.

Fig G-3. Approximate floodplain of Piedra River in Lob Lolly Area



G.12. Water permitting information

*Originally, it was stated "*The Applicant will obtain coverage under a Colorado Discharge Permit System permit for any discharge of storm water, dewatering flows, and process water, before initiating mining activities." 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 terrace alluvium. *Because the site is located within the Exterior Boundaries of the Southern Ute Indian Reservation (SUIR), the State of Colorado does not have jurisdiction to issue storm water permits, and instead, the* ***US EPA issued an individual permit for the storm water, dewatering, and industrial discharge (water used for washing sand and gravel only). This permit permits discharges of both storm water and dewatering flows, requires continuous monitoring, and monthly discharge monitoring reports (DMR) to be submitted even when there is no discharge.***

G.13. WATER AND DRAINAGE: during each phase, the working face will move uphill, away from the river, as much as possible. Infiltration areas to allow water to soak into the ground will be maintained at the toe of the downhill face of the pit, and will allow dewatering if necessary, with permitted discharge to the river. The plant site will have detention/sediment basins. Drainage through reclaimed areas will be a permanent part of final reclamation.

G.13.1. 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 regulations[20] and permits to ensure that no sediment from the pit is discharged into the Piedra River.

G.13.2. The pit floor and plant site floors are below the surrounding land and there will be no discharge under normal conditions from these areas during mining. 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 Piedra River is a rated cold-water fishery above Navajo Lake.

G.13.3. Although identified as a potential requirement, no dewatering is anticipated, as ground flow through undisturbed mineable material on the sides 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.

G.13.4. Water used for washing of material and dust control will not be discharged, but will be recirculated/recycled as much as possible.

G.13.5. Key Best Management Practices (BMP) for storm water management:

a. Maintain equipment, both mobile and portable, to reduce leaks, drips, and spills. As necessary, use drip pans or absorbents under equipment to catch and contain leaks.
b. Maintain good housekeeping practices, including minimizing and collecting litter at least weekly.
c. Provide secondary containment for all petroleums, oils, and lubricants.
d. Properly store and dispose of all waste products, keeping wastes properly segregated. Locate waste storage areas at least 50 feet from drainageways and watercourses and away from areas susceptible to frequent flooding.
e. Divert as much surface runoff from outside disturbed areas to prevent flow into disturbed areas by using berms, curbs, silt fencing, and other means.
f. Discharge as much runoff as possible from disturbed areas and stockpiles into closed basins with only infiltration and evaporation outlets.
g. If it is necessary to dewater a site, implement sediment control measures at the discharge point, including sediment traps, sediment basins, dewatering structures, and artificial wetland areas, to treat sediment-laden excess water from a site.
h. Locate temporary sanitary facilities at least 100 feet from drainage ways, watercourses, areas of high traffic, and areas susceptible to flooding.
i. Inspect storm water controls at least weekly and after all precipitation events (including snowmelt).
j. Maintain accurate records of BMP and inspections.

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

EXHIBIT H – Wildlife Information

This Exhibit H has been updated from 2008 to 2013.

H.1. Agricultural land, coniferous forests, drainages, wetlands, and brush land combine to provide a high diversity of wildlife habitat in the Lower Piedra Valley in which the pit is located. Much of this diversity has been induced by irrigated agriculture, which began in the 1890s, and the construction of Navajo Lake . Irrigation converted a dry basin into many kinds of habitats, including ponds, marshes, reservoirs, cropland, and those habitats created by the irrigation water conveyance system (canals, laterals, and ditches). *This site is located on private (fee) land, within the Exterior Boundaries of the SUIR, and to the knowledge of the applicant, no part of the site has been designated as critical habitat with limits or restrictions on land use or habitat modification. There is no federal action involved.*

H.2. Wildlife species common in area:
LOWER PIEDRA RIVER VALLEY, E ARCHULETA COUNTY

The area's wildlife habitat corresponds to the ecosystems and plant communities present. 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 valley with a variety of shorebirds, small mammals, reptiles, and amphibians adding diversity to the wildlife in the area. The area is a Colorado DOW-designed elk production area, is a mule deer winter concentration area, and identitied as range for both elk and mule deer for severe winters.

H.2.1. Other Fish and Wildlife Resources-Other Fish Species

Fish species inhabiting streams and bodies of water near the project area include such game fish as kokanee, 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. The lower Piedra River is considered marginal quality trout habitat due to relatively high summer temperatures and relatively high silt loads.

H.2.2. 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.

Bald eagles nest, roost, and perch in large cottonwood trees adjacent to reservoirs and rivers. These types of suitable habitat are found on the Piedra River. Most suitable trees in the Lob Lolly area are located within the 100-foot buffer zone along the river or on the steeper slopes not being mined, so no significant impact is expected.

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. *Potential* flycatcher habitat is interspersed throughout the area along ditches and the perennial drainages such as the Piedra River. No effect on possible flycatcher habitat is expected: the sole area which might be suitable is in the riparian buffer zones.

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 significantly affected by proposed mining.

Yellow-billed cuckoo, a federal species of concern and Colorado endangered species, is found to nest in cottonwood/willow riparian habitat along rivers, is an uncommon local summer resident in valleys such as the

Piedra, and one was sighted on the Piedra River near the Lob Lolly area by a SUIT biologist in 2000 or 2001. This habitat is found in the buffer zone and will not be significantly affected by proposed mining.

Arboles milkvetch is found on thick, seleniferous clay soils in sagebrush flats, at elevations of 5600 to 7000 feet. There are three known populations in the area: none are located on or adjacent to this 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 during pipeline installation or ditch lining.

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, except that the expansion of cropland or irrigated cropland on the site as part of reclamation may improve their habitat.

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 no cliffs and most forested areas will be protected in buffer zones. 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 or improved 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: No prairie dogs are known on-site.

New Mexico Meadow Jumping Mouse: Potential habitat seems to be limited to the riparian fringe along the bank of the Piedra River, within the buffer zone.

H.3. Threatened and endangered species impacted:

Habitat *which might be suitable* for some of the threatened or endangered species *listed in Table H-1* is found ~~in or~~ near the project site, *but are not found in the areas to be mined. The buffer zone protects riparian and open water areas which might be suitable habitat for some species.*

H.4. Assessment of mining impact on wildlife:

Although past use of the land has been primarily grazing, the planned sequence of mining on the site, mining will have little or no negative impact on wildlife because of the relatively small area disturbed at any one time *and because no significant wildlife habitat is identified in those areas to be affected.* However, even short-term impact on wildlife will be beneficial, since the site will be available for livestock and wildlife use until converted to industrial use, and will have better soils available to support grasses, while livestock will be restricted from much of the site for safety reasons. 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* Piedra River and across the valley, and therefore should have no reasonable 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 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 relatively small area impacted, and plans to allow water to infiltrate rather than flow on the surface, and limit ponding, there should be no significant water depletion which would impact wildlife or their habitat and therefore require consultation. See Exhibit G.

H.5. Proposed mitigation measures, including reclamation, for wildlife habitat:

Since the anticipated effect on threatened and endangered species is "No Effect" and since there is no reasonable potential of significant impact on wildlife habitat, no mitigation measures are planned for the sake of wildlife habitat mitigation.

H.6. Name, Title, Address and Phone of Person preparing wildlife statement:
Nathan A. Barton, C.E., P.E., D.E.E., Environmental Engineer
P.O. Box 88, Cortez, CO 81321-0088 Phone: (970)218-4133
Prepared for Arboles Sand and Stone, LLC May 2013

H.7. References: (See also general references for exhibits)

a. Colorado Mammal Distribution Latilong Study, Colorado Division of Wildlife and Denver Museum of Natural History, OCT 1990

b. Colorado Bird Distribution Latilong Study, Colorado Division of Wildlife and Colorado Field Ornithologists, DEC 1987

c. Colorado Reptile & Amphibian Distribution Latilong Study, Colorado Division of Wildlife, MAY 1981

d. Navajo Reservoir Resource Management Plan/Draft Environmental Assessment, US Bureau of Reclamation, 2005. (Chapter 3, Affected Environment)

e. Natural Resource Management Plan Update, Southern Ute Indian Tribe, 2000.

f. Oil/Gas Leasing Environmental Impact Study, Southern Ute Indian Tribe, 2000.

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

Scientific Name	Common Name	State Status	Federal Status	Occurrence
Empidonaz traillii extimus	Southwestern Willow Flycatcher	E	E	Migrate through the area. No known nesting but possible in the area (in buffer zone).
Coccyzus americanus	Yellow-billed Cuckoo (western)	SC	C	Possible, but none observed. Suitable habitat exists in area: will be in buffer zone. Still candidate a/o 2013MAY30.
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.
Mustela nigripes	Black-footed ferret	E	E	No prairie dog colonies in area of sufficient size to support population
Lynx canadensis	Canada lynx	E	T	No known population in this part of Archuleta County
Strix occidentalist lucida	Mexican spotted owl	T	T	No suitable habitat/habitat complex in or near permit area: buffer zone not old growth forest.
Zapus hudsonius luteus	New Mexico meadow jumping mouse	Not	C	Normal habitat may exist immediately along river in buffer zone which will not be disturbed (within 10-25 feet of permanent water) in scrub-shrub wetlands)
Ipomopsis polyantha	Pagosa skyrocket		E	27JUL2011 listing (76FR145054) Only three populations known in Archuleta County: none here
Oncorhynchus clarki virginalis	Rio Grande cutthroat trout		C	No suitable habitat in area. No impact on habitat downstream.

Summary of threatened and endangered species and their status within the Piedra River Valley. Abbreviations for species status include E = Endangered, T = Threatened, P = Proposed, C = Candidate, SC = Species of concern, # = No Status.

H.8. Coordination

Coordination was made via phone with US FWS Grand Junction Office. Ms. Patty Gellatt indicated that they had no further response beyond what was given in 2008.
Coordination was made via phone with CDPW Durango Office. Mr. Tony Gurzick requested this statement be provided for review (via e-mail) but did not anticipate any issues based on actions proposed.

EXHIBIT I – Soils Information

Updated from 2008 information

1. Source(s) of Information: USDA Soil Survey of Southern Ute Indian Reservation, Colorado, (Parts of La Plata and Archuleta Counties), issued 2006.[21]

2. Significant concerns in soils management: Prevention of water and wind erosion, and downstream siltation. Protection of limited topsoil. Topsoil (the A horizon) and soil (the upper 6" to 24" of material), and overburden (loam, silt and clay in the subsoil) is expected to be quite variable, as defined by standard NRCS methods, and may require or benefit from screening of larger materials (cobbles) prior to replacement.

3. Most reclamation will be as irrigated pasture with standard agricultural pasture-grass mix. 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.

4. The soils map is drawn from the soil survey and on-line data available from NRCS and included in this Exhibit. Although the survey shows a clear separation of soil types, actual mixture is much more variable and the site has a higher amount of mixed alluvium with cobbles and gravel not derived from sandstone and shale but from other materials.

5. The soils descriptions provided in Table B-2-1 are taken from the Survey. Field surveys have determined that the mapping is fairly accurate but does not show many small areas of other soils, such as Fluvaquents found in Steimer and Bayfield. It also does not show areas of "fossil soil" buried under more recent outwash (such as Catdraw loam) found in much of the site, typical for the area of the Lob Lolly Pit. Soil ranges from 0.25 to 2 feet in depth, overburden (below the topsoil, including fossil soils) ranges from 0 to 20 feet in depth. Cobbles and smaller rock materials suitable for mining are found throughout the profiles, and will be used for construction materials if possible. In addition, good topsoil materials from project sites will be brought to the Pit and stockpiled for reclamation use, to prevent waste. This includes topsoil from CDOT access improvements on SH-151 east of the pit.

