RECLAMATION PLAN
LEBATA BIG ROCK CREEK
AGGREGATE SURFACE MINE AND PROCESSING FACILITIES

AUGUST 2014

ATTACHMENT A

Figures

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ATTACHMENT A

Figure 1 Regional Map

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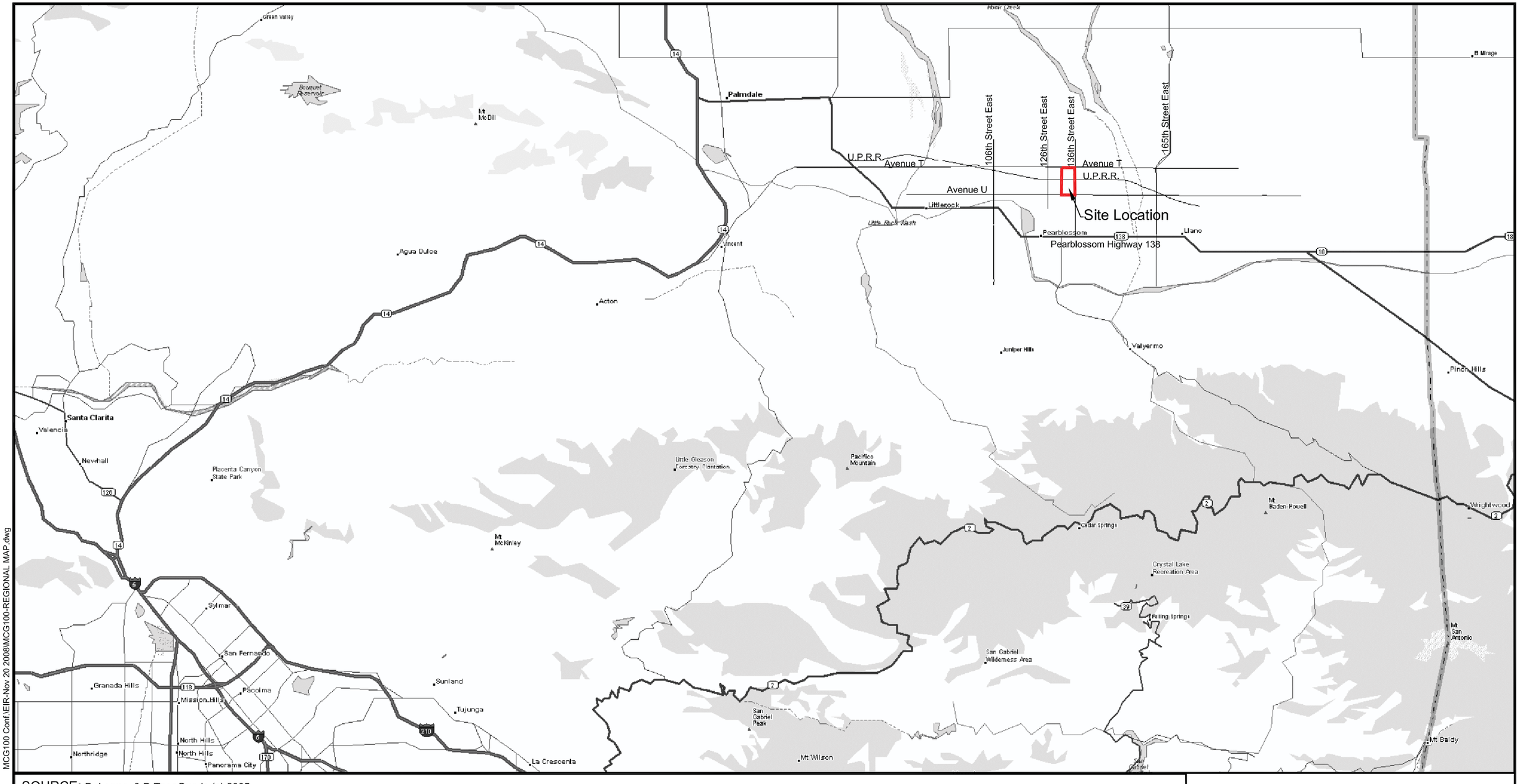

MCG100 Conf.\EIR-Nov 20 2008\MCG100-REGIONAL MAP.dwg

SOURCE: DeLorme, 3-D TopoQuads (c) 2005

PROJECT BOUNDARY

N

NOT TO SCALE

Source: West Coast Environmental, 11-20-2008

Regional Map Big Rock Creek Site Antelope Valley, California	FIGURE 1
Scale: NTS	Date: 3-13-2012

ATTACHMENT A

Figure 2 Vicinity Map

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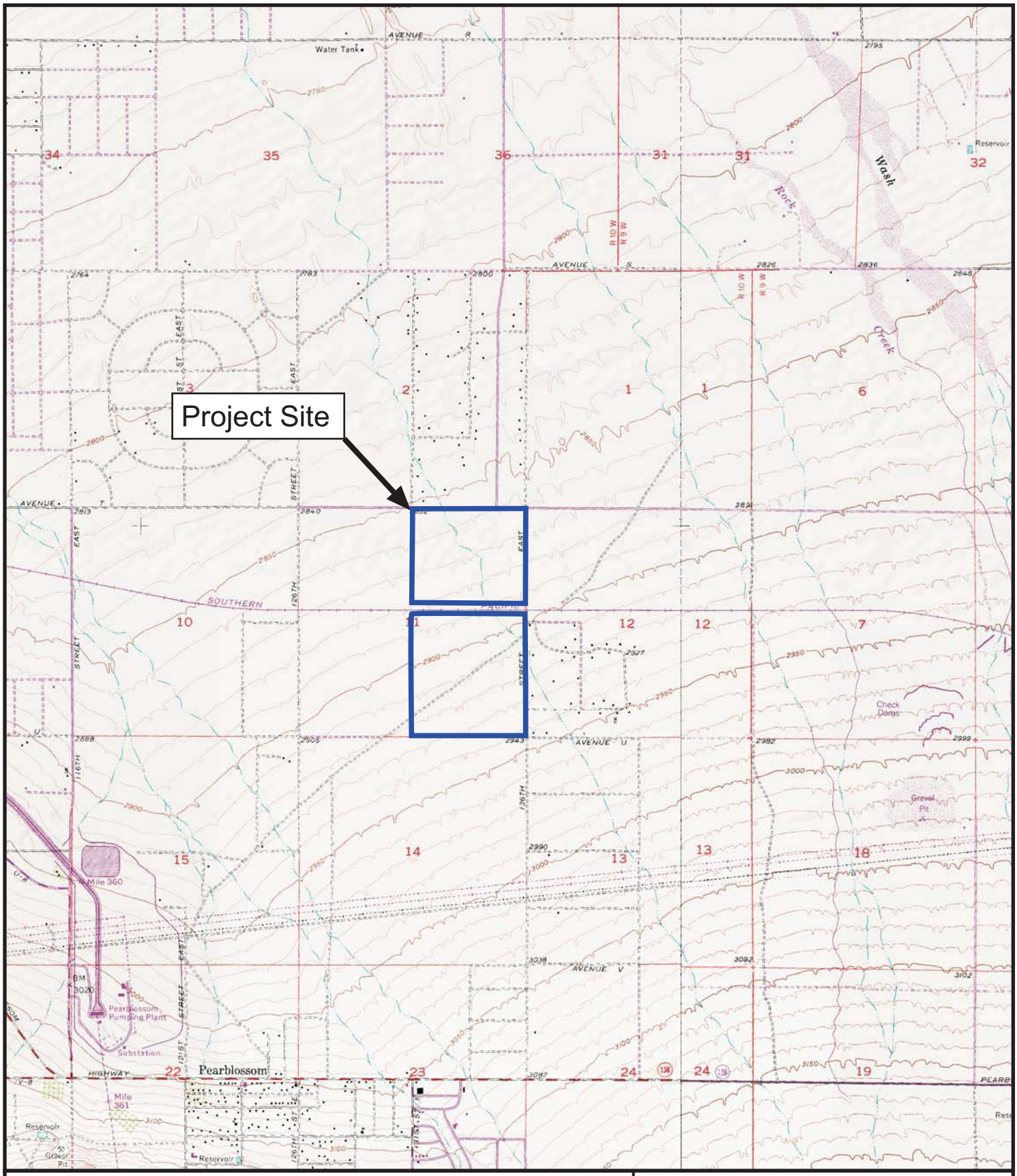

Source: USGS 7.5 Minute Topographic Quadrangle
Littlerock & Lovejoy Buttes, California 1957
Photorevised 1992
(C)2002 DeLorme, XMap(R) 3.5

Legend:

Project Boundary

N

0 2000' 4000'

10' Contour Interval
National Geodetic Vertical Datum 1929

Source: West Coast Environmental, 11-20-2008

Vicinity Map Big Rock Creek Site Antelope Valley, California	FIGURE 2
Scale: As Shown	Date: 3-13-2012

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ATTACHMENT A

Figure 3 Site Plan

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AVENUE T

RIDGVIEW RD.

50 FOOT EASEMENT

Phase 3a

Facilities Area
(See Fig. 6 for Detail)

APN 3039-21-09

Phase 1

Phase 3b

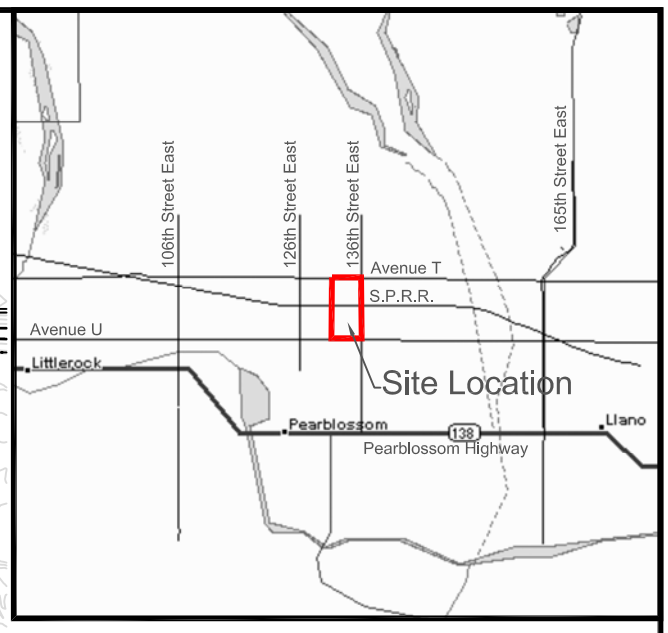
Raw Cement and Aggregate Transfer and Distribution Facility (See Fig. 6 for Detail)

UNION PACIFIC RAILROAD

APN 3039-36-01

Phase 2

APN 3039-36-02



Vicinity Map

N.T.S.

LEGEND:

- Assessors Parcel Boundaries
- CUP Boundary
- Phase 1 Mining Boundary
- Phase 2 Mining Boundary
- Phase 3a Mining Boundary
- Phase 3b Mining Boundary
- Existing Contours

N

0 200 400

APPROXIMATE SCALE IN FEET

SOURCE: West Coast Environmental 02/02/09

Site Plan
Big Rock Creek Site
Antelope Valley California

FIGURE 3

SCALE: AS SHOWN

DATE: 3-16-2012

ATTACHMENT A

Figure 4 Assessor’s Parcel Map 1

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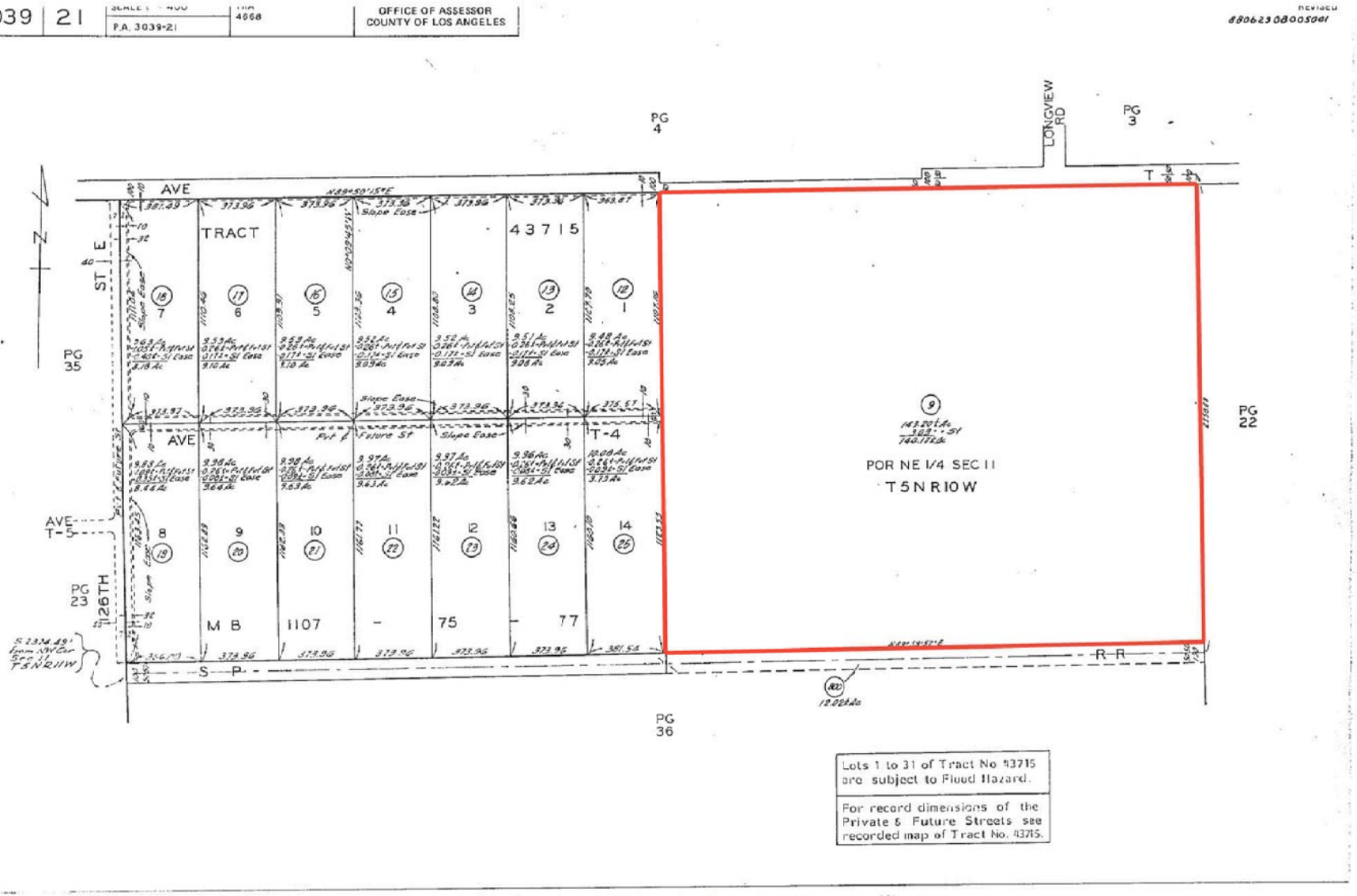

Source: USGS 7.5 Minute Topographic Quadrangle
Littlerock & Lovejoy Buttes, California 1957
Photorevised 1992
(C)2002 DeLorme, XMap(R) 3.5

Legend:

Project Boundary

N

Source: West Coast Environmental, 12-31-2008

Assessor's Parcel Map 1
Big Rock Creek Site
Antelope Valley, California

FIGURE 4

Scale: NTS

Date: 3-13-2012

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ATTACHMENT A

Figure 5 Assessor’s Parcel Map 2

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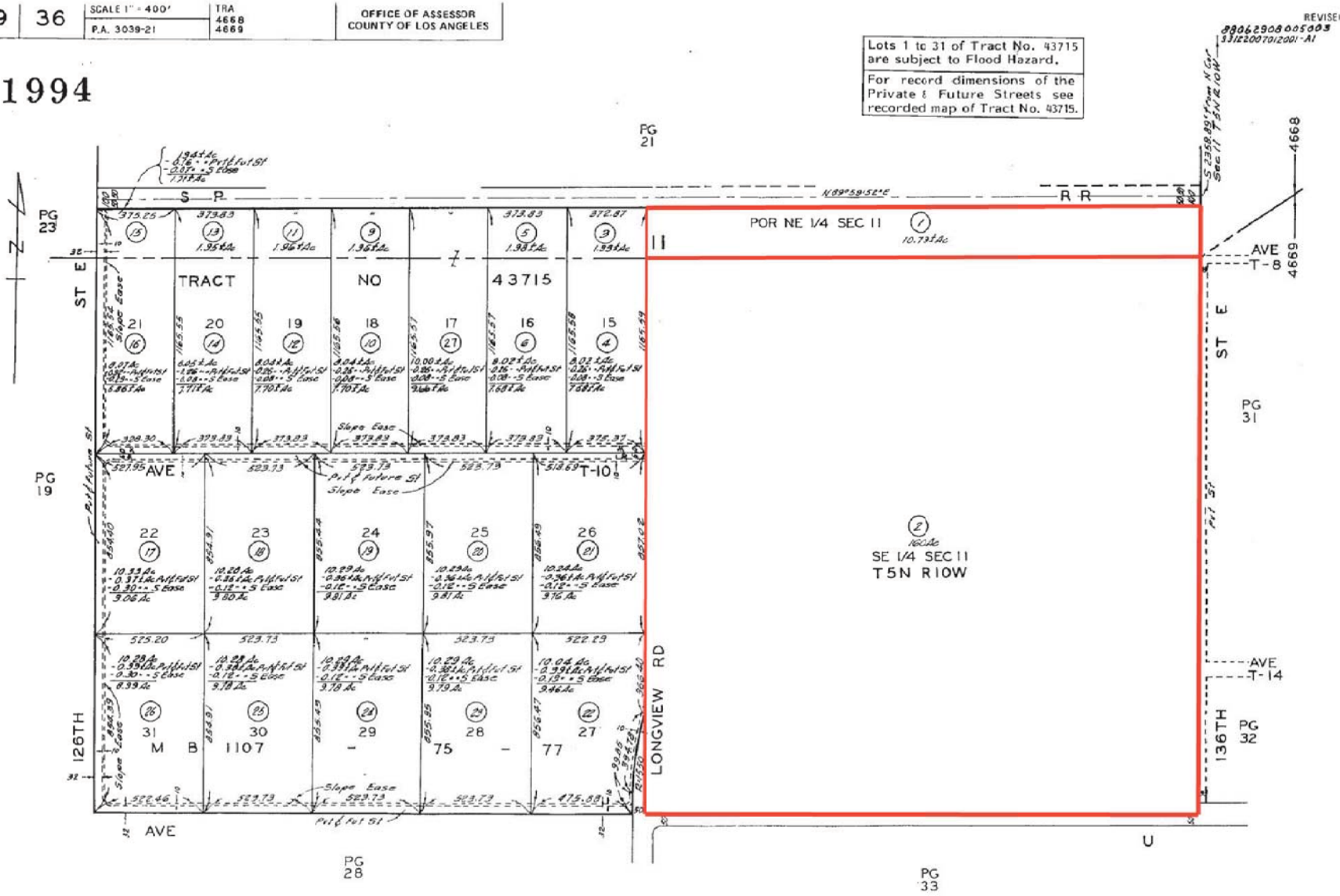

Source: West Coast Environmental, 12-31-2008

Assessor's Parcel Map 2 Big Rock Creek Site Antelope Valley, California	FIGURE 5
Scale: NTS	Date: 3-13-2012

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ATTACHMENT A

Figure 6 Lowered Facilities Alternative – Facilities Site Plan

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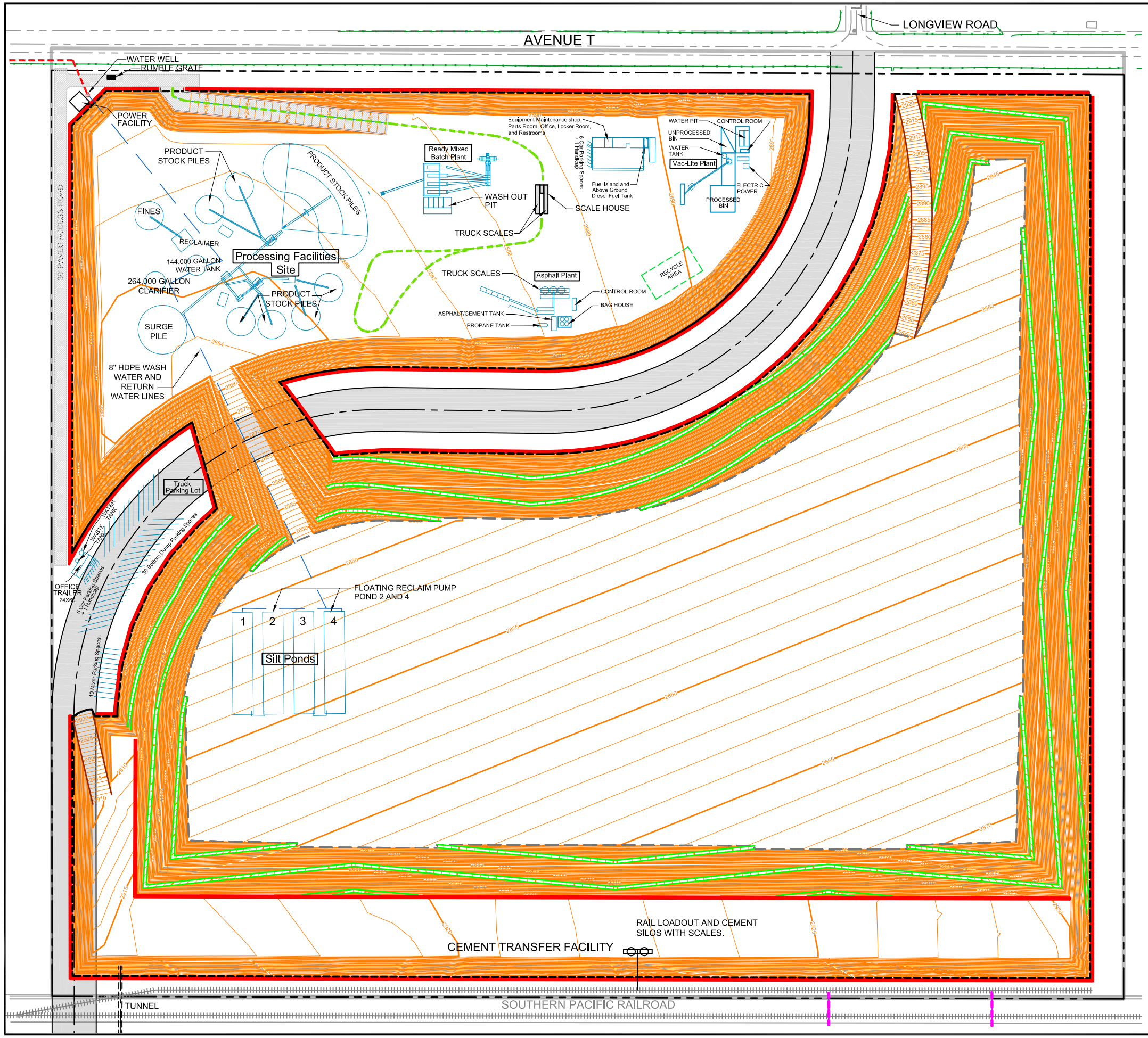

LEGEND

- ASSESSORS PARCEL BOUNDARIES
- CUP BOUNDARY
- APPROXIMATE MAXIMUM MINING CONTOURS **(see Mining/Grading plans for detail)**
- PROPOSED LONGVIEW ROAD EXTENSION (750' RADIUS)
- AVEK PIPELINE (Alternative water source)
- INTERNAL HAUL ROUTE

0 250 500

APPROXIMATE SCALE IN FEET

*** This figure shows Facility Layout/Design. For contour detail please refer to Mining/Grading plans.**

Lowered Facilities Alternative Facilities Site Plan Big Rock Creek Site Antelope Valley, California	**FIGURE 6**
SCALE: AS SHOWN	**DATE:** 3-16-2012

ATTACHMENT A

Figure 7 Aerial Site Plan

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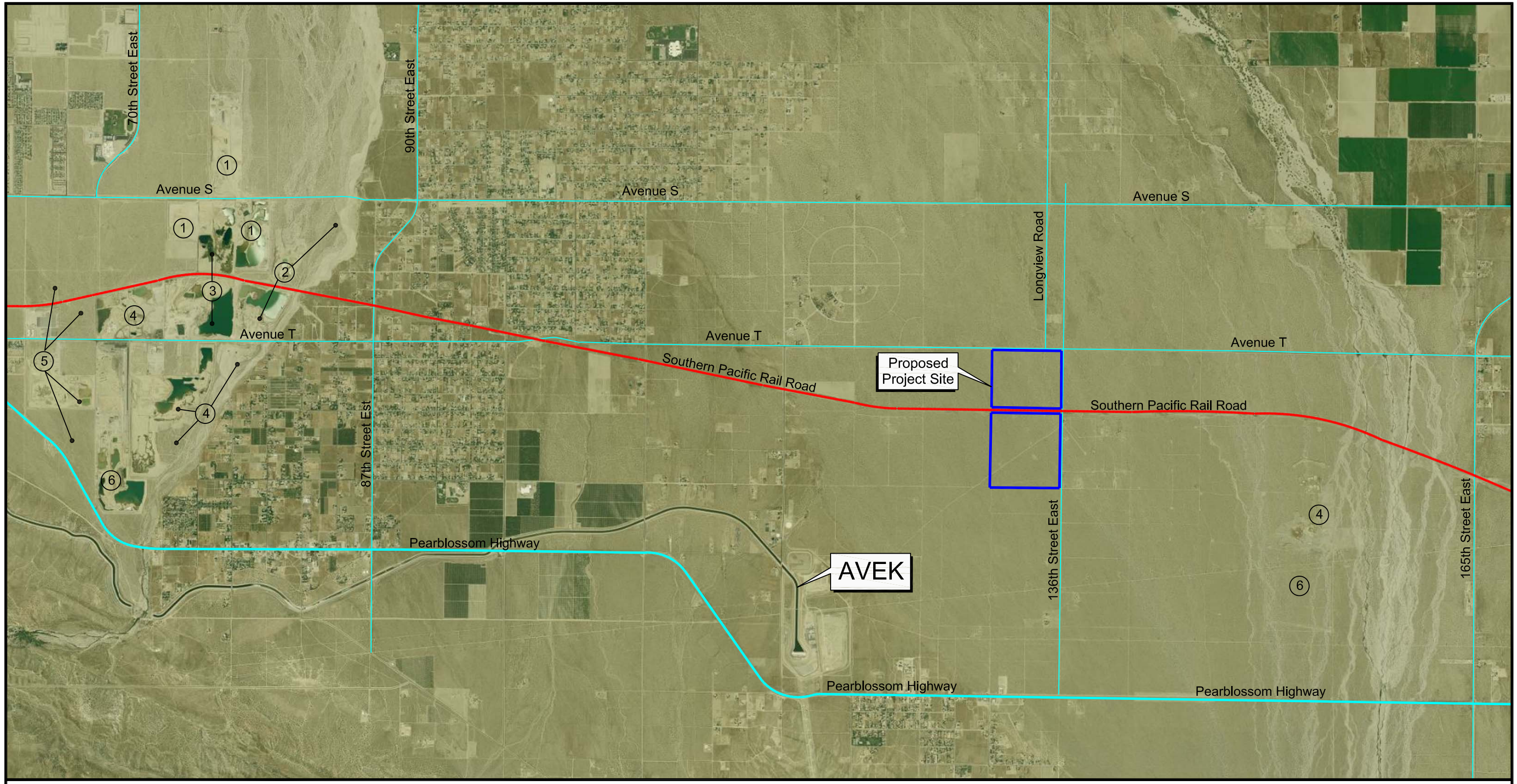

LEGEND:

1	Service Rock	5	Hi-Grade Materials
2	Holliday Rock	6	Granite Construction
3	Antelope Valley Aggregate		
4	Vulcan Materials		

AVEK: Antelope Valley-East Kern Water Agency

N

NOT TO SCALE

SOURCE: West Coast Environmental 11/20/08

Aerial Site Plan
Vicinity of Big Rock Creek Site
Big Rock Creek Site
Antelope Valley, California

FIGURE 7

SCALE: AS SHOWN

DATE: 3-16-2012

ATTACHMENT A

Figure 8 Local Water Wells

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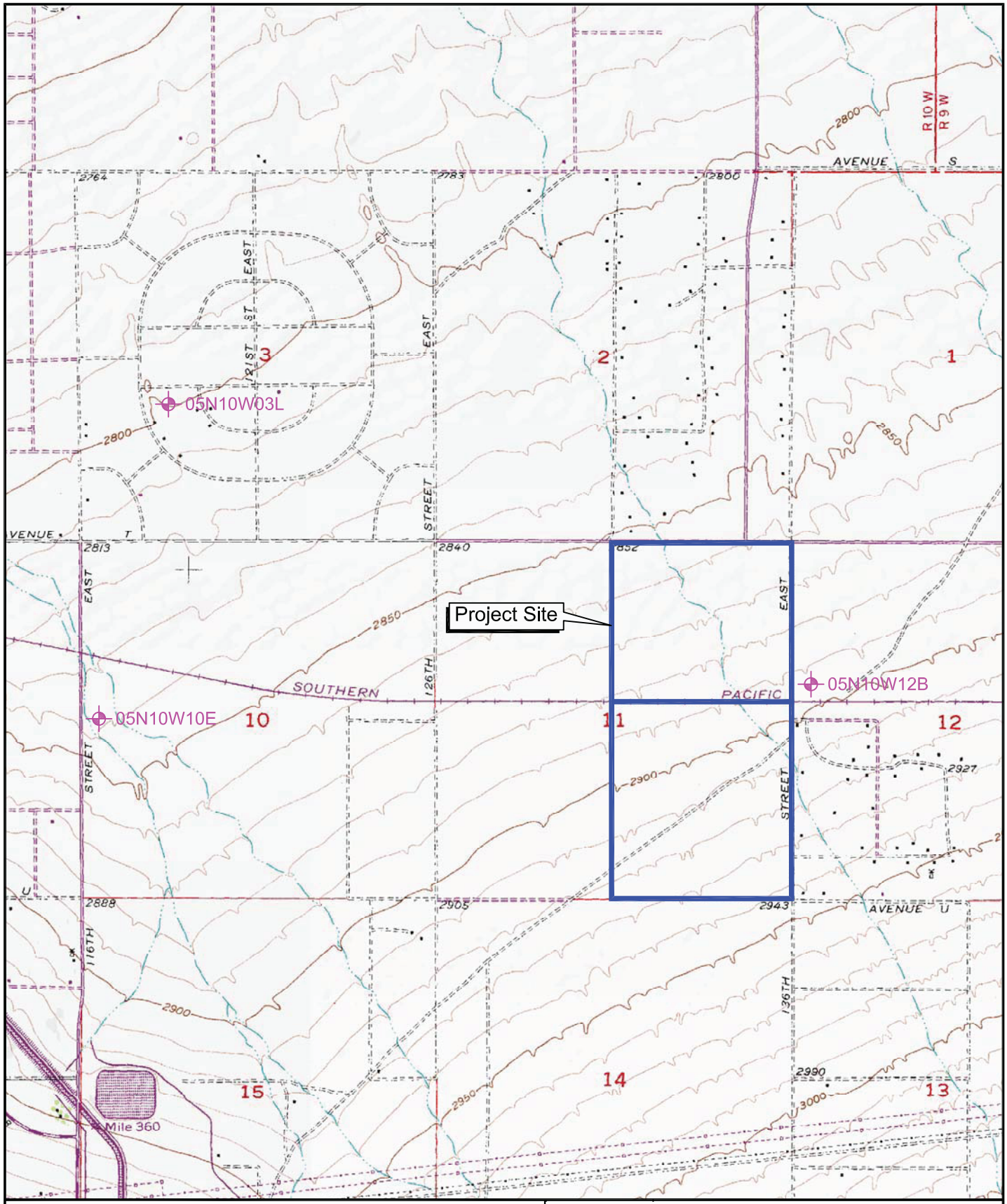

Source: USGS 7.5 Minute Topographic Quadrangle
Littlerock & Lovejoy Buttes, California 1957
Photorevised 1992
(C) 2002 DeLorme, XMap (R) 3.5
Los Angeles County Water Works District #4

05N10W10E Well Number

0 1000 2000 3000 4000 5000 FEET

SCALE 1:24000

Source: West Coast Environmental, 11-20-2008

Local Water Wells Big Rock Creek Site Antelope Valley, California	FIGURE 8
Scale: As Shown	Date: 3-13-2012

MCG100-Conf:\EIR NOV 20 2008\Local Water Wells

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ATTACHMENT A

Figure 9 FEMA 100-Year Floodplain Map

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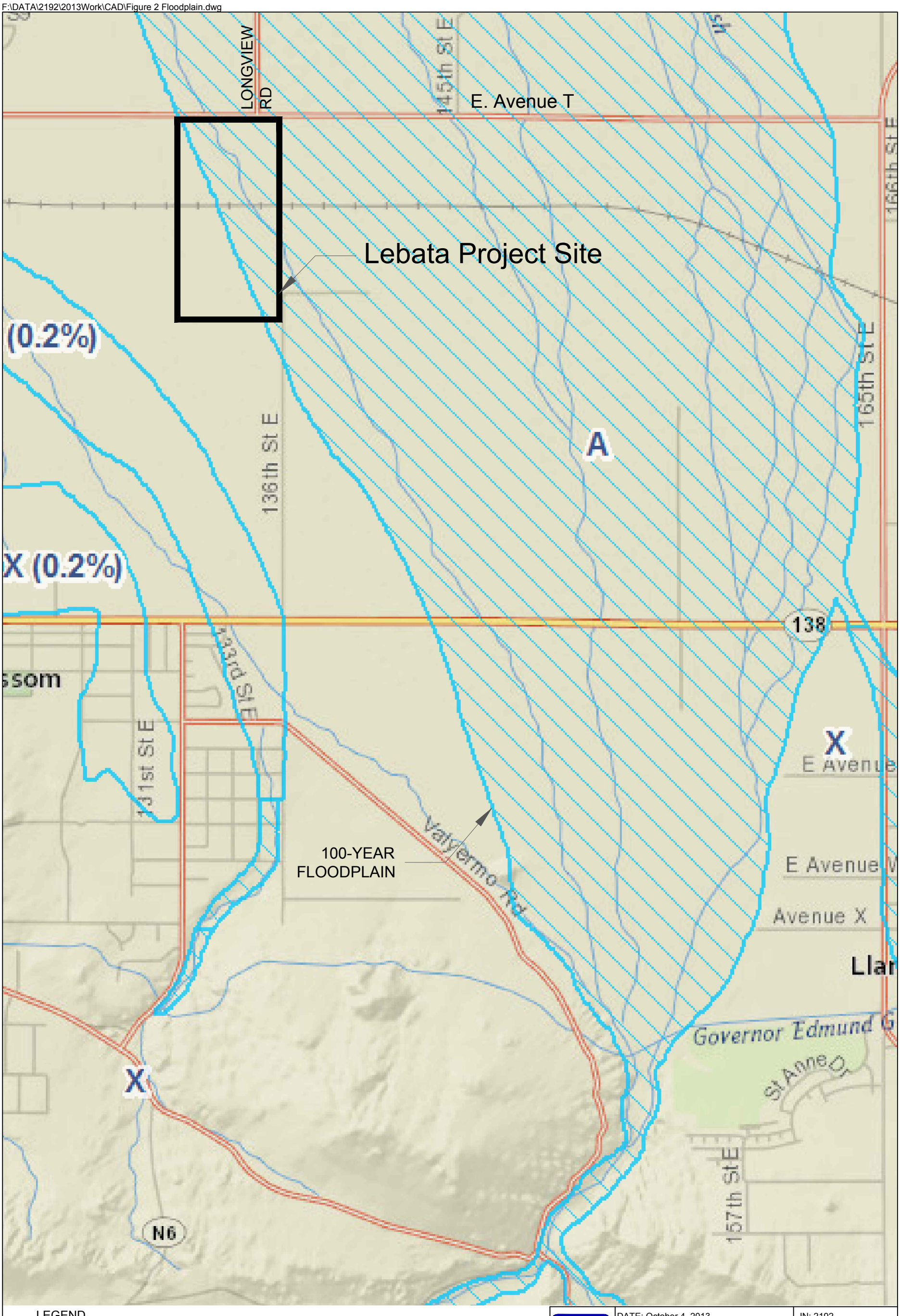
F:\DATA\2192\2013Work\CAD\Figure 2 Floodplain.dwg



LEGEND

100-YEAR FLOODPLAIN

500-YEAR FLOODPLAIN

NOTE: PROJECT SITE IS NOT WITHIN COUNTY ADOPTED FLOODWAY

SOURCE: FLOODPLAIN MAP OBTAINED FROM THE LOS ANGELES COUNTY WEBSITE: HTTP://DPW.LACOUNTY.GOV/WMD/FLOODZONE/

N W E S

SCALE: N.T.S.

STETSON ENGINEERS INC.

DATE: October 4, 2013 | JN: 2192

PROJECT LOCATION AND FEMA 100-YEAR FLOODPLAIN MAP

FEMA 100-Year Floodplain Map Big Rock Creek Site Antelope Valley, California	FIGURE 9
SCALE: AS SHOWN	DATE: 10-21-2013

ATTACHMENT A

Figure 10 Lowered Facilities Alternative - Preproduction Grading Plan

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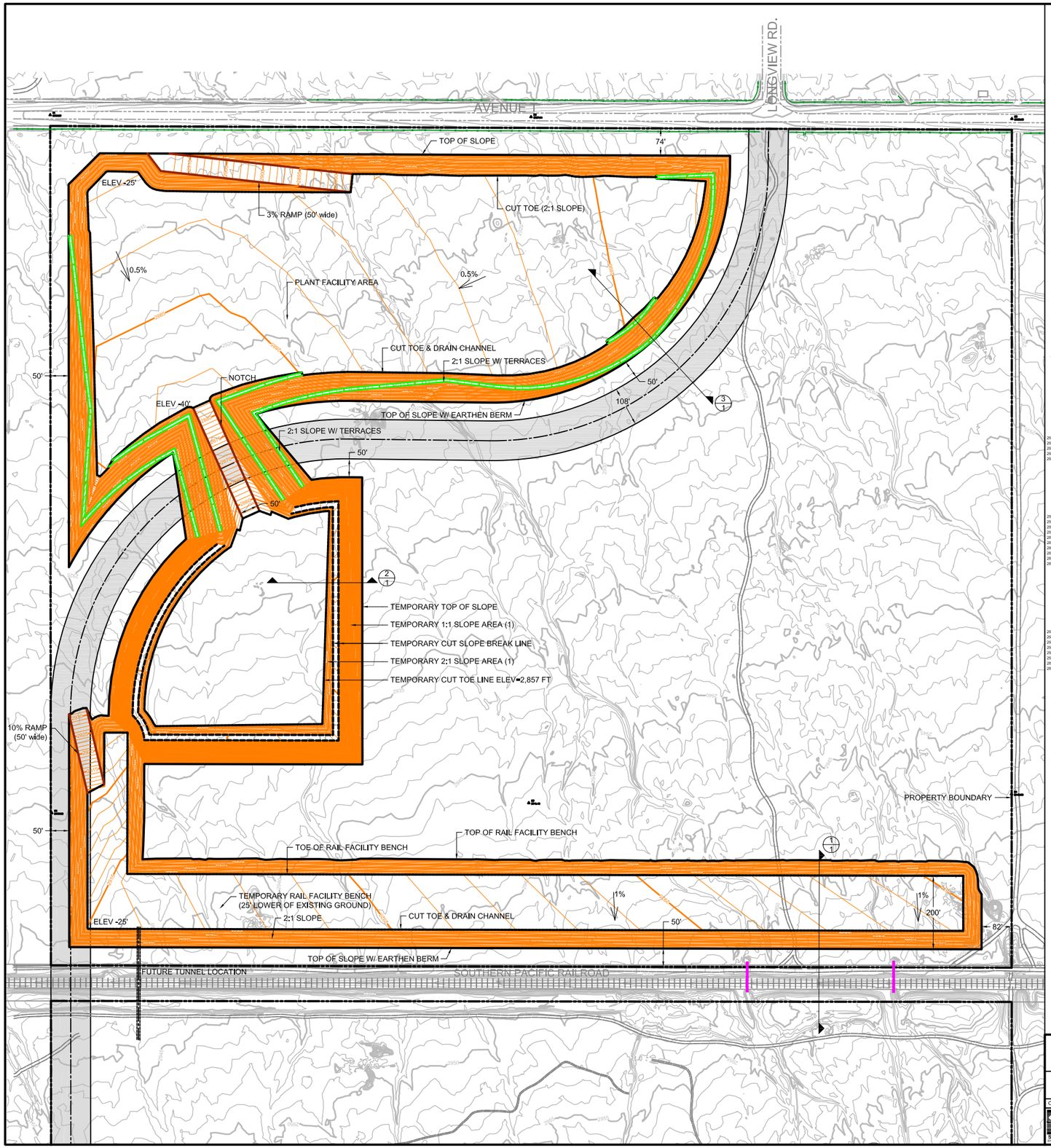
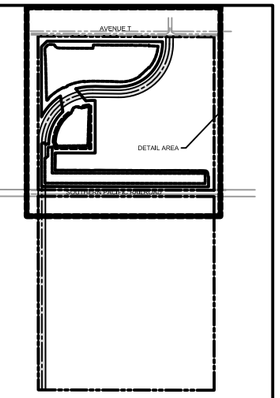
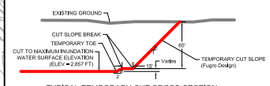


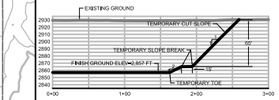


PROJECT OVERVIEW
Scale: 1" = 750'



TYPICAL TEMPORARY CUT CROSS-SECTION
SCALE 1" = 70'

1/1 RAIL FACILITY BENCH CROSS-SECTION
SCALE 1" = 70'



2/1 TEMPORARY CUT AREA CROSS-SECTION
SCALE 1" = 70'

3/1 PLANT FACILITY AREA CROSS-SECTION
SCALE 1" = 70'

LEGEND

- PROPERTY BOUNDARY
- EXISTING CONTOUR LINES
- EXISTING DIRT ROAD
- EXISTING CMP CULVERT
- PROPOSED ROAD (750-FOOT TURNING RADIUS)
- PHASE GRADING BOUNDARY
- TOE OF SLOPE
- PROPOSED CONTOUR LINES
- PROPOSED RAMP
- PROPOSED TERRACE
- CUT SLOPE BREAK LINES

NOTES:

1. ALL TEMPORARY CUT SLOPES ARE BASED ON PIT SLOPE STABILITY EVALUATION PREPARED BY FUGRO WEST, INC., MAY 2010.
2. PERMANENT CUT SLOPE FOR RAIL FACILITY BENCH AND PLANT FACILITY AREA ARE BASED ON LOS ANGELES COUNTY GRADING GUIDELINES. OVERALL CUT SLOPE IN THESE AREAS ARE 2(H):1(V) OR FLATTER.
3. DRAINAGE PLAN FOR RAIL FACILITY BENCH AND PLANT FACILITY AREA ARE NOT SHOWING IN THIS SHEET, SEE SHEET 2 FOR DRAINAGE PLAN IN THESE AREAS.
4. TERRACE DRAINS SHOWN FOR CONCEPTUAL APPROVAL. FINAL LOCATIONS PER MINING PLAN SOILS REPORT.

N
W
E
S

SCALE (FEET)
0 50 100 200

DRAINAGE CONCEPT/HYDROLOGY STUDY
FOR SURFACE MINING PROJECT 200700001
(Lebata Inc.)

LOWERED FACILITIES ALTERNATIVE
PRE-PRODUCTION GRADING PLAN

JN:	2192
Scale:	1" = 100'
	1 - Inch
Cut Volume: 2,760,100 CY	Date: July 27, 2010
Topo Source:	Inland Aerial Survey Inc. Date of Flight: 05/02/2006
Designed By: G. Trinidad	Drawn By: G. Trinidad
Revised By: J. Reilly	Approved By:
SHEET	1 of 5

STETSON ENGINEERS INC.

Lowered Facilities Alternative Pre-Production Grading Plan And Drainage Plan
Big Rock Creek Site
Antelope Valley, California

FIGURE 10

SCALE: AS SHOWN

DATE: 10-21-2013

ATTACHMENT A

Figure 11 Lowered Facilities Alternative - Mining Phase 1 – North Pit

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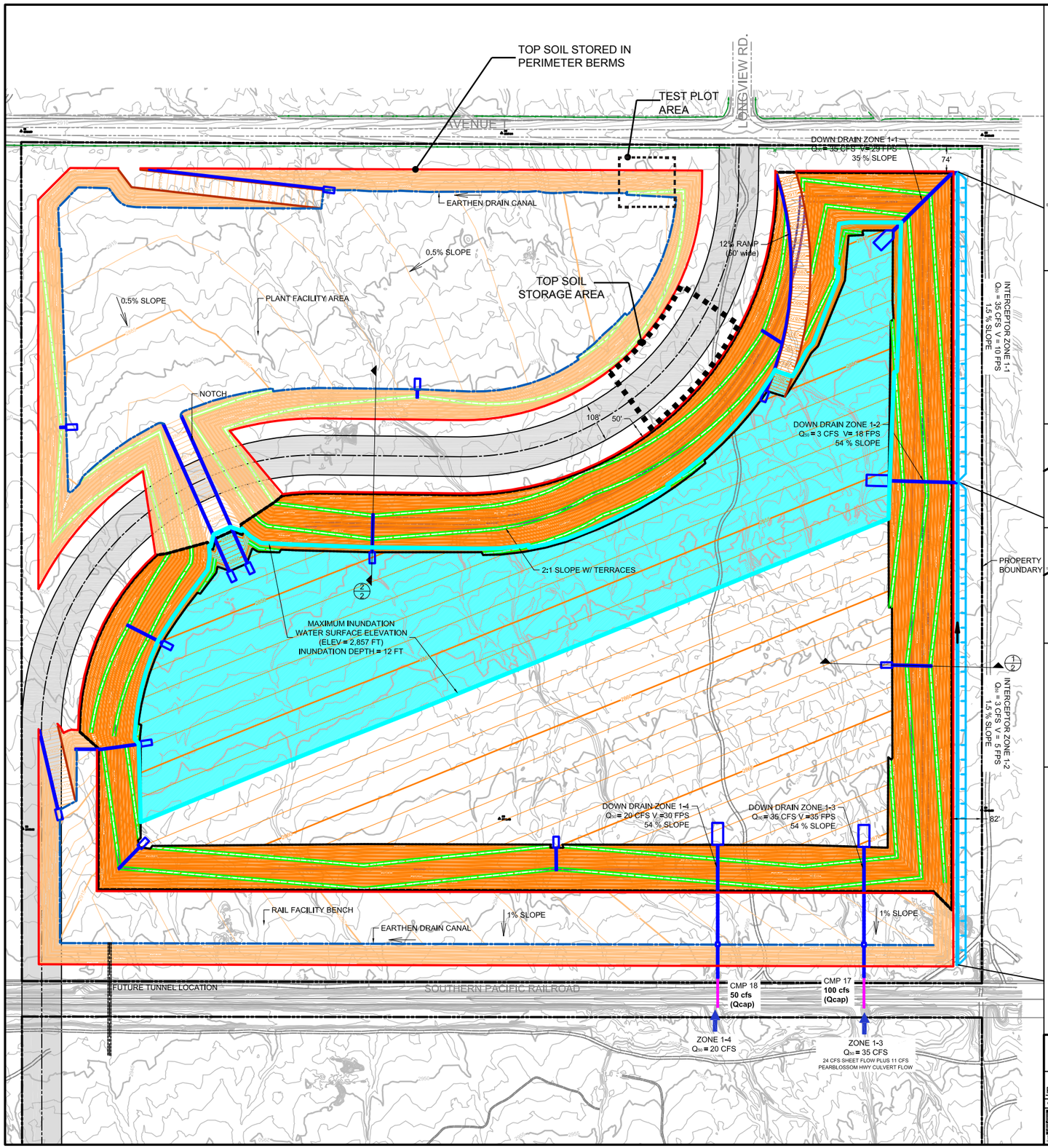

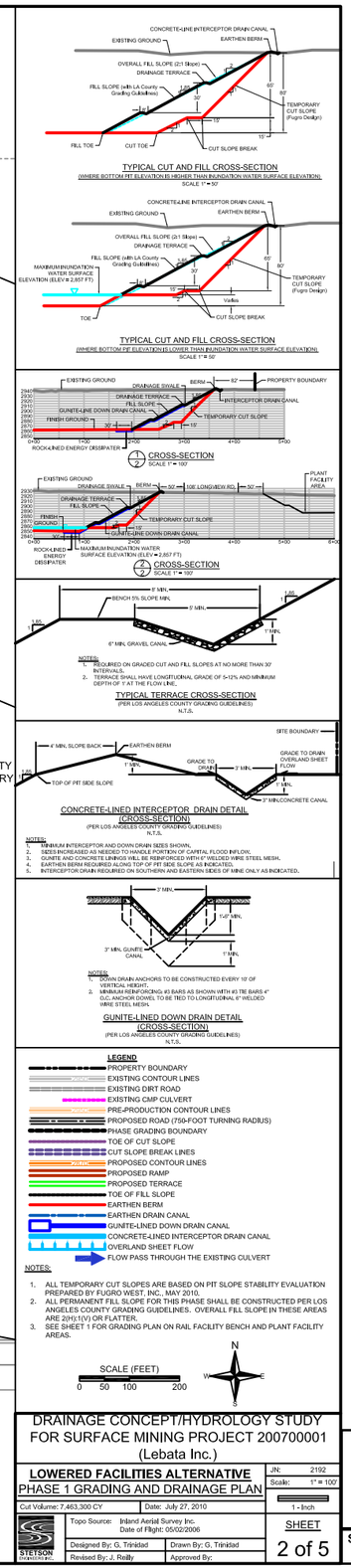

DRAINAGE CONCEPT/HYDROLOGY STUDY
FOR SURFACE MINING PROJECT 200700001
(Lebata Inc.)

LOWERED FACILITIES ALTERNATIVE
PHASE 1 GRADING AND DRAINAGE PLAN

Cut Volume: 7,463,300 CY | Date: July 27, 2010

STETSON ENGINEERS

Topo Source: Inland Aerial Survey Inc.
Date of Flight: 05/02/2006

Designed By: G. Trinidad | Drawn By: G. Trinidad
Revised By: J. Reilly | Approved By:

JN: 2192
Scale: 1" = 100'
1 - Inch

SHEET
2 of 5

Lowered Facilities Alternative Mining Phase 1 North Pit and Drainage Plan
Big Rock Creek Site
Antelope Valley, California

FIGURE 11

SCALE: AS SHOWN

DATE: 10-21-2013

ATTACHMENT A

Figure 12 Lowered Facilities Alternative - Mining Phase 2 – South Pit

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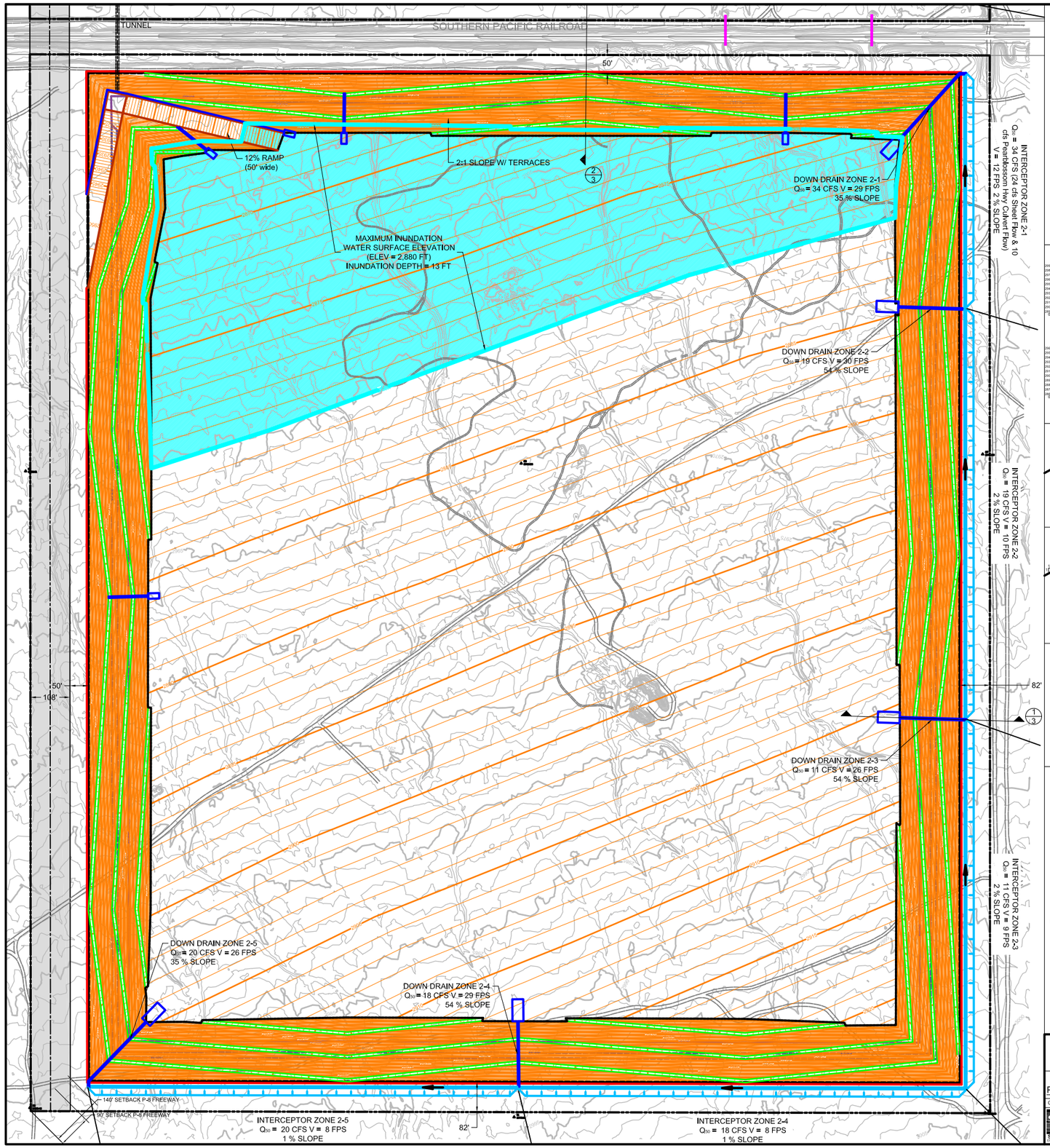
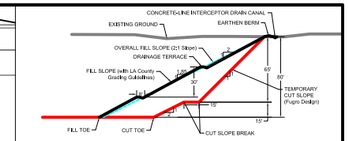
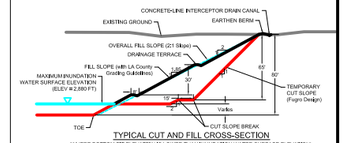
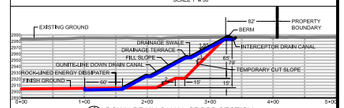




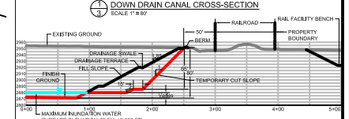
TYPICAL CUT AND FILL CROSS-SECTION
(WHERE BOTTOM PIT ELEVATION IS HIGHER THAN INUNDATION WATER SURFACE ELEVATION)
SCALE 1" = 50'



TYPICAL CUT AND FILL CROSS-SECTION
(WHERE BOTTOM PIT ELEVATION IS LOWER THAN INUNDATION WATER SURFACE ELEVATION)
SCALE 1" = 50'



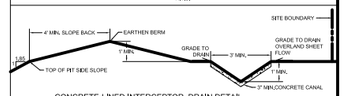
1/3 DOWN DRAIN CANAL CROSS-SECTION
SCALE 1" = 50'



2/3 CUT AND FILL CROSS-SECTION
SCALE 1" = 50'

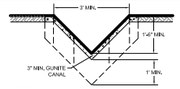
NOTES:
1. REQUIRED ON GRADED CUT AND FILL SLOPES AT NO MORE THAN 30' INTERVALS.
2. TERRACE SHALL HAVE LONGITUDINAL GRADE OF 5-12% AND MINIMUM DEPTH OF 1' AT THE FLOW LINE.

TYPICAL TERRACE CROSS-SECTION
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.



CONCRETE-LINED INTERCEPTOR DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.

NOTES:
1. MINIMUM INTERCEPTOR AND DOWN DRAIN SIZES SHOWN.
2. SIZES INCREASED AS NEEDED TO HANDLE PORTION OF CAPITAL FLOOD INFLOW.
3. GUNITE ANCHOR DOWELS TO BE TIED TO LONGITUDINAL 6" WELDED WIRE STEEL MESH.
4. EARTHEN BERM REQUIRED ALONG TOP OF PIT SIDE SLOPE AS INDICATED.
5. INTERCEPTOR DRAIN REQUIRED ON SOUTHERN AND EASTERN SIDES OF MINE ONLY AS INDICATED.



NOTES:
1. DOWN DRAIN ANCHORS TO BE CONSTRUCTED EVERY 10' OF VERTICAL HEIGHT.
2. MINIMUM REINFORCING: #3 BARS AS SHOWN WITH #3 TIE BARS 4' O.C. ANCHOR DOWEL TO BE TIED TO LONGITUDINAL 6" WELDED WIRE STEEL MESH.

GUNITE-LINED DOWN DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.

LEGEND
- PROPERTY BOUNDARY
- EXISTING CONTOUR LINES
- EXISTING DIRT ROAD
- EXISTING CMP CULVERT
- PRE-PRODUCTION CONTOUR LINES
- PROPOSED ROAD (750-FOOT TURNING RADIUS)
- PHASE GRADING BOUNDARY
- TOE OF CUT SLOPE
- CUT SLOPE BREAK LINES
- PROPOSED CONTOUR LINES
- PROPOSED RAMP
- PROPOSED TERRACE
- TOE OF FILL SLOPE
- EARTHEN BERM
- GUNITE-LINED DOWN DRAIN CANAL
- CONCRETE-LINED INTERCEPTOR DRAIN CANAL
- OVERLAND SHEET FLOW

NOTES:
1. ALL TEMPORARY CUT SLOPES ARE BASED ON PIT SLOPE STABILITY EVALUATION PREPARED BY FUGRO WEST, INC., MAY 2010.
2. ALL PERMANENT FILL SLOPE FOR THIS PHASE SHALL BE CONSTRUCTED PER LOS ANGELES COUNTY GRADING GUIDELINES. OVERALL FILL SLOPE IN THESE AREAS ARE 2(H):1(V) OR FLATTER.
3. SEE SHEET 1 FOR GRADING PLAN ON RAIL FACILITY BENCH.

SCALE (FEET)
0 50 100 200

N W E S

DRAINAGE CONCEPT/HYDROLOGY STUDY
FOR SURFACE MINING PROJECT 200700001
(Lebata Inc.)

LOWERED FACILITIES ALTERNATIVE
PHASE 2 GRADING AND DRAINAGE PLAN

JN: 2192
Scale: 1" = 100'
1 - Inch

Cut Volume: 17,970,000 CY
Date: July 27, 2010

Topo Source: Inland Aerial Survey Inc.
Date of Flight: 05/02/2006

STETSON ENGINEERING

Designed By: G. Trinidad
Drawn By: G. Trinidad
Revised By: J. Reilly
Approved By:

SHEET
3 of 5

Lowered Facilities Alternative Mining Phase 2 North Pit and Drainage Plan
Big Rock Creek Site
Antelope Valley, California

FIGURE 12

SCALE: AS SHOWN
DATE: 10-21-2013

ATTACHMENT A

Figure 13 Lowered Facilities Alternative - Final Reclamation – North Pit

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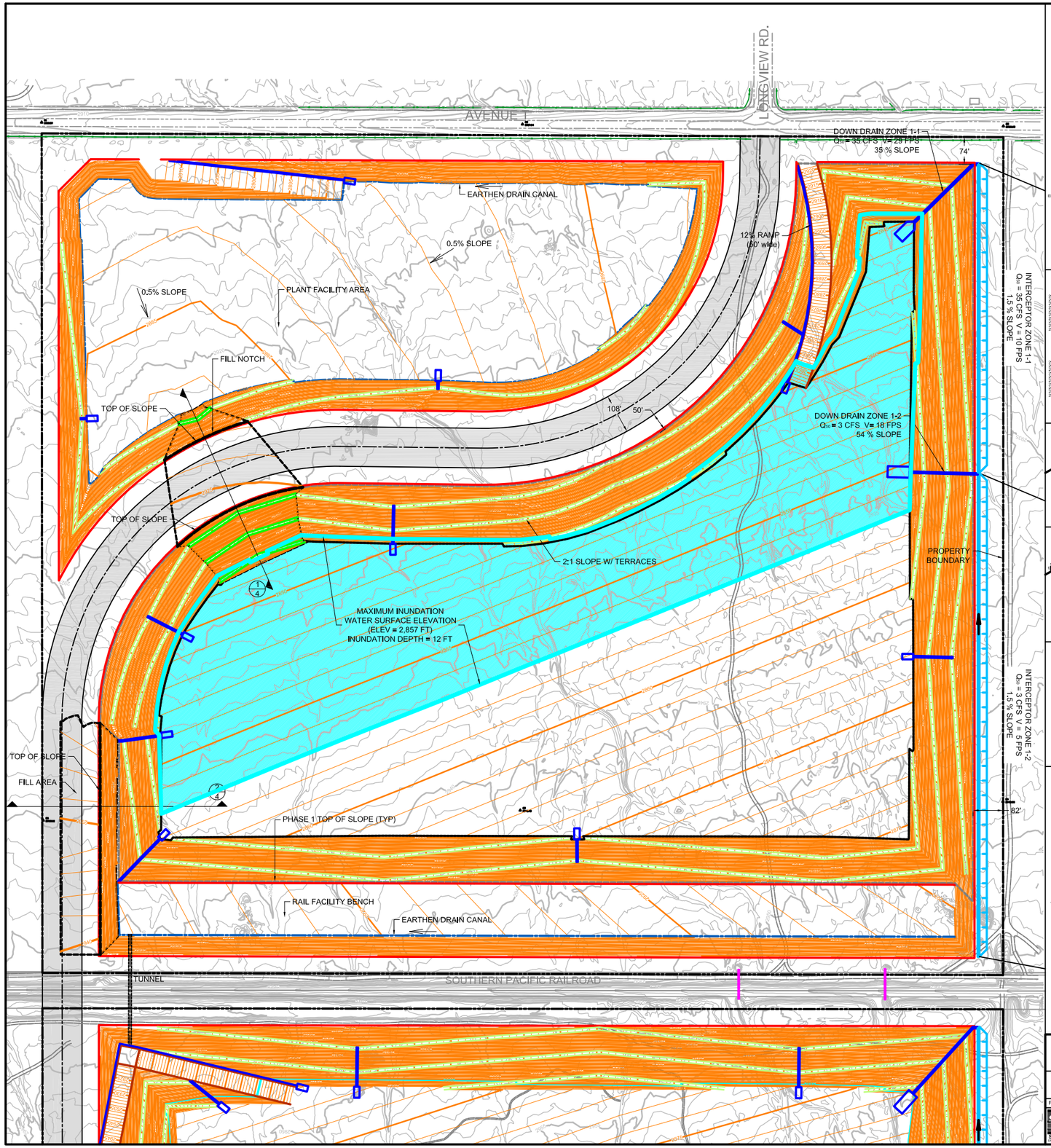
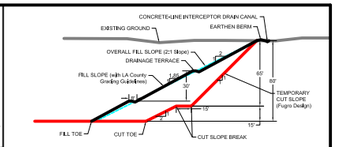
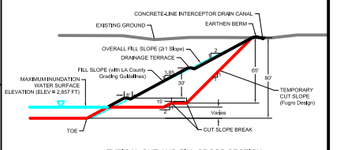
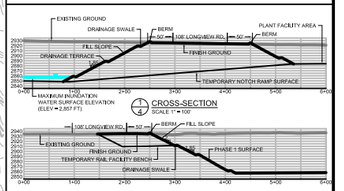


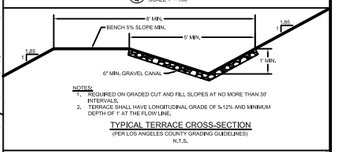


TYPICAL CUT AND FILL CROSS-SECTION
(WHERE BOTTOM PIT ELEVATION IS HIGHER THAN INUNDATION WATER SURFACE ELEVATION)
SCALE 1" = 50'



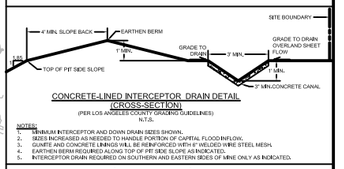
TYPICAL CUT AND FILL CROSS-SECTION
(WHERE BOTTOM PIT ELEVATION IS LOWER THAN INUNDATION WATER SURFACE ELEVATION)
SCALE 1" = 50'





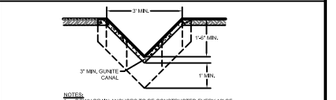
NOTES:
1. REQUIRED ON GRADED CUT AND FILL SLOPES AT NO MORE THAN 30' INTERVALS.
2. TERRACE SHALL HAVE LONGITUDINAL GRADE OF 5-12% AND MINIMUM DEPTH OF 1' AT THE FLOW LINE.