6. Topsoil stripping, storage, and replacement: For planning purposes and based on test pits, it is assumed that an average of 2.5 feet of material will be removed, and that the equivalent of 1-2 feet of material will be screened and/or washed out of excavated material and used for reclamation, with a target of 18 inches in all areas, especially if potentially to be irrigated in the future. In all areas where topsoil is removed, the following will be done as much as possible:

- Upper layers (A horizon) of soil will be removed and stockpiled, ranging from 8 to 12 inches (based on soil type); lower layers (from 8 or 12 to 24 inches) will be removed and stockpiled separately if necessary to preserve better quality soil.
- If necessary, the larger cobbles will be removed from the soil prior to placement in the final location. Up to 25% of original soil may be therefore screened out, with an estimated average of 15% (leaving 18-20 inches of the original 24 inches removed).
- In areas to be reclaimed for cropland, pasture, or grazing land, soil will replaced to a depth not less than 2/3 of original depth for reclamation: minimum 18 inches. In dryland areas, minimum will be 12 inches. Depth will vary by area, but soil will be placed on backfill/subgrade that is suitable for rooting zone, and not directly on competent bedrock.
- Soil will not be replaced on roads, industrial areas and pond areas except as landscaping. This will make some additional soil available for increased depth in other areas.

The objective is to provide as high a quality cropland/pasture/grazing as feasible at the end of mining activities, and not to waste topsoil. Only if adequate topsoil is available to meet reclamation goals will any topsoil be shipped off-site.

---

[21] Available on-line:

Table I-1. Soils Descriptions

Unit	AO-B
Name	Steimer loam, 1 to 3 percent slopes
Description	85 percent Steimer and similar soils: 0-8 inches: loam 8-12 inches: very fine sandy loam 12-23 inches: loam 23-50 inches: stratified loam to very fine sandy loam to clay loam 50-70 inches: stratified extremely gravelly loamy sand Note: portions of this soil appear to have upper portions of profile removed with more gravel in all parts of profile. Landform: flood-plain steps Somewhat poorly drained. Alluvium derived from mixed sources. Ecological site/classifications: River Bottom (R036XY327CO/048AY236CO)
Unit	A2W-B
Name	Fluvaquents, 0 to 3 percent slopes
Description	85 percent Fluvaquents and similar soils: 0-10 inches: gravelly loam 10-60 inches: stratified extremely gravelly sand to very cobbly sandy loam Landform: flood plains Frequent flooding, no ponding, poorly drained Alluvium derived from mixed sources. Ecological site/classifications: River Bottom (R036XY327CO/048AY236CO)
Unit	VO-CD
Name	Catdraw loam 3 to 12 percent slopes
Description	85 percent Catdraw and similar soils: 0-3 inches: loam 3-9 inches: clay loam 9-60 inches: clay loam Landform: pediments (base slope position), Slope alluvium derived from sandstone and shale. Well drained, high available water capacity. Ecological site/classification: Loamy Foothills (R036XY284CO/048AY284CO)
Unit	XE6-E
Name	Payan-Rock outcrop complex, 12 to 65 percent slopes
Description	Payan and similar soils: 55 percent Rock outcrop: 30 percent 0-5 inches: cobbly sandy clay loam 5-12 inches: clay loam 12-18 inches: clay loam 18-26 inches: weathered bedrock 26+ inches: bedrock (Ojo Alamo sandstone) Ecological site: Pinus edulis-Juniperus scopulorum/Quercus gambelii-Artemisia tridentata ssp. vaseyana/Poa fendleriana-Hesperostipa comata (F036XY926CO) [Pine-Juniper savannah]

FIGURE I-1

I-1 SOIL MAP - taken from NRCS (Web Soil Survey) ↑north Scale: 1"=apprx 1200'

EXHIBIT J – Vegetation Information

No change from 2008 information

1. Source(s) of information: USDA Soil Conservation Service, Soil Conservation District, USDA National Forest Service, various environmental assessments, site visit.

2. Vegetative communities and conditions: As shown in tables J-1 and -2.

This site is located on the boundary between two Southern Rockies ecoregions: the Foothills Shrublands to the east, and the Sedimentary Mid-Elevation Forests. This interface is characterized by broad, grass-, shrub-, and woodland-covered benches and mesas, with soils and communities very strongly influenced by the substrate and availability of water.

Table J-1. Vegetative communities:

Community (Ecological site)	***Vegetation layer and dominant species***
Big Sagebrush Shrubland (also identified as "Loamy Foothill")	The major portion of the site, including most of the area to be mined. The sagebrush shrubland type is a sagebrush-dominated type that occurs on hills, mesas, and valley floors at elevations ranging from approximately 5,000 to 9,000 feet. This type occurs on moderately well to well-drained soils in the semi-arid and lower montane climate zones. As with much of this community in the region, there is evidence of previous degradation, but the area is not normally grazed by livestock and has not been significantly affected in the last decade. Soils are typically deep, well-drained and non-saline. They are dominated by basin big sagebrush and/or Wyoming big sagebrush, with scattered junipers, black greasewood, and saltbush present in some stands. Rubber rabbitbrush, Douglas rabbitbrush, antelope bitterbrush, or mountain snowberry may codominate disturbed lands. Perennial herbaceous components typically contribute less than 25% vegetative cover. Common grass species include Indian ricegrass, blue grama, thickspike wheatgrass, Idaho fescue, needle-and-thread, Great Basin wildrye, galleta, western wheatgrass, Sandberg bluegrass, or bluebunch wheatgrass. Much of this land will be converted to cropland. This is a portion of the **Foothill Shrublands** ecoregion (21D). This is a transition from the higher elevation forests to the drier and lower Great Plains (Ecoregions 25, 26) to the east and to the Colorado Plateaus (20) to the west. This semiarid region has rolling to irregular terrain of hills, ridges, and footslopes, with elevations generally 6000 to 8500 feet. Sagebrush and mountain mahogany shrubland, pinyon-juniper woodland, and scattered oak shrublands occur. Other common low shrubs include serviceberry and skunkbush sumac. Interspersed are some grasslands of blue grama, Junegrass, and western wheatgrass. Land use is mainly livestock grazing and some irrigated hayland adjacent to perennial streams.
Riparian Woodland (also identified as "River Bottom")	Most of the riparian woodland on the site is located within the buffer zones and will not disturbed. Some portions of this community will be mined and will be converted to cropland for grazing and industrial/industrial buffer use. The Rocky Mountain Lower Montane Riparian Woodland and Shrubland type often occurs as a mosaic of multiple tree-dominated communities with a diverse shrub component. 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 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 (salt cedar) are common in some stands. This is also part of Ecoregion 21D (described above).
Pinyon-Juniper	This community includes the steeper areas of the western portions of the site. Characteristic vegetation includes Twoneedle pinyon (15%), Utah juniper (15%), Big sagebrush (20%), Muttongrass (10%), Western wheatgrass (10%), and Indian ricegrass (5%). Production varies from

	500 to 700 pounds per acre. Most of these areas will not be mined, but the fringe areas will be mined and reclaimed as shrubland for grazing and industrial buffer zones. Pinyon-Juniper Woodland type occurs on warm, dry sites on mountain slopes, mesa, plateaus, and ridges at elevations from 4920 to 8010 feet (1500 - 2440 m). Soils vary in texture from stony, cobbly, gravelly sandy loams to clay loam or clay. Pinyon and/or Utah juniper dominate the tree canopy. In northwestern New Mexico, one-seed juniper and various juniper hybrids may dominate or codominate the tree canopy. Rocky Mountain juniper may codominate or replace Utah juniper at higher elevations. 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. This is the major vegetative type within the reservoir area and covers about 42% of the area. Small stands of ponderosa pine and Douglas fir occur on cool slopes and on the floors of some of the Navajo Reservoir's canyon tributaries (e.g., La Jara Canyon, Frances Arm, and Bancos Canyon). (USBR 1999) This is within the **Sedimentary Mid-Elevation Forests** ecoregion (21F). This ecoregion occurs in the western and southern portions of the Southern Rockies, at elevations generally below Ecoregion 21e. The elevation limits and vegetation of this region are similar to the crystalline (21c) and volcanic (21h) mid-elevation forests; however, a larger area of Gambel oak woodlands and forest is found in this region. Carbonate substrates in some areas affect water quality, hydrology, and biota. Soils are generally finer-textured than those found on crystalline and metamorphic substrates such as those in Ecoregion 21c.

Table J-2. Status of vegetative cover:

Area(s) on map	Ground cover percentage	Rating	Total yield	Composition
River bottom:				
Riparian woodland	80-100%	Good	2500	See description above.
Big sagebrush scrubland	25-40%	Poor	2000	See description above.
Loamy foothills (scrubland)	20-30%	Poor	1500	See description above. Portions have been cleared of brush and are in grass.
Pinyon-Juniper woodlands	15-30%	Fair	400	See description above.

Yield is in pounds per year, present condition.

1. Seed mixes:
    a. For topsoil protection and reclamation (For temporary seeding for stabilization and protection of stockpiles:[22]

Species, Variety	Rate in lbs/acre, PLS, Broadcast	Rate in lbs/acre, PLS, Drilled
Slender Wheatgrass, Pryor	8.25	4.13
Sanfoin, Remont	12.50	6.25
TOTAL	20.75	10.38

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

    b. For reclamation as irrigated or semi-irrigated (pasture/hay/landscaping):

Species, Variety	Rate in lbs/acre, PLS, Broadcast	Rate in lbs/acre, PLS, Drilled
Orchardgrass, Paiute	5.00	3.50
Meadow Brome	2.50	1.75
Smooth Brome, Manchar	2.50	1.75
Intermediate Wheatgrass	3.75	2.50
Sainfoin (Remont or similar)	3.75	2.50
Small Burnet	2.50	1.75
Annual Rye (nurse crop)	5.00	3.50
TOTAL	25	17.25

    c. For reclamation as dryland (hay/pasture/landscaping/grazing land):

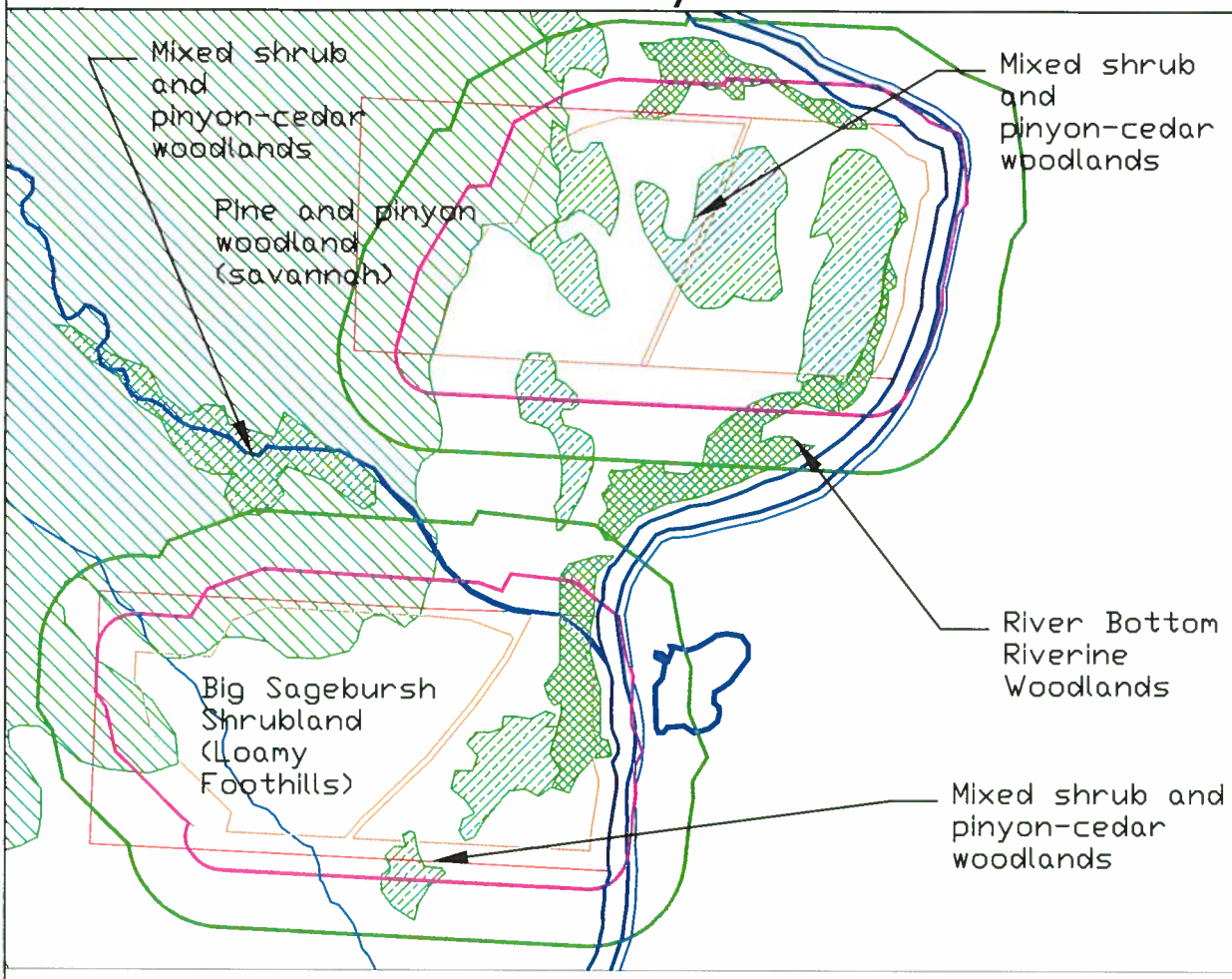
Species, Variety	Rate in lbs/acre, PLS, Broadcast	Rate in lbs/acre, PLS, Drilled
Pubescent Wheatgrass	5.00	3.75
Smooth Brome, Manchar	5.00	3.75
Orchardgrass, Paiute	4.00	3.00
Crested Wheatgrass	3.00	2.25
Russian Wildrye	2.00	1.50
Annual Rye (nurse crop)	1.00	0.75
TOTAL	20	15