TYPICAL TERRACE CROSS-SECTION
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.



CONCRETE-LINED INTERCEPTOR DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.

NOTES:
1. MINIMUM INTERCEPTOR AND DOWN DRAIN SIZES SHOWN.
2. SIZES INCREASED AS NEEDED TO HANDLE PORTION OF CAPITAL FLOOD INFLOW.
3. GUNITE AND CONCRETE LININGS WILL BE REINFORCED WITH 6" WELDED WIRE STEEL MESH.
4. EARTHEN BERM REQUIRED ALONG TOP OF PIT SIDE SLOPE AS INDICATED.
5. INTERCEPTOR DRAIN REQUIRED ON SOUTHERN AND EASTERN SIDES OF MINE ONLY AS INDICATED.



NOTES:
1. DOWN DRAIN ANCHORS TO BE CONSTRUCTED EVERY 10' OF VERTICAL HEIGHT.
2. MINIMUM REINFORCING: #3 BARS AS SHOWN WITH #3 TIE BARS 4' O.C. ANCHOR DOWEL TO BE TIED TO LONGITUDINAL 6" WELDED WIRE STEEL MESH.

GUNITE-LINED DOWN DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.

LEGEND
- PROPERTY BOUNDARY
- EXISTING CONTOUR LINES
- EXISTING DIRT ROAD
- EXISTING CMP CULVERT
- PROPOSED ROAD (750-FOOT TURNING RADIUS)
- RECLAMATION FILL BOUNDARY
- FINAL CONTOUR LINES
- PROPOSED RAMP
- PROPOSED TERRACE
- EARTHEN BERM
- EARTHEN DRAIN CANAL
- GUNITE-LINED DOWN DRAIN CANAL
- CONCRETE-LINED INTERCEPTOR DRAIN CANAL
- OVERLAND SHEET FLOW

NOTES:
1. ALL TEMPORARY CUT SLOPES ARE BASED ON PIT SLOPE STABILITY EVALUATION PREPARED BY FUGRO WEST, INC., MAY 2010.
2. ALL PERMANENT FILL SLOPE FOR THIS PHASE SHALL BE CONSTRUCTED PER LOS ANGELES COUNTY GRADING GUIDELINES. OVERALL FILL SLOPE IN THESE AREAS ARE 2(H):1(V) OR FLATTER.
3. SEE SHEET 1 FOR GRADING PLAN ON RAIL FACILITY BENCH AND PLANT FACILITY AREAS.

SCALE (FEET)
0 50 100 200

N
W E
S

DRAINAGE CONCEPT/HYDROLOGY STUDY
FOR SURFACE MINING PROJECT 200700001
(Lebata Inc.)

LOWERED FACILITIES ALTERNATIVE
FINAL RECLAMATION NORTH PIT GRADING AND DRAINAGE PLAN

Fill Volume: 185,700 CY | Date: July 27, 2010

Topo Source: Inland Aerial Survey Inc.
Date of Flight: 05/02/2006

Designed By: G. Trinidad | Drawn By: G. Trinidad
Revised By: J. Reilly | Approved By:

STETSON ENGINEERS

JN: 2192
Scale: 1" = 100'
1 = Inch
SHEET 4 of 5

Lowered Facilities Alternative Final Reclamation And Drainage Plan - North Pit
Big Rock Creek Site
Antelope Valley, California

FIGURE 13

SCALE: AS SHOWN
DATE: 10-21-2013

ATTACHMENT A

Figure 14 Lowered Facilities Alternative - Final Reclamation – South Pit

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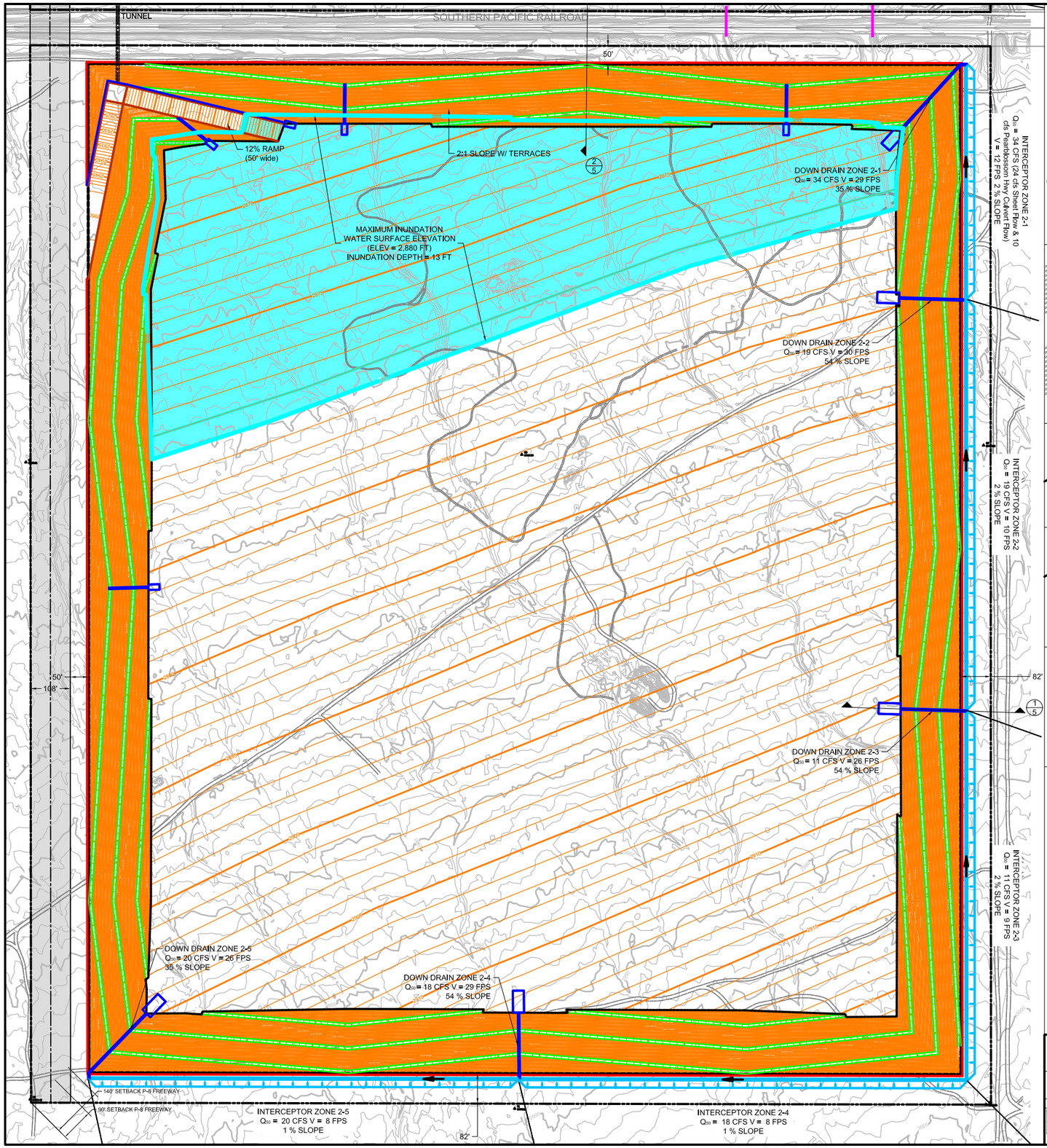
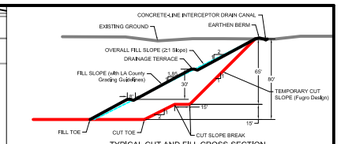
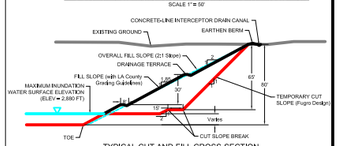
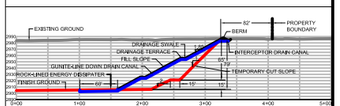




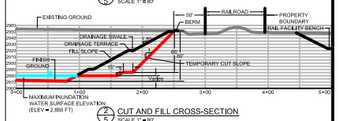
TYPICAL CUT AND FILL CROSS-SECTION
(WHERE BOTTOM PIT ELEVATION IS HIGHER THAN INUNDATION WATER SURFACE ELEVATION)
SCALE 1" = 50'



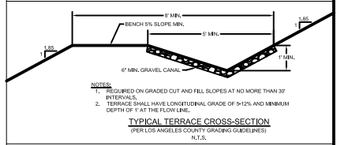
TYPICAL CUT AND FILL CROSS-SECTION
(WHERE BOTTOM PIT ELEVATION IS LOWER THAN INUNDATION WATER SURFACE ELEVATION)
SCALE 1" = 50'



1
5
DOWN DRAIN CANAL CROSS-SECTION
SCALE 1" = 50'

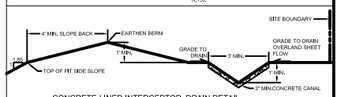


2
5
CUT AND FILL CROSS-SECTION
SCALE 1" = 80'



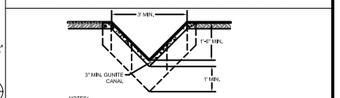
NOTES:
1. REQUIRED ON GRADED CUT AND FILL SLOPES AT NO MORE THAN 30' INTERVALS.
2. TERRACE SHALL HAVE LONGITUDINAL GRADE OF 5-12% AND MINIMUM DEPTH OF 1' AT THE FLOW LINE.

TYPICAL TERRACE CROSS-SECTION
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.



CONCRETE-LINED INTERCEPTOR DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.

NOTES:
1. MINIMUM INTERCEPTOR AND DOWN DRAIN SIZES SHOWN. SIZES INCREASED AS NEEDED TO HANDLE PORTION OF CAPITAL FLOOD INFLOW).
2. GUNITE AND CONCRETE LININGS WILL BE REINFORCED WITH 6" WELDED WIRE STEEL MESH.
3. EARTHEN BERM REQUIRED ALONG TOP OF PIT SIDE SLOPE AS INDICATED.
4. INTERCEPTOR DRAIN REQUIRED ON SOUTHERN AND EASTERN SIDES OF MINE ONLY AS INDICATED.



NOTES:
1. DOWN DRAIN ANCHORS TO BE CONSTRUCTED EVERY 10' OF VERTICAL HEIGHT.
2. MINIMUM REINFORCING BARS AS SHOWN WITH #3 TIE BARS 4" O.C. ANCHOR DOWEL TO BE TIED TO LONGITUDINAL 6" WELDED WIRE STEEL MESH.

GUNITE-LINED DOWN DRAIN DETAIL
(CROSS-SECTION)
(PER LOS ANGELES COUNTY GRADING GUIDELINES)
N.T.S.

LEGEND

- PROPERTY BOUNDARY
- EXISTING CONTOUR LINES
- EXISTING DIRT ROAD
- EXISTING CMP CULVERT
- PROPOSED ROAD (750-FOOT TURNING RADIUS)
- FINAL CONTOUR LINES
- PROPOSED RAMP
- PROPOSED TERRACE
- TOE OF FILL SLOPE
- EARTHEN BERM
- GUNITE-LINED DOWN DRAIN CANAL
- CONCRETE-LINED INTERCEPTOR DRAIN CANAL
- OVERLAND SHEET FLOW

NOTES:

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3. SEE SHEET 1 FOR GRADING PLAN ON RAIL FACILITY BENCH.

SCALE (FEET)
0 50 100 200

N
W E
S

DRAINAGE CONCEPT/HYDROLOGY STUDY
FOR SURFACE MINING PROJECT 200700001
(Lebata Inc.)

LOWERED FACILITIES ALTERNATIVE
FINAL RECLAMATION SOUTH PIT GRADING AND DRAINAGE PLAN

Cut Volume: 0 CY

JN: 2192
Scale: 1" = 100'
1 - Inch
Date: July 27, 2010

Topo Source: Inland Aerial Survey Inc.
Date of Flight: 05/02/2006

Designed By: G. Trinidad
Drawn By: G. Trinidad
Revised By: J. Reilly
Approved By:

SHEET
5 of 5

STETSON ENGINEERS

Lowered Facilities Alternative
Final Reclamation and Drainage Plan - South Pit
Big Rock Creek Site
Antelope Valley, California

FIGURE
14

SCALE: AS SHOWN
DATE: 10-21-2013

RECLAMATION PLAN
LEBATA BIG ROCK CREEK
AGGREGATE SURFACE MINE AND PROCESSING FACILITIES

AUGUST 2014

ATTACHMENT B

Policy of Title Insurance

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Policy of Title Insurance

ISSUED BY

First American Title Insurance Company

SUBJECT TO THE EXCLUSIONS FROM COVERAGE, THE EXCEPTIONS FROM COVERAGE CONTAINED IN SCHEDULE B AND THE CONDITIONS AND STIPULATIONS, FIRST AMERICAN TITLE INSURANCE COMPANY, a California corporation, herein called the Company, insures, as of Date of Policy shown in Schedule A, against loss or damage, not exceeding the Amount of Insurance stated in Schedule A, sustained or incurred by the insured by reason of:

1. Title to the estate or interest described in Schedule A being vested other than as stated therein;
2. Any defect in or lien or encumbrance on the title;
3. Unmarketability of the title;
4. Lack of a right of access to and from the land; and in addition, as to an insured lender only:
5. The invalidity or unenforceability of the lien of the insured mortgage upon the title;
6. The priority of any lien or encumbrance over the lien of the insured mortgage; said mortgage being shown in Schedule B in the order of its priority;
7. The invalidity or unenforceability of any assignment of the insured mortgage, provided the assignment is shown in Schedule B, or the failure of the assignment shown in Schedule B to vest title to the insured mortgage in the named insured assignee free and clear of all liens.

The Company will also pay the costs, attorneys' fees and expenses incurred in defense of the title or the lien of the insured mortgage, as insured, but only to the extent provided in the Conditions and Stipulations.

IN WITNESS WHEREOF, First American Title Insurance Company has caused this policy to be signed and sealed by its duly authorized officers as of Date of Policy shown in Schedule A.

First American Title Insurance Company

BY Gary L. Kerwood PRESIDENT

ATTEST Mark R. Arnesen SECRETARY

FIRST AMERICAN TITLE INSURANCE COMPANY INCORPORATED SEPTEMBER 24, 1968 CALIFORNIA

SCHEDULE A

Total Fee for Title Search, Examination
and Title Insurance: $4,200.00

Amount of Insurance: $3,000,000.00 Policy Number: LPA-2137043

Date of Policy: January 30, 2006 at 8:00 A.M.

1. Name of insured:

   LeBata Incorporated, a California Corporation

2. The estate or interest in the land which is covered by this policy is:

   A fee.

3. Title to the estate or interest in the land is vested in:

   LeBata Incorporated, a California Corporation

SCHEDULE B

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

PART ONE

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records. Proceedings by a public agency which may result in taxes or assessments, or notice of such proceedings, whether or not shown by the records of such agency or by the public records.

2. Any facts, rights, interests or claims which are not shown by the public records but which could be ascertained by an inspection of the land or which may be asserted by persons in possession thereof.

3. Easements, liens or encumbrances, or claims thereof, which are not shown by the public records.

4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.

5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the public records.

SCHEDULE B
(Continued)

PART TWO

1. General and special taxes and assessments for the fiscal year 2006-2007, a lien not yet due or payable.

2. The lien of supplemental taxes, if any, assessed pursuant to Chapter 3.5 commencing with Section 75 of the California Revenue and Taxation Code.

3. An easement for public street, road or highway purposes and incidental purposes, recorded October 16, 1962 as Instrument No. 6124 of Official Records.

   Affects: The Northerly 50 feet of said land

   (Affects APN: 3039-021-009)

The map attached, if any, may or may not be a survey of the land depicted hereon. First American expressly disclaims any liability for loss or damage which may result from reliance on this map except to the extent coverage for such loss or damage is expressly provided by the terms and provisions of the title insurance policy, if any, to which this map is attached.

SCHEDULE C

The land referred to in this policy is described as follows:

Real property in the unincorporated area of the County of Los Angeles, State of California , described as follows:

THE EAST HALF OF SECTION 11, TOWNSHIP 5 NORTH, RANGE 10 WEST, SAN BERNARDINO BASE AND MERIDIAN, ACCORDING TO THE OFFICIAL PLAT OF SAID LAND APPROVED BY THE SURVEYOR GENERAL MARCH 19, 1856.

EXCEPT A STRIP OF LAND 100.00 FEET WIDE, CONVEYED TO SOUTHERN PACIFIC COMPANY BY GRANT DEED RECORDED MAY 2, 1958 AS INSTRUMENT NO. 1550 IN BOOK D-89 PAGE 249 OF OFFICIAL RECORDS.

ALSO EXCEPT AN UNDIVIDED ONE-HALF INTEREST IN AND TO ALL THE OIL, GAS, AND OTHER HYDROCARBONS AND MINERALS NOW OR AT ANY TIME HEREAFTER SITUATED UPON, WITHIN OR UNDERLYING SAID LAND OR PRODUCTILBE THEREFROM PROVIDED, HOWEVER THAT THIS RESERVATION SHALL NOT BE CONSIDERED AS PERMITTING THE GRANTOR TO LEASE SAID LAND FOR OIL, GAS OR MINERAL EXPLORATION OR DEVELOPMENT WITHOUT SUCH LEASE BEING JOINED IN BY THE GRANTEE, HIS HEIRS OR ASSIGNS, AS RESERVED BY HELEN HOUSTON, A SINGLE WOMAN, IN DEED RECORDED SEPTEMBER 28, 1955 IN BOOK 49074 PAGE 133 OF OFFICIAL RECORDS.

BY A QUITCLAIM DEED RECORDED AUGUST 28, 1970 AS INSTRUMENT NO. 894, HELEN HOUSTON RELEASED THE RIGHT OF ENTRY TO A DEPTH OF 200 FEET BENEATH THE SURFACE OF SAID LAND FOR THE PURPOSE OF DEVELOPING AND EXPLORING FOR OIL, GAS AND OTHER HYDROCARBONS AND MINERALS NOW OR AT ANY TIME HEREAFTER SITUATED THEREON.

APN: 3039-021-009 and 3039-036-001 and 3039-021-002

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1.(a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to

(i) the occupancy, use, or enjoyment of the land;

(ii) the character, dimensions or location of any improvement now or hereafter erected on the land;

(iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or

(iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.

(b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.

2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.

3. Defects, liens, encumbrances, adverse claims, or other matters:

(a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;

(b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;

(c) resulting in no loss or damage to the insured claimant;

(d) attaching or created subsequent to Date of Policy; or

(e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage or for the estate or interest insured by this policy.

4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with the applicable doing business laws of the state in which the land is situated.

5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.

6. Any claim, which arises out of the transaction vesting in the insured the estate or interest insured by their policy or the transaction creating the interest of the insured lender, by reason of the operation of federal bankruptcy, state insolvency or similar creditors' rights laws.

CONDITIONS AND STIPULATIONS

1. DEFINITION OF TERMS.

The following terms when used in this policy mean:

(a) "insured": the insured named in Schedule A, and, subject to any rights or defenses the Company would have had against the named insured, those who succeed to the interest of the named insured by operation of law as distinguished from purchase including, but not limited to, heirs, distributees, devisees, survivors, personal representatives, next of kin, or corporate or fiduciary successors. The term "insured" also includes

(i) the owner of the indebtedness secured by the insured mortgage and each successor in ownership of the indebtedness except a successor who is an obligor under the provisions of Section 12 (c) of these Conditions and Stipulations (reserving, however, all rights and defenses as to any such successor that the Company would have had against any predecessor insured, unless the successor acquired the indebtedness as a purchaser for value without knowledge of the asserted defect, lien, encumbrance, adverse claim or other matter insured against by this policy as affecting title to the estate or interest in the land;

(ii) any governmental agency or governmental instrumentality which is an insurer or guarantor under an insurance contract or guaranty insuring or guaranteeing the indebtedness secured by the insured mortgage, or any part thereof, whether named as an insured herein or not;

(iii) the parties designated in Section 2 (a) of these Conditions and Stipulations.

(b) "insured claimant": an insured claiming loss or damage.

(c) "insured lender: the owner of an insured mortgage.

(d) "insured mortgage:" a mortgage shown in Schedule B, the owner of which is named as an insured in Schedule A.

(e) "knowledge" or "known": actual knowledge, not constructive knowledge or notice which may be imputed to an insured by reason of any public records as defined in this policy or any other records which impart constructive notice of matters affecting the land.

(f) "land": the land described or referred to in Schedule C, and improvements affixed thereto which by law constitute real property. The term "land" does not include any property beyond the lines of the area specifically described or referred to in Schedule C, nor any right, title, interest, estate or easement in abutting streets, roads, avenues, alleys, lanes, ways or waterways, but nothing herein shall modify or limit the extent to which a right of access to and from the land is insured by this policy.

(g) "mortgage": mortgage, deed of trust, trust deed, or other security instrument.

(h) "public records": records established under state statutes at Date of Policy for the purpose of imparting constructive notice of matters relating to real property to purchasers for value and without knowledge.

(i) "unmarketability of the title": an alleged or apparent matter affecting the title to the land, not excluded or excepted from coverage, which would entitle a purchaser of the estate or interest described in Schedule A or the insured mortgage to be released from the obligation to purchase by virtue of a contractual condition requiring the delivery of marketable title.

2. CONTINUATION OF INSURANCE.

(a) **After Acquisition of Title:** If this policy insures the owner of the indebtedness secured by the insured mortgage, the coverage of this policy shall continue in force as of Date of Policy in favor of

(i) such insured lender who acquires all or any part of the estate or interest in the land by foreclosure, trustee's sale, conveyance in lieu of foreclosure, or other legal manner which discharges the lien of the insured mortgage;
(ii) a transferee of the estate or interest so acquired from an insured corporation, provided the transferee is the parent or wholly owned subsidiary of the insured corporation and their corporate successors by operation of law and not by purchase, subject to any rights or defenses the Company may have against any predecessor insureds; and
(iii) any governmental agency or governmental instrumentality which acquires all or any part of the estate or interest pursuant to a contract of insurance or guaranty insuring or guaranteeing the indebtedness secured by the insured mortgage.
(b) **After Conveyance of Title:** The coverage of this policy shall continue in force as of Date of Policy in favor of an insured only so long as the insured retains an estate or interest in the land, or holds an indebtedness secured by a purchase money mortgage given by a purchaser from the insured, or only so long as the insured shall have liability by reason of covenants of warranty made by the insured in any transfer or conveyance of the estate or interest. This policy shall not continue in force in favor of any purchaser from the insured of either
(i) an estate or interest in the land, or
(ii) an indebtedness secured by a purchase money mortgage given to an insured.
(c) **Amount of Insurance:** The amount of insurance after the acquisition or after the conveyance by an insured lender shall in neither event exceed the least of:
(i) The amount of insurance stated in Schedule A;
(ii) The amount of the principal of the indebtedness secured by the insured mortgage as of Date of Policy, interest thereon, expenses of foreclosure, amounts advanced pursuant to the insured mortgage to assure compliance with laws or to protect the lien of the insured mortgage prior to the time of acquisition of the estate or interest in the land and secured thereby and reasonable amounts expended to prevent deterioration of improvements, but reduced by the amount of all payments made; or
(iii) The amount paid by any governmental agency or governmental instrumentality, if the agency or instrumentality is the insured claimant, in the acquisition of the estate or interest in satisfaction of its insurance contract or guaranty.

3. NOTICE OF CLAIM TO BE GIVEN BY INSURED CLAIMANT.

The insured shall notify the Company promptly in writing
(i) in case of any litigation as set forth in Section 4 (a) below,
(ii) in case knowledge shall come to an insured hereunder of any claim of title or interest which is adverse to the title to the estate or interest or the lien of the insured mortgage, as insured, and which might cause loss or damage for which the Company may be liable by virtue of this policy, or
(iii) if title to the estate or interest or the lien of the insured mortgage, as insured, is rejected as unmarketable. If prompt notice shall not be given to the Company, then as to that insured all liability of the Company shall terminate with regard to the matter or matters for which prompt notice is required; provided, however, that failure to notify the Company shall in no case prejudice the rights of any insured under this policy unless the Company shall be prejudiced by the failure and then only to the extent of the prejudice.

4. DEFENSE AND PROSECUTION OF ACTIONS; DUTY OF INSURED CLAIMANT TO COOPERATE.

(a) Upon written request by the insured and subject to the options contained in Section 6 of these Conditions and Stipulations, the Company, at its own cost and without unreasonable delay, shall provide for the defense of such insured in litigation in which any third party asserts a claim adverse to the title or interest as insured but only as to those stated causes of action alleging a defect, lien or encumbrance or other matter insured against by this policy. The Company shall have the right to select counsel of its choice (subject to the right of such insured to object for reasonable cause) to represent the insured as to those stated causes of action and shall not be liable for and will not pay the fees of any other counsel. The Company will not pay any fees, costs or expenses incurred by an insured in the defense of those causes of action which allege matters not insured against by this policy.
(b) The Company shall have the right, at its own cost, to institute and prosecute any action or proceeding or to do any other act which in its opinion may be necessary or desirable to establish the title to the estate or interest or the lien of the insured mortgage, as insured, or to prevent or reduce loss or damage to an insured. The Company may take any appropriate action under the terms of this policy, whether or not it shall be liable hereunder, and shall not thereby concede liability or waive any provision of this policy. If the Company shall exercise its rights under this paragraph, it shall do so diligently.
(c) Whenever the Company shall have brought an action or interposed a defense as required or permitted by the provisions of this policy, the Company may pursue any litigation to final determination by a court of competent jurisdiction and expressly reserves the right, in its sole discretion, to appeal from any adverse judgment or order.
(d) In all cases where this policy permits or requires the Company to prosecute or provide for the defense of any action or proceeding, the insured shall secure to the Company the right to so prosecute or provide defense in the action or proceeding, and all appeals therein, and permit the Company to use, at its option, the name of such insured for this purpose. Whenever requested by the Company, an insured, at the Company's expense, shall give the Company all reasonable aid
(i) in any action or proceeding, securing evidence, obtaining witnesses, prosecuting or defending the action or proceeding, or effecting settlement, and
(ii) in any other lawful act which in the opinion of the Company may be necessary or desirable to establish the title to the estate or interest or the lien of the insured mortgage, as insured. If the Company is prejudiced by the failure of an insured to furnish the required cooperation, the Company's obligations to such insured under the policy shall terminate, including any liability or obligation to defend, prosecute, or continue any litigation, with regard to the matter or matters requiring such cooperation.

5. PROOF OF LOSS OR DAMAGE.

In addition to and after the notices required under Section 3 of these Conditions and Stipulations have been provided the Company, a proof of loss or damage signed and sworn to by each insured claimant shall be furnished to the Company within 90 days after the insured claimant shall ascertain the facts giving rise to the loss or damage. The proof of loss or damage shall describe the defect in, or lien or encumbrance on the title, or other matter insured against by this policy which constitutes the basis of loss or damage and shall state, to the extent possible, the basis of calculating the amount of the loss or damage. If the Company is prejudiced by the failure of an insured claimant to provide the required proof of loss or damage, the Company's obligations to such insured under the policy shall terminate, including any liability or obligation to defend, prosecute, or continue any litigation, with regard to the matter or matters requiring such proof of loss or damage.
In addition, an insured claimant may reasonably be required to submit to examination under oath by any authorized representative of the Company and shall produce for examination, inspection and copying, at such reasonable times and places as may be designated by any authorized representative of the Company, all records, books, ledgers, checks, correspondence and memoranda, whether bearing a date before or after Date of Policy, which reasonably pertain to the loss or damage. Further, if requested by any authorized representative of the Company, the insured claimant shall grant its permission, in writing, for any authorized representative of the Company to examine, inspect and copy all records, books, ledgers, checks, correspondence and memoranda in the custody or control of a third party, which reasonably pertain to the loss or damage. All information designated as confidential by an insured claimant provided to the Company pursuant to this Section shall not be disclosed to others unless, in the reasonable judgment of the Company, it is necessary in the administration of the claim. Failure of an insured claimant to submit for examination under oath,

produce other reasonably requested information or grant permission to secure reasonably necessary information from third parties as required in this paragraph, unless prohibited by law or governmental regulation, shall terminate any liability of the Company under this policy as to that insured for that claim.

6. OPTIONS TO PAY OR OTHERWISE SETTLE CLAIMS; TERMINATION OF LIABILITY.

In case of a claim under this policy, the Company shall have the following additional options:

(a) to Pay or Tender Payment of the Amount of Insurance or to Purchase the Indebtedness.

(i) to pay or tender payment of the amount of insurance under this policy together with any costs, attorneys' fees and expenses incurred by the insured claimant, which were authorized by the Company, up to the time of payment or tender of payment and which the Company is obligated to pay; or

(ii) in case loss or damage is claimed under this policy by the owner of the indebtedness secured by the insured mortgage, to purchase the indebtedness secured by the insured mortgage for the amount owing thereon together with any costs, attorneys' fees and expenses incurred by the insured claimant which were authorized by the Company up to the time of purchase and which the Company is obligated to pay.

If the Company offers to purchase the indebtedness as herein provided, the owner of the indebtedness shall transfer, assign, and convey the indebtedness and the insured mortgage, together with any collateral security, to the Company upon payment therefor.

Upon the exercise by the Company of the option provided for in paragraph a(i), all liability and obligations to the insured under this policy, other than to make the payment required in that paragraph, shall terminate, including any liability or obligation to defend, prosecute or continue any litigation, and the policy shall be surrendered to the Company for cancellation.

Upon the exercise by the Company of the option provided for in paragraph a(ii) the Company's obligation to an insured Lender under this policy for the claimed loss or damage, other than the payment required to be made, shall terminate, including any liability or obligation to defend, prosecute or continue any litigation.

(b) To Pay or Otherwise Settle With Parties Other than the Insured or With the Insured Claimant.

(i) to pay or otherwise settle with other parties for or in the name of an insured claimant any claim insured against under this policy, together with any costs, attorneys' fees and expenses incurred by the insured claimant which were authorized by the Company up to the time of payment and which the Company is obligated to pay; or

(ii) to pay or otherwise settle with the insured claimant the loss or damage provided for under this policy, together with any costs, attorneys' fees and expenses incurred by the insured claimant which were authorized by the Company up to the time of payment and which the Company is obligated to pay.

Upon the exercise by the Company of either of the options provided for in paragraphs b(i) or (ii), the Company's obligations to the insured under this policy for the claimed loss or damage, other than the payments required to be made, shall terminate, including any liability or obligation to defend, prosecute or continue any litigation.

7. DETERMINATION AND EXTENT OF LIABILITY.

This policy is a contract of indemnity against actual monetary loss or damage sustained or incurred by the insured claimant who has suffered loss or damage by reason of matters insured against by this policy and only to the extent herein described.

(a) The liability of the Company under this policy to an insured lender shall in no case exceed the least of:

(i) the Amount of Insurance stated in Schedule A, or, if applicable, the amount of insurance as defined in Section 2(c) of these Conditions and Stipulations;

(ii) the amount of the unpaid principal indebtedness secured by the insured mortgage as limited or provided under Section 8 of these Conditions and Stipulations or as reduced under Section 9 of these Conditions and Stipulations, at the time the loss or damage insured against by this policy occurs, together with interest thereon; or

(iii) the difference between the value of the insured estate or interest as insured and the value of the insured estate or interest subject to the defect, lien or encumbrance insured against by this policy.

(b) In the event the insured lender has acquired the estate or interest in the manner described in Section 2(a) of these Conditions and Stipulations or has conveyed the title, then the liability of the Company shall continue as set forth in Section 7(a) of these Conditions and Stipulations.

(c) The liability of the Company under this policy to an insured owner of the estate or interest in the land described In Schedule A shall not exceed the least of:

(i) the Amount of Insurance stated in Schedule A; or

(ii) the difference between the value of the insured estate or interest as insured and the value of the insured estate or interest subject to the defect, lien or encumbrance insured against by this policy.

(d) The Company will pay only those costs, attorneys' fees and expenses incurred in accordance with Section 4 of these Conditions and Stipulations.

8. LIMITATION OF LIABILITY.

(a) If the Company establishes the title, or removes the alleged defect, lien or encumbrance, or cures the lack of a right of access to or from the land, or cures the claim of unmarketability of title, or otherwise establishes the lien of the insured mortgage, all as insured, in a reasonably diligent manner by any method, including litigation and the completion of any appeals therefrom, it shall have fully performed its obligations with respect to that matter and shall not be liable for any loss or damage caused thereby.

(b) In the event of litigation, including litigation by the Company or with the Company's consent, the Company shall have no liability for loss or damage until there has been a final determination by a court of competent jurisdiction, and disposition of all appeals therefrom, adverse to the title, or, it applicable, to the lien of the insured mortgage, as insured.

(c) The Company shall not be liable for loss or damage to any insured for liability voluntarily assumed by the insured in settling any claim or suit without the prior written consent of the Company.

(d) The Company shall not be liable for:

(i) any indebtedness created subsequent to Date of Policy except for advances made to protect the lien of the insured mortgage and secured thereby and reasonable amounts expended to prevent deterioration of improvements; or

(ii) construction loan advances made subsequent to Date of Policy, except construction loan advances made subsequent to Date of Policy for the purpose of financing in whole or in part the construction of an improvement to the land which at Date of Policy were secured by the insured mortgage and which the insured was and continued to be obligated to advance at and after Date of Policy.

9. REDUCTION OF INSURANCE; REDUCTION OR TERMINATION OF LIABILITY.

(a) All payments under this policy, except payments made for costs, attorneys' fees and expenses, shall reduce the amount of the insurance pro tanto. However, as to an insured lender, any payments made prior to the acquisition of title to the estate or interest as provided in Section 2(a) of these Conditions and Stipulations shall not reduce pro tanto the amount of insurance afforded under this policy as to any such insured, except to the extent that the payments reduce the amount of the indebtedness secured by the insured mortgage.

(b) Payment in part by any person of the principal of the indebtedness, or any other obligation secured by the insured mortgage, or any voluntary partial satisfaction or release of the insured mortgage, to the extent of the payment, satisfaction or release, shall reduce the amount of insurance pro tanto. The amount of insurance may thereafter be increased by accruing interest and advances made to protect the lien of the insured mortgage and secured thereby, with interest thereon, provided in no event shall the amount of insurance be greater than the Amount of Insurance stated in Schedule A.

(c) Payment in full by any person or the voluntary satisfaction or release of the insured mortgage shall terminate all liability of the Company to an insured lender except as provided in Section 2(a) of these Conditions and Stipulations.

10. LIABILITY NONCUMULATIVE.

It is expressly understood that the amount of insurance under this policy shall be reduced by any amount the Company may pay under any policy insuring a mortgage to which exception is taken in Schedule B or to which the insured has agreed, assumed or taken subject, or which is hereafter executed by an insured and which is a charge or lien on the estate or interest described or referred to in Schedule A, and the amount so paid shall be deemed a payment under this policy to the insured owner.

The provisions of this Section shall not apply to an insured lender, unless such insured acquires title to said estate or interest in satisfaction of the indebtedness secured by an insured mortgage.

11. PAYMENT OF LOSS.

(a) No payment shall be made without producing this policy for endorsement of the payment unless the policy has been lost or destroyed, in which case proof of loss or destruction shall be furnished to the satisfaction of the Company.

(b)When liability and the extent of loss or damage has been definitely fixed in accordance with these Conditions and Stipulations, the loss or damage shall be payable within 30 days thereafter.

12. SUBROGATION UPON PAYMENT OR SETTLEMENT.

(a) **The Company's Right of Subrogation.**

Whenever the Company shall have settled and paid a claim under this policy, all right of subrogation shall vest in the Company unaffected by any act of the insured claimant.

The Company shall be subrogated to and be entitled to all rights and remedies which the insured claimant would have had against any person or property in respect to the claim had this policy not been issued. If requested by the Company, the insured claimant shall transfer to the Company all rights and remedies against any person or property necessary in order to perfect this right of subrogation. The insured claimant shall permit the Company to sue, compromise or settle in the name of the insured claimant and to use the name of the insured claimant in any transaction or litigation involving these rights or remedies.

If a payment on account of a claim does not fully cover the loss of the insured claimant the Company shall be subrogated

(i) as to an insured owner, to all rights and remedies in the proportion which the Company's payment bears to the whole amount of the loss; and

(ii) as to an insured lender, to all rights and remedies of the insured claimant after the insured claimant shall have recovered its principal, interest and costs of collection.

If loss should result from any act of the insured claimant, as stated above, that act shall not void this policy, but the Company, in that event shall be required to pay only that part of any losses insured against by this policy which shall exceed the amount, if any, lost to the Company by reason of the impairment by the insured claimant of the Company's right of subrogation.

(b) **The Insured's Rights and Limitations.**

Notwithstanding the foregoing, the owner of the indebtedness secured by an insured mortgage, provided the priority of the lien of the insured mortgage or its enforceability is not affected, may release or substitute the personal liability of any debtor or guarantor, or extend or otherwise modify the terms of payment, or release a portion of the estate or interest from the lien of the insured mortgage, or release any collateral security for the indebtedness.

When the permitted acts of the insured claimant occur and the insured has knowledge of any claim of title or interest adverse to the title to the estate or interest or the priority or enforceability of the lien of the insured mortgage, as insured, the Company shall be required to pay only that part of any losses insured against by this policy which shall exceed the amount, if any, lost to the Company by reason of the impairment by the insured claimant of the Company's right of subrogation.

(c) **The Company's Rights Against Non-Insured Obligors.**

The Company's right of subrogation against non-insured obligors shall exist and shall include, without limitation, the rights of the insured to indemnities, guaranties, other policies of insurance or bonds, notwithstanding any terms or conditions contained in those instruments which provide for subrogation rights by reason of this policy.

The Company's right of subrogation shall not be avoided by acquisition of the insured mortgage by an obligor (except an obligor described in Section 1(a)(ii) of these Conditions and Stipulations) who acquires the insured mortgage as a result of an indemnity, guarantee, other policy of insurance, or bond and the obligor will not be an insured under this policy, notwithstanding Section 1(a)(i) of these Conditions and Stipulations.

13. ARBITRATION.

Unless prohibited by applicable law, either the Company or the insured may demand arbitration pursuant to the Title Insurance Arbitration Rules of the American Arbitration Association. Arbitrable matters may include, but are not limited to, any controversy or claim between the Company and the insured arising out of or relating to this policy, any service of the Company in connection with its issuance or the breach of a policy provision or other obligation. All arbitrable matters when the Amount of Insurance is $1,000,000 or less shall be arbitrated at the option of either the Company or the insured. All arbitrable matters when the Amount of Insurance is in excess of $1,000,000 shall be arbitrated only when agreed to by both the Company and the insured. Arbitration pursuant to this policy and under the Rules in effect on the date the demand for arbitration is made or, at the option of the insured, the Rules in effect at Date of Policy shall be binding upon the parties. The award may include attorneys' fees only if the laws of the state in which the land is located permit a court to award attorneys' fees to a prevailing party. Judgment upon the award rendered by the Arbitrator(s) may be entered in any court having jurisdiction thereof.

The law of the situs of the land shall apply to an arbitration under the Title Insurance Arbitration Rules.

A copy of the Rules may be obtained from the Company upon request.

14. LIABILITY LIMITED TO THIS POLICY; POLICY ENTIRE CONTRACT.

(a) This policy together with all endorsements, if any, attached hereto by the Company is the entire policy and contract between the insured and the Company. In interpreting any provision of this policy, this policy shall be construed as a whole.

(b) Any claim of loss or damage, whether or not based on negligence, and which arises out of the status of the lien of the insured mortgage or of the title to the estate or interest covered hereby or by any action asserting such claim, shall be restricted to this policy.

(c) No amendment of or endorsement to this policy can be made except by a writing endorsed hereon or attached hereto signed by either the President, a Vice President, the Secretary, an Assistant Secretary, or validating officer or authorized signatory of the Company.

15. SEVERABILITY.

RECLAMATION PLAN
LEBATA BIG ROCK CREEK
AGGREGATE SURFACE MINE AND PROCESSING FACILITIES

AUGUST 2014

ATTACHMENT C

Statement of Responsibility

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STATEMENT OF RESPONSIBILITY (SOR)

Reference SMARA 2772.C.10

In consideration of approval by the lead agency of this application for a Surface Mining Permit and/or Reclamation Plan, the undersigned, jointly and severally, hereby covenant with the lead agency and the Department of Conservation as follows:

MINE NAME: Lebata Big Rock Creek Surface Mining Project

CALIFORNIA MINE ID #: 91-

LEAD AGENCY: Los Angeles County

CONDITIONAL USE PERMIT #: R2007-00670 and SMP 200700001

I hereby acknowledge that all of the provisions of said permit and reclamation plan, and any and all conditions appended thereto shall be faithfully performed and completed by the undersigned within the time therein provided, or within any additional time as may be allowed pursuant to the Surface Mining Ordinance Code of the lead agency and with the applicable requirements of Articles 1 and 9 (commencing with section 3500 et seq., respectively) of chapter 8, division 2, title 14, of the California Code of Regulations, the Surface Mining and Reclamation Act of 1975 (SMARA), as amended (section 2710 et seq. of the Public Resources Code) which are incorporated herein by reference.

That the obligations of the undersigned to perform and complete the provisions of said permit and/or plan, including any and all conditions appended thereto, shall be subject to the provisions of said Ordinance Code and SMARA and the State Mining and Geology Board's implementing regulations and guidelines.

That the place of performance by the undersigned of the covenants herein, shall be the area managed by the lead agency in the State of California.

That, pursuant to Public Resources Code section 2774.1 (a) notice procedures, any notice required to be given, or otherwise given to the undersigned may be by personal service or by certified mail.

Owner of Operation Business Structure: (check one)

- [x] Corporation
- [ ] Limited Liability Corporation
- [ ] General Partnership
- [ ] Limited Partnership
- [ ] Individual

Check one:

[ ] **I have** posted an adequate financial assurance mechanism pursuant to Public Resources Code section 2773.1 that is equal to or greater than the lead agency approved financial assurance cost estimate. **Date Posted:** _____

Mechanism Type (check one)

[ ] Surety Bond [ ] Certificate of Deposit [ ] Letter of Credit [ ] Other: _____

Or

[x] **I will** post an adequate financial assurance mechanism, pursuant to Public Resources Code section 2773.1 that is equal to or greater than the lead agency approved financial assurance cost estimate.

Mechanism Type (check one)

[x] Surety Bond [ ] Certificate of Deposit [ ] Letter of Credit [ ] Other: _____

Dated this 17 **day of** October, **20** 14

Lebata, Inc.

Printed Name of Owner of Operation

Signature of Owner of Operation
(to be acknowledged by a Notary Public)

FOR DEPARTMENT USE ONLY
(completed by staff after approval of project)

SMARA Database Entry Date _____ Analyst Initials _____

STATEMENT OF RESPONSIBILITY (SOR)

INSTRUCTIONS FOR AN EXISTING MINING OPERATION

Surface mining operations are subject to the requirements of the Surface Mining and Reclamation Act (Public Resources Code 2710 et seq., California Code of Regulations, title 14, section 3500 et seq.) and applicable administrative regulations as well as lead agency (LA) ordinance requirements. When a new mine site operator is going to assume legal and operational responsibility for an existing mining operation in California, it is required to file a Statement of Responsibility (SOR). (Reference PRC section 2772(c)(10)). This statement formally notifies the LA and the State Department of Conservation (Department) that a new individual and/or company is assuming all permitted responsibility for operating the mining site in compliance with the LA-approved Surface Mining Permit and Reclamation Plan, local ordinances, the Surface Mining and Reclamation Act of 1975 (SMARA), associated regulations, and guidelines. If the mining operation will be assumed by someone other than the legal landowner of the property, written authorization from the property owner(s) of record is also required.

The attached forms include places to provide the LA and the Department with the pertinent contact information for the new mine site operator and other information related to the mine site. The SOR form should be signed and acknowledged by a Certified Public Notary and returned, together with the other requested information, to the LA. Once a determination is made by LA staff that the forms have been properly filled out and executed, the LA will notify the Department of the change, and copy the new mine site operator.

Before filing a SOR to assume legal and operational responsibility for a mining operation, the new mine site operator should secure a copy of the approved surface mining permit and reclamation plan from the current or previous property owner and become thoroughly familiar with the requirements that the LA has imposed with respect to the affected mine site.

Additionally, the new mine site operator should request the property owner provide a copy of the latest Surface Mining Inspection Report (MRRC-1) prepared by the LA's Mining Inspector and a copy of the latest State Mining Operation Annual Report (MRRC-2) filed with the Department and the LA.

Once the new mine site operator has received written confirmation that this filing has been satisfactorily completed, a new financial assurance mechanism must be submitted to the lead agency and reviewed by the Department before existing financial assurance instruments of the previous mine operator can be released by the LA and the Department. (Reference: CCR section 3805.5)

In order to ensure that the required forms have been properly executed, please include the following appropriate documentation with your submittal:

1) If the mining operation has been acquired through a change in ownership, the signatures of all the legal owners of record for that property must be included on the SOR.

2) If the new or current property owners will be allowing mining operations to be assumed by a third party, a separate letter of authorization to assume this mining operation, signed by each new owner of record, shall be submitted.

3) If the person filing the SOR is acting on behalf of a corporation, a resolution from the corporation's board of directors should be submitted which provides authority for this filing and which indicates who has the ability to execute the statement on behalf of the corporation. A minimum of two (2) signatures are required.

4) If the person filing the SOR is acting on behalf of a Limited Liability Company, a copy of the company's Articles of Organization must be submitted which clearly indicate who has authority to execute the statement on behalf of the company.

5) If the person filing the SOR is acting on behalf of a General Partnership, verification is required to ensure that the signatory is a current partner.

6) If the person filing the SOR is acting on behalf of a Limited Partnership, a copy of the partnership agreement must be submitted which indicates who is designated as a general partner within the partnership. Only a general partner may sign the SOR on behalf of the partnership.

NOTIFICATION OF ASSUMPTION OF LEGAL AND OPERATIONAL AUTHORITY

FOR AN EXISTING OR NEW SURFACE MINE

Lebata Big Rock Creek

MINE NAME: Surface Mining Project **CALIFORNIA MINE ID #:** 91-

EFFECTIVE ASSUMPTION DATE: est. 11-05-2014

NEW OWNER OF OPERATION

1. NAME: Lebata, Inc.
   MAILING ADDRESS: 4621 Teller Avenue
   CITY/STATE/ZIP: Newport Beach, CA 92660
   BUSINESS PHONE: 949-640-0500 FAX: 949-640-4015
   CELL PHONE: EMAIL: jimmcgee@mcgee-law.com

LANDOWNER

[X] Same as #1

2. NAME:
   MAILING ADDRESS:
   CITY/STATE/ZIP:
   BUSINESS PHONE: FAX:
   CELL PHONE: EMAIL:

ON-SITE CONTACT

[ ] Same as #1

3. NAME: Dan Brown EMAIL: dbrown@assocrmc.com
   BUSINESS PHONE: 949-253-2800 CELL PHONE:

DESIGNATED AGENT

[ ] Same as #1

4. NAME: James McGee
   MAILING ADDRESS: 23 Corporate Plaza, Suite 230
   CITY/STATE/ZIP: Newport Beach, CA 92660
   BUSINESS PHONE: 949-640-0500 FAX: 949-640-4015
   CELL PHONE: EMAIL: jimmcgee@mcgee-law.com

PERSON AUTHORIZED BY OPERATION OWNER TO SIGN MINING OPERATION ANNUAL REPORTS (MRRC-2)

[X] Same as #1

5. NAME:
   MAILING ADDRESS:
   CITY/STATE/ZIP:
   BUSINESS PHONE: FAX:
   CELL PHONE: EMAIL:

I, the undersigned new owner of the above mining operation, do hereby submit to and the Department of Conservation, the above information as true and accurate. Los Angeles County (Lead Agency)

SIGNATURE OF OWNER OF OPERATION

10/7/14
DATE

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of California

County of Orange }

On 10-7-2014 (Date) before me, Shelley Jo Frilot Notary Public (Here Insert Name and Title of the Officer),

personally appeared Kurt Gaillet (Name(s) of Signer(s)),

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

SHELLEY JO FRILOT
Commission # 1983519
Notary Public - California
Orange County
My Comm. Expires Jun 28, 2016

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature _____ (Signature of Notary Public)

Place Notary Seal Above

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

Description of Attached Document

Title or Type of Document: Statement of Responsibility

Document Date: 10-7-2014 Number of Pages: 3

Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: _____

☐ Individual
☐ Corporate Officer — Title(s): _____
☐ Partner — ☐ Limited ☐ General
☐ Attorney in Fact
☐ Trustee
☐ Guardian or Conservator
☐ Other: _____

Signer Is Representing: _____

RIGHT THUMBPRINT OF SIGNER
Top of thumb here

Signer's Name: _____

☐ Individual
☐ Corporate Officer — Title(s): _____
☐ Partner — ☐ Limited ☐ General
☐ Attorney in Fact
☐ Trustee
☐ Guardian or Conservator
☐ Other: _____

Signer Is Representing: _____

RIGHT THUMBPRINT OF SIGNER
Top of thumb here

RECLAMATION PLAN
LEBATA BIG ROCK CREEK
AGGREGATE SURFACE MINE AND PROCESSING FACILITIES

AUGUST 2014

ATTACHMENT D

Draft Financial Assurance Cost Estimate

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SESPE
CONSULTING, INC.

468 Poli Street, Suite 2E • Ventura, California 93001

FINANCIAL ASSURANCE COST ESTIMATE

Big Rock Creek

Antelope Valley

County of Los Angeles, CA

CA Mine ID: Not Yet Assigned

September 8, 2014

Prepared for:	Lebata, Inc. c/o McGee & Associates 23 Corporate Plaza, Suite 230 Newport Beach, CA 92660 (949) 640-0500
Prepared by:	Sespe Consulting, Inc. 468 Poli Street, Suite 2E Ventura, CA 93001 (805) 275-1515

FINANCIAL ASSURANCE COST ESTIMATE

Big Rock Creek
Los Angeles County, California

CA Mine ID: Not Yet Assigned

September 8, 2014

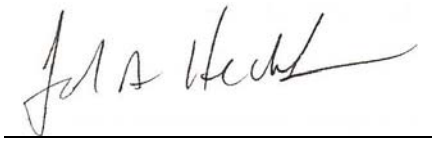
Certification Statement

This Financial Assurance Cost Estimate was prepared based on:

- Public Resources Code Section 2207(a)(9) and 2773.1;
- California Code of Regulations Title 14 Section 3804; and
- State Mining and Geology Board Financial Assurance Guidelines (revision dated January 16, 1997-A; July 23, 2004).

I hereby certify that:

- I am familiar with the requirements of the Surface Mining and Reclamation Act of 1975 and the Public Resources Code Section 2710.
- This Financial Assurance Cost Estimate has been prepared in accordance with good engineering practice.



John A. Hecht, P.E.
President
Sespe Consulting, Inc.

FINANCIAL ASSURANCE COST ESTIMATE

Big Rock Creek
Los Angeles County, California

CA Mine ID: Not yet assigned

September 8, 2014

TABLE OF CONTENTS

FINANCIAL ASSURANCE COST ESTIMATE

Big Rock Creek
Los Angeles County, California

CA Mine ID: Not yet assigned

September 8, 2014

1.0 EXECUTIVE SUMMARY

This Financial Assurance Cost Estimate (FACE) has been prepared for the Big Rock Creek site located in the Antelope Valley in an unincorporated area of Los Angeles County, California.

This FACE covers the period of one (1) year of the pre-production mining phase. The site is currently being permitted and operations have not begun.

The total reclamation cost was calculated to be $340,198.

2.0 BACKGROUND

The site is currently being permitted; at this time there are no active mining activities at the site.

The amount of Financial Assurance required is based on the anticipated mining and operating activities during the first year of operation after approval of the project. During this period, the operator will be in the pre-production mining phase. The pre-production mining phase is scheduled to last five (5) years and mine approximately 4 million tons of material. The operator anticipates mining about 75% percent of the average annual pre-production throughput during the first year of operation, or approximately 600,000 tons. This volume of mining will produce approximately 130,000 tons of excess unusable material, 50% of which is assumed will be stockpiled on site at any one time.

The amount of the proposed Financial Assurance is adequate to cover the cost of returning the land to a state as required by the proposed Reclamation Plan; however, the final amount may need adjusting after approval of the project because of mitigation measures and conditions of approval that are placed on the project.

During the first year of operations, the operator anticipates conducting the following tasks:

- Position temporary mining facilities (i.e. portable plants) and equipment to process mined material during pre-production;
- Excavate approximately 600,000 tons (400,000 cubic yards) of material from the pre-production areas;
- Cut and compact haul roads;
- Construct landscape berms per the approved reclamation plan;
- Stockpile 65,000 tons (43,500 cubic yards) of fines; and
- Stockpile 4,500 tons (3,000 cubic yards) of topsoil and subsoil.

The primary objective of the Reclamation Plan is to reclaim the site as open space, or possibly for use for groundwater recharge.

2.1 Current and Projected Site Conditions

The site is approximately 310 acres in size and is currently undeveloped. There are no mining operations or other industrial activities taking place at the site at this time. Currently, the site is undisturbed (0 acres disturbed). This FACE was prepared assuming that approximately 11 acres will be disturbed during the first year based on the estimated pre-production total disturbance of 55 acres over 5 years. Appendix 1 presents site figures.

2.2 Reclamation Activities

The following reclamation activities presented in the SMARA Financial Assurance Guidelines ("SMARA Guidelines") would need to be completed if the site were to be abandoned within the first year of operations:

- **Decompaction of staging / stockpile areas:** Decompact, scarify, and regrade compacted areas (roadways and plant area).
- **Plant and equipment removal**: Temporary portable plant equipment will be removed from the site. No permanent plants or buildings will be used at the site during the pre-production phase.
- **Topsoil replacement / redistribution**: Transport and distribute 4,500 tons (3,000 cubic yards) of topsoil from landscape berms around the processing area. Transport and distribute 65,000 tons (43,500 cubic yards) of stockpiled fines into cut portion of the pre-production mining area.
- **Finish grading:** The disturbed area will need to be graded to final contours.
- **Well closure:** This estimate assumes that one (1) water well will have to be removed.
- **Revegetation:** The disturbed surface area of the site (pre-production and processing area) will be seeded.
- **Monitoring:** Revegetation monitoring to ensure adequate reclamation.

To ensure adequate reclamation of the site, this estimate assumes the following additional task will be performed as a part of reclamation:

- **Miscellaneous:** A Phase I Environmental Site Assessment will be prepared to assist the lead agency in determining the condition of the site and to identify issues that should be addressed as a part of reclamation.

The tasks listed above are discussed in Sections 3 through 7 of this document and cost calculations are presented in Appendix 2.

The following common reclamation activities would not need to be completed given the current site conditions and activities anticipated over the first year of the project:

- **Removal of haul / access roads:** No paved roads are expected to be constructed during the first year of operation.
- **Plant and buildings**: No permanent plant or buildings will be used at the site during the pre-production phase.
- **Cleanup of boneyard areas:** There are no boneyard areas currently at the site or anticipated during the first year of operation.
- **Remediation of soil contamination**: There is no known soil contamination at this site.

- **Establish access restrictions**: The site will be reclaimed as open space. Access restrictions are not necessary.

2.3 Cost Estimate Calculation Methodology

This FACE is based on the remaining activities necessary to implement the Reclamation Plan for the site. It includes the cost of required physical improvements as well as various indirect costs, including mobilization and contingencies as described by the California State Mining and Geology Board's (SMGB) *Financial Assurance Guidelines.*

Where possible, specific unit equipment and labor costs were used. The cost and unit efficiency / capacity data were obtained from the following sources:

- *Means Heavy Construction Cost Data, 28th Annual Edition, 2014*;
- State Prevailing Wage Rates or "SPWR" (*General Prevailing Wage Determination Made by the Director of Industrial Relations, Pursuant to California Labor Code Part 7, Chapter 1, Article 2, Sections 1770, 1773, and 1773.1;* http://www.dir.ca.gov/dlsr/pwd/Southern.html), effective through June 30, 2015 (as modified by predetermined rate increases), to determine labor rates;
- CalTrans Equipment Rates *(Labor Surcharge and Equipment Rental Rates (Cost of Equipment Ownership)),* effective April 1, 2014 through March 31, 2015 to determine equipment rental rates; and
- Caterpillar Handbook *(Caterpillar Performance Handbook, Edition 42*) to determine equipment capacity and cycle times.

The Office of Mine Reclamation (OMR) developed an MS Excel version of Appendix A-1 of the *Financial Assurance Guidelines* to assist lead agencies and operators preparing reclamation cost estimates in conformance with Section 2773.1 of SMARA. This tool was used to calculate estimated reclamation costs (see Appendix 2).

3.0 PRIMARY RECLAMATION ACTIVITIES

This section presents details regarding the primary reclamation tasks and the methodology used to calculate the costs for each. Appendix 2 presents detailed calculations for each task as well as a summary of costs.

3.1 Distribute Topsoil

Approximately 3,000 cubic yards of topsoil from the landscape berms will be spread over the processing area.

Two (2) Caterpillar 772 trucks will transport the topsoil to the processing area (average haul distance of 500 feet) and one loader will load the trucks. It is assumed that each haul truck round trip takes 15 minutes. A Caterpillar D8R dozer will then spread the material at a rate of 1,050 tons per hour (based on the Caterpillar Performance Handbook [CPH]). A water truck will be utilized to control emissions for 25% of the equipment use duration.

CalTrans rental rates were used to determine the rental cost of the equipment. Hourly rates for the equipment operators were obtained from SPWR.

3.2 Distribute Stockpiled Fines

Approximately 43,500 cubic yards of stockpiled fines will be transported an average of about 500 feet and distributed inside the cut portion of the pre-production mining area.

Four (4) Caterpillar 772 trucks will transport the topsoil to the processing area (average haul distance of 500 feet) and one loader will load the trucks. It is assumed that each haul truck round trip takes 15 minutes. A Caterpillar D8R dozer will then spread the material at a rate of 1,050 tons per hour (based on CPH). A water truck will be utilized to control emissions for 25% of the equipment use duration.

CalTrans rental rates were used to determine the rental cost of the equipment. Hourly rates for the equipment operators were obtained from SPWR.

3.3 Decompact and Grade Compacted Areas

Before revegetation, it is assumed that 11 acres (479 MSF) of compacted surfaces will be decompacted and graded to smooth contours. This is conservatively based on the total disturbed area during the first year.

A Caterpillar 160H grader can decompact 1 acre per hour. A second pass will then be conducted to finish grade the area. A water truck will be utilized to control emissions for 25% of the total grader time.

CalTrans rental rates were used to determine the rental cost of the equipment. Hourly rates for the equipment operators were obtained from SPWR.

3.4 Well Closure

This estimate assumes that there will be one 500 foot well at the site that must be closed.

RS Means 024113.76-0500 is used to estimate the cost of pump removal and RS Means 024113.76-100 is used to calculate the cost of well screen and casing removal. Note that the Means costs used in this estimate were increased by 1.9% to account for the location of the site.

4.0 REVEGETATION

This section presents details regarding the revegetation tasks remaining and the methodology used to calculate the costs for each. Appendix 2 presents detailed calculations for each task as well as a summary of costs.

All of the disturbed area, about 11 acres (479 MSF), will be seeded with a native seed mix.

RS Means Section 329219.14-5700 was used to determine the labor, equipment, and material costs. Note that the Means costs used in this estimate were increased by 1.9% to account for the location of the site.