Fertilizer: as determined at time of seeding.
Mulching: 2 tons (4000 pounds) weed-free straw, per acre, crimped, or aspen/birch excelsior or sawdust, crimped or pinned.

Seed available from Southwest Seed, Cortez, Colorado

[22] This mix is based upon recommendations by the local CSU Extension Service, … a temporary mix consisting of sanfoin and slender wheatgrass, based on watering for establishment (not permanent irrigation)

Arboles Sand & Stone
Lob Lolly Pit



Mapping scale 1:24,000

Red is permit boundary.

Based on aerial photography, 1990-2007

Nathan A. Barton, PE (CO-82630)

Prepared for AS&S by and (c) WASTELINE, INC.
Date: 30 MAY 08 By: N. Barton Rv: S. Wright
Scale: 1"=1000' Source: USGS Map/Photo.
Portions Sec 15,16&21, T33N, R5W, 10th PM,
Archuleta Co., CO, Pertaining to
Application: M-~~2008-036~~

N

MAP SHOWING
VEGETATIVE COMMUNITIES
(ECOLOGICAL SITES)
BEFORE MINING

Drawing/
Sheet No.
J1

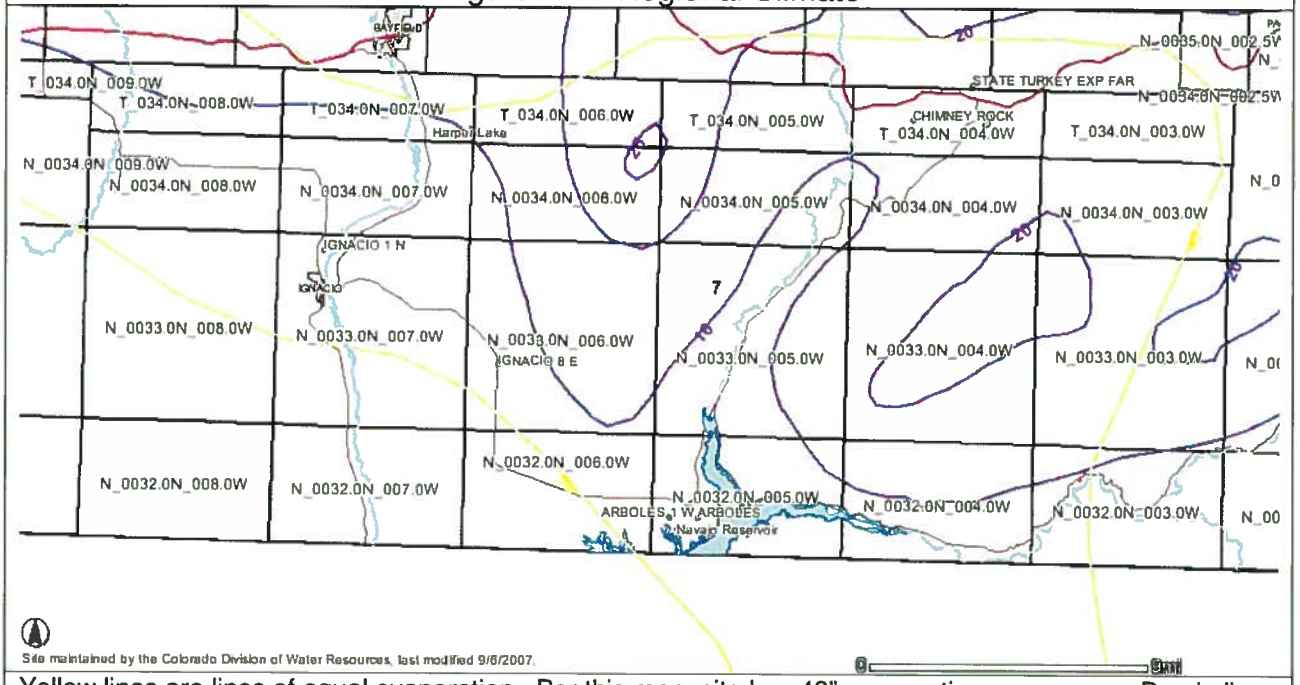
EXHIBIT K – Climate

Updated from 2008 Information

ARBOLES-LOWER PIEDRA VALLEY AREA, ARCHULETA COUNTY, COLORADO:

SUMMARY: Average annual precipitation is 12-15 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.

Figure K-1. Regional Climate



Yellow lines are lines of equal evaporation. Per this map, site has 48" evaporation per annum. Purple lines are lines of equal precipitation. Site has 15" precipitation per annum.

1. Source(s) of Information:
   a. US Bureau of Reclamation, Navajo Reservoir (website);
   b. Archuleta County Economic Development (personal conversations);
   c. The Weather Channel (website);
   d. USDA Natural Resources Conservation Service (various publications, website),
   e. Colorado Division of Water Resources (website),
   f. Chapman, S.S., et al., 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),
   g. Western Regional Climate Center (websites including http://www.wrcc.dri.edu/pcpnfreq.html), Colorado State University

2. General Climate:

Archuleta County, in southwest Colorado, is where the San Juan Mountains meet the desert canyon country of the San Juan Basin. The area has milder winters than northern Colorado, yet still has four distinct seasons. Winter weather patterns flow from the southwest and west, usually avoiding the colder storms that are typical of most parts of Colorado. Winter storms bring heavier snowfalls to the San Juan

Mountains in the northern portion of the county. The atmosphere is dry and generally clear. There is abundant sunshine, with an average of 321 days of sunshine during the year. Snowfall varies considerably with elevation. Precipitation is extremely variable from year to year.

Table K-1. Lob Lolly Pit General and Regional Climate Data
Data based on Arboles and modified by state climate maps

Data Item	*Quantity*	*Units*	*Remarks*
2-yr, 24-hour storm	1.3	inches of precipitation	interpolated
25-yr, 24-hour storm	2.3	Inches of precipitation	interpolated
100-yr, 24-hour storm	2.9	inches of precipitation	interpolated
Depth of freezing	36	Inches	
Annual average lake evaporation	48	inches/year	Schwab et al.
Rainfall, Arboles	12.1	inches/year	Climate.fizber.com
Snowfall, Arboles	3.4	inches/year	Climate.fizber.com
Precipitation days, Arboles	52	Days/year	Climate.fizber.com
Sunny days, Arboles	284	Days/year	Climate.fizber.com
Avg. July High	89	Degrees, F	Climate.fizber.com
Avg. January Low	8.1	Degrees, F	Climate.fizber.com
UV Index	6.1		Climate.fizber.com
Mean Annual Temperature	48.6	Degrees, F	1929-1996
Daily Maximum Temp	98	Degrees, F	Date Unknown
Daily Minimum Temp	-27	Degrees, F	Date Unknown
Growing Season, Site	100-120	Days	USDA
Elevation of site	6300	Feet above sea level	USGS

3. Annual Precipitation:

Table K-2. Lob Lolly Pit Precipitation Table[23]

In Inches	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Precipitation	.78	1.05	1.12	0.69	1.01	0.70	1.51	2.77	2.51	1.15	0.51	1.18	15
Snowfall	Y	Y	Y	Y						Y	Y	Y	3.4

http://www.wrcc.dri.edu/htmlfiles/westevap.final.html COLORADO

MONTHLY AVERAGE PAN EVAPORATION (INCHES)

	PERIOD OF RECORD	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
AKRON 4 E	[illegible]	[illegible]												
ALAMOSA WSO AP	[illegible]	[illegible]												
ARBOLES	1957-1963	0.00	0.00	0.00	5.41	7.95	9.56	9.78	8.61	6.52	0.00	0.00	0.00	47.83
BONNY LAKE	[illegible]	[illegible]												

4. Temperature:

Table K-3. Lob Lolly Pit Temperature Table

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Maximum	39	45	53	62	72	83	87	85	77	65	50	41	63.25
Minimum	09	15	23	28	35	42	49	48	41	31	21	12	29.5
Average	24	30	38	45	53.5	62.5	68	66.5	59	48	35.5	26.5	46.38

[23] Based on Navajo Reservoir data, revised for total precipitation for the actual site based on state maps.

ARBOLES, COLORADO (050307)

http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?co0307

Period of Record Monthly Climate Summary

Period of Record : 10/22/1957 to 10/31/1963

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	39.8	45.4	51.2	64.8	74.8	85.1	89.0	86.3	78.8	67.8	52.3	43.8	64.9
Average Min. Temperature (F)	8.1	18.5	22.9	29.5	38.4	46.6	52.7	52.4	45.3	34.6	23.6	14.8	32.3
Average Total Precipitation (in.)	0.61	1.09	1.32	1.14	0.30	0.36	0.58	1.55	1.37	2.16	0.76	0.82	12.06
Average Total SnowFall (in.)	0.0	0.0	1.6	0.1	0.0	0.0	0.0	0.0	0.2	0.0	0.0	1.4	3.4
Average Snow Depth (in.)	3	1	1	0	0	0	0	0	0	0	0	1	0

Percent of possible observations for period of record.
Max. Temp.: 99.7% Min. Temp.: 99.5% Precipitation: 99.9% Snowfall: 91.1% Snow Depth: 66%

Data from Pagosa Springs, CO:

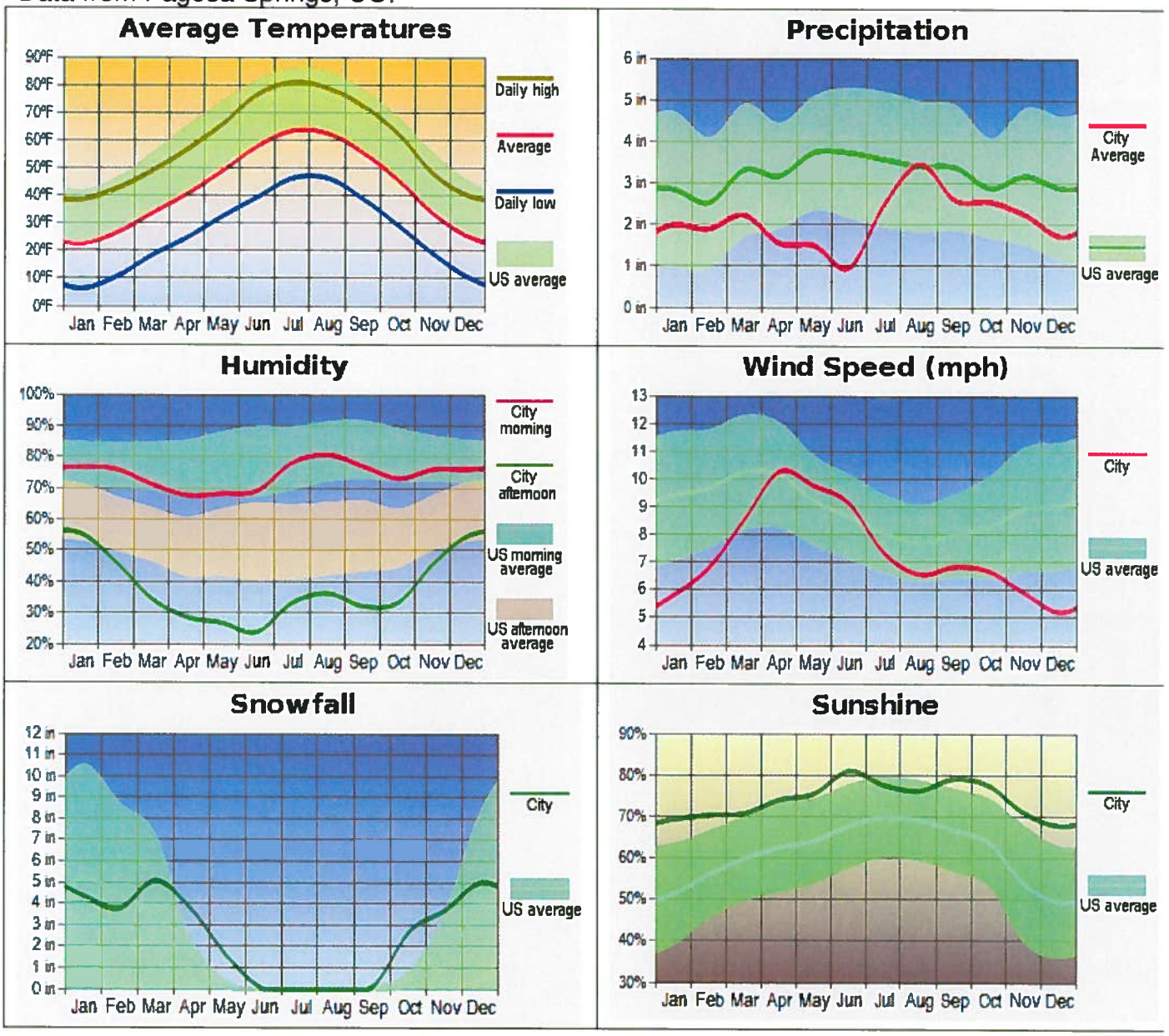


EXHIBIT L – Reclamation Costs

Updated from 2008 information

UNIT COSTS BY ACTIVITY				$/hour	$/acre		
Backfilling from stockpiles (berms)			Dozer, 12 hr/acre	$135	$1,620		
Grading and contouring			Patrol, 5 hrs/acre	$100	$500		
Scarification and final contouring			Tractor, 5 hrs/acre	$80	$400		
Revegetation	Where needed		seed $300, sow $300, mulch $300	NA	$900		
GENERAL SITE FEATURES							
STATUS	LOCATION	Acres	ACTIVITY	Unit $	Cost $	Mark-up	Total $
Years 1-5	Area A	14.9	Backfilling from stockpiles (berms)	$1,620	$24,138	15%	$ 27,759
		14.9	Grading and contouring	$500	$7,450	15%	$ 8,568
		14.9	Scarification and final contouring	$400	$5,960	15%	$ 6,854
		1.9	Revegetation to fringe areas	$900	$1,710	15%	$ 1,967
Years 6-15	Area B	14.5	No backfill: at final grade	$500	$7,250	15%	$ 8,338
		14.5	Scarification and final contouring	$400	$5,800	15%	$ 6,670
		13.9	Revegetation of area	$900	$12,510	15%	$ 14,387
Years 16-20	Area C	16.1	Backfilling from stockpiles (berms)	$1,620	$26,082	15%	$ 29,994
		16.1	Scarification and final contouring	$500	$8,050	15%	$ 9,258
		14.9	Revegetation of area	$900	$13,410	15%	$ 15,422
Years 20-28	Area D	15.7	No backfill: at final grade	$1,620	$25,434	15%	$ 29,249
		15.7	Grading and contouring	$500	$7,850	15%	$ 9,028
		15.7	Scarification and final contouring	$400	$6,280	15%	$ 7,222
		13.2	Revegetation of area	$900	$11,880	15%	$ 13,662
Reclamation Estimate for Year 1 to 5 (including existing disturbance)				Phase I	Area A	Yr 1-5	$ 45,147
Peak disturbed and unreclaimed during year 16							$ 74,541
				Phase II	Area B	Yr 6-15	$ 29,394
				Phase III	Area C	Yr 16-20	$ 54,673
				Phase IV	Area D	Yr 20-28	$ 59,161
Permanent Road Areas are not included, as they are already built and will be maintained during operation							
Pond areas are not included in revegetation areas, except for perimeters.							
Revegetation includes 50% reseeding.							

Prepared by N Barton, 2 JUN 2013

Notes: Dozer may be replaced by scraper under some conditions. Mobilization and profit included in above hourly rates. Mobilization likely to come from Arboles-Tiffany-Ignacio area, not Pagosa sprngs. 15% mark-up is state administrative and design costs. In Phase I (years 1-5), 14.9 acres assumes entire Area A will be disturbed, but that 13 acres of area is permanent road, basins, and plant sites for industrial use. Although permanent plant sites can be assumed to be at final grade at any time, the acres are included to account for additional backfill/grading work to do final configuration of basins (including open water areas) to DRMS-required slopes. for open water.

EXHIBIT M – Other Permits and Licenses

Updated from 2008 information

M.1. Permits: The following other permits are required for this project:

Type of Permit Required	Permit number/date	Status and remarks
Air Quality: Site is under jurisdiction of SUIT/EPA and not under jurisdiction of State of Colorado (CDPHE-APCD)	None. Fugitive emissions for sand and gravel operations do not require a permit under EPA regulations, and to our knowledge SUIT has not implemented such.	As annual production is expected to be less than 70,000 tons, Permit for fugitive emissions is not required. APEN to be renewed in 2013.Eequipment to be operated on site will be portable and have own permits
County Air Quality	None required: uses state	
Colorado Mining	M-2008-036	This application now in review.
County Mining	Part of County Land use	See also County Land Use
Storm Water: Site is under jurisdiction of SUIT/EPA and not under jurisdiction of State of Colorado (CDPHE-APCD)	US EPA CO0048194, 1 FEB 2013	USEPA issued permit as a special, rather than general permit, and includes storm water, dewatering, and process water (if generated). Permit requires daily monitoring of any discharge, and monthly discharge monitoring reports.
Process Water	Substitute water supply plan to be submitted. No well application (for pit) required; no ground water exposed.	Have existing water rights; must account for out-of-priority depletions as anticipated. SWSP required to use these water rights.
Bio-solids Application	Not required	No use planned
County Land Use (Planning and Zoning)	No number: 10-year permit issued 19 May 2009, may be renewed	Standard Conditional Use Permit with special requirements for mining
Water Rights for Pit	Well permit applied for on 31 MAY 2012	No substitute supply plan expected to be required; may involve change in use to existing Munoz Pipeline 2.5 cfm right.
Water Appropriation for dust control	To come from water rights	To be included with well permit, if ag water needs change of use to be used
Above-ground storage tanks (AST)	To be assigned if required, by OPS (CDLE), if tanks are considered not to be "remote"	Equipment to be used on site will be portable and will have own notifications and/or permits. Maintenance shop for equipment will be part of permanent industrial activities and not specifically for mining.
CDOT Access Permit	508024 issued 02 SEP 2008	Limits to 82,500 TPY without further improvements
Federal	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 Lob Lolly Pit will be processed on site and then transported by truck to plants or construction sites for further processing and use. Most material transported will use private and not public (state or county) highways.

ROUTES

Based on anticipated markets during the life of the pit, traffic on public highways is assumed to be 2/3 northbound and 1/3 percent southbound on SH-151. No county roads will be used for the pit.

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

See CDOT access application and permit. Existing intersection improvements done in 2009 limit production to 82,500 tons/year (rolling average) without further improvements (addition of auxiliary lanes) or use of flaggers/traffic control (for special projects).

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.

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, west of the Piedra River and in a fairly wide valley setting, 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 US-151, other sounds carry well, but trees and the terrain help contain noise.

The nearest dwellings are the Kane house just east of the river between the two parcels, the Lark and Miller family houses to the south, and the Tierra Piedra Ranch house to the north. For the most part, the various buffers (along the river and north and south boundaries) ensure that operations are separated from these 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 be partially buffered by use of stockpile berms as they are built. This will allow the terrain features on site and off-site to act as sound barriers.

Operating procedures for all Arboles Sand and Gravel 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. Because of terrain, the two neighbors to the south may be initially modestly affected by operations, until the first portion of the pit is open, berms are built, and most activities move to below ground level. However, a large buffer has been established to reduce this impact, and the two nearest houses are more than 400 feet from any operations. Operations will move constantly away from this house, and wooded areas, as well as the berms, will buffer these locations. Other neighbors are not located where general pit operations will be heard, but may be affected by traffic noises.

All complaints received by Arboles Sand and Gravel will be recorded and investigated immediately. New methods of noise control will be regularly considered and adopted when feasible.

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. Fencing, the pipeline, trails, work areas, and related utilities are not identified as having historical significance. *Information provided by OAHP appeared to be contrary to this information but was addressed.*[24]

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[24] Original DRMS comment: **13. The submitted exhibit states that no known cultural resources are contained on the site. The response from the Office of Archaeology and Historic Preservation states that there are certain culturally sensitive locations at the site and has instructed that specific measures must be taken to protect these resources (please see enclosed letter). Please contact the Historical Society and address how these areas will be protected during activity at the site.**
We have received no further information from the OAHP on the three sites referenced (5AA47, 5AA48, and 5AA49, but these are all prehistoric sites. It appears that these sites were identified during a survey of the Southern Ute Indian Reservation in 1969 or around that time period, and therefore are most likely NOT located on the property for this project. Without additional information, there is no indication that these sites are actually on the property (OAHP has a record of frequently identifying sites in their comments that either are not located on the property being disturbed or no longer exist because they were disturbed and excavated during the project that the original cultural resource surveys were prepared for). However, the sites (if they do exist and are on Wright property) are on private property and the owners have no obligation or desire to take any special effort to preserve any potential archeological or historic site. Indeed, any sites which may exist on the property have most likely been disturbed by past agricultural and industrial use of the property. The county is not a "Certified Local Government" as established by the OAHP and there is no local agency with which to consult. It is the

DISCUSSION:

A research program was initiated to identify potential historic and prehistoric sites which might be impacted by operations, as well as any cultural resources which might exist on the site.

No prehistoric 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

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Operator's intent to comply with all federal and state law regarding human remains and related matters.

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

EXHIBIT N – Source of Legal Right to Enter

Right-of-Way and Damage Agreement

This Agreement is made and entered into, effective as of the 4th day of June, 2008 ("Effective Date") by and between Steve and Joyce Wright,, whose address is 12577 Highway 151, Pagosa Springs, Colorado, ("**Landowner**"), and, Arboles Sand & Stone, LLC ("**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 minerals leases and rights and surface estate or otherwise controls the surface rights in and to the property described as Archuleta County parcel numbers 5959-16-300-012 and 5959-21-100-013 ("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 ("Lob Lolly Pit")/

D. Landowner owns or operates potentially significant, valuable, and permanent manmade structures ("Structures") located in 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 SH-151, to be included within the permit boundaries of the Lob Lolly Pit as required by applicable Colorado Revised Statute and Archuleta County Ordinance and Land Use Plan.

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 Kane 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.

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

Steve Wright, Landowner

Joyce Wright, Landowner

Steve Wright, Manager, Arboles Sand & Stone, LLC

State of Colorado)
County of Archuleta)ss

The foregoing instrument was acknowledged before me this 9th day of June, 2008, by the above persons, Steve Wright and Joyce Wright.

NATHAN A. BARTON [SEAL] NOTARY PUBLIC State of South Dakota

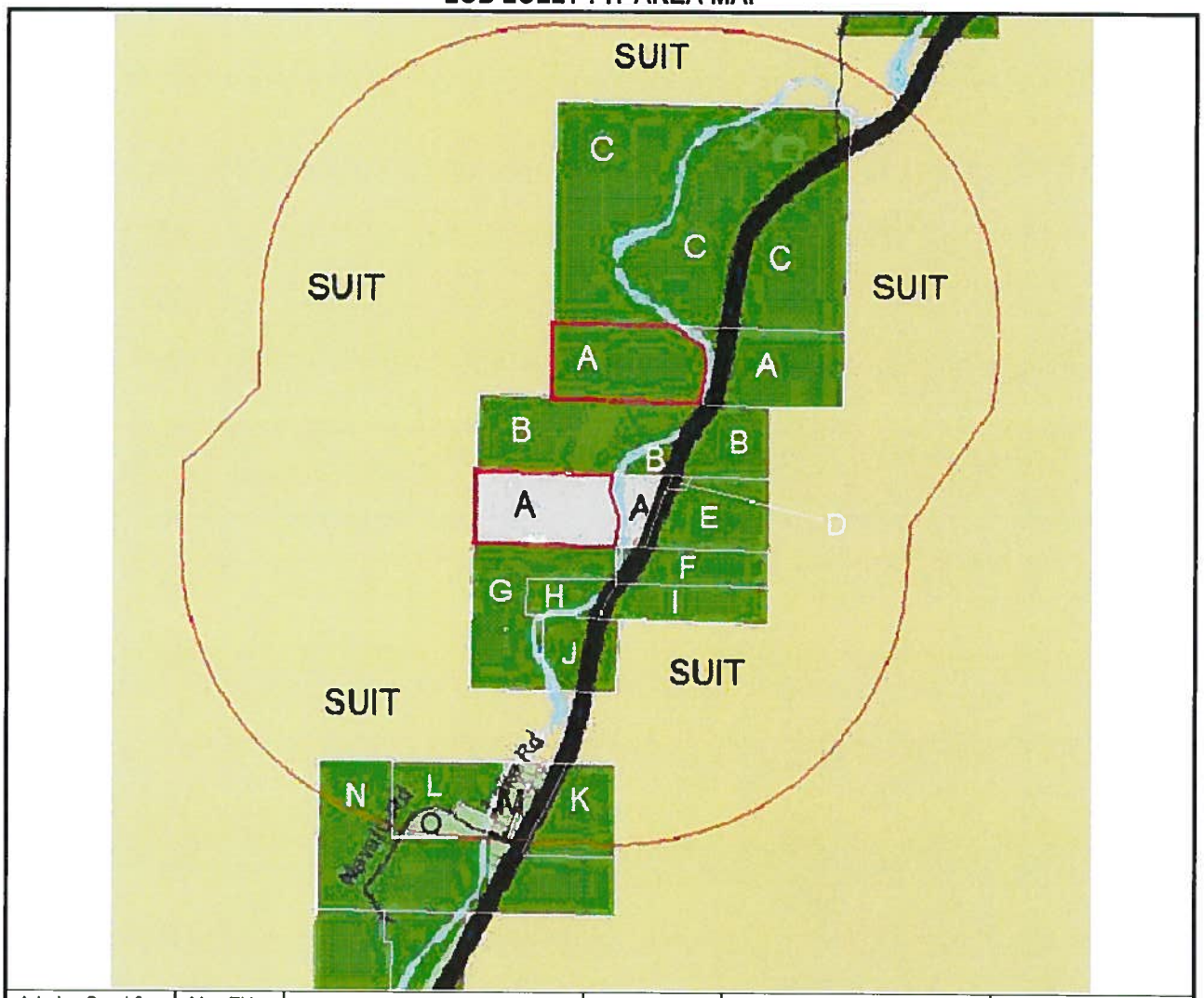
My commission expires: 02 Dec 2010

Notary Public

EXHIBIT O – Owners of Record

Updated from 2008 Information

LOB LOLLY PIT AREA MAP



Arboles Sand & Stone, LLC Pagosa Springs, CO	Map Title	Lob Lolly Pit Index Map	Scale	1:42240 (1" = 1.5 miles)	North Date: 02DEC07
	Source of Map	Archuleta County Assessor and GIS Office	Permit No. & Name	M-2008-036 Lob Lolly Pit	Drawn by NAB Checked by NAB
	Legend	As marked	Ref		File No. O-1

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	Address
A	5959-21-100-013	East of S. Parcel (total parcel 94.10 ac) in Sec 21	Wright, Steve and Joyce	12577 Hwy 151
A	5959-16-300-012	East of N. Parcel (total parcel 153.55 ac) in Sec 16	Wright, Steve and Joyce	None
B	5959-21-100-001	Between Parcels 153.70 ac in Sec 21	James H Kane Trust PO Box 2035 Frazier Park CA 93225	12501 Hwy 151

SUIT	5959-01-200-006	West of Site	Southern Ute Indian Tribe	Various
C	5959-21-100-001	Tierra Piedra Ranch N 900.00 ac (477.60 ac)	Petrox Resources Inc 685 Main Street, Suite 4, Meeker, CO (PO Box 81641)	11501 State Highway 151 # A
D	5959-21-100-002	Pena land 1.00 ac	Estrella Pena 12590 Hwy 151 Pagosa Springs CO 81147	12490 Hwy 151
E	5959-21-100-003	"Old Munoz Home" 57.23 ac	Mary Martinez & Corrine Ferguson 10845 Santa Fe Reno NV 89506	12740 Hwy 151
F	5959-21-400-005	N ½ N ½ S of Sec 21 E of River, 44.18 ac	*Robert Heiermann* *26380 Olympus Court* *Moreno Valley, CA 92555*	12901 Hwy 151
G	5959-21-300-010	S, W of river , SW ¼ of Sec 21, 88.85 ac	Jim & Georgia Lark 12747 Hwy 151 Pagosa Springs CO 81147	12747 Hwy 151
H	5959-10-300-034	S on river beyond Lark property, 38.05 ac	*Jim & Georgia Lark* *12747 Hwy 151* *Pagosa Springs CO 81147*	371 CR 193
I	5959-21-400-009	SE ¼ of Sec 21, 37.5 ac	*Jesse J & LaJune A Hughes* *Rt 1 Box 2650* *Qyinton, OK 74561*	X Hwy 151
J	5959-21-300-013	SE ¼ of SW ¼ of Sec 21, 38.00 ac	*Markus Meier* *PO Box 1868* *Arboles, CO 81121-1868*	12845 Hwy 151
K	5959-28-200-006	S, E of Hwy 151. 44.63 ac	Tillie B Manning 3700 S Westport Ave #68 Sioux Falls SD 57106	13750 Hwy 151
L	595-029-100-036	S, W of river, 44.60 ac	Charles Bates PO Box 30187 Albuquerque NM 87190	341 Navajo Road
M	Various	Lado del Rio Estates, various small lots in NW ¼, Sec 28	Various	Various
N	5959-29-400-020	SW, 125.00 ac	Wayne & Sheila Ellison 114 Navajo Pagosa Springs, CO: 81147	114 Navajo
O	5959-28-200-035	S, W of river 14.96 ac	Milton & Judith Wagner POB 1639 Arboles, CO 81121	179 Navajo Road

Information from Archuleta County Assessors Office, May 2013

EXHIBIT P – Municipalities Within Two Miles

No change from 2008 Information

NONE.

Arboles, the nearest town, is located approximately five miles to the south. There are no organized or unorganized communities within two miles.

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

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 "Lob Lolly Pit" to be located in Archuleta County, Colorado, has been hand-delivered by

Steve Wright, of Arboles Sand & Stone, LLC on the 30 day of Sept. 2013, to

Tonya McCann (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. Received by:

SIGNATURE: Tonya McCann
TITLE: Clerical Tech

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 "Lob Lolly Pit" to be located in Archuleta County, Colorado, has been hand-delivered by

Steve Wright, of Arboles Sand & Stone, LLC on the **30th** day of **September** 2013, to

Cynthia Purcell (insert name) of the San Juan Conservation District, 505A County Road 600, Pagosa Springs, CO 81147, for presentation to the Board of Supervisors of the San Juan Conservation District at their next convenience. Received by:

SIGNATURE:
TITLE: Dist. Conservationist

NOTICE OF FILING APPLICATION
FOR COLORADO MINED LAND RECLAMATION PERMIT

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

NOTICE TO THE BOARD OF COUNTY COMMISSIONERS ARCHULETA COUNTY

Arboles Sand and Gravel, LLC (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 INDUSTRIAL AND AGRICULTURAL 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 not 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.

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

Arboles Sand and Stone LLC (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 INDUSTRIAL AND AGRICULTURAL 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 not 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 Archuleta County

OFFICE OF THE COUNTY CLERK AND RECORDER
June Madrid, County Clerk
P.O. Box 2589
Pagosa Springs, Colorado 81147

(970) 264-8350
FAX (970) 264-8357

AFFIDAVIT OF RECEIPT
FILING OF GRAVEL PERMIT APPLICATION

This is to certify that I have received the application package for the following gravel pit.

Lob Lolly Pit Application
12577 Hwy 151
Pagosa Springs, Co 81147

Filed this 30th day of September, 2013 in the office of the Archuleta County Clerk & Recorder.

Karen Bringe, Deputy Clerk
Archuleta County Clerk & Recorder

AFFIDAVIT OF RECEIPT FOR GRAVEL PITS.DOC/H2006OFFICE

NOTICE

This site is the location of a proposed construction materials operation. Arboles Sand & Stone, LLC, whose address is 12577 Hwy 151, Pagosa Springs, CO 81147 (Arboles) and phone number is (970)883-5454, has applied for a Regular 112 Operation Reclamation Permit with the Colorado Mined Land Reclamation Board. Anyone wishing to comment on the application may view the application at the Archuleta County Clerk's Office, County Courthouse, 449 San Juan Street, Pagosa Springs, Colorado, and should send comments prior to the end of the public comment period to the Colorado Division of Reclamation, Mining, and Safety, 1313 Sherman Street Room 215, Denver, Colorado 80203.

I, Steve Wright, landowner and applicant, hereby certify that I posted a sign containing the above notice for the proposed permit area known as the Lob Lolly 111 Permit on the 2nd of October, 2013.

Steve Wright DATE: 02nd of October 2013

Signature

Notice as posted on site on 02 OCT 2013 by Steve Wright

EXHIBIT S – Permanent Manmade Structures

Updated from 2008 Information.

S.1. General (Refer to Map S-1):

a. All occupied dwellings are more than 200 feet from the edge of the affected area.
b. Mining activities are limited by the County Conditional Use Permit.
c. No impact on utilities *(including natural gas etc. pipelines)* or fencing is expected.