Monitoring

Costs to monitor the revegetation efforts are addressed in Section 7 of this document.

5.0 PLANT STRUCTURE AND ANCILLARY EQUIPMENT REMOVAL

The plant equipment and associated support structures used during the pre-production phase will be temporary and portable; therefore, the salvage value of the equipment is assumed to be greater than the removal cost (i.e. cost to haul equipment away). A contingency cost of $2,000 is assigned for this task to account for equipment mobilization and other associated costs.

Permanent processing structures and equipment will not be installed at the site during the pre-production phase.

6.0 MISCELLANEOUS COSTS

This estimate assumes that a Phase I Environmental Site Assessment will be prepared to assist the lead agency in determining the condition of the site and identifying any issues that should be addressed as a part of reclamation.

7.0 MONITORING / MAINTENANCE

The Reclamation Plan calls for monitoring to evaluate the success of revegetation and subsequent native plant growth over time and to implement contingency measures in the event that the specified performance criteria are not achieved.

Maintenance

Removal of non-native weeds will be conducted twice each year for three (3) years. A combination of mechanical and chemical methods will be used. Mechanical treatment will involve the use of a weed trimmer, where necessary, to remove large stands of tall invasive species, such as castor bean or fennel. Cut stems will be sprayed with Roundup. This estimate assumes that each site visit will require two (2) landscape maintenance laborers two (2) days each to conduct maintenance activities (i.e., 8 man days or 64 man hours per year).

Monitoring / Reporting

This estimate assumes that annual visits will be performed, and a report prepared, by a qualified biologist for five (5) years. The following activity level was assumed:

- Prepare for and conduct an annual site visit (biologist, 8 hours, $105/hour); and
- Prepare an annual report (biologist, 8 hours, $105/hour).

The biologist rate of $105/hour was provided by Aspen Environmental (see Appendix 3).

8.0 INDIRECT COSTS

Supervision

Project inspection and supervision is usually performed by a consultant or staff member with experience in reclamation of disturbed lands. Management activities include but are not limited to recommending change orders, verifying completed work, and verifying compliance with project specifications. The cost factor for management was automatically calculated by the OMR spreadsheet based on Graph 1 in the Financial Assurance Guidelines.

Profit and Overhead

In the event that a third party must be retained to do the reclamation work, profit and overhead costs must be added to the total reclamation cost estimate. Profit and overhead are not included in the reclamation cost sheets. The cost factor for profit and overhead was automatically calculated by the OMR spreadsheet based on Graph 2 in the Financial Assurance Guidelines.

Contingencies

Contingency costs are included in the financial assurance estimates to provide for project uncertainties and unexpected natural events. A contingency cost was automatically calculated by the OMR spreadsheet based on “C” in Section VI in the Financial Assurance Guidelines.

Mobilization

Mobilization costs are required to move equipment to the project site for reclamation activities. These costs normally range from 1% to 5%of the total direct cost of the reclamation activities and vary depending upon the site location. A mobilization cost of 5% of the total direct cost of reclamation is assumed in this FACE.

Lead Agency Administrative Cost

An administrative cost of 10% of the total direct and indirect costs has been included in the FACE to account for lead agency costs to implement the Reclamation Plan.

APPENDIX 1

FIGURES

See Reclamation Plan Attachment A

APPENDIX 2

RECLAMATION COST CALCULATIONS

Financial Assurance Guidelines

Department of Conservation
Financial Assurance Cost Estimate
Form OMR-23 **(BETA VERSION)**

FINANCIAL ASSURANCE COST ESTIMATE

FOR

Big Rock Creek

CA MINE ID #91- Not yet assigned

Prepared by:

Sespe Consulting, Inc.
468 Poli Street, Suite 2E
Ventura, CA 93001

Date: 9/4/2014

Note: This worksheet should be used in conjunction with the *Financial Assurance Guidelines* adopted by the State Mining and Geology Board, and good cost estimating practices.

I. PRIMARY RECLAMATION ACTIVITIES

Description of Task:

Distribute topsoil from landscape berms over processing area.

Methods to be Used:

Approximately 4,500 tons of topsoil (3,000 cubic yards) from the landscape berms will be spread over the processing area. Two trucks will transport the material, one loader will load the trucks, and one dozer will spread the material. A water truck will be used 25% of the time.

Miscellaneous Information

Topsoil quantity (tons)	4,500	Haul Size (tons)	50	Dozer Rate (tph)	1,050
Average haul distance (ft)	500	Haul duration (hrs)	23	Dozer duration (hrs)	5
Haul truck cycles/hr	4	Loader duration (hrs)	12	Water truck (hrs)	3

A. Equipment - List equipment required to complete identified task. For large reclamation jobs separate mine areas for ease of accounting

Equipment	$/Hour	# of Hours	Cost ($)
Cat 772 Truck (2 total)	$259.18	23	$5,961
980H Loader (1 total)	$234.94	12	$2,819
Caterpillar D8R (1 total)	$204.08	5	$1,020
6,000 gal Water Truck (1 total)	$64.33	3	$193

Total Equipment Cost for this Task = $9,994

B. Labor - List all labor categories to complete identified task

Labor Category	$/Hour	# of Man-hours	Cost ($)
Group VIII Teamster (2 total)	$53.61	23	$1,233
Group 8 Operating Engineer (1 total)	$65.78	12	$789
Group 8 Operating Engineer (1 total)	$65.78	5	$329
Group V Teamster (1 total)	$53.08	3	$159

Total Labor Cost for this Task = $2,511

C. Materials - List all materials required to complete identified task (include disposal costs).

Item	Quantity	$/Unit	Cost ($)
(None)	0.00	$0.00	$0
	0.00	$0.00	$0
	0.00	$0.00	$0

Total Materials Cost for this Task = $0

D. Direct Cost for this Task

Equipment Cost + Labor Cost + Materials Cost = **$12,504**

I. PRIMARY RECLAMATION ACTIVITIES

Description of Task:

Distribute stockpiled fines inside the cut portion of Phase 1, Block 1.

Methods to be Used:

Approximately 65,000 tons of fines (43,500 cubic yards) from the fines piles will be spread over the pre-production and processing area. Four trucks will transport the material, one loader will load the trucks, and one dozer will spread the material. A water truck will be used 25% of the time.

Miscellaneous Information

Fines quantity (tons)	65,000	Haul Size (tons)	50	Dozer Rate (tph)	1,050
Average haul distance (ft)	500	Haul duration (hrs)	325	Dozer duration (hrs)	62
Haul truck cycles/hr	4.0	Loader duration (hrs)	81	Water truck (hrs)	20

A. Equipment - List equipment required to complete identified task. For large reclamation jobs separate mine areas for ease of accounting

Equipment	$/Hour	# of Hours	Cost ($)
Cat 772 Truck (4 total)	$259.18	325.0	$84,234
980H Loader (1 total)	$234.94	81.0	$19,030
Caterpillar D8R (1 total)	$204.08	62.0	$12,653
6,000 gal Water Truck (1 total)	$64.33	20.3	$1,303

Total Equipment Cost for this Task = $117,219

B. Labor - List all labor categories to complete identified task

Labor Category	$/Hour	# of Man-hours	Cost ($)
Group VIII Teamster (4 total)	$53.61	325.0	$17,423
Group 8 Operating Engineer (1 total)	$65.78	325.0	$21,379
Group 8 Operating Engineer (1 total)	$65.78	325.0	$21,379
Group V Teamster (1 total)	$53.08	325.0	$17,251

Total Labor Cost for this Task = $77,431

C. Materials - List all materials required to complete identified task (include disposal costs).

Item	Quantity	$/Unit	Cost ($)
(None)	0.00	$0.00	$0
	0.00	$0.00	$0
	0.00	$0.00	$0

Total Materials Cost for this Task = $0

D. Direct Cost for this Task

Equipment Cost + Labor Cost + Materials Cost = **$194,651**

I. PRIMARY RECLAMATION ACTIVITIES

Description of Task:

Decompact and grade processing area and roadways (assumed to be entire disturbed area of 11 acres)

Methods to be Used:

A Caterpillar 160H grader can decompact 1 acre per hour. A second pass will be conducted to grade the areas. To control dust emissions, a water truck will be utilized for 25% of the total task time.

Miscellaneous Information

Area to decompact (acres)	11	Water Truck (hrs)	6		
Grader rate (acres/hr)	1				
Grader duration (hrs)	22				

A. Equipment - List equipment required to complete identified task. For large reclamation jobs separate mine areas for ease of accounting

Equipment	$/Hour	# of Hours	Cost ($)
Caterpillar 160 H (1 total)	$117.14	22.0	$2,577
6,000 gal Water Truck (1 total)	$64.33	6.0	$386
	$0.00	0.0	$0
	$0.00	0.0	$0

Total Equipment Cost for this Task = $2,963

B. Labor - List all labor categories to complete identified task

Labor Category	$/Hour	of Man-hours	Cost ($)
Group 8 Operating Engineer (1 total)	$65.78	22.0	$1,447
Group V Teamster (1 total)	$53.08	6.0	$318
	$0.00	0.0	$0
	$0.00	0.0	$0

Total Labor Cost for this Task = $1,766

C. Materials - List all materials required to complete identified task (include disposal costs).

Item	Quantity	$/Unit	Cost ($)
(None)	0.00	$0.00	$0
	0.00	$0.00	$0
	0.00	$0.00	$0

Total Materials Cost for this Task = $0

D. Direct Cost for this Task

Equipment Cost + Labor Cost + Materials Cost = **$4,729**

I. PRIMARY RECLAMATION ACTIVITIES

Description of Task:

A 500 foot well will be abandoned.

Methods to be Used:

RS Means 024113.76-0500 is used for the pump removal task and RS Means 024113.76-1000 is used for the well screen and casing removal task. The Means cost was increased by 1.9% to account for the RS Means location factor for Mojave.

Miscellaneous Information

# of wells	1		
Vertical Linear Feet	500		

A. Equipment - List equipment required to complete identified task. For large reclamation jobs separate mine areas for ease of accounting

Equipment	$/Unit	# of Units	Cost ($)
RS Means 024113.76-0500	$677.64	1.0	$678
RS Means 024113.76-1000	$9.78	500.0	$4,891
	$0.00	0.0	$0
	$0.00	0.0	$0

Total Equipment Cost for this Task = $5,569

B. Labor - List all labor categories to complete identified task

Labor Category	$/Unit	# of Units	Cost ($)
RS Means 024113.76-0500	$845.77	1.0	$846
RS Means 024113.76-1000	$5.03	500.0	$2,517
	$0.00	0.0	$0
	$0.00	0.0	$0

Total Labor Cost for this Task = $3,363

C. Materials - List all materials required to complete identified task (include disposal costs).

Item	Quantity	$/Unit	Cost ($)
(None)	0.00	$0.00	$0
	0.00	$0.00	$0
	0.00	$0.00	$0

Total Materials Cost for this Task = $0

D. Direct Cost for this Task

Equipment Cost + Labor Cost + Materials Cost = **$8,932**

II. REVEGETATION

Description of Task:

Revegetation

Methods to be Used:

The entire disturbed area (approximately 11 acres or 479 MSF) will be seeded with a native seed mix. RSMeans 329219.14-5700 (tractor spreader and wildflower seeds) is used for labor, equipment, and material costs. The costs were increased by 1.9% to account for the RS Means location factor for Mojave.

A. Equipment - List equipment required to complete identified task.

Equipment	$/MSF	# of MSF	Cost ($)
RS Means Section 329219.14-5700	$5.08	479	$2,436
	$0.00	0.0	$0
	$0.00	0.0	$0

Total Labor Cost for this Task = $2,436

B. Labor - List all labor categories to complete identified task.

Labor Category	$/MSF	# of MSF	Cost ($)
RS Means Section 329219.14-5700	$7.39	479	$3,538.7
	$0.00	0.0	$0.0
	$0.00	0.0	$0.0

Total Equipment Cost for this Task = $3,539

C. Materials - List all material required to complete identified task.

Item / Plant Species	Unit of Measure	# of Units	$/Unit	Cost ($)
RS Means Section 329219.14-5700	MSF	479	$1.83	$879
		0.0	$0.00	$0
		0.0	$0.00	$0
		0.0	$0.00	$0
		0.0	$0.00	$0
		0.0	$0.00	$0
		0.0	$0.00	$0

Total Materials Cost for this Task = $879

D. Direct Cost for this Task

Equipment Cost + Labor Cost + Materials Cost = **$6,853**

III. PLANT STRUCTURES AND EQUIPMENT REMOVAL

Description of Task:

Remove plant structures and equipment.

Methods to be Used:

The plant equipment and associated support structures used during the pre-production phase will be portable; therefore, the salvage value of the equipment is assumed to be greater than the removal cost (i.e. cost to haul away). A contingency cost of $2,000 is assigned for this task to account for equipment mobilization and other associated costs.

A. Equipment - List equipment required to complete identified task.

Equipment	$ / Each	Hours	Cost ($)
			$0
			$0
			$0
			$0

Total Labor Cost for this Task $0

B. Labor - List all labor categories to complete identified task.

Labor Category	$/Unit	Hours	Cost ($)
			$0
			$0
			$0
			$0

Total Equipment Cost for this Task $0

C. Demolition - List all structures and equipment to be dismantled or demolished.

Structure / Equipment	Type of Material	Units	Unit Cost Basis	Disposal Cost	Cost ($)
(None)					$0
					$0
					$0
					$0

Total Materials Cost for this Task $0

D. Direct Cost for this Task

Equipment Cost + Labor Cost + Demolition Cost = **$2,000**

(Sections "C" and "D" have been automated)

E. Surplus / Salvage Value

1. **Total cost to remove plant structures and equip for which salvage value is being claimed. (This is obtained from values already entered in A, B, & C above. No entry needed if salvage value is not being claimed)	$2,000
2. Net salvage value of the plant structures and equipment.* (no entry if salvage value is not being claimed)	$0
3. Subtract Line 2 from Line 1. (allowable credit for salvage value)	$0
4. Total plant structure and misc structure demo costs	$2,000

*NOTE This is the value of plant structures, buildings and equipment on a salvage basis -- e.g. after the structures and equipment have been removed for sale or use off-site. In order to include net salvage value in the financial assurance calculation, the operator must provide a letter of agreement, signed contract, bid, or quote from an independent company which provides industrial dismantling or equipment salvage services, or is in the business of buying and selling scrap metals or similar products.

**Note This value must be obtained by manually adding items previously entered in sections A, B, & C that are related to removal of items for which salvage value is being claimed. This manual step is necessary in order to apply salvage value only towards costs of removing equipment for which salvage is being claimed, not towards other demolition costs.

IV. MISCELLANEOUS COSTS

Examples of this type of cost could include temporary storage of equipment and materials off site, special one-time permits (I.e. transportation permits for extra wide overweight loads, etc.), decommissioning a process mill (I.e. decontamination of equipment), or disposal of warehouse inventories.

Item / Task	Quantity	$/Unit	Cost ($)
Phase 1 Site Assessment	1.0	$5,000.00	$5,000
	0.0	$0.00	$0
	0.0	$0.00	$0
	0.0	$0.00	$0
	0.0	$0.00	$0
	0.0	$0.00	$0
	0.0	$0.00	$0
	0.0	$0.00	$0
	0.0	$0.00	$0
	0.0	$0.00	$0

Total Miscellaneous Costs **$5,000.00**

V. MONITORING

Monitoring Task	$/Hour	Man Hours/Year	# of Monitoring Years	Cost ($)
Maintenance	$10.15	64.0	3.0	$1,948
Monitoring / Reporting	$105.00	16.0	5.0	$8,400
	$0.00	0.0	0.0	$0
	$0.00	0.0	0.0	$0
	$0.00	0.0	0.0	$0

Total Monitoring Costs **$10,348**

VII. SUMMARY OF COSTS

Total of all Primary Activities Costs		$211,884
Total of all Revegetation Costs		$6,853
Total of all Plant Structures & Equipment Removal Costs (corrected for salvage)		$2,000
Total of all Miscellaneous Costs		$5,000
Total of all Monitoring Costs		$10,348
	Total of Direct Costs	$236,084
Supervision (5%) (based on graph no. 1)		$11,804
Profit/Overhead (11%) (based on graph no. 2)		$25,969
Contingencies (10%) (based on "C" in section VI.)		$23,608
Mobilization (5%) (1% to 5%)		11,804.22
	Total of Indirect Costs	$73,186
	Total of Direct and Indirect Costs	$309,270
(calculated at % of Direct plus Indirect Costs)	10%) Lead Agency Administrative Cost* (Determined by the Lead Agency or OMR, SMARA 3802 (b))	$30,927
	Total Estimated Cost of Reclamation	**$340,198**

***NOTE** The Financial Assurance Guidelines recommend that when reviewing and approving a financial assurance cost estimate, lead agencies should include their administrative cost to draw on the financial assurance and implement the reclamation plan, should it become necessary.

APPENDIX 3

SUPPORTING DOCUMENTATION

ASPEN ENVIRONMENTAL RATE SHEET
CALTRANS RENTAL RATES
CATERPILLAR PERFORMANCE HANDBOOK
MEANS COST DATA
STATE PREVAILING WAGE RATE

Aspen Environmental Group
2013 - 2014 Fee Schedule

General Rate Schedule for Environmental Compliance Services

Fully Burdened Hourly Labor Rates

President	Engineer/Physical Scientist	$250.00
Principal Associate	Social Scientist/Economist	$195.00
Principal Associate II	Earth Scientist	$230.00
Principal Associate I	Earth Scientist	$195.00
Sr. Associate III	Engineer/Physical Scientist	$170.00
Sr. Associate III	Engineer/Physical Scientist	$155.00
Sr. Associate IIIa	Environ./Life Scientist	$210.00
Sr. Associate IIIb	Environ./Life Scientist	$170.00
Sr. Associate IIIa	Social Scientist/Economist	$205.00
Sr. Associate IIIb	Social Scientist/Economist	$175.00
Sr. Associate III	Earth Scientist	$165.00
Sr. Associate III	Sr. Social Scientist/Economist	$202.00
Sr. Associate III	Social Scientist/Economist	$160.00
Sr. Associate III	Management/Administraive	$105.00
Sr. Associate III	Mathematician/Computer Science	$150.00
Sr. Associate II	Environ./Life Scientist	$155.00
Sr. Associate II	Engineer/Physical Scientist	$175.00
Sr. Associate I	Project Manager/Environ./Life Scientist	$118.00
Sr. Associate I	Environ./Life Scientist	$95.00
Sr. Associate I	Earth Scientist	$125.00
Sr. Associate I	Cultural Resources	$105.00
Sr. Associate I	Engineer/Physical Scientist	$135.00
Sr. Associate I	Social Scientist/Economist	$125.00
Sr. Associate I	Mathmetician/IT/GIS	$140.00
Sr. Associate I	Management/Administraive	$100.00
Associate III	Environ./Life Scientist	$105.00
Associate III	Earth Scientist	$125.00
Associate III	Social Scientist/Economist	$100.00
Associate III	Mathmetician/IT/GIS	$118.00
Associate III	Management/Administraive	$100.00
Associate II	Environ./Life Scientist	$110.00
Associate II	Management/Administraive	$100.00
Associate II	Management/Administraive	$75.00
Associate II	Field Monitors	$101.00
Associate II	Social Scientist/Economist	$105.50
Associate II	Mathmetician/IT/GIS	$95.00
Associate I	Engineer/Physical Scientist	$75.00
Associate I	Earth Scientist	$75.00
Associate I	Environ./Life Scientist	$100.00
Associate I	Social Scientist/Economist	$87.00
Associate I	Social Scientist/Economist	$85.00
Associate I	Information Technology	$80.00
Associate I	Mathematician/Computer Science	$65.00
Associate I	Management/Administraive	$105.00
Associate I	Management/Administraive	$65.00
Associate I	Field Monitors	$95.00
Staff II	Mathematician/Computer Science	$65.00
Staff II	Engineer/Physical Scientist	$90.00
Staff II	Environ./Life Scientist	$75.00
Staff II	Earth Scientist	$72.00
Staff II	Management/Administraive	$65.00
Staff I	Field Monitors	$83.00
Staff I	Engineer/Physical Scientist	$70.00
Staff I	Mathematician/Computer Science	$50.00
Staff I	Mathmetician/IT/GIS	$74.00
Staff I	Environ./Life Scientist	$68.00
Staff I	Social Scientist/Economist	$71.00
Staff I	Management/Administraive	$65.00
Technician	Mathmetician/IT/GIS	$50.00
Technician	Management/Administraive	$42.00

*All non-labor costs (including subcontractors) will be at cost + 10% Aspen Fee

State of California
Business, Transportation, and Housing Agency

Department of Transportation
Division of Construction

Labor Surcharge and Equipment Rental Rates

(Cost of Equipment Ownership)

Effective April 1, 2014 through March 31, 2015

ELECTRIC GENERATORS & LIGHT PLANTS [ELGEN]

DELAY FACTOR = 0.11 **OVERTIME FACTOR = 0.90**

Rates are for gas or diesel power and alternating or direct current.

GENERATOR [GEN]

Rated in accordance with Mfr's output in kilowatts.

OVER	TO	Code	Rate
0	1	**000-001**	$0.89
1	3	**001-003**	$2.10
3	7.5	**003-008**	$4.30
7.5	15	**008-015**	$9.61
15	25	**015-025**	$15.10
25	50	**025-050**	$15.18
50	100	**050-100**	$27.53
100	200	**100-200**	$55.89
200	300	**200-300**	$95.66
300	400	**300-400**	$130.08
400	500	**400-500**	$162.80

LIGHTS [LITE]

Includes trailer, pole and generator.

Model	Code	Rate
2 Light Set	**2 LIGHT**	$4.19
4 Light Set	**4 LIGHT**	$8.32

ELECTRIC POWERED HAND TOOLS [ELTOL]

DELAY FACTOR = 0.61 **OVERTIME FACTOR = 0.41**

Includes electric powered, hand held tools not listed elsewhere in this book. Expendable bits, blades, discs, wheels, etc. shall be paid by separate invoice. Rated in accordance with Mfr's suggested retail price.

TOOLS [TOOL]

OVER	TO	Code	Rate
450	600	**045-060**	$0.28
600	800	**060-080**	$0.37
800	1000	**080-100**	$0.46

FORK LIFT TRUCKS [FKLFT]

DELAY FACTOR = 0.19 **OVERTIME FACTOR = 0.82**

Includes attachments and accessories. Listed in accordance with the Mfr's maximum rated capacity in kilograms(pounds).

FORK LIFT TRUCKS [FLT]

OVER	TO	Code	Rate
454 (1000)	1814 (4000)	**010-040**	$30.78
1814 (4000)	2722 (6000)	**040-060**	$41.02
2722 (6000)	3629 (8000)	**060-080**	$46.19
3629 (8000)	5443 (12000)	**080-120**	$64.45
5443 (12000)	7258 (16000)	**120-160**	$67.11
7258 (16000)	9072 (20000)	**160-200**	$78.47
9072 (20000)	11340 (25000)	**200-250**	$77.11
11340 (25000)	13608 (30000)	**250-300**	$85.40
13608 (30000)	18144 (40000)	**300-400**	$107.74
18144 (40000)	22680 (50000)	**400-500**	$127.62
22680 (50000)	34020 (75000)	**500-750**	$173.00

GRADERS [GRADR]

DELAY FACTOR = 0.10 **OVERTIME FACTOR = 0.91**

Includes ripper and scarifier attachments and all accessories. Electronic blade control and specialty cutting tools shall be paid separately.

BLADE-MOR [BMOR]

Model	Code	Rate
727	**2173**	$28.88
747	**2178**	$41.42

CATERPILLAR [CAT]

Model	Code	Rate
120G 87V serial	**2685**	$76.45
130G 74V serial	**2695**	$84.49
12E 99E serial	**2710**	$55.36
12F 73G serial	**2768**	$83.91
12F 13K serial	**2826**	$64.23
12F 89H serial	**2884**	$64.71
12G 61M serial	**2890**	$86.24
12H	**2895**	$92.97
14E 72G serial	**3174**	$86.13
14G	**3180**	$128.45
14H	**3185**	$141.40
140 14U serial	**3250**	$87.15
140G 72V serial	**3260**	$93.51
140H	**3265**	$99.44
143H	**3267**	$111.01
16 49G serial	**3290**	$112.25
16 49G800 serial	**3348**	$164.30
16 G93U serial	**3360**	$178.52
16H	**3380**	$188.29
160H	**3385**	$117.14
163H	**3390**	$122.71

JOHN DEERE [DEER]

Model	Code	Rate
JD-570A	**3890**	$50.53
JD-570B	**3892**	$58.20
JD-670	**3900**	$66.43
JD-670A	**3905**	$72.39
JD-670CH	**3907**	$92.86
JD-770	**3910**	$75.51
JD-770A, 770A-H	**3915**	$87.88
JD-770B	**3916**	$95.07
JD-772CH	**3930**	$112.93

936E	**2110**	$90.45
936F	**2120**	$93.96
938F	**2130**	$95.74
938G	**2130G**	$108.36
950 90A serial	**2228**	$71.62
950 31K & 81J serial	**2270**	$84.65
950B	**2272**	$103.78
950E	**2300**	$110.04
950F	**2301**	$115.99
950F Series II	**2303**	$119.64
950G	**2310**	$128.37
950H	**2310H**	$147.59
962G	**2320G**	$140.65
966C	**2340**	$122.29
966D	**2350**	$135.92
966E	**2360**	$149.73
966F	**2361**	$152.96
966G	**2362**	$170.96
966H	**2362H**	$197.59
970F	**2370**	$179.07
972G	**2372G**	$190.86
980B	**2376**	$158.69
980C	**2378**	$190.38
980F	**2381**	$195.99
980G	**2382**	$215.81
980H	**2382H**	$234.94
988 87A6868 serial	**2398**	$194.54
988B 50W serial	**2436**	$272.13
992B 25K serial	**2460**	$344.67
992C	**2470**	$517.96
IT 12	**2472**	$44.48
IT 12B	**2472B**	$51.75
IT 14F	**2473**	$59.84
IT 18	**2474**	$56.95
IT 18B	**2475**	$64.32
IT 28	**2476**	$69.06
IT 28B	**2477**	$74.66
IT 28F	**2477G**	$86.32
IT 28G	**2478**	$89.49
IT 38G	**2480**	$103.14
IT 62G	**2482**	$141.92

CLARK **[CLRK]**

Model	Code	Rate
35C	**2484**	$54.73
45C	**2486**	$63.95
55C	**2488**	$77.33
75C	**2491**	$100.69
125B	**2492**	$130.47
275B	**2496**	$226.21
275C	**2497**	$244.62

JOHN DEERE **[DEER]**

Model	Code	Rate
JD-210C	**2485**	$35.01
JD-210C w/ backhoe	**2490**	$34.83
JD-210LE	**2495**	$45.76
JD-310A w/ backhoe	**2504**	$36.55
JD-310B w/ backhoe	**2506**	$37.23
JD-310C w/ backhoe	**2507**	$41.09
JD-310D w/ backhoe	**2507D**	$46.04
JD-310E w/ backhoe	**2507E**	$47.08
JD-310SE w/ backhoe	**2507F**	$52.75
310G	**2507G**	$48.32
JD-315SE w/ backhoe	**2507H**	$53.37
JD-410 w/ backhoe	**2508**	$39.85
JD-410B w/ backhoe	**2509**	$40.55
JD-410C w/ backhoe	**2509F**	$47.77
JD-410D w/ backhoe	**2509G**	$56.54
JD-410E w/ backhoe	**2509H**	$59.42
410G	**2509J**	$60.73
JD-444	**2510**	$53.18
JD-444C	**2515**	$55.16
JD-444D	**2520**	$57.01
JD-444E	**2521**	$61.70
JD-500C w/ backhoe	**2592**	$51.71
JD-510 w/ backhoe	**2620**	$48.32
JD-510B w/ backhoe	**2625**	$46.09
JD-510C w/ backhoe	**2630**	$54.52
JD-510D w/ backhoe	**2630D**	$64.15
JD-544B	**2660**	$65.89
JD-544C	**2670**	$67.49
JD-544D	**2672**	$66.41
JD-544E	**2673**	$73.37
JD-544G	**2673B**	$80.40
JD-610B w/ backhoe	**2690**	$52.70
JD-610C w/ backhoe	**2691**	$60.33
JD-624E	**2700**	$87.67
JD-624G	**2700G**	$98.69
JD-624H	**2700H**	$108.16
JD-644B	**2710**	$91.08
JD-644C	**2715**	$93.98
JD-644D	**2717**	$97.46
JD-644E	**2719**	$104.88
JD-644G	**2719B**	$118.37
JD-644H	**2719H**	$126.68
644J	**2719J**	$139.13
JD-710B w/ backhoe	**2720**	$67.59
JD-710C w/ backhoe	**2721**	$74.98
JD-710D w/ backhoe	**2722**	$80.90
JD-710D 4WD w/ backhoe	**2722D**	$82.83
710G	**2722G**	$85.55

CATERPILLAR **[CAT]**

Model	Code	Rate
D-3	**2340**	$33.68
D-3B	**2345**	$37.12
D-3 LGP	**2350**	$34.29
D-3B LGP	**2355**	$38.31
D-3B SA	**2370**	$41.52
D-3C	**2380**	$39.31
D4C Series III	**2450**	$50.15
D-4D	**2655**	$40.63
D-4E direct drive	**2660**	$42.56
D-4E power shift	**2665**	$43.79
D-4H	**2670**	$55.26
D-4H LGP	**2675**	$54.92
D-4H Series II	**2680**	$56.42
D-4E SA	**2772**	$51.71
D-4E LGP power shift	**2780**	$43.98
D-4E LGP direct drive	**2782**	$43.98
D-4G XL	**2790XL**	$50.87
D-5	**3194**	$58.30
D-5B power shift	**3206**	$61.42
D-5B SA	**3325**	$67.16
D-5B LGP	**3345**	$63.97
D-5C	**3346**	$54.52
D-5H	**3347**	$73.14
D-5H Series II	**3348**	$76.93
D-5H LGP	**3350**	$76.03
D-6C direct drive	**3645**	$75.75
D-6C power shift	**3688**	$76.36
D-6C LGP	**3710**	$78.76
D-6D	**3720**	$86.57
D-6D SA	**3725**	$97.55
D-6D LGP	**3730**	$87.01
D-6H	**3732**	$98.70
D-6H Series II	**3733**	$103.08
D-6H LGP	**3735**	$103.04
D-6M LGP	**3745**	$95.21
D-6N XL	**3755**	$98.05
D-6R DS	**3800**	$108.54
D-6R XL	**3815**	$114.06
D-7G	**4180**	$129.92
D-7G LGP	**4200**	$125.94
D-7G SA	**4210**	$139.72
D-7H	**4215**	$134.58
D-7H Series II	**4216**	$143.56
D-7H LGP	**4220**	$140.75
D-8K	**4858**	$173.80
D-8L	**4862**	$207.74
D-8L SA	**4863**	$226.36
D-8N	**4864**	$185.80
D-8R	**4870**	$204.08
D-9H	**5160**	$231.85
D-9L	**5165**	$276.29
D-9N	**5170**	$235.40
D-9R	**5175**	$274.63
D-10	**5220**	$423.42
D-10N	**5225**	$339.87
D-10R	**5227**	$379.01
D-11N	**5230**	$527.87

JOHN DEERE **[DEER]**

Model	Code	Rate
JD 350C	**5360**	$37.04
JD 350D	**5365**	$41.58
JD 400G	**5405**	$34.76
JD 450C	**5474**	$37.14
JD 450D	**5476**	$38.55
JD 450E	**5478**	$39.22
JD 450G	**5479**	$42.24
JD 550	**5480**	$41.87
JD 550A	**5481**	$45.37
JD 550B	**5483**	$44.17
JD 550G	**5484**	$49.18
JD 650G	**5484A**	$55.07
JD 650H LGP	**5484H**	$58.81
JD 750	**5485**	$65.38
JD 750B	**5486**	$71.68
JD 750 LGP	**5487**	$68.19
JD 750B LGP	**5488**	$86.85
JD 850	**5490**	$85.55
JD 850B	**5491**	$98.48
JD 850 LGP	**5492**	$90.09
JD 850B LGP	**5495**	$105.35

DRESSER **[DRES]**

Model	Code	Rate
TD 7E	**9100**	$38.12
TD 7G	**9102**	$42.25
TD 8E	**9105**	$46.43
TD 8G	**9107**	$49.74
TD 12	**9110**	$66.71
TD 12 LGP	**9115**	$76.16
TD 15C	**9120**	$93.32
TD 15E	**9122**	$113.74
TD 15C LGP	**9125**	$90.58
TD 20E	**9130**	$126.17
TD 20G	**9135**	$151.79
TD 20G LGP	**9137**	$159.10
TD 25E	**9139**	$180.21
TD 25G	**9140**	$220.76

VERMEER **[VERM]**

Model	Code	Rate
CC-135	**8350**	$93.06
M 220	**8380**	$18.17
M 455 / M455A	**8480**	$41.70
M 475	**8570**	$43.92
M 475A	**8571**	$50.12
M 485	**8580**	$47.58
M 495	**8585**	$78.11
T 300B, T 300A	**8718**	$27.99
T 400C, T 400B, T 400A	**8781**	$59.66
T 600D, C, B, A	**8842**	$85.84
T 650	**8843**	$143.76
T 800B, T 800A, T800	**8870**	$137.21
T 800C	**8871**	$149.89
T 850	**8875**	$266.91
V 430	**8950**	$31.84
V 430A	**8951**	$35.70
V 434 / M 434	**9000**	$30.72
V 440	**9015**	$33.76
V 450	**9017**	$39.50
V 454	**9020**	$34.55
V 1550	**9025**	$16.91

TRUCK, TRUCK TRAILERS, EXCL. DUMP TRUCKS & EQPT TRAIL [TRUCK]

DELAY FACTOR = 0.13 **OVERTIME FACTOR = 0.88**

Includes all attachments and accessories related to hauling, with and without trailers as needed. Includes water trucks, freight trucks and passenger vehicles, including 4wd option. Listed by Mfr's Gross Vehicle Weight in Kilograms(pounds). For tractor-trailer units, the gross vehicle weight of the cargo carrying unit or units will control. In the case of water trucks, the tank capacity expressed in kilograms (pounds) of water plus 20%, will determine the gross vehicle weight. For attachment allowance, see attachment class.