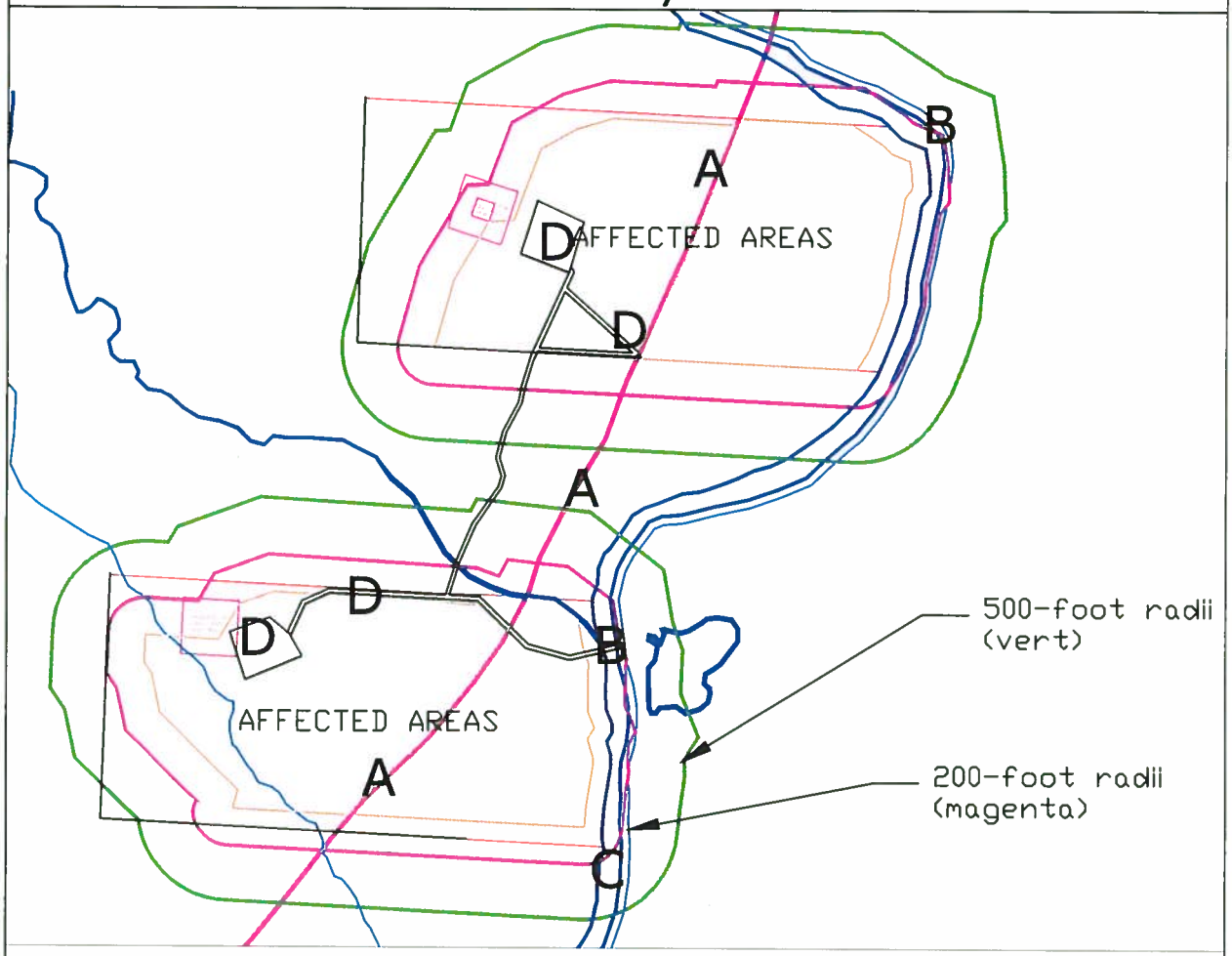
S.2. This Exhibit is the engineering evaluation as required by the Colorado Division of Reclamation, Mining, and Safety, prepared by Nathan A. Barton, CE, PE, DEE, a licensed Professional Engineer in the State of Colorado. This exhibit also addresses general geotechnical stability.

a. Based on my inspection of the site, as an engineer, 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 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, provided that actions are taken as outlined.
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 sandy loam, are variable in depth but average about two feet thick, and underlain by similar subsoils, all of alluvial origin, with a bedrock of Ojo Alamo Sandstone. The soils have virtually no potential for mass movement at proposed slopes of 2H:1V (for mining) or 3:1 (*target* for reclamation). Vertical slopes should be avoided without careful attention to water content and uphill drainage, erosion, and settlement, but slopes of up to 80 degrees for short periods will present no problem.
e. This evaluation was prepared based on site inspections and investigations conducted October 2007 through May 2008, and reviewed and updated in May 2013. The work done in 2009-10 has been inspected multiple times and no significant problems have been observed.

S.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):

Structure	Description/notes	Owner
A. Pipeline	Natural gas pipelines and associated features	PETROX
Evaluation	Pipeline is located within a 30-foot easement as shown on project maps, and is buried approximately 20 feet below grade, with a road constructed on the surface above it. Additional pipelines will be constructed within the 30-foot easement during the life of the pit. See Attachment S-1.	
Conclusion and recommendations	There are no structural issues in the soil and subgrade in which the pipeline is built. A 3:1 slope in the material is stable with a factor of safety of at least 3, and a 2:1 slope is stable with a factor of safety of 2.2:1 or better. Mining along the easement must remain entirely outside the easement, and may not exceed a 2:1 slope or 10-foot bench height with minimum 20-foot bench width, within 100 feet of the exterior of the easement without additional investigation at the time of stripping. Road construction may be done as per agreement within the easement provided that there is no excavation greater than 3 feet in depth from the existing ground surface and that plans are reviewed by PETROX in advance.	

Arboles Sand & Stone
Lob Lolly Pit



A A: Pipeline

B B: Lob Lolly Bridge

C C: Lark Bridge (more than 200 feet from affected areas)

D D: Gas wells and associated structures (feeder lines and roads) (2 each)

Mapping scale 1:12,000 (1 inch = 1,000 feet)

Red is permit boundary.
Grey is the boundary of the affected lands, not counting permanent roads built for oil and gas development and site access, even if used for mining.
Magenta is the 200-foot distance from affected lands.
Green (vert) is the 500-foot distance from affected lands.
Based on aerial photography, 1990-2012

Nathan A. Barton, PE (CO-82630)

Prepared for AS&S by and (c) **WASTELINE, INC.**
Date:30MAY08 Rev 30MAY13
By: N. Barton Rv: S. Wright
Scale: 1"=1000' Source: USGS Map/Photo. photos
Portions Sec 15,16&21, T33N, R5W, 10th PM,
Archuleta Co., CO, Pertaining to
Application: M-~~2008-036~~

MAP SHOWING PERMANENT MANMADE STRUCTURES OF SIGNIFICANCE IN AND AROUND THE PERMIT AREA

Drawing/ Sheet No.
S1

Structure	Description/notes	Owner
B. Bridge	Steel truss bridge with concrete deck on concrete abutments, single span approximately 100 feet long, 24 feet wide, spanning the Piedra River.	Landowner (mine operator)
Evaluation	Bridge abutment is located approximately 80 feet from the nearest affected land (other than the roadway), and are constructed on spread footings with road approaching on ramp. Design of abutments has been reviewed with the engineer.	
Conclusion and recommendations	Bridge is owned and operated by the mine operator. No excavation below ground surface (after bridge is constructed) should be done within 50 feet of bridge.	
Structure	Description/notes	Owner
C. Bridge	Light-duty bridge with limited decking crosses the river approximately 50 feet south of property line.	Landowner to south (Lark)
Evaluation	Bridge is located approximately 220 feet from affected area (top of outside perimeter of area to be mined, and is unlikely to be disturbed by mining. Bridge is poorly maintained, and should be considered a risk crossing for any vehicle greater than 2 kip gross weight. Decking is in very poor condition, and abutments are also in poor shape. The entire bridge is in significant need of maintenance and repair.	
Conclusion and recommendations	Recommend documenting condition of bridge in coordination with adjacent landowner before mining moves within 500 feet of bridge, and at the conclusion of mining in that area.	

Structure	Description/notes	Owner
D. Gas wells (proposed)	Gas wellheads and pads, constructed in 2008, with associated feeder pipelines and roads.	Landowner (mine operator) and PETROX
Evaluation	Mining has been designed to take gas wells and related infrastructure into account, including construction of access roads and limiting of mining along roads in a manner similar to that proposed for the main pipeline (item A). Wells are drilled almost directly into the Ojo Alamo sandstone and not dependent on conditions of the surficial deposits of alluvium. No mining is planned to involve competent Ojo Alamo sandstone.	
Conclusion and recommendations	All conditions identified for item A should be followed for wellhead pads and feeder pipelines. If drilling and pipeline construction commence prior to mining along those portions of the East-West Road and Upper Road (as expected), the actual wellhead pad, not the entire drilling pad can be mined, provided limits and slopes are maintained.	

Structure	Description/notes	Owner
E. Fencing	Property line fencing partially on all sides (except river), 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 range in condition from very poor to excellent/like-new.	Landowner
Evaluation	All perimeter fencing is owned by the mining operator. As stated in the mining and reclamation plans, mining on the edges of property will be done to allow for a permanent, post-mining 3H:1V slope and slopes will be stabilized to prevent damage to fencing. Soil conditions and slopes will be adequate to prevent significant damage. North, south, and west boundary fences are further protected by the buffer zones where no mining is proposed. The landowner does not intend to attempt to preserve any internal fencing.	
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.	

Structure	Description/notes	Owner
On-site structures and improvements	On the property being permitted and adjacent properties, there are various unimproved roads and trails. On the property to be permitted, various additional roads will be constructed for mining and post-mining use, some of which will be permanent. (Not shown on maps except in general.)	Landowner and Adjacent landowners
Evaluation	The unimproved trails are not "significant manmade structures." The newly constructed roads on the site are designed to be used for, and to be unaffected by, mining operations, and there is no reasonable expectation of damage.	
Conclusion and recommendations	There is no impact expected to permanent structures other than that intentionally planned and executed. New roads and other structures on-site should be included in a damage indemnity agreement executed between the mine operator and the landowner of the permitted site.	

Structure	Description/notes	Owner
Off-site structures and improvements	Other structures located off-site in the property belonging to the operator or operator's principals; structures located off-site in the property belonging to adjacent landowners, including CDOT. Potentially including: power and other utilities lines, SH-151 road, roadbed, signage, etc., unimproved trails, water pumps and intakes. Lark house located approximately 500 feet outside affected area.	Landowner and Adjacent landowners
Evaluation	The unimproved trails are not "significant manmade structures." CDOT structures, including SH-151, are located within 500 feet but not within 200 feet of affected area (due to 100-foot buffer along river, width of river and width of floodplain on east side of river: CDOT structures are located outside the floodplain). Utilities lines located east of SH-151 or more than 200 feet from affected areas. Water pumps and intakes on east side of Piedra River may be located at approximately 200 feet from affected lands on the South Parcel. These are not located on land which has any potential for stability to be affected by operations west of the river, and there appears to be no potential for other impacts without impact to the river itself. Using the 100-foot buffer west of the river, and given that the affected land is located entirely outside of the 100-year floodplain, there is a less than 1% chance (defined by the floodplain) that floodwaters would enter the pit, with a much lower chance of "pit capture" or similar changes to river flow and course. Lark house located approximately 500 feet outside affected area on stable alluvial material is very unlikely to have any impact due to disturbed soil and alluvial materials.	
Conclusion and recommendations	There is no impact expected to permanent structures located off-site within 500 feet but more than 200 feet from other than that intentionally planned and executed. New roads and other structures on-site should be included in a damage indemnity agreement executed between the mine operator and the landowner of the permitted site.	

S.4. Based on my review, there is no need for additional slope analysis or evaluation at this time, except as already performed and included in this report and its attachment(s).

S.5. This report is submitted in lieu of Attachment S-1 to Exhibit S for items not listed in Attachment S-1.

S. 6. Certification signature at end of Attachment S-1 specifically includes the main body of Exhibit S.

S.7. The following information, in this general form, was provided in the applicant's response #3 to the DIvision's comments in 2008, and is repeated to ensure issues are addressed.

a. A total of only three owners of permanent man-made structures are involved: the Lob Lolly landowners (Steve and Joyce Wright, who are also the owners of the Applicant/Operator, Arboles Sand & Stone); Petrox Resources, and XCEL Energy (aka Public Service Company of Colorado).[ii]

b. The landowners Steve and Joyce Wright DID sign and return a damage waiver agreement, which was included in the original Exhibit N submitted to the Division and is duplicated in this update.[iii]

c. We have not received any other signed damage waiver agreements, therefore we have no other "copies of signed agreements" to furnish to the Division.
   a. We originally contacted Mr. Mike Clark, the owner of PETROX, in May 2008, and prepared an agreement for him, which we sent to him on 11 MAY 2008 by fax and e-mail. We have contacted him by phone and e-mail since then, as well. He has declined to sign the agreement, since he already has an agreement for the well pads and pipelines with the landowners (the Wrights) which deals with such issues, and does not wish to further complicate matters nor involve attorneys when not necessary. The letter of 25 July 2008 was simply a pro forma letter to meet the state's requirements, as we understood them then, to formally ask for an agreement. This situation has not changed since 2009.

d. We also originally contacted XCEL in May 2008, and heard nothing in response. After multiple attempts and mailing the request letter on 25 July to XCEL, we made several more efforts to follow up. Finally on 22 AUG 2008, I spoke with Mr. Al Morganfield, of their Denver office. He requested that I change "XCEL" to "Public Service Company of Colorado" and I e-mailed him a copy of the changed damage waiver agreement that same day; I have heard nothing further since then, and we have received no agreement.. Further efforts in 2008-2009 resulted in no further response. We are willing to again attempt to do so.

e. We did not understand that we must take actions to "prove" that we sent out agreements, as this has not been required on permit applications in the past. If we had been told by the Division that "proof" was necessary, we would have sent the requests out by certified mail or some other method of demonstration, instead of just putting a 42-cent stamp on the letters and mailing them out, or e-mailing or faxing the agreements.

f. We do not understand how to "prove" that agreements were not returned to us. How can we prove a negative? And why would we <u>not</u> provide a signed copy of an agreement if it was returned to us signed?

g. If the Division wishes that further efforts be made to obtain these two agreements, we will again send requests, and if required, will do so by certified mail in hopes of furnishing "proof" that at least the attempt was again made. However, we question strongly the necessity for this additional expense, and believe that these statements demonstrate that a legitimate and honest effort was made to obtain agreements.

S.8. As we understand the situation, PETROX now has ownership of the pipeline system, or is the managing member of the LLC which owns the pipeline and the agent for dealing with both the feeder lines from the wells as well as the main pipeline running from north to south through the permit area. Therefore, at the same time as sending out the notices to adjacent property owners, the Operator will request that PETROX either sign the indemnification agreement (using the current DRMS form) or sign a letter confirming that PETROX still considers the contract between the Wrights and PETROX to be sufficient indemnity against damage to the system, as well as access and other issues.

Attachment S-1. Structural Stability Analysis

Natural Gas Pipelines, Owner: Petrox Resources, Inc./Xcel Energy

Permanent Manmade Structures: 12-inch diameter or smaller natural gas pipeline (low pressure) buried in center of a 30-foot wide easement, minimum depth six feet below grade.

Assumptions:

(1) Existing ground slopes at average 2.5% perpendicular to pipeline, to the east.
(2) Excavation for mining to generally not exceed 30 feet vertical in vicinity of pipeline (within 100 feet of pipeline right-of-way)
(3) Excavation for mining will be limited to maximum of 1:1 slope, with top of slope at the easement line and toe of slope at a horizontal distance at least twice the height of the slope; and that if vertical highways are used, they will be limited to 20 feet in height, with same restriction on toe (minimum of 20 feet).
(4) No soil or overburden will be stored on the pipeline easement.
(5) No soil or overburden will be stripped on the pipeline easement.
(6) Upstream flow (both channelized and sheet) will be diverted from the easement.
(7) Top of slope (at boundary of pipeline easement) will be stabilized with silt fencing, sediment log-rolls, or earth berms (curbs) to prevent flow down the slope of the cut face unless erosion prevention measures (riprap, erosion control blankets, or similar) are installed.
(8) When excavation of materials is completed, slope will be backfilled to a 3:1 or better slope, including replacement of soil and revegetation, with appropriate storm water controls.
(9) No excavation for road construction or maintenance will exceed three feet at any point within the easement, and will not be performed without exact location of pipeline(s) being marked on the ground by owner or One-Call personnel within 30 days of excavation.

North Parcel

Soil type: AO-B:Steimer loam 1 to 3 percent slopes. Floodplain step soils, loam to sand with significant amounts of gravel to 70 inches. More alluvium below 70 inches, with variable depth to Ojo Alamo sandstone bedrock. Cutbanks (vertical) slopes are unstable in upper 70 inches, stable below that depth (based on NRCS data and inspection of excavations in similar soils.

Natural angle of repose: (Caterpillar Performance Handbook Tables)

Loose, moist to dry conditions. 1.4:1
Undisturbed, dry conditions. 1.0:1

South Parcel

Soil type: VO-GD Catdraw loam 3 to 12 percent slopes. Pediments (base slope); slope alluvium derived from sandstone and shale, loam and clay loam to 60 inches, with variable depth to Ojo Alamo sandstone bedrock. Cutbanks (vertical) may be unstable (0.10 percent probability), stable in sandstone.

Natural angle of repose:

Loose, dry to very dry conditions. 1.0:1
Undisturbed, dry to very dry conditions. 0.5:1

Ojo Alamo Sandstone

The Ojo Alamo Formation, the bedrock which underlies the Piedra River Valley, is a fine- to medium-grained sedimentary sandstone (fluvial deposits) with some pebbles in this area, and which may be a local aquifer (though not used as such locally); it is not noted for significant bedding, or other indicators of instability: mining will not extend into the sandstone, which is not suitable material for the intended purposes.

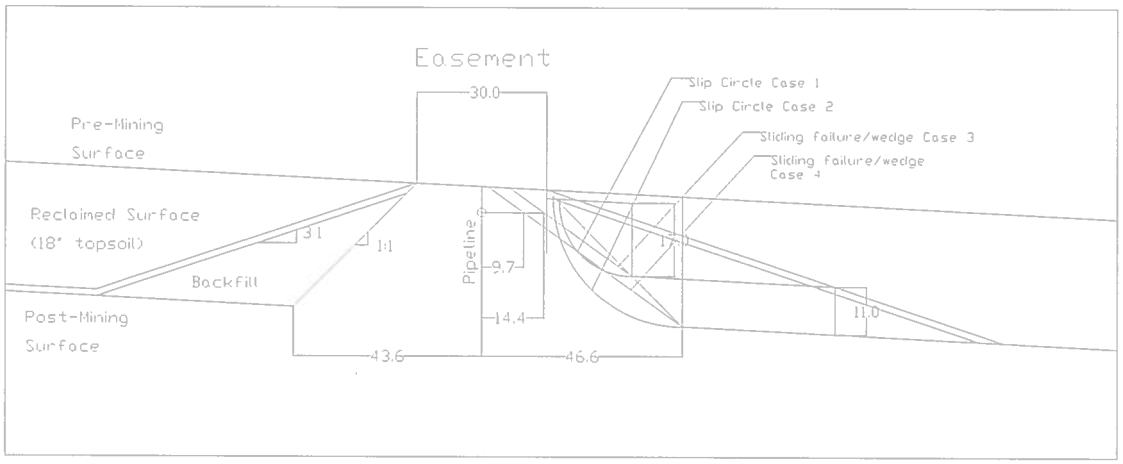
Proposed: Maximum excavated slope in soil and subsoil: 1.0:1

Maximum post-reclamation slope in soil and subsoil: 3.0:1

Because the Steimer soil has the flatter natural angle of repose, it will be used for the analysis, since it would be the worst case. Although the soil is cohesive, cohesionless soil is assumed for preliminary analysis.

Preliminary Analysis: For a twenty-foot high headwall or working face, the potential plane of failure is from the toe of the working face to a point approximately 28 feet behind the working face (varying somewhat due to original ground slope) for sliding failure (1.4:1), and approximately 17 feet behind the face for slip circle failure. This places the closest point of failure to be approximately 14.4 feet from the pipeline, the nearest permanent structure. For a thirty-foot high working face, with the same potential plane of failure, the nearest point of failure would be 9.7 feet from the pipeline for sliding failure. For slip circle failure at 30 feet behind the toe of a 1:1 cut slope, the nearest point of failure would be outside the easement.

Therefore, a detailed rigorous analysis is not required, provided a commitment is made to keep the toe of 1:1 slopes at least 30 feet outside the easement, and to keep vertical work faces to a maximum of 20 feet high and at least 25 feet outside the easement.



References

1. Fundamentals of Soil Mechanics, Feb. 1965 by Donald W. Taylor
2. The Encyclopedia of Applied Geology, 1984 edited by Charles W. Finkl, Jr.
3. Handbook of Heavy Construction, 2nd edition, 1971 Edited by John A. Havers and Frank W. Stubbs, Jr.
4. US Army Corps of Engineers, EM 1110-1-1905 Bearing Capacity of Soils, 30OCT1992
5. US Army Corps of Engineers, EM 385-1-1 Safety and Health Requirements, Chapter 25 Excavations, 3 NOV 2003
6. US Army Corps of Engineers, EM 1110-1-2908 Rock Foundations, 30 NOV 1994

Prepared by Nathan A. Barton, CE, PE, DEE 16 May 2008

CERTIFICATION (ENGINEERING EVALUATION) FOR EXHIBIT S: 6 pages.

(SEAL)

SIGNATURE NATHAN A. BARTON, PE, DEE Colorado Registered P E 27342, DATE: 30 MAY 2008

GENERAL REFERENCES

1. Flood Insurance Rate Map, FEMA Flood Insurance Administration.
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
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12. http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B074 Owl
13. http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=A0BX Mouse
14. http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q2U7 Rocket
15. http://rockymountainwild.org/species/plants/pagosa-skyrocket
16. http://www.cnhp.colostate.edu/download/documents/2003/Upper_San_Juan_Basin_Biological_Assessment.pdf
17. Bing.com, Maps and aerial photography 2012-2013

All sites accessed between 27 and 31 May 2013 unless otherwise indicated

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[i] The following information is provided for the record and for future consideration of technical revisions as requested by the Operator:

a. Activities which may be performed on the south parcel of property owned by Steve and Joyce Wright, owners of Arboles Sand & Gravel, LLC:
   - Storage: either in the open, in storage containers, on vehicles or portable equipment, or in buildings.
   - Maintenance and repair, including inspection, disassembly, assembly, replacement of parts, cleaning, configuring, and other activities as normally found at a truck or mobile equipment shop, construction materials yard, and/or facilities maintenance shop, with such work done either in the open or in buildings.

b. Items which might be stored or maintained and repaired:
   - Equipment: earthmoving and road and pad maintenance equipment, including bulldozers, loaders, graders, scrapers, back hoes (tracked and wheeled), skid-loaders, trenching equipment, cranes, forklifts, derricks, tanks, compressors, stacks, steel beams, drilling rigs, pumps, pumpjacks, flares, pipelayers, and other heavy equipment; tools (power and hand); vehicles such as semi-tractors, farm tractors, semi-trailers, single-unit trucks, pick-up trucks, automobiles, safety equipment (including signs, lights, barriers, rescue equipment), generators, wash units, and other portable and mobile equipment.
   - Supplies and materials: POL (petroleum, oils, and lubricants) such as diesel fuel, hydraulic fluid, transmission fluid; cleaning and similar compounds (such as muriatic acid, cleaning solvents, detergents, soap, etc.), parts (repair, replacement, recovered (separated for recycling/rebuild/reuse), etc.), major components (engines, transmissions, wheels, tires, etc.), office supplies, paint, bentonite, explosives, seed, fertilizer, sand, gravel, recycled concrete, recycled asphalt, topsoil, lumber, wood, wood chips, sawdust, pipe (metal, plastic, etc.), propane, oxygen, acetylene, water, culvert (metal, concrete, plastic), cable (steel, etc.), concrete block, fencing, trash, etc.
   - This equipment, supplies, and materials are similar to those commonly found in equipment and maintenance shops of mining, construction, and similar sites in Colorado.