TRUCKS **[T&TT]**

OVER	TO	Code	Rate
CARS , LIGHT TRUCKS		**00-06**	$21.78
3175 (7000)	5443 (12000) No small pickups	**06-12**	$27.33
5443 (12000)	9072 (20000)	**12-20**	$33.46
9072 (20000)	12701(28000)	**20-28**	$36.04
12701 (28000)	16330 (36000)	**28-36**	$45.17
16330 (36000)	21773 (48000)	**36-48**	$52.11
21773 (48000)	27216 (60000)	**48-60**	$64.33
27216(60000) & Over		**60**	$81.67

TRUCKS, OFF-HIGHWAY [TRUOF]

DELAY FACTOR = 0.18 **OVERTIME FACTOR = 0.83**

Includes all attachments and accessories. Includes end dump, belly dump and earthmover types. Listed in accordance with Mfr's rated capacity in tonnes (tons). In the case of earthmover types, rated by Mfr's volumetric capacity, a factor of 1.4 tonnes per cubic meter (1-1/2 tons per cubic yard) of struck capacity shall be used.

TRUCK OFF-HIGHWAY **[TRU]**

OVER	TO	Code	Rate
9.1 (10)	13.6 (15)	**10-15**	$49.96
16.3 (18)	20.0 (22)	**18-22**	$88.55
20.0 (22)	24.5 (27)	**22-27**	$111.01
24.5 (27)	29.0 (32)	**27-32**	$126.59
29.0 (32)	36.3 (40)	**32-40**	$172.97
36.3 (40)	49.9 (55)	**40-55**	$259.18
49.9 (55)	60.8 (67)	**55-67**	$290.56

TRUCKS, DUMP, ON-HIGHWAY [TRUON]

DELAY FACTOR = 0.15 **OVERTIME FACTOR = 0.86**

Includes all end dump, side dump and belly dump types; including all attachments and accessories.

TRUCK ON-HIGHWAY **[TRUN]**

Model	Code	Rate
2 axles	**2AXL**	$56.33
3 axles	**3AXL**	$72.07
4 axles	**4AXL**	$80.06
5 axles	**5AXL**	$90.57

WELDING EQUIPMENT [WELD]

DELAY FACTOR = 0.18 **OVERTIME FACTOR = 0.84**

ARC WELDING MACHINES **[AWM]**

Diesel, gas or electric powered. Includes helmets, holders, cable and all attachments and accessories. Rate capacity in amps.

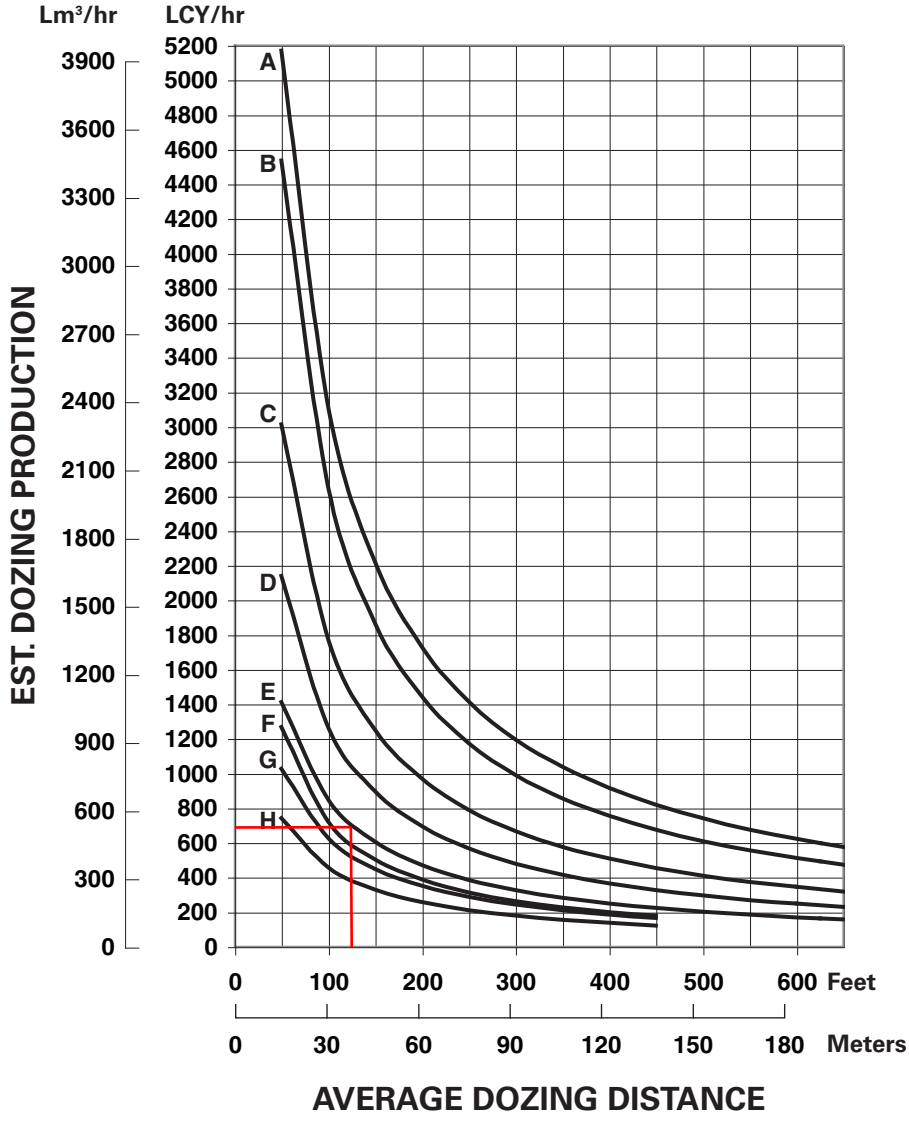
OVER	TO	Code	Rate
0	250	**0-250**	$6.24
250	500	**250-500**	$12.11
over	500	**500**	$12.32

GAS WELDING OUTFIT **[GWO]**

Includes regulator, 7.6 meters (25 feet) of hose, torch, goggles, lighter and attachments and accessories. Gas and rod shall be paid separately.

Model	Code	Rate
ALL	**ALL**	$0.25

ESTIMATED DOZING PRODUCTION ● Universal Blades ● D7G through D11T CD



KEY

A — D11T CD
B — D11T
C — D10T
D — D9T
E — D8T
F — D7E
G — D7R Series 2
H — D7G

NOTE: This chart is based on numerous field studies made under varying job conditions. Refer to correction factors following these charts.

Caterpillar D8 Dozer
Over an average 125 foot push can move 700 LCY/hr.
700 CY x 1.5 tons/CY = 1,050 tons/hr.

02 32 Geotechnical Investigations

02 32 19 – Exploratory Excavations

	02 32 19.10 Test Pits	Crew	Daily Output	Labor-Hours	Unit	2014 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1010	Difficult access for rig, add				Hr.				260	320
1020	Auger borings, drill rig, incl. samples				L.F.				26.50	33
1030	Hand auger				↓				31.50	40
1050	Drill and sample every 5', split spoon				↓				31.50	40
1060	Extra samples				Ea.				36	45.50

02 41 Demolition

02 41 13 – Selective Site Demolition

02 41 13.15 Hydrodemolition

0010	**HYDRODEMOLITION** R024119-10									
0015	Hydrodemolition, concrete pavement, 4000 PSI, 2" depth	B-5	500	.112	S.F.		4.53	2.85	7.38	10.10
0120	4" depth		450	.124			5.05	3.17	8.22	11.20
0130	6" depth		400	.140			5.65	3.56	9.21	12.60
0410	6000 PSI, 2" depth		410	.137			5.50	3.47	8.97	12.25
0420	4" depth		350	.160			6.45	4.07	10.52	14.40
0430	6" depth		300	.187			7.55	4.75	12.30	16.80
0510	8000 PSI, 2" depth		330	.170			6.85	4.32	11.17	15.25
0520	4" depth		280	.200			8.10	5.10	13.20	18
0530	6" depth	↓	240	.233	↓		9.45	5.95	15.40	21

02 41 13.17 Demolish, Remove Pavement and Curb

0010	**DEMOLISH, REMOVE PAVEMENT AND CURB** R024119-10									
5010	Pavement removal, bituminous roads, up to 3" thick	B-38	690	.058	S.Y.		2.41	1.86	4.27	5.75
5050	4" to 6" thick		420	.095			3.96	3.05	7.01	9.40
5100	Bituminous driveways		640	.063			2.60	2	4.60	6.20
5200	Concrete to 6" thick, hydraulic hammer, mesh reinforced		255	.157			6.50	5	11.50	15.50
5300	Rod reinforced		200	.200	↓		8.30	6.40	14.70	19.80
5400	Concrete, 7" to 24" thick, plain		33	1.212	C.Y.		50.50	39	89.50	120
5500	Reinforced	↓	24	1.667	"		69.50	53.50	123	165
5600	With hand held air equipment, bituminous, to 6" thick	B-39	1900	.025	S.F.		.98	.12	1.10	1.64
5700	Concrete to 6" thick, no reinforcing		1600	.030			1.16	.15	1.31	1.95
5800	Mesh reinforced		1400	.034			1.33	.17	1.50	2.22
5900	Rod reinforced	↓	765	.063	↓		2.43	.31	2.74	4.08
6000	Curbs, concrete, plain	B-6	360	.067	L.F.		2.67	1.01	3.68	5.20
6100	Reinforced		275	.087			3.50	1.33	4.83	6.80
6200	Granite		360	.067			2.67	1.01	3.68	5.20
6300	Bituminous		528	.045			1.82	.69	2.51	3.55
6500	Site demo, berms under 4" in height, bituminous		528	.045			1.82	.69	2.51	3.55
6600	4" or over in height	↓	300	.080	↓		3.21	1.22	4.43	6.25

02 41 13.20 Selective Demo, Highway Guard Rails & Barriers

0010	**SELECTIVE DEMOLITION, HIGHWAY GUARD RAILS & BARRIERS**									
0100	Guard rail, corrugated steel	B-6	600	.040	L.F.		1.60	.61	2.21	3.13
0200	End sections		40	.600	Ea.		24	9.15	33.15	47
0300	Wrap around		40	.600	"		24	9.15	33.15	47
0400	Timber 4" x 8"		600	.040	L.F.		1.60	.61	2.21	3.13
0500	Three 3/4" cables		600	.040	"		1.60	.61	2.21	3.13
0600	Wood posts	↓	240	.100	Ea.		4.01	1.52	5.53	7.80
0700	Guide rail, 6" x 6" box beam	B-80B	120	.267	L.F.		10.45	2.07	12.52	18.35
0800	Median barrier, 6" x 8" box beam		240	.133			5.25	1.03	6.28	9.20
0850	Precast concrete 3'-6" high x 2' wide	↓	300	.107	↓		4.19	.83	5.02	7.35
0900	Impact barrier, UTMCD, barrel type	B-16	60	.533	Ea.		19.95	11.55	31.50	43

02 41 Demolition

02 41 13 – Selective Site Demolition

	02 41 13.72 Selective Demo., Shore Protect/Mooring Struct.	Crew	Daily Output	Labor-Hours	Unit	Material	2014 Bare Costs Labor	Equipment	Total	Total Incl O&P
0300	Maximum	B-9	9	4.444	L.F.		165	26	191	283
0400	Steel, from shore	B-40B	54	.889			36	22	58	79
0500	from barge	B-76A	30	2.133			84	70	154	206
0600	Jetties, docks, floating	B-21B	600	.067	S.F.		2.65	1.11	3.76	5.30
0700	Pier supported, 3" - 4" decking		300	.133			5.30	2.21	7.51	10.60
0800	Floating, prefab, small boat, minimum		600	.067			2.65	1.11	3.76	5.30
0900	Maximum		300	.133			5.30	2.21	7.51	10.60
1000	Floating, prefab, per slip, minimum		3.20	12.500	Ea.		495	207	702	995
1010	Maximum		2.80	14.286	"		570	237	807	1,125
	02 41 13.74 Selective Demolition, Piles									
0010	**SELECTIVE DEMOLITION, PILES**									
0100	Cast in place piles, corrugated, 8" - 10"	B-19	600	.107	V.L.F.		4.91	3.07	7.98	11.05
0200	12"-14"		500	.128			5.90	3.68	9.58	13.25
0300	16"		400	.160			7.35	4.60	11.95	16.50
0400	fluted, 12"		600	.107			4.91	3.07	7.98	11.05
0500	14"-18"		500	.128			5.90	3.68	9.58	13.25
0600	end bearing, 12"		600	.107			4.91	3.07	7.98	11.05
0700	14"-18"		500	.128			5.90	3.68	9.58	13.25
0800	Precast prestressed piles, 12"-14" dia		700	.091			4.21	2.63	6.84	9.45
0900	16"-24" dia		600	.107			4.91	3.07	7.98	11.05
1000	36"-66" dia		300	.213			9.80	6.15	15.95	22
1100	10"-14" thick		600	.107			4.91	3.07	7.98	11.05
1200	16"-24" thick		500	.128			5.90	3.68	9.58	13.25
1300	Pressure grouted pile, 5"		150	.427			19.65	12.25	31.90	44
1400	Steel piles, 8"-12" tip		600	.107			4.91	3.07	7.98	11.05
1500	H sections HP8 to HP12		600	.107			4.91	3.07	7.98	11.05
1600	HP14	B-19A	600	.107			4.91	3.76	8.67	11.80
1700	Steel pipe piles, 8"-12"	B-19	600	.107			4.91	3.07	7.98	11.05
1800	14"-18" plain		500	.128			5.90	3.68	9.58	13.25
1900	concrete filled, 14"-18"		400	.160			7.35	4.60	11.95	16.50
2000	Timber piles to 14" dia		600	.107			4.91	3.07	7.98	11.05
	02 41 13.76 Selective Demolition, Water Wells									
0010	**SELECTIVE DEMOLITION, WATER WELLS**									
0100	Well, 40' deep with casing & gravel pack, 24"-36" dia	B-23	.25	160	Eq.		5,925	11,500	17,425	21,900
0200	Riser pipe, 1-1/4", for observation well	"	300	.133	L.F.		4.94	9.60	14.54	18.15
0300	Pump, 1/2 to 5 HP up to 100' depth	Q-1	3	5.333	Ea.		276		276	415
0400	Up to 150' well 25 HP pump	Q-22	1.50	10.667			555	440	995	1,325
0500	Up to 500' well 30 HP pump	"	1	16			830	665	1,495	1,975
0600	Well screen 2" to 8"	B-23	300	.133	V.L.F.		4.94	9.60	14.54	18.15
0700	10" to 16"		200	.200			7.40	14.40	21.80	27.50
0800	18" to 26"		150	.267			9.90	19.25	29.15	36.50
0900	Slotted PVC for wells 1-1/4"-8"		600	.067			2.47	4.81	7.28	9.10
1000	Well screen and casing 6" to 16"		300	.133			4.94	9.60	14.54	18.15
1100	18" to 26"		150	.267			9.90	19.25	29.15	36.50
1200	30" to 36"		100	.400			14.80	29	43.80	54.50
	02 41 13.78 Selective Demolition, Radio Towers									
0010	**SELECTIVE DEMOLITION, RADIO TOWERS**									
0100	Radio tower,guyed, 50'	2 Skwk	16	1	Ea.		47.50		47.50	73.50
0200	190', 40 lb. section	K-2	.70	34.286			1,600	475	2,075	3,275
0300	200', 70 lb. section		.70	34.286			1,600	475	2,075	3,275
0400	300', 70 lb. section		.40	60			2,825	835	3,660	5,725
0500	270', 90 lb. section		.40	60			2,825	835	3,660	5,725

32 92 19.14 Seeding, Athletic Fields	Crew	Daily Output	Labor-Hours	Unit	2014 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **SEEDING, ATHLETIC FIELDS**									
0020 Seeding, athletic fields, athletic field mix, 8#/M.S.F. push spreader	1 Clab	8	1	M.S.F.	17.60	36.50		54.10	76
0100 Tractor spreader	B-66	52	.154		17.60	7.25	4.99	29.84	36
0200 Hydro or air seeding, with mulch and fertilizer	B-81	80	.300		19.35	12.30	8.85	40.50	50
0400 Birdsfoot trefoil, .45#/M.S.F., push spreader	1 Clab	8	1		12	36.50		48.50	69.50
0500 Tractor spreader	B-66	52	.154		12	7.25	4.99	24.24	29.50
0600 Hydro or air seeding, with mulch and fertilizer	B-81	80	.300		23	12.30	8.85	44.15	54
0800 Bluegrass, 4#/M.S.F., common, push spreader	1 Clab	8	1		14.30	36.50		50.80	72.50
0900 Tractor spreader	B-66	52	.154		14.30	7.25	4.99	26.54	32.50
1000 Hydro or air seeding, with mulch and fertilizer	B-81	80	.300		23.50	12.30	8.85	44.65	54.50
1100 Baron, push spreader	1 Clab	8	1		16.80	36.50		53.30	75
1200 Tractor spreader	B-66	52	.154		16.80	7.25	4.99	29.04	35
1300 Hydro or air seeding, with mulch and fertilizer	B-81	80	.300		23	12.30	8.85	44.15	54
1500 Clover, 0.67#/M.S.F., white, push spreader	1 Clab	8	1		2.13	36.50		38.63	59
1600 Tractor spreader	B-66	52	.154		2.13	7.25	4.99	14.37	18.85
1700 Hydro or air seeding, with mulch and fertilizer	B-81	80	.300		11.70	12.30	8.85	32.85	41.50
1800 Ladino, push spreader	1 Clab	8	1		2.21	36.50		38.71	59
1900 Tractor spreader	B-66	52	.154		2.21	7.25	4.99	14.45	18.95
2000 Hydro or air seeding, with mulch and fertilizer	B-81	80	.300		9.70	12.30	8.85	30.85	39
2200 Fescue 5.5#/M.S.F., tall, push spreader	1 Clab	8	1		10.80	36.50		47.30	68.50
2300 Tractor spreader	B-66	52	.154		10.80	7.25	4.99	23.04	28.50
2400 Hydro or air seeding, with mulch and fertilizer	B-81	80	.300		35.50	12.30	8.85	56.65	67.50
2500 Chewing, push spreader	1 Clab	8	1		6	36.50		42.50	63
2600 Tractor spreader	B-66	52	.154		6	7.25	4.99	18.24	23
2700 Hydro or air seeding, with mulch and fertilizer	B-81	80	.300		19.80	12.30	8.85	40.95	50.50
2900 Crown vetch, 4#/M.S.F., push spreader	1 Clab	8	1		80	36.50		116.50	145
3000 Tractor spreader	B-66	52	.154		80	7.25	4.99	92.24	105
3100 Hydro or air seeding, with mulch and fertilizer	B-81	80	.300		110	12.30	8.85	131.15	150
3300 Rye, 10#/M.S.F., annual, push spreader	1 Clab	8	1		8.80	36.50		45.30	66
3400 Tractor spreader	B-66	52	.154		8.80	7.25	4.99	21.04	26
3500 Hydro or air seeding, with mulch and fertilizer	B-81	80	.300		19.35	12.30	8.85	40.50	50
3600 Fine textured, push spreader	1 Clab	8	1		12	36.50		48.50	69.50
3700 Tractor spreader	B-66	52	.154		12	7.25	4.99	24.24	29.50
3800 Hydro or air seeding, with mulch and fertilizer	B-81	80	.300		26.50	12.30	8.85	47.65	57.50
4000 Shade mix, 6#/M.S.F., push spreader	1 Clab	8	1		9.30	36.50		45.80	67
4100 Tractor spreader	B-66	52	.154		9.30	7.25	4.99	21.54	27
4200 Hydro or air seeding, with mulch and fertilizer	B-81	80	.300		20.50	12.30	8.85	41.65	51
4400 Slope mix, 6#/M.S.F., push spreader	1 Clab	8	1		10.40	36.50		46.90	68
4500 Tractor spreader	B-66	52	.154		10.40	7.25	4.99	22.64	28
4600 Hydro or air seeding, with mulch and fertilizer	B-81	80	.300		26	12.30	8.85	47.15	57
4800 Turf mix, 4#/M.S.F., push spreader	1 Clab	8	1		10.90	36.50		47.40	68.50
4900 Tractor spreader	B-66	52	.154		10.90	7.25	4.99	23.14	28.50
5000 Hydro or air seeding, with mulch and fertilizer	B-81	80	.300		27.50	12.30	8.85	48.65	58.50
5200 Utility mix, 7#/M.S.F., push spreader	1 Clab	8	1		9.30	36.50		45.80	67
5300 Tractor spreader	B-66	52	.154		9.30	7.25	4.99	21.54	27
5400 Hydro or air seeding, with mulch and fertilizer	B-81	80	.300		35	12.30	8.85	56.15	67
5600 Wildflower, .10#/M.S.F., push spreader	1 Clab	8	1		1.80	36.50		38.30	58.50
5700 Tractor spreader	B-66	52	.154		1.80	7.25	4.99	14.04	18.50
5800 Hydro or air seeding, with mulch and fertilizer	B-81	80	.300		9.90	12.30	8.85	31.05	39.50
7000 Apply fertilizer, 800 lb./acre	B-66	4	2	Ton	1,000	94	65	1,159	1,325
7025 Fertilizer, mechanical spread	1 Clab	1.75	4.571	Acre	5.70	168		173.70	265
7100 Apply mulch, see Section 32 91 13.16									

Location Factors

Costs shown in RSMeans cost data publications are based on national averages for materials and installation. To adjust these costs to a specific location, simply multiply the base cost by the factor and divide by 100 for that city. The data is arranged alphabetically by state and postal zip code numbers. For a city not listed, use the factor for a nearby city with similar economic characteristics.

STATE/ZIP	CITY	MAT.	INST.	TOTAL
ALABAMA				
350-352	Birmingham	97.5	74.1	87.3
354	Tuscaloosa	96.7	62.0	81.6
355	Jasper	97.0	56.7	79.4
356	Decatur	96.6	59.1	80.3
357-358	Huntsville	96.7	70.8	85.4
359	Gadsden	96.7	60.8	81.1
360-361	Montgomery	97.9	58.1	80.5
362	Anniston	96.5	63.0	81.9
363	Dothan	96.9	50.5	76.7
364	Evergreen	96.5	51.9	77.1
365-366	Mobile	97.8	65.9	83.9
367	Selma	96.7	50.8	76.7
368	Phenix City	97.3	55.7	79.2
369	Butler	96.8	50.5	76.6
ALASKA				
995-996	Anchorage	121.3	114.3	118.3
997	Fairbanks	120.7	115.0	118.2
998	Juneau	120.6	113.5	117.5
999	Ketchikan	132.0	113.5	124.0
ARIZONA				
850,853	Phoenix	99.4	74.8	88.7
851,852	Mesa/Tempe	98.8	73.8	87.9
855	Globe	99.0	71.2	86.9
856-857	Tucson	97.6	73.6	87.1
859	Show Low	99.1	73.5	88.0
860	Flagstaff	101.0	72.9	88.8
863	Prescott	98.9	69.7	86.2
864	Kingman	97.3	73.2	86.8
865	Chambers	97.3	71.9	86.3
ARKANSAS				
716	Pine Bluff	96.9	62.9	82.1
717	Camden	94.5	50.4	75.3
718	Texarkana	95.7	49.9	75.7
719	Hot Springs	93.8	52.3	75.8
720-722	Little Rock	98.0	63.8	83.1
723	West Memphis	95.6	62.7	81.2
724	Jonesboro	96.3	59.4	80.2
725	Batesville	94.2	55.1	77.2
726	Harrison	95.5	51.1	76.1
727	Fayetteville	93.0	52.9	75.6
728	Russellville	94.1	54.4	76.8
729	Fort Smith	96.8	61.7	81.5
CALIFORNIA				
900-902	Los Angeles	100.1	116.5	107.3
903-905	Inglewood	95.7	113.4	103.4
906-908	Long Beach	97.1	113.4	104.2
910-912	Pasadena	96.3	113.9	104.0
913-916	Van Nuys	99.1	113.9	105.5
917-918	Alhambra	98.2	113.9	105.0
919-921	San Diego	100.2	109.1	104.1
922	Palm Springs	96.7	111.6	103.2
923-924	San Bernardino	94.6	111.2	101.9
925	Riverside	98.9	114.0	105.5
926-927	Santa Ana	96.5	111.6	103.1
928	Anaheim	98.9	114.1	105.6
930	Oxnard	99.6	114.2	105.9
931	Santa Barbara	98.9	114.6	105.7
932-933	Bakersfield	100.8	110.6	105.1
934	San Luis Obispo	99.3	111.6	104.7
935	Mojave	96.8	108.6	101.9
936-938	Fresno	100.0	114.5	106.3
939	Salinas	100.2	120.3	108.9
940-941	San Francisco	106.1	143.8	122.5
942,956-958	Sacramento	101.2	118.6	108.8
943	Palo Alto	99.5	133.1	114.2
944	San Mateo	101.7	132.7	115.2
945	Vallejo	100.6	127.2	112.2
946	Oakland	103.9	133.1	116.6
947	Berkeley	103.4	133.1	116.4
948	Richmond	102.5	131.2	115.0
949	San Rafael	104.2	133.6	117.0
950	Santa Cruz	104.1	120.4	111.2
CALIFORNIA (CONT'D)				
951	San Jose	102.2	134.6	116.3
952	Stockton	100.5	115.5	107.0
953	Modesto	100.4	114.9	106.7
954	Santa Rosa	100.3	133.4	114.7
955	Eureka	101.6	111.6	106.0
959	Marysville	100.8	115.1	107.0
960	Redding	103.6	114.6	108.4
961	Susanville	102.6	114.6	107.8
COLORADO				
800-802	Denver	101.6	82.6	93.3
803	Boulder	98.6	82.0	91.3
804	Golden	100.6	79.6	91.4
805	Fort Collins	102.1	79.6	92.3
806	Greeley	99.7	76.1	89.4
807	Fort Morgan	99.1	79.6	90.6
808-809	Colorado Springs	101.3	79.3	91.7
810	Pueblo	100.9	78.6	91.2
811	Alamosa	102.0	74.6	90.1
812	Salida	101.7	76.2	90.6
813	Durango	102.4	76.8	91.2
814	Montrose	101.2	76.5	90.5
815	Grand Junction	104.4	76.7	92.4
816	Glenwood Springs	102.2	79.3	92.2
CONNECTICUT				
060	New Britain	100.8	120.4	109.3
061	Hartford	102.0	120.6	110.1
062	Willimantic	101.4	120.6	109.7
063	New London	97.7	120.5	107.6
064	Meriden	99.6	120.5	108.7
065	New Haven	102.2	120.5	110.2
066	Bridgeport	101.8	120.2	109.8
067	Waterbury	101.4	120.1	109.6
068	Norwalk	101.4	126.9	112.5
069	Stamford	101.5	127.9	113.0
D.C.				
200-205	Washington	101.6	91.6	97.2
DELAWARE				
197	Newark	98.8	108.1	102.8
198	Wilmington	99.4	108.1	103.2
199	Dover	99.7	108.1	103.3
FLORIDA				
320,322	Jacksonville	97.2	67.7	84.3
321	Daytona Beach	97.4	74.4	87.3
323	Tallahassee	98.7	58.0	81.0
324	Panama City	98.5	59.1	81.3
325	Pensacola	100.8	62.4	84.1
326,344	Gainesville	98.7	68.0	85.3
327-328,347	Orlando	99.3	71.4	87.1
329	Melbourne	99.9	77.9	90.3
330-332,340	Miami	97.7	74.6	87.6
333	Fort Lauderdale	96.4	73.9	86.6
334,349	West Palm Beach	95.3	72.3	85.3
335-336,346	Tampa	97.9	79.8	90.0
337	St. Petersburg	100.2	64.7	84.7
338	Lakeland	97.1	79.3	89.4
339,341	Fort Myers	96.4	74.1	86.7
342	Sarasota	99.3	75.3	88.8
GEORGIA				
300-303,399	Atlanta	96.8	75.3	87.5
304	Statesboro	96.5	56.9	79.2
305	Gainesville	95.2	62.8	81.1
306	Athens	94.7	65.1	81.8
307	Dalton	96.4	60.1	80.6
308-309	Augusta	95.6	64.8	82.2
310-312	Macon	96.2	65.9	83.0
313-314	Savannah	98.4	62.0	82.6
315	Waycross	97.3	60.7	81.3
316	Valdosta	97.5	62.6	82.3
317,398	Albany	97.5	62.5	82.3
318-319	Columbus	97.4	66.6	84.0

GENERAL PREVAILING WAGE DETERMINATION MADE BY THE DIRECTOR OF INDUSTRIAL RELATIONS
PURSUANT TO CALIFORNIA LABOR CODE PART 7, CHAPTER 1, ARTICLE 2, SECTIONS 1770, 1773 AND 1773.1

CRAFT: ## LANDSCAPE MAINTENANCE LABORER
(APPLIES ONLY TO ROUTINE LANDSCAPE MAINTENANCE WORK NOT NEW LANDSCAPE CONSTRUCTION)[1]

DETERMINATION: SC-LML-2014-1
ISSUE DATE: August 22, 2014
EXPIRATION DATE OF DETERMINATION: September 30, 2014* Effective until superseded by a new determination issued by the Director of Industrial Relations. Contact the Office of the Director – Research Unit at (415) 703-4774 for the new rates after 10 days from the expiration date, if no subsequent determination is issued.

		Employer Payments					Straight-Time		Overtime
LOCALITY:	Basic Hourly Rate	Health and Welfare	Pension	Vacation	Holiday	Training	Hours	Total Hourly Rate	1 1/2X
Imperial	$9.00	-	-	[a] 0.115	0.17	-	8	[b]9.285	[b]13.785
Inyo, Mono and San Bernardino	9.00	-	-	0.30	0.17	-	8	9.47	13.97
Kern	9.00	-	-	[c] 0.16	0.17	-	8	[b]9.33	[b]13.83
	10.00	-	-	[d] 0.27	0.46	-	8	[b]10.73	[b]15.73
Los Angeles	9.00	0.89	-	[e] 0.115	0.14	-	8	[b]10.145	[b]14.645
Orange	9.00	-	-	[f] 0.11	0.11	-	8	[b]9.22	[b]13.72
Riverside	9.00	-	-	[g] 0.20	0.16	-	8	[b]9.36	[b]13.86
San Diego	9.00	-	-	0.22	0.115	-	8	9.335	13.835
	9.00	-	-	0.24	0.12	-	8	9.36	13.86
San Luis Obispo	9.00	-	-	[k] 0.15	0.15	-	8	9.30	13.80
	9.00	-	-	[l] 0.16	0.16	-	8	9.32	13.82
Santa Barbara	9.00	-	-	[h] 0.12	0.12	-	8	[b]9.24	[b]13.74
	9.00	-	-	[i] 0.13	0.13	-	8	[b]9.26	[b]13.76
Ventura	9.00	-	-	0.115	0.16	-	8	9.275	13.775
	9.00	2.97	-	[j] 0.19	0.26	-	8	[b]12.42	[b]16.92

Craft is not apprenticeable.
NOTE: If there are two rates, the first rate is for routine work, the second rate is for complex work.

[a] $0.22 after 3 years of service.
[b] Computation is based on the first years of employment. This rate should be increased by any applicable vacation increase as stated in other footnotes.
[c] $0.31 after 2 years of service.
[d] $0.54 after 2 years of service: $0.81 after 3 years of service.
[e] $0.24 after 3 years of service: $0.37 after 7 years of service.
[f] $0.22 after 4 years of service.
[g] $0.40 after 3 years of service.
[h] $0.23 after 2 years of service.
[i] $0.27 after 2 years of service.
[j] $0.38 after 3 years of service.
[k] $0.29 after 2 years of service.
[l] $0.31 after 2 years of service.

[1] This determination does not apply to work of a landscape laborer employed on landscape construction (work incidental to construction or post-construction maintenance during the plant installation and establishment period). The following is a description of the landscape work cover under this determination:

ROUTINE – mowing, watering, pruning, trimming, weeding, spraying, occasional planting and replacement of plants and janitorial work incidental to such landscape maintenance.
COMPLEX – servicing of irrigation and sprinkler systems, repairing of equipment use in such landscape maintenance.

RECOGNIZED HOLIDAYS: Holidays upon which the general prevailing hourly wage rate for Holiday work shall be paid, shall be all holidays in the collective bargaining agreement, applicable to the particular craft, classification, or type of worker employed on the project, which is on file with the Director of Industrial Relations. If the prevailing rate is not based on a collectively bargained rate, the holidays upon which the prevailing rate shall be paid shall be as provided in Section 6700 of the Government Code. You may obtain the holiday provisions for the current determinations on the Internet at http://www.dir.ca.gov/OPRL/PWD. Holiday provisions for current or superseded determinations may be obtained by contacting the Office of the Director – Research Unit at (415) 703-4774.

TRAVEL AND/OR SUBSISTENCE PAYMENT: In accordance with Labor Code Sections 1773.1 and 1773.9, contractors shall make travel and/or subsistence payments to each worker to execute the work. You may obtain the travel and/or subsistence provisions for the current determinations on the Internet at http://www.dir.ca.gov/OPRL/PWD. Travel and/or subsistence requirements for current or superseded determinations may be obtained by contacting the Office of the Director – Research Unit at (415) 703-4774.

GENERAL PREVAILING WAGE DETERMINATION MADE BY THE DIRECTOR OF INDUSTRIAL RELATIONS
PURSUANT TO CALIFORNIA LABOR CODE PART 7, CHAPTER 1, ARTICLE 2, SECTIONS 1770, 1773 AND 1773.1

FOR COMMERCIAL BUILDING, HIGHWAY, HEAVY CONSTRUCTION AND DREDGING PROJECTS

CRAFT: #TEAMSTER
(APPLIES ONLY TO WORK ON THE CONSTRUCTION SITE)

DETERMINATION: SC-23-261-2-2014-1
ISSUE DATE: August 22, 2014
EXPIRATION DATE OF DETERMINATION: June 30, 2015** The rate to be paid for work performed after this date has been determined. If work will extend past this date, the new rate must be paid and should be incorporated in contracts entered into now. Contact the Office of the Director – Research Unit for specific rates at (415) 703-4774.
LOCALITY: All localities within Imperial, Inyo, Kern, Los Angeles, Mono, Orange, Riverside, San Bernardino, San Luis Obispo, Santa Barbara and Ventura Counties

			Employer Payments				Straight-Time		Overtime Hourly Rates		
Classification[c] (Journeyperson)	Basic Hourly Rate	Health and Welfare	Pension	Vacation/ Holiday	Training[e]	Other Payments	Hours	Total Hourly Rate	Daily[d] 1 1/2X	Saturday[d] 1 1/2X	Sunday/ Holiday 2X
Group I	27.99	14.92	5.00	2.70[a]	1.52	.45	8	52.58	65.575	65.575	80.57
Group II	28.14	14.92	5.00	2.70[a]	1.52	.45	8	52.73	66.80	66.80	80.87
Group III	28.27	14.92	5.00	2.70[a]	1.52	.45	8	52.86	66.995	66.995	81.13
Group IV	28.46	14.92	5.00	2.70[a]	1.52	.45	8	53.05	67.28	67.28	81.51
Group V	28.49	14.92	5.00	2.70[a]	1.52	.45	8	53.08	67.325	67.325	81.57
Group VI	28.52	14.92	5.00	2.70[a]	1.52	.45	8	53.11	67.37	67.37	81.63
Group VII	28.77	14.92	5.00	2.70[a]	1.52	.45	8	53.36	67.745	67.745	82.13
Group VIII	29.02	14.92	5.00	2.70[a]	1.52	.45	8	53.61	68.12	68.12	82.63
Group IX	29.22	14.92	5.00	2.70[a]	1.52	.45	8	53.81	68.42	68.42	83.03
Group X	29.52	14.92	5.00	2.70[a]	1.52	.45	8	54.11	68.87	68.87	83.63
Group XI	30.02	14.92	5.00	2.70[a]	1.52	.45	8	54.61	69.62	69.62	84.63
Subjourneyman											
0-2000 hours	14.20	14.92	5.00	1.35[a]	1.52	.45	8	37.44	44.54	44.54	51.64
2001-4000 hours	16.20	14.92	5.00	1.60[a]	1.52	.45	8	39.69	47.79	47.79	55.89
4001-6000 hours	18.20	14.92	5.00	1.85[a]	1.52	.45	8	41.94	51.04	51.04	60.14
Over 6000 hours and thereafter at journeyman rates											

# Indicates an apprenticeable craft. The current apprentice wage rates are available on the Internet @ http://www.dir.ca.gov/OPRL/PWAppWage/PWAppWageStart.asp . To obtain any apprentice wage rates as of July 1, 2008 and prior to September 27, 2012, please contact the Division of Apprenticeship Standards or refer to the Division of Apprenticeship Standards' website at http://www.dir.ca.gov/das/das.html.
[a] Includes an amount for Supplemental Dues.
[b] Subjourneyman may be employed at a ratio of one subjourneyman for every five journeymen.
[c] For classifications within each group, see page 21A.
[d] Rate applies to the first 4 daily overtime hours on weekdays and the first 12 hours on Saturday. All other overtime is paid at the Sunday/Holiday double-time rate.
[e] Includes $0.60 for Apprentice Program Fund.

RECOGNIZED HOLIDAYS: Holidays upon which the general prevailing hourly wage rate for Holiday work shall be paid, shall be all holidays in the collective bargaining agreement, applicable to the particular craft, classification, or type of worker employed on the project, which is on file with the Director of Industrial Relations. If the prevailing rate is not based on a collectively bargained rate, the holidays upon which the prevailing rate shall be paid shall be as provided in Section 6700 of the Government Code. You may obtain the holiday provisions for the current determinations on the Internet at http://www.dir.ca.gov/OPRL/PWD. Holiday provisions for current or superseded determinations may be obtained by contacting the Office of the Director – Research Unit at (415) 703-4774.

TRAVEL AND/OR SUBSISTENCE PAYMENT: In accordance with Labor Code Sections 1773.1 and 1773.9, contractors shall make travel and/or subsistence payments to each worker to execute the work. You may obtain the travel and/or subsistence provisions for the current determinations on the Internet at http://www.dir.ca.gov/OPRL/PWD. Travel and/or subsistence requirements for current or superseded determinations may be obtained by contacting the Office of the Director – Research Unit at (415) 703-4774.

Group I
Warehouseman and Teamster

Group II
Driver of Vehicle or Combination of Vehicles - 2 axles
Traffic Control Pilot Car, excluding moving heavy equipment permit load
Truck Mounted Power Broom

Group III
Driver of Vehicle or Combination of Vehicles - 3 axles
Bootman
Cement Mason Distribution Truck
Fuel Truck Driver
Water Truck - 2 axles
Dump Truck of less than 16 yards water level
Erosion Control Driver

Group IV
Driver of Transit Mix Truck-Under 3 yds
Dumpcrete Truck Less than 6 1/2 yards water level
Truck Repairman Helper

Group V
Water Truck 3 or more axles
Warehouseman Clerk
Working Truck Driver
Truck Greaser and Tireman - $0.50 additional for Tireman
Pipeline and Utility Working Truck Driver, including Winch Truck and Plastic Fusion, limited to Pipeline and Utility Work
Slurry Truck Driver

Group VI
Driver of Transit Mix Truck - 3 yds or more
Dumpcrete Truck 6 1/2 yds water level and over
Driver of Vehicle or Combination of Vehicles - 4 or more axles
Driver of Oil Spreader Truck
Dump Truck 16 yds to 25 yds water level
Side Dump Trucks
Flow Boy Dump Trucks

Group VII
A Frame, Swedish Crane or Similar
Forklift Driver
Ross Carrier Driver

Group VIII
Dump Truck of 25 yds to 49 yards water level
Truck Repairman
Water Pull Single Engine
Welder

Group IX
Truck Repairman Welder
Low Bed Driver, 9 axles or over

Group X
Water Pull Single Engine with attachment
Dump Truck and Articulating - 50 yards or more water level

Group XI
Water Pull Twin Engine
Water Pull Twin Engine with attachments
Winch Truck Driver - $0.25 additional when operating a Winch or similar special attachments

GENERAL PREVAILING WAGE DETERMINATION MADE BY THE DIRECTOR OF INDUSTRIAL RELATIONS
PURSUANT TO CALIFORNIA LABOR CODE PART 7, CHAPTER 1, ARTICLE 2, SECTIONS 1770, 1773 AND 1773.1

FOR COMMERCIAL BUILDING, HIGHWAY, HEAVY CONSTRUCTION AND DREDGING PROJECTS

CRAFT: #OPERATING ENGINEER

DETERMINATION: SC-23-63-2-2014-2
ISSUE DATE: August 22, 2014
EXPIRATION DATE OF DETERMINATION: July 5, 2015** The rate to be paid for work performed after this date has been determined. If work will extend past this date, the new rate must be paid and should be incorporated in contracts entered into now. Contact the Office of the Director – Research Unit for specific rates at (415) 703-4774.

LOCALITY: All localities within Imperial, Inyo, Kern, Los Angeles, Mono, Orange, Riverside, San Bernardino, San Luis Obispo, Santa Barbara, and Ventura counties.

		Employer Payments					Straight – Time		Overtime Hourly Rate		
CLASSIFICATION (Journeyperson)	Basic Hourly Rate	Health and Welfare	Pension	Vacation/ Holiday (a)	Training	Other Payments	Hours	Total Hourly Rate	Daily (c)	Saturday (d)	Sunday/ Holiday
									1 1/2X	1 1/2X	2X
Classification Groups (b)											
Group 1	$39.05	$11.20	$8.55	$3.00	$0.80	$0.29	8	$62.89	$82.415	$82.415	$101.94
Group 2	$39.83	$11.20	$8.55	$3.00	$0.80	$0.29	8	$63.67	$83.585	$83.585	$103.50
Group 3	$40.12	$11.20	$8.55	$3.00	$0.80	$0.29	8	$63.96	$84.020	$84.020	$104.08
Group 4	$41.61	$11.20	$8.55	$3.00	$0.80	$0.29	8	$65.45	$86.255	$86.255	$107.06
Group 6	$41.83	$11.20	$8.55	$3.00	$0.80	$0.29	8	$65.67	$86.585	$86.585	$107.50
Group 8	$41.94	$11.20	$8.55	$3.00	$0.80	$0.29	8	$65.78	$86.750	$86.750	$107.72
Group 10	$42.06	$11.20	$8.55	$3.00	$0.80	$0.29	8	$65.90	$86.930	$86.930	$107.96
Group 12	$42.23	$11.20	$8.55	$3.00	$0.80	$0.29	8	$66.07	$87.185	$87.185	$108.30
Group 13	$42.33	$11.20	$8.55	$3.00	$0.80	$0.29	8	$66.17	$87.335	$87.335	$108.50
Group 14	$42.36	$11.20	$8.55	$3.00	$0.80	$0.29	8	$66.20	$87.380	$87.380	$108.56
Group 15	$42.44	$11.20	$8.55	$3.00	$0.80	$0.29	8	$66.28	$87.500	$87.500	$108.72
Group 16	$42.56	$11.20	$8.55	$3.00	$0.80	$0.29	8	$66.40	$87.680	$87.680	$108.96
Group 17	$42.73	$11.20	$8.55	$3.00	$0.80	$0.29	8	$66.57	$87.935	$87.935	$109.30
Group 18	$42.83	$11.20	$8.55	$3.00	$0.80	$0.29	8	$66.67	$88.085	$88.085	$109.50
Group 19	$42.94	$11.20	$8.55	$3.00	$0.80	$0.29	8	$66.78	$88.250	$88.250	$109.72
Group 20	$43.06	$11.20	$8.55	$3.00	$0.80	$0.29	8	$66.90	$88.430	$88.430	$109.96
Group 21	$43.23	$11.20	$8.55	$3.00	$0.80	$0.29	8	$67.07	$88.685	$88.685	$110.30
Group 22	$43.33	$11.20	$8.55	$3.00	$0.80	$0.29	8	$67.17	$88.835	$88.835	$110.50
Group 23	$43.44	$11.20	$8.55	$3.00	$0.80	$0.29	8	$67.28	$89.000	$89.000	$110.72
Group 24	$43.56	$11.20	$8.55	$3.00	$0.80	$0.29	8	$67.40	$89.180	$89.180	$110.96
Group 25	$43.73	$11.20	$8.55	$3.00	$0.80	$0.29	8	$67.57	$89.435	$89.435	$111.30

# Indicates an apprenticeable craft. The current apprentice wage rates are available on the Internet @ http://www.dir.ca.gov/OPRL/PWAppWage/PWAppWageStart.asp. To obtain any apprentice wage rates as of July 1, 2008 and prior to September 27, 2012, please contact the Division of Apprenticeship Standards or refer to the Division of Apprenticeship Standards' website at http://www.dir.ca.gov/das/das.html.

[a] Includes an amount withheld for supplemental dues.

[b] For classifications within each group, see pages 8 and 9.

[c] Rate applies to the first 4 overtime hours. All other daily overtime is paid at the Sunday rate.

[d] Rate applies to the first 12 hours worked. All other time is paid at the Sunday rate.

NOTE: For Special Shift and Multi-Shift, see pages 9A and 9B.

RECOGNIZED HOLIDAYS: Holidays upon which the general prevailing hourly wage rate for Holiday work shall be paid, shall be all holidays in the collective bargaining agreement, applicable to the particular craft, classification, or type of worker employed on the project, which is on file with the Director of Industrial Relations. If the prevailing rate is not based on a collectively bargained rate, the holidays upon which the prevailing rate shall be paid shall be as provided in Section 6700 of the Government Code. You may obtain the holiday provisions for the current determinations on the Internet at http://www.dir.ca.gov/OPRL/PWD. Holiday provisions for current or superseded determinations may be obtained by contacting the Office of the Director – Research Unit at (415) 703-4774.

TRAVEL AND/OR SUBSISTENCE PAYMENT: In accordance with Labor Code Sections 1773.1 and 1773.9, contractors shall make travel and/or subsistence payments to each worker to execute the work. You may obtain the travel and/or subsistence provisions for the current determinations on the Internet at http://www.dir.ca.gov/OPRL/PWD. Travel and/or subsistence requirements for current or superseded determinations may be obtained by contacting the Office of the Director – Research Unit at (415) 703-4774.

DETERMINATION: SC-23-63-2-2014-2

CLASSIFICATIONS:

GROUP 1

Bargeman
Brakeman
Compressor Operator
Ditchwitch, with seat or similar type equipment
Elevator Operator - Inside
Engineer Oiler
Forklift Operator (includes loed, lull or similar types – under 5 tons)
Generator Operator
Generator, Pump or Compressor Plant Operator
Heavy Duty Repairman Helper
Pump Operator
Signalman
Switchman

GROUP 2

Asphalt-Rubber Plant Operator (Nurse Tank Operator)
Concrete Mixer Operator - Skip Type
Conveyor Operator
Fireman
Forklift Operator (includes loed, lull or similar types – over 5 tons)
Hydrostatic Pump Operator
Oiler Crusher (Asphalt or Concrete Plant)
Petromat Laydown Machine
RJU Side Dump Jack
Rotary Drill Helper (Oilfield)
Screening and Conveyor Machine Operator (or similar types)
Skiploader (Wheel type up to 3/4 yd. without attachment)
Tar Pot Fireman
Temporary Heating Plant Operator
Trenching Machine Oiler

GROUP 3

Asphalt Rubber Blend Operator
Bobcat or similar type (Skid Steer, with all attachments)
Equipment Greaser (rack)
Ford Ferguson (with dragtype attachments)
Helicopter Radioman (ground)
Stationary Pipe Wrapping and Cleaning Machine Operator

GROUP 4

Asphalt Plant Fireman
Backhoe Operator (mini-max or similar type)
Boring Machine Operator
Boring System Electronic Tracking Locator
Boxman or Mixerman (asphalt or concrete)
Chip Spreading Machine Operator
Concrete Cleaning Decontamination Machine Operator
Concrete Pump Operator (small portable)
Drilling Machine Operator, Small Auger types (Texoma Super Economatic, or similar types - Hughes 100 or 200, or similar types - drilling depth of 30 maximum)
Equipment Greaser (grease truck)
Excavator Track/Rubber-Tired (Operating weight under 21,000 lbs)
Guard Rail Post Driver Operator
Highline Cableway Signalman
Hydra-Hammer-Aero Stomper
Hydraulic Casing Oscillator Operator – drilling depth of 30’ maximum
Micro Tunneling Operator (above ground tunnel)
Power Concrete Curing Machine Operator
Power Concrete Saw Operator
Power - Driver Jumbo Form Setter Operator
Power Sweeper Operator
Rock Wheel Saw/Trencher
Roller Operator (compacting)
Screed Operator (asphalt or concrete)
Trenching Machine Operator (up to 6ft.)
Vacuum or Muck Truck

GROUP 5 (for multi-shift rate, see page 9B)

Equipment Greaser (Grease Truck/Multi-Shift)

GROUP 6

Articulating Material Hauler
Asphalt Plant Engineer
Batch Plant Operator
Bit Sharpener
Concrete Joint Machine Operator (canal and similar type)
Concrete Placer Operator
Concrete Planer Operator
Dandy Digger
Deck Engine Operator
Deck Engineer
Derrickman (oilfield type)

Drilling Machine Operator, Bucket or Auger types (Calweld 100 bucket or similar types - Watson 1000 auger or similar types - Texoma 330, 500 or 600 auger or similar types - drilling depth of 45' maximum)
Drilling Machine Operator (including water wells)
Hydraulic Casing Oscillator Operator – drilling depth of 45’ maximum
Hydrographic Seeder Machine Operator (straw, pulp or seed)
Jackson Track Maintainer, or similar type
Kalamazoo Switch Tamper, or similar type
Machine Tool Operator
Maginnis Internal Full Slab Vibrator
Mechanical Berm, Curb or Gutter (concrete or asphalt)
Mechanical Finisher Operator (concrete, Clary-Johnson-Bidwell or similar)
Micro Tunnel System Operator (below ground)
Pavement Breaker Operator
Railcar Mover
Road Oil Mixing Machine Operator
Roller Operator (asphalt or finish)
Rubber-Tired Earthmoving Equipment (single engine, up to and including 25 yds. struck)
Self-Propelled Tar Pipelining Machine Operator
Skiploader Operator (crawler and wheel type, over 3/4 yds. and up to and including 1 1/2 yds.)
Slip Form Pump Operator (power driven hydraulic lifting device for concrete forms)
Tractor Operator - Bulldozer, Tamper-Scraper (single engine, up to 100 H.P. flyweel and similar types, up to and including D-5 and similar types)
Tugger Hoist Operator (1 drum)
Ultra High Pressure Waterjet Cutting Tool System Operator
Vacuum Blasting Machine Operator
Volume Mixer Operator
Welder – General

GROUP 7 (for multi-shift rate, see page 9B)

Welder – General (Multi-Shift)

GROUP 8

Asphalt or Concrete Spreading Operator (tamping or finishing)
Asphalt Paving Machine Operator (barber greene or similar type, one (1) Screedman)
Asphalt-Rubber Distributor Operator
Backhoe Operator (up to and including 3/4 yds.) small ford, case or similar
Backhoe Operator (over 3/4 yd. and up to 5 cu. yds. M.R.C.)
Barrier Rail Mover (BTM Series 200 or similar types)
Cast in Place Pipe Laying Machine Operator
Cold Foamed Asphalt Recycler
Combination Mixer and Compressor Operator (gunite work)
Compactor Operator - Self Propelled
Concrete Mixer Operator - Paving
Crushing Plant Operator
Drill Doctor
Drilling Machine Operator, Bucket or Auger types (Calweld 150 bucket or similar types - Watson 1500, 2000, 2500 auger or similar types - Texoma 700, 800 auger or similar types - drilling depth of 60' maximum)
Elevating Grader Operator
Excavator Track/Rubber-Tired (Operating Weight 21,000 lbs - 100,000 lbs)
Global Positioning System/GPS (or Technician)
Grade Checker
Gradall Operator
Grouting Machine Operator
Heavy Duty Repairman/Pump Installer
Heavy Equipment Robotics Operator
Hydraulic Casing Oscillator Operator – drilling depth of 60’ maximum
Hydraulic Operated Grout Plant (excludes hand loading)
Kalamazoo Ballast Regulator or similar type
Klemm Drill Operator or similar types
Kolman Belt Loader and similar type
Le Tourneau Blob Compactor or similar type
Lo Drill
Loader Operator (Athey, Euclid, Sierra and similar types)
Master Environmental Maintenance Mechanic
Mobark Chipper or similiar types
Ozzie Padder or similar types
P.C. 490 Slot Saw
Pneumatic Concrete Placing Machine Operator (Hackley-Presswell or similar type)
Prentice 721E Hydro-Ax
Pumpcrete Gun Operator
Rock Drill or Similiar Types (see Miscellaneous Provision #4 for additional information regarding this classification)
Rotary Drill Operator (excluding caison type)
Rubber-Tired Earth Moving Equipment Operator (single engine, caterpillar, euclid, athey wagon, and similar types with any and all attachments over 25 yds. and up to and including 50 cu. yds. struck)
Rubber-Tired Earth Moving Equipment Operator (multiple engine - up to and including 25 yds. struck)
Rubber-Tired Scraper Operator (self-loading paddle wheel type - John Deere, 1040 and similar single unit)
Self-Propelled Curb and Gutter Machine Operator
Shuttle Buggy
Skiploader Operator (crawler and wheel type over 1 1/2 yds. up to and including 6 1/2 yds.)
Soil Remediation Plant Operator (CMI, Envirotech or Similar)
Soil Stabilizer and Reclaimer (WR-2400)
Somero SXP Laser Screed
Speed Swing Operator
Surface Heaters and Planer Operator
Tractor Compressor Drill Combination Operator

DETERMINATION: SC-23-63-2-2014-2

GROUP 8 CONT.

Tractor Operator (any type larger than D-5 - 100 flyweel H.P. and over, or similar – bulldozer, tamper, scraper and push tractor, single engine)

Tractor Operator (boom attachments)

Traveling Pipe Wrapping, Cleaning and Bending Machine Operator

Trenching Machine Operator (over 6 ft. depth capacity, manufacturer's rating)

Trenching Machine with Road Miner Attachment (over 6ft. depth capacity, manufacturer's rating - Oiler or Journeyman Trainee required)

Ultra High Pressure Waterjet Cutting Tool System Mechanic

Water Pull (compaction)

GROUP 9 (for multi-shift rate, see page 9B)

Heavy Duty Repairman (Multi-Shift)

GROUP 10

Backhoe Operator (over 5 cu. yds. M.R.C.)

Drilling Machine Operator, Bucket or Auger types (Calweld 200 B bucket or similar types - Watson 3000 or 5000 auger or similar types - Texoma 900 auger or similar types - drilling depth of 105' maximum)

Dual Drum Mixer

Dynamic Compactor LDC350 or similar types

Heavy Duty Repairman-Welder combination

Hydraulic Casing Oscillator Operator – drilling depth of 105' maximum

Monorail Locomotive Operator (diesel, gas or electric)

Motor Patrol - Blade Operator (single engine)

Multiple Engine Tractor Operator (euclid and similar type - except quad 9 cat.)

Pneumatic Pipe Ramming Tool and similar types

Pre-stressed Wrapping Machine Operator (2 Operators required)

Rubber - Tired Earth Moving Equipment Operator (single engine, over 50 yds. struck)

Rubber - Tired Earth Moving Equipment Operator (multiple engine, euclid caterpillar and similar - over 25 yds. and up to 50 yds. struck)

Tower Crane Repairman

Tractor Loader Operator (crawler and wheel-type over 6 1/2 yds.)

Welder - Certified

Woods Mixer Operator (and similar pugmill equipment)

GROUP 11 (for multi-shift rate, see page 9B)

Heavy Duty Repairman – Welder Combination (Multi-Shift)

Welder – Certified (Multi-Shift)

GROUP 12

Auto Grader Operator

Automatic Slip Form Operator

Backhoe Operator (over 7 cu. yds. M.R.C.)

Drilling Machine Operator, Bucket or Auger types (Calweld, auger 200 CA or similar types - watson, auger 6000 or similar types - hughes super duty, auger 200 or similar types - drilling depth of 175' maximum)

Excavator Track/Rubber Tired (Operating Weight 100,000 lbs. - 200,000 lbs)

Hoe Ram or similar with compressor

Hydraulic Casing Oscillator Operator – drilling depth of 175' maximum

Mass Excavator Operator - less than 750 cu. yds.

Mechanical Finishing Machine Operator

Mobile Form Traveler Operator

Motor Patrol Operator (multi-engine)

Pipe Mobile Machine Operator

Rubber-Tired Earth Moving Equipment Operator (multiple engine, euclid, caterpillar and similar type, over 50 cu. yds. struck)

Rubber-Tired Self-Loading Scraper Operator (paddle-wheel-auger type self-loading - (two (2) or more units)

GROUP 13

Rubber-Tired Earth Moving Equipment Operator, Operating Equipment with the Push-Pull System (single engine, up to and including 25 yds. struck)

GROUP 14

Canal Liner Operator

Canal Trimmer Operator

Remote Controlled Earth Moving Operator ($1.00 per hour additional to base rate)

Wheel Excavator Operator (over 750 cu. yds. per hour)

GROUP 15

Rubber-Tired Earth Moving Equipment Operator, Operating Equipment with the Push-Pull System (single engine, caterpillar, euclid, athey wagon, and similar types with any and all attachments over 25 yds. and up to and including 50 cu. yds. struck)

Rubber-Tired Earth Moving Equipment Operator, Operating Equipment with the Push-Pull System (multiple engine - up to and including 25 yds. struck)

GROUP 16

Excavator Track/Rubber Tired (Operating Weight exceeding 200,000 lbs.)