- While most of these materials are not regulated by state or federal agencies, regardless of their use, some are regulated and require special reporting, registration, and in some cases permitting; in some cases, laws or regulations establish specific requirements for the storage, use, handling, and disposal of these materials; in some cases, permits or registration are required to operate some types of equipment. The Operator will comply with all applicable local, tribal, state, and federal requirements for the storage, use, handling, disposal, operation, and processing of these items.

c. Those items for which some kind of regulatory compliance may be anticipated, which may be stored or used or handled on the site include:
   - Material handling and processing equipment, such as crushers, screens, wash plants, generators, fuel-burning engines, compressors, drills, pumps: often require air quality permits, SMM registration, and titles.
   - POL and other chemical storage; above-ground stationary or mobile tanks, bulk containers, trailers, drums, and smaller containers. (Secondary containment, when necessary, will be provided.): may require registration, SARA Title III or other reporting, development of plans.
   - On-highway vehicles, including trucks (prime movers, semi-tractors, single-unit trucks, etc.), and automobiles (DMV, Counties).
   - Off-road vehicles, including earthmoving equipment, farm tractors, four-wheel vehicles, etc. (Counties)
d. It is the Operator's belief that there is evidence from other facilities and operations that these items do not constitute any potential threat significantly different in nature or degree from items normally found at other sand and gravel pits and processing plants located in Archuleta, La Plata, or other counties in Colorado, either to surface or ground water quality or quantities, hydrologic balance, air quality, land quality, or the public safety and health.
e. The reasonable and prudent actions necessary to prevent contamination or other environmental, safety, and health issues with equipment found and actions performed at most mining sites are adequate to prevent such problems with the oil and gas and related items as listed above. If monitoring is not required for fuel systems, material storage areas, maintenance shops, vehicle and equipment storage areas, and other items found at many sand and gravel mining and processing operations, the Applicant does not believe there is a need for monitoring for these items simply because they are related to oil and gas exploration and production. Nor are there, to our knowledge, any special permitting requirements from CDPHE or other state or federal agencies to permit these items solely because they are used for oil and gas operations rather than some other industry sector.

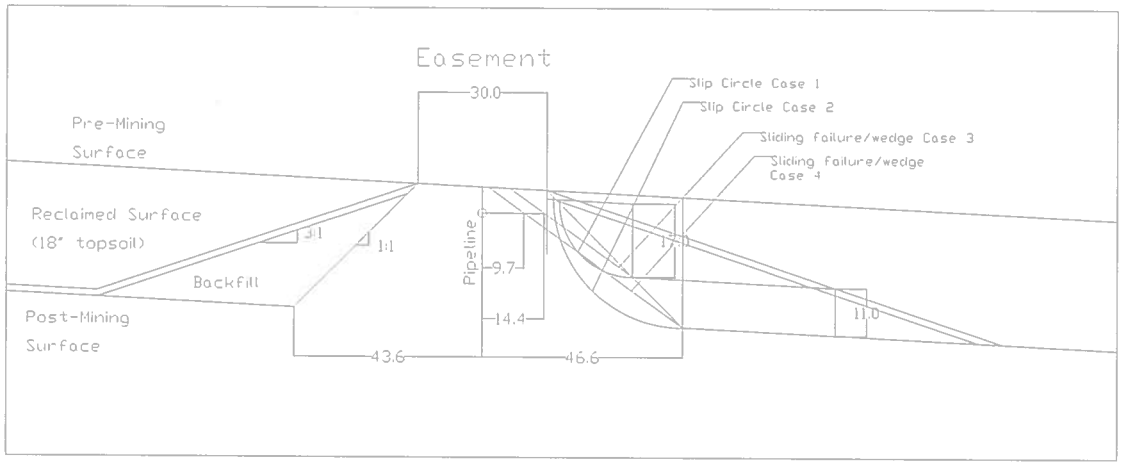
[ii] Mr. Lark, the owner of the bridge south of the permitted area, was listed in Exhibit S for the sake of completeness and to forestall any claims that the bridge, a permanent manmade structure, was within 200 feet of affected land, but was not asked to sign an agreement. Originally, Mr. James Kane, the owner of the property between the two parcels inside the permit boundary, was asked to sign a damage waver agreement as part of an agreement to grant a right-of-way across his property to connect the two parcels; however, when he decided NOT to grant such access, he no longer had any permanent manmade structures within 200 feet of affected land.

[iii] The review letter states that we responded to the request for proof by "supplying an unsigned copy of the waiver agreement" which may give the impression that was all that was done: however, what was attached was a copy of the cover letter and the unsigned waiver agreement sent to the owners, which is exactly what the first review letter requested be provided.

Because the Steimer soil has the flatter natural angle of repose, it will be used for the analysis, since it would be the worst case. Although the soil is cohesive, cohesionless soil is assumed for preliminary analysis.

Preliminary Analysis: For a twenty-foot high headwall or working face, the potential plane of failure is from the toe of the working face to a point approximately 28 feet behind the working face (varying somewhat due to original ground slope) for sliding failure (1.4:1), and approximately 17 feet behind the face for slip circle failure. This places the closest point of failure to be approximately 14.4 feet from the pipeline, the nearest permanent structure. For a thirty-foot high working face, with the same potential plane of failure, the nearest point of failure would be 9.7 feet from the pipeline for sliding failure. For slip circle failure at 30 feet behind the toe of a 1:1 cut slope, the nearest point of failure would be outside the easement.

Therefore, a detailed rigorous analysis is not required, provided a commitment is made to keep the toe of 1:1 slopes at least 30 feet outside the easement, and to keep vertical work faces to a maximum of 20 feet high and at least 25 feet outside the easement.



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11. http://www.wrcc.dri.edu/pcpnfreq.html
12. http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B074 Owl
13. http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=A0BX Mouse
14. http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q2U7 Rocket
15. http://rockymountainwild.org/species/plants/pagosa-skyrocket
16. http://www.cnhp.colostate.edu/download/documents/2003/Upper_San_Juan_Basin_Biological_Assessment.pdf
17. Bing.com, Maps and aerial photography 2012-2013

All sites accessed between 27 and 31 May 2013 unless otherwise indicated

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[i] The following information is provided for the record and for future consideration of technical revisions as requested by the Operator:

a. Activities which may be performed on the south parcel of property owned by Steve and Joyce Wright, owners of Arboles Sand & Gravel, LLC:
   - Storage: either in the open, in storage containers, on vehicles or portable equipment, or in buildings.
   - Maintenance and repair, including inspection, disassembly, assembly, replacement of parts, cleaning, configuring, and other activities as normally found at a truck or mobile equipment shop, construction materials yard, and/or facilities maintenance shop, with such work done either in the open or in buildings.

b. Items which might be stored or maintained and repaired:
   - Equipment: earthmoving and road and pad maintenance equipment, including bulldozers, loaders, graders, scrapers, back hoes (tracked and wheeled), skid-loaders, trenching equipment, cranes, forklifts, derricks, tanks, compressors, stacks, steel beams, drilling rigs, pumps, pumpjacks, flares, pipelayers, and other heavy equipment; tools (power and hand); vehicles such as semi-tractors, farm tractors, semi-trailers, single-unit trucks, pick-up trucks, automobiles, safety equipment (including signs, lights, barriers, rescue equipment), generators, wash units, and other portable and mobile equipment.
   - Supplies and materials: POL (petroleum, oils, and lubricants) such as diesel fuel, hydraulic fluid, transmission fluid; cleaning and similar compounds (such as muriatic acid, cleaning solvents, detergents, soap, etc.), parts (repair, replacement, recovered (separated for recycling/rebuild/reuse), etc.), major components (engines, transmissions, wheels, tires, etc.), office supplies, paint, bentonite, explosives, seed, fertilizer, sand, gravel, recycled concrete, recycled asphalt, topsoil, lumber, wood, wood chips, sawdust, pipe (metal, plastic, etc.), propane, oxygen, acetylene, water, culvert (metal, concrete, plastic), cable (steel, etc.), concrete block, fencing, trash, etc.
   - This equipment, supplies, and materials are similar to those commonly found in equipment and maintenance shops of mining, construction, and similar sites in Colorado.

- While most of these materials are not regulated by state or federal agencies, regardless of their use, some are regulated and require special reporting, registration, and in some cases permitting; in some cases, laws or regulations establish specific requirements for the storage, use, handling, and disposal of these materials; in some cases, permits or registration are required to operate some types of equipment. The Operator will comply with all applicable local, tribal, state, and federal requirements for the storage, use, handling, disposal, operation, and processing of these items.

c. Those items for which some kind of regulatory compliance may be anticipated, which may be stored or used or handled on the site include:
   - Material handling and processing equipment, such as crushers, screens, wash plants, generators, fuel-burning engines, compressors, drills, pumps: often require air quality permits, SMM registration, and titles.
   - POL and other chemical storage; above-ground stationary or mobile tanks, bulk containers, trailers, drums, and smaller containers. (Secondary containment, when necessary, will be provided.): may require registration, SARA Title III or other reporting, development of plans.
   - On-highway vehicles, including trucks (prime movers, semi-tractors, single-unit trucks, etc.), and automobiles (DMV, Counties).
   - Off-road vehicles, including earthmoving equipment, farm tractors, four-wheel vehicles, etc. (Counties)
d. It is the Operator's belief that there is evidence from other facilities and operations that these items do not constitute any potential threat significantly different in nature or degree from items normally found at other sand and gravel pits and processing plants located in Archuleta, La Plata, or other counties in Colorado, either to surface or ground water quality or quantities, hydrologic balance, air quality, land quality, or the public safety and health.
e. The reasonable and prudent actions necessary to prevent contamination or other environmental, safety, and health issues with equipment found and actions performed at most mining sites are adequate to prevent such problems with the oil and gas and related items as listed above. If monitoring is not required for fuel systems, material storage areas, maintenance shops, vehicle and equipment storage areas, and other items found at many sand and gravel mining and processing operations, the Applicant does not believe there is a need for monitoring for these items simply because they are related to oil and gas exploration and production. Nor are there, to our knowledge, any special permitting requirements from CDPHE or other state or federal agencies to permit these items solely because they are used for oil and gas operations rather than some other industry sector.

[ii] Mr. Lark, the owner of the bridge south of the permitted area, was listed in Exhibit S for the sake of completeness and to forestall any claims that the bridge, a permanent manmade structure, was within 200 feet of affected land, but was not asked to sign an agreement. Originally, Mr. James Kane, the owner of the property between the two parcels inside the permit boundary, was asked to sign a damage waver agreement as part of an agreement to grant a right-of-way across his property to connect the two parcels; however, when he decided NOT to grant such access, he no longer had any permanent manmade structures within 200 feet of affected land.

[iii] The review letter states that we responded to the request for proof by "supplying an unsigned copy of the waiver agreement" which may give the impression that was all that was done: however, what was attached was a copy of the cover letter and the unsigned waiver agreement sent to the owners, which is exactly what the first review letter requested be provided.

Division of Reclamation, Mining, and Safety

Fee Receipt for M2013066

Arboles Sand & Stone

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Receipt #: 16108
Date: 10/07/2013
Permit: M2013066

Payment Method	Revenue Code	Fee Description/Notes	Amount
1103	4300-02	Minerals Application Fees m2013066 kja	$2,696.00
		Receipt Total:	**$2,696.00**