Rubber-Tired Earth Moving Equipment Operator, Operating Equipment with the Push-Pull System (single engine, over 50 yds. struck)

Rubber-Tired Earth Moving Equipment Operator, Operating Equipment with the Push-Pull System (multiple engine, euclid, caterpillar, and similar, over 25 yds. and up to 50 yds. struck)

GROUP 17

Rubber-Tired Earth Moving Equipment Operator, Operating Equipment with the Push-Pull System (multiple engine, euclid, caterpillar, and similar type, over 50 cu. yds. struck)

Tandem Tractor Operator (operating crawler type tractors in tandem - Quad 9 and similar type)

GROUP 18

Rubber-Tired Earth Moving Equipment Operator, Operating in Tandem (scrapers, belly dumps, and similar types in any combination, excluding compaction units - single engine, up to and including 25 yds. struck)

GROUP 19

Rotex Concrete Belt Operator

Rubber-Tired Earth Moving Equipment Operator, Operating in Tandem (scrapers, belly dumps, and similar types in any combination, excluding compaction units - single engine, caterpillar, euclid, athey wagon, and similar types with any and all attachments over 25 yds. and up to and including 50 cu. yds. struck)

Rubber-Tired Earth Moving Equipment Operator, Operating in Tandem (scrapers, belly dumps, and similar types in any combination, excluding compaction units - multiple engines, up to and including 25 yds. struck)

GROUP 20

Rubber-Tired Earth Moving Equipment Operator, Operating in Tandem (scrapers, belly dumps, and similar types in any combination, excluding compaction units - single engine, over 50 yds. struck)

Rubber-Tired Earth Moving Equipment Operator, Operating in Tandem (scrapers, belly dumps, and similar types in any combination, excluding compaction units - multiple engine, euclid, caterpillar and similar, over 25 yds. and up to 50 yds. struck)

Drilling Machine Operator, Bucket or Auger types (Calweld, auger 200 CA or similar types -

GROUP 21

Rubber-Tired Earth Moving Equipment Operator, Operating in Tandem (scrapers, belly dumps, and similar types in any combination, excluding compaction units - multiple engine, euclid, caterpillar and similar type, over 50 cu. yds. struck)

GROUP 22

Rubber-Tired Earth Moving Equipment Operator, Operating Equipment with the Tandem Push-Pull System (single engine, up to and including 25 yds. struck)

GROUP 23

Rubber-Tired Earth Moving Equipment Operator, Operating Equipment with the Tandem Push-Pull System (single engine, caterpillar, euclid, athey wagon, and similar types with any and all attachments over 25 yds. and up to and including 50 cu. yds. struck)

Rubber-Tired Earth Moving Equipment Operator, Operating Equipment with the Tandem Push-Pull System (multiple engine, up to and including 25 yds. struck)

GROUP 24

Rubber-Tired Earth Moving Equipment Operator, Operating Equipment with the Tandem Push-Pull System (single engine, over 50 yds. Struck)

Rubber-Tired Earth Moving Equipment Operator, Operating Equipment with the Tandem Push-Pull System (multiple engine, euclid, caterpillar and similar, over 25 yds. and up to 50 yds. struck)

GROUP 25

Concrete Pump Operator-Truck Mounted

Pedestal Concrete Pump Operator

Rubber-Tired Earth Moving Equipment Operator, Operating Equipment with the Tandem Push-Pull System (multiple engine, euclid, caterpillar and similar over 50 cu. yds struck)

MISCELLANEOUS PROVISIONS:

1. Operators on hoists with three drums shall receive fifteen cents (15¢) per hour additional pay to the regular rate of pay. The additional pay shall be added to the regular rate and become the base rate for the entire shift.
2. All heavy duty repairman and heavy duty combination shall receive fifty cents (50¢) per hour tool allowance in addition to their regular rate of pay and this shall become their base rate of pay.
3. Employees required to suit up and work in a hazardous material environment, shall receive Two Dollars ($2.00) per hour in addition to their regular rate of pay, and that rate shall become the basic hourly rate of pay.
4. A review of rock drilling is currently pending. The minimum acceptable rate of pay for this classification or type of work on public works projects is Laborer and Related Classifications/Group 5 (Driller) as published on pages 13 and 14 of the Director's General Prevailing Wage Determinations. However, the published rate for the craft/classification of Operating Engineer/Group 8 (Rock Drill or Similar Types) may be used by contractors to perform rock drilling on public works projects.

RECLAMATION PLAN
LEBATA BIG ROCK CREEK
AGGREGATE SURFACE MINE AND PROCESSING FACILITIES

AUGUST 2014

ATTACHMENT E

Supplemental Biological Resource Studies

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ATTACHMENT E

Exhibit 1 - ***Updated Special-status Plant Survey and General Wildlife Survey Results*****, prepared by ECORP Consulting, Inc., July 24, 2014**

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ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

July 24, 2014
(2014-054)

Mr. John Hecht
SESPE Consulting, Inc.
468 Poli Street, Suite 2E
Ventura, CA 93001

SUBJECT: Updated Special-status Plant Survey and General Wildlife Survey Results for the Lebata Big Rock Creek Surface Mining Project Site, Los Angeles County, California

Dear Mr. Hecht,

The purpose of this letter report is to document the results of a special-status plant survey where Lebata, Inc. (Lebata) has proposed surface mining activities on approximately 310 acres (125 hectares [ha]) near Big Rock Creek, near the community of Pearblossom, Los Angeles County, California. ECORP Consulting, Inc. (ECORP) was contracted to conduct a literature review and focused survey on approximately 135 acres (55 ha) of the project site for the presence or absence of listed and/or sensitive plant species Phases 1 and 3 (APN 3039-021-009 and 3039-036-002) of the project. In addition, a general wildlife survey was also conducted to update the wildlife compendium for the project area.

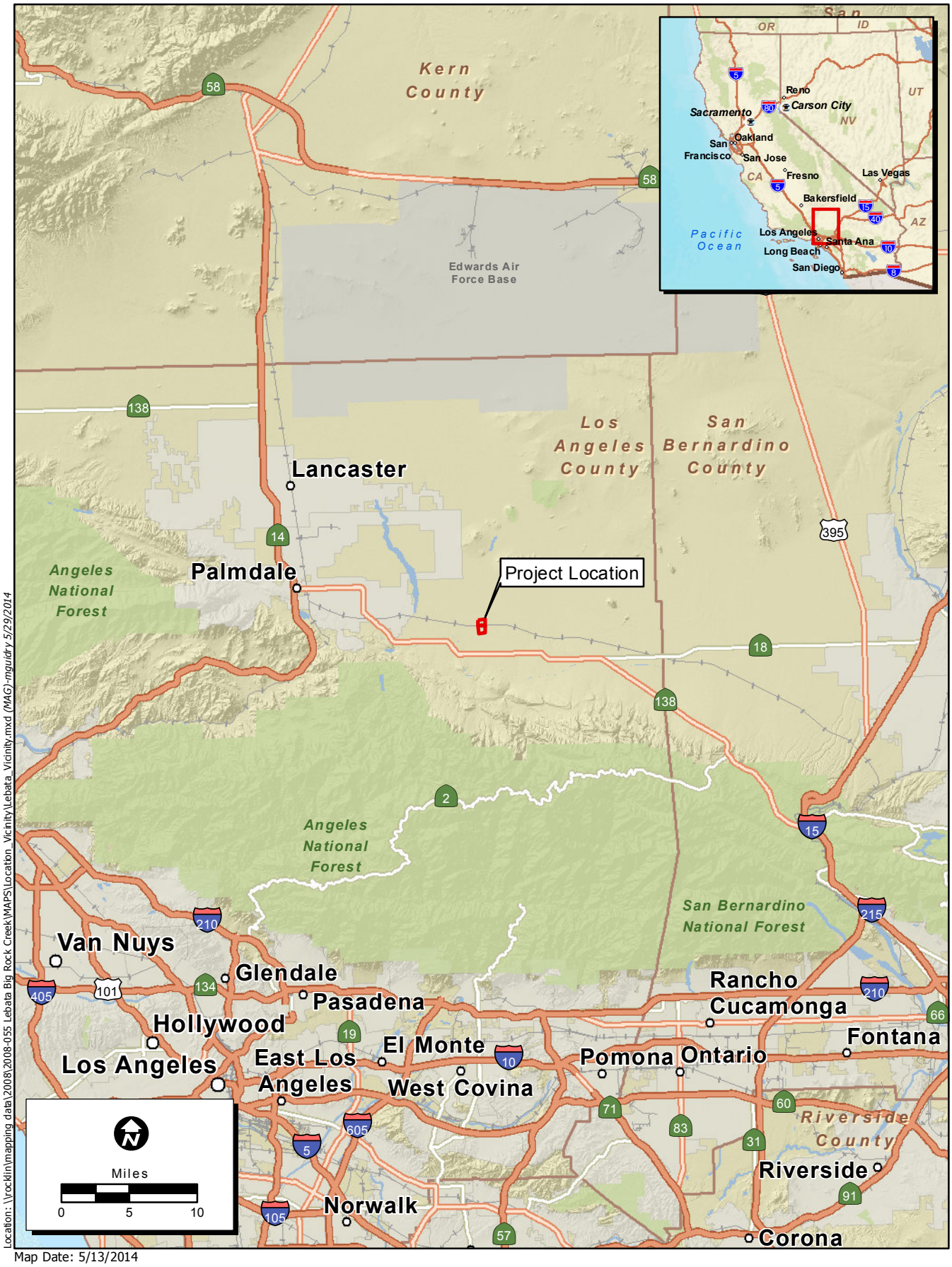
Prior to conducting the focused surveys, a review of plant database and regional literature was conducted in order to identify the potential for occurrence of plant species based on the habitat types present on the project site. The 2008 special-status plant report and the 2010 sensitive plant species occurrence memo update prepared for the project site by ECORP were also reviewed (ECORP 2008, ECORP 2010).

The results of the surveys indicate that no federally or state-listed (threatened or endangered) plant species were observed on site. One sensitive plant species, the crowned muilla (*Muilla coronata*), which was observed during the 2008 focused surveys, was also observed during the 2014 focused surveys. The crowned muilla has a limited distribution and is currently on the California Native Plant Society (CNPS) watch list, but it does not have any state or federal protection. Additionally, beavertail cactus (*Opuntia basilaris* var. *basilaris*) was also observed and these appear to contain genes of short-joint beavertail cactus (*Opuntia basilaris* var. *brachyclada*). Documented intermediates or hybrids of these two species were found on another site close by in 2002 (Chambers Group 2002). The intermediate between the two beavertail cactus species does not have any protection under state or federal legislation.

Introduction

Project Location and Description

The approximately 310-acre (125-ha) project site is located south of Avenue T between 131st and 136th Streets East in the unincorporated community of Pearblossom, Los Angeles County (Figure 1). The project site is bisected by the Union Pacific Railroad (UPRR), located approximately 0.5 mile (mi) (1 kilometer [km]) south of Avenue T.



Location: \\rocklin\mapping data\2008\2008-055 Lebata Big Rock Creek\MAPS\Location_Vicinity\Lebata_Vicinity.mxd (MAG)-mguidry 5/29/2014

Map Date: 5/13/2014

Service Layer Credits: Sources: USGS, ESRI, TANA, AND

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Figure 1. Project Vicinity

2014-054 Lebata Big Rock Creek

Mining activities in the northern portion of the project site (approximately 135 acres (55 ha)), which is bordered by the UPRR on the south, are being proposed and are expected to break ground in early 2015 (Figure 2). The northern portion of the project site will be mined under Phases 1 and 3 of the proposed work plan. The southern portion of the project site, approximately 175 acres (71 ha) bounded by the UPRR to the north, is also proposed for surface mining activities; however, the activities in this portion of the project site are not proposed to break ground until a later date. The southern portion of the project site will be mined under Phase 2 of the proposed work plan. Elevations on the site range from approximately 2,850 to 2,940 feet (ft) (870 to 896 meters [m]) above mean sea level (msl).

Purpose of Surveys

A special-status plant survey was conducted on the entire project site in 2008 (ECORP 2008) and a memo documenting changes to the sensitive plant species occurrences was prepared for the site in 2010 (ECORP 2010). The results of these efforts are pertinent, but were considered in need of a current update. Additionally, wildlife surveys that were previously conducted on the site were also considered in need of an update. An updated survey for special-status plants and a general wildlife survey were conducted at the request of the California Department of Fish and Wildlife (CDFW) in order to provide current information in support of future permitting for the project.

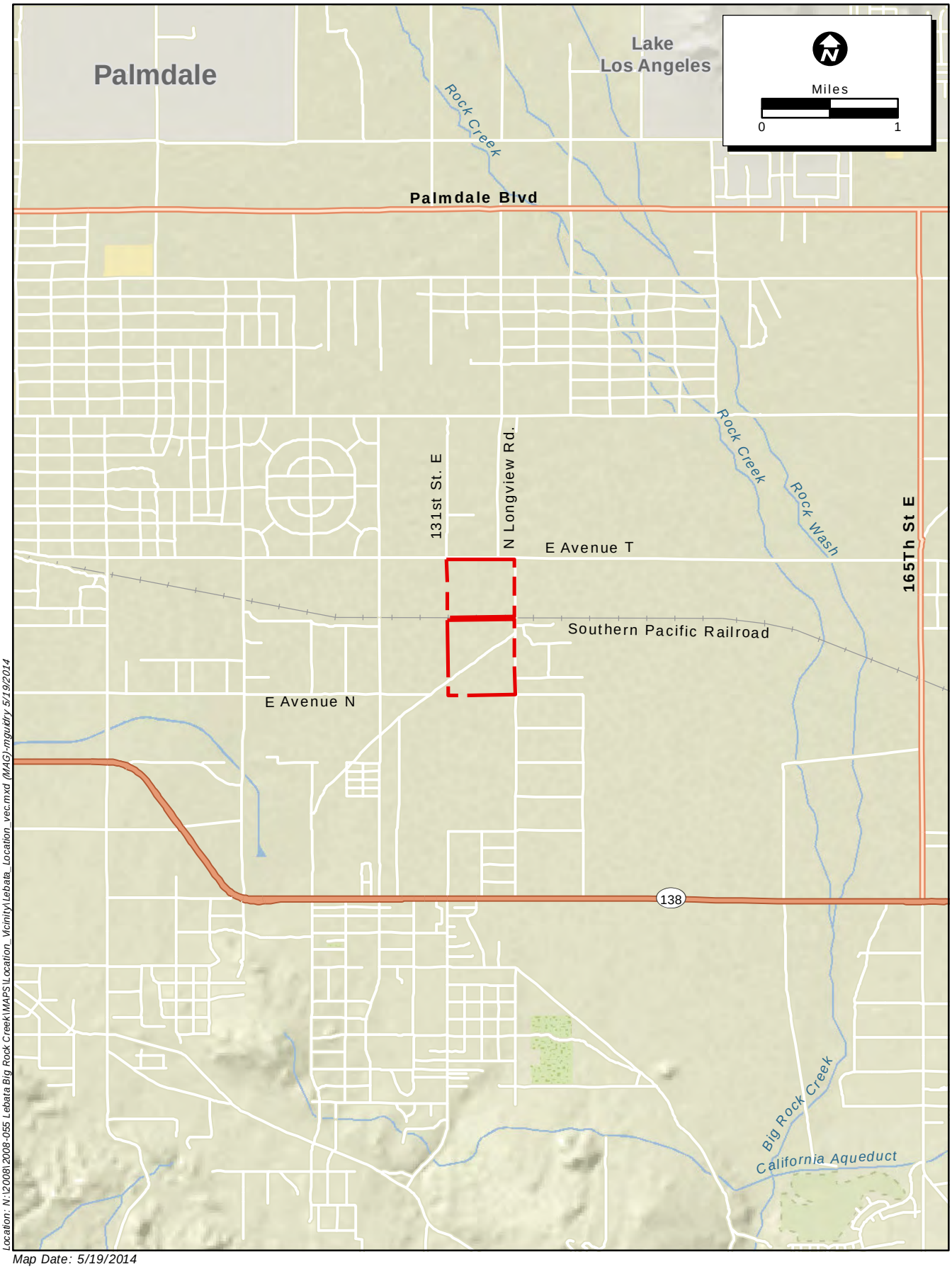
Due to the fact that Phases 1 and 3 are proposed for ground breaking activities in early 2015, only the northern portion of the project site was focused on during the 2014 surveys. For the purposes of this report, the northern portion will be referred to as the study area.

Methods

Literature Review

Prior to the surveys, a review of the California Natural Diversity Database (CDFW 2014), the CNPS Rare Plant Inventory (CNPS 2014), University of California Berkeley's Specimen Management System of California Herbaria (SMASCH) database (UCB 2010), the CalFlora database (CalFlora 2014), and previous reports and documentation available for the study area (Chambers Group 2002, ECORP 2008, ECORP 2010) was conducted for the study area and the surrounding areas. In addition, the Los Angeles County Sensitive Bird Species list and the Los Angeles County Bird Watchlist were also reviewed (LA County 2009). Nine United States Geological Survey (USGS) 7.5-minute topographic quadrangles were searched: Littlerock, Palmdale, Lancaster East, Alpine Butte, Hi Vista, Lovejoy Buttes, Valyermo, Juniper Hills, and Pacifico Mountain. Additional reference data regarding local special-status and common plants likely to occur within the study area was also gathered from the following sources:

- The Jepson Manual (Baldwin et al. 2012),
- Mojave Desert Wildflowers (MacKay 2003), and
- Online websites (CalPhotos 2014).



Location: N:\2008\2008-055 Lebata Big Rock Creek\MAPS\Location_Vicinity\Lebata_Location_vec.mxd (MAG)-mgudry 5/19/2014

Map Date: 5/19/2014
Source: ESRI

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Figure 2. Project Location

2014-054 Lebata Big Rock Creek

Updated Special-status Plant Surveys

Focused special-status plant surveys of the project area were conducted by ECORP biologists Alisa Flint, Brad Haley, Emily Graf, and Kevin Cornell on April 3, 2014 according to the *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW 2009). The field surveys consisted of walking transects spaced 10 m (33 ft) apart throughout the entire study area including a 100-ft (30-m) buffer. The biologists characterized the plant communities present on site and verified vegetation communities described in the literature review. Plant species were recorded and those that could not be identified in the field were later identified using taxonomic keys. A global positioning system (GPS) unit was used to record the coordinates of any sensitive plant species observed and site reference photographs were taken with a digital camera. Weather data were recorded during surveys, including time, temperature, and wind speed for each day surveys were conducted.

General Wildlife Survey

A general wildlife survey was conducted in the project area to update the list of wildlife species observed or detected in the study area. The survey consisted of biologists driving the perimeter of the study area and walking 30-m (98-ft) transects in selected portions of the study area. During the survey all wildlife species were documented, animal sign (e.g. scat, tracks) was recorded, and burrows and another other special habitat features were documented. Coordinates of any sensitive and/or listed wildlife species or other sensitive biological resources observed, such as bird nests, on the site were recorded. Weather data were recorded at the beginning and end of each survey, including time, temperature, and wind speed.

Results

Literature Review

A total of 20 special-status plant species were found to have potential to occur in the study area. The following guidelines were used to assess each special-status species' potential to occur:

Presumed Absent: Species was not observed during focused surveys conducted at an appropriate time for identification, or environmental conditions (including elevation, soils and vegetation communities) associated with species occurrence are not present on the site.

Low: Recent or historic records do not exist for the species within the study area or its immediate vicinity (approximately 5 mi [8 km]), and environmental conditions on site (including elevation, soils and vegetation communities) associated with the given species are of poor quality.

Moderate: Either a historic record exists for the species within the immediate vicinity of the study area (approximately 5 mi [8 km]), or the environmental conditions (including elevation, soils and vegetation communities) associated with the given species exist within the study area.

High: A historic record of the species exists within the study area or its immediate vicinity (approximately 5 mi [8 km]), and the environmental conditions (including elevation, soils and vegetation communities) associated with the given species exist within the project area.

Present: Species was observed within the study area during the survey.

***Note:** Location information on some sensitive species is not available; therefore, for survey purposes, landscape factors associated with species occurrence requirements may be considered sufficient to give a species a positive potential for occurrence.

One species considered rare in California and nineteen other special-status plant species were identified during the literature search as potentially occurring in the vicinity of the site (CDFW 2014, CNPS 2014). However, the majority of species previously documented in the literature search in the vicinity of the study area were presumed absent based on the lack of suitable habitat and/or lack of detection during the focused surveys. All plant species identified during the literature search Attachment 1. Species for which habitat is present in the study area are discussed individually below.

Preuss's milk-vetch (*Astragalus preussii* var. *preussii*) is a CNPS List 2.3 perennial herb associated with chenopod scrub and Mojavean desert scrub habitats on selenium-bearing soils. It typically occurs from 2,460 to 2,707 ft (750 to 825 m) above msl and its bloom period is from May to June. Suitable habitat exists throughout the study area for this species, but it was not observed during the focused survey. Although the survey was conducted before the normal bloom period for this species, the vegetative parts of the plant should have been present, which would make observation possible. This species is presumed absent from the study area.

Alkali mariposa lily (*Calochortus striatus*) is a CNPS 1B.2 bulbiferous herb. This species typically occurs in chaparral, chenopod scrub, Mojave Desert scrub, alkaline meadows, and ephemeral washes at elevations ranging from 295 to 5,233 ft (90 to 1,595 m) above msl and usually blooms from April to June. Suitable habitat exists throughout the study area but no occurrence records were found within a 5 mi (8 km) radius. The focused special-status plant survey was conducted during the appropriate bloom period for this species; however, no individuals were observed. This species is presumed absent from the study area.

Sagebrush loeflingia (*Loeflingia squarrosa* var. *artemisiarum*) is a CNPS List 2.2 species that is associated with Great Basin scrub, Sonoran Desert scrub, desert dunes, sandy flats and dune habitats, often around clay slicks. It is found from 2,296 to 3,937 ft (700 to 1,200 m) above msl and its bloom period is from April to May. Even though limited habitat is present in the sandy soils within the study area, this species was not observed during the focused surveys. Therefore, it is presumed absent from the study area.

Peirson's lupine (*Lupinus peirsonii*) is a CNPS List 1B.3 species that typically occurs in Joshua tree woodland, lower montane coniferous forest, pinyon/juniper woodland and upper montane coniferous forest from 3,281 to 8,202 ft (1,000 to 2,500 m) above msl. Only limited habitat is present on site. This species was not observed during the focused surveys (conducted within the appropriate bloom period [April to June] for this species); therefore, it is presumed absent from the study area.

Crowned muilla (*Muilla coronata*) is a CNPS List 4.2 bulbiferous herb that typically occurs in chenopod scrub, Joshua tree woodland, Mojave desert scrub, and pinyon-juniper woodland from 2,510 to 6,430 ft (765 to 1,960 m) above msl. A total of 27 individuals of crowned muilla were observed on the site, details of which can be found in and are included in the Updated Special-status Plant Survey section below.

Short-joint beavertail cactus (*Opuntia basilaris* var. *brachyclada*) is a CNPS List 1B.2 species that is usually found in a range of habitats including chaparral, Joshua tree woodland, Mojave Desert scrub, pinyon/juniper woodland, and riparian woodland between 4,101 to 5,971 ft (1,250 and 1,820 m) above msl. Suitable habitat exists in the study area and known populations occur within 10 mi (16 km) of the property. The locations of numerous individuals of *Opuntia basilaris* (not the sensitive *brachyclada* variation) were recorded within the study area, details of which are found in the Updated Special-status Plant Survey section below.

Parish's popcorn-flower (*Plagiobothrys parishii*) is a CNPS List 1B.1 species that occurs within Great Basin scrub and Joshua tree woodland habitats in mesic areas with alkaline soils from 2,460 to 4,593 ft (750 to 1,400 m) above msl. Limited habitat for the popcorn-flower is present in the study area and no individuals were observed during the focused survey conducted during the appropriate bloom period (March to June). Therefore, this species is presumed absent from the site

Updated Special-status Plant Survey

A focused special-status plant survey of the study area was conducted by ECORP biologists Alisa Flint, Brad Haley, Emily Graf, and Kevin Cornell on April 3, 2014. The entire focused special-status plant survey occurred between the hours of 0800 and 1730; weather conditions were suitable for the effort (Table 1). Representative site photographs taken during the survey are included as Attachment 2.

Table 1 - Weather Conditions during the Special-status Plant Survey

Date	Time		Temperature (°F)	Cloud Cover (%)	Wind Speed (mph)
	Start	End			
4/3/14	0800	1730	65	25	3-8

Common Plant Species

During the focused special-status plant survey, 105 different species of plants were observed and recorded. Examples of common plant species observed include creosote bush (*Larrea tridentata*), four-wing saltbush (*Atriplex canescens*), Mormon tea (*Ephedra nevadensis*), desert calico (*Loeseliastrum matthewsii*), and desert dandelion (*Malacothrix glabrata*). Appendix 3 contains a compendium of all plant species observed.

Special-status Plant Species

One special-status plant species was observed during the focused plant survey, crowned muilla (*Muilla coronata*). Twenty-seven individuals of crowned muilla were observed in the study area (Figure 3).This species had also been identified in the 2008 survey (ECORP 2008). Figure 4 shows a crowned muilla specimen observed during the 2014 survey.

Location: N:\2008\2008-055 Lebata Big Rock Creek\MAPS\RARE_PLANT\Lebata_muilla_loc.mxd (DW/MAG)-mguidry 5/23/2014

Map Date: 5/23/2014
Photo Source: NAIP (2012)

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Figure 3. Crowned Muilla and Beavertail Cactus Locations

2014-054 Lebata Big Rock Creek

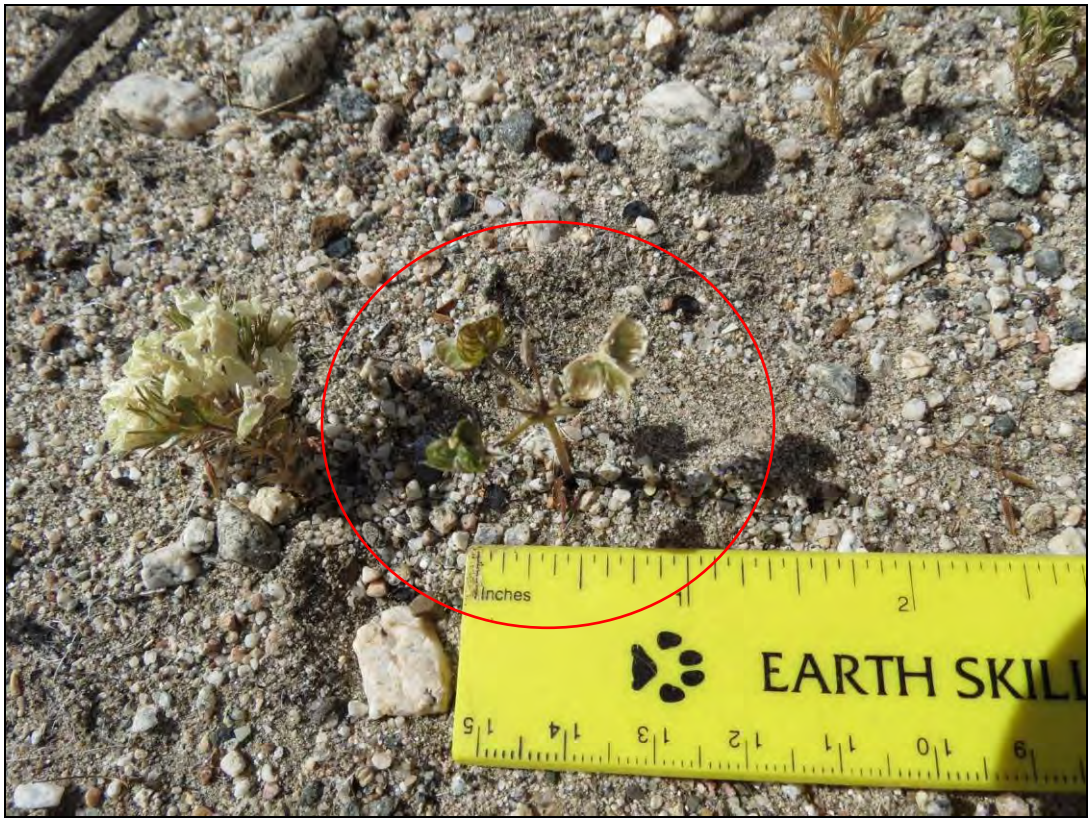


Figure 4. Crowned muilla (*Muilla coronata*) specimen found on the study area.

Individuals of beavertail cactus with some characteristics of the sensitive variety (*Opuntia basilaris* var. *brachyclada*) were recorded at numerous locations on site in 2008 and in 2014 (Figure 3). A taxonomic study including collection and comparative propagation through Rancho Santa Ana Botanic Garden was conducted of similar beavertail specimens on a nearby property in Big Rock Wash. The individuals of the study were determined to be intermediates expressing some genes of the sensitive variety (*O. basilaris* var. *brachyclada*) (Chambers Group 2002) along with the common variety (*O. basilaris basilaris*). Botanist Pamela DeVries, who was involved with the prior study, was consulted regarding the individuals observed at the Lebata study area. She confirmed that these individuals are most likely intermediates containing physical characteristics of both the common and the sensitive varieties and that they are not likely the pure *brachyclada* varietal (personal communication 2008). A photograph of the beavertail cactus observed during the survey is shown in Figure 5.

Figure 5. Beavertail cactus (*Opuntia basilaris*) specimen found on the study area.

General Wildlife Survey

A general wildlife survey was conducted in the northern portion of the site by wildlife biologists Kristen (Mobraaten) Wasz and Amy Trost on April 22 and 23, 2014. The wildlife survey was conducted in conjunction with Mohave ground squirrel (*Xerospermophilus mohavensis*) (MGS) trapping study occurring from April 19 to April 23, 2014. Weather conditions experienced during the survey are included in Table 2.

Table 2 - Weather Conditions during the General Wildlife Survey

Date	Time		Temperature (°F)	Cloud Cover (%)	Wind Speed (mph)
	Start	End			
4/22/14	1120	1220	72	25	7-15
4/23/14	1545	1700	76	60	0-1

Additional wildlife species were observed during the second and third MGS trapping sessions, which were conducted from May 19 through 23 and June 17 through June 21, 2014 (a total of 15 survey days). The number of wildlife species identified during the survey and additional trapping sessions included 31 species (nine reptile species, 16 bird species, and six mammal species). Some of the common wildlife species observed on the site include long-nosed leopard lizard (*Gambelia wislizenii*), horned lark (*Eremophila alpestris*), and white-tailed antelope ground squirrel (*Ammospermophilus leucurus*). Although not observed during the wildlife survey, the following common species are also expected to occur on or immediately adjacent to the site: Mojave green rattlesnake (*Crotalus scutulatus*), phainopepla (*Phainopepla nitens*), northern flicker (*Colaptes auratus*), and pocket mice species (*Perognathus* sp. and *Chaetodipus* sp.). Attachment 4 contains a compendium of all wildlife species observed during the wildlife survey and MGS trapping.

Burrow sites used by the desert kit fox (Vulpes macrotus) were not found in the project area during the survey. This species is protected as a fur-bearing mammal under Title 14 of the California Code of Regulations § 460. This species likely forages for small mammals, birds, and reptiles in the region surrounding the project area but there are no active fox burrows in the project area.

One previously occupied burrow was discovered in the study area with old burrowing owl sign (old whitewash and pellets; Figure 6). This burrow was observed in the northwestern portion of the study area. The biologists did not observe or detect any burrowing owls or currently occupied burrows during the survey. The burrowing owl is on the Los Angeles County Sensitive Bird Species List Part II (LA County 2009), which includes County sensitive bird species listed by other agencies.

One bird species on the Los Angeles County Sensitive Bird Species County Sensitive Bird Species List Part I (LA County 2009) is the greater roadrunner (*Geococcyx californianus*). This species was not observed during the surveys. It occurs in open arid habitats and is likely common in the vicinity of the site due to the abundance of suitable habitat. Other bird species on the Los Angeles County Sensitive Bird Species List Part II that may occur in the vicinity of the site but were not observed during multiple surveys between April and June of 2014 include golden eagle (*Aquila chrysaetos*) and loggerhead shrike (*Lanius ludovicianus*).

Three bird species identified during the surveys are on the Los Angeles County Bird Watchlist (LA County 2009), including the lesser nighthawk (*Chordeiles acutipennis*), Bell's sparrow (*Artemisiospiza belli*), and the cactus wren (*Campylorhynchus brunneicapillus*). The watchlist includes bird species that do not share the same level of risk as those on the Los Angeles County Sensitive Bird Species list but if one or more risk factors are actualized, they could be moved into higher rankings. Populations of species on the watchlist are those that warrant monitoring (LA County 2009).

Figure 6. Previously occupied burrowing owl burrow at the study area.

One lesser nighthawk was observed on the site during the survey but there was no sign that this species was nesting in the area. Lesser nighthawks are likely relatively common in the vicinity of the site considering the open nature of the habitat on and in the vicinity of the site.

Bell's sparrows were observed using the creosote bush scrub community on the site during the surveys. This species is common in open desert habitats and would be expected to occur throughout the undeveloped habitat in the region surrounding the site.

Two cactus wren nests were found in a silver cholla (*Cylindropuntia echinocarpa*) during the general wildlife survey. The nests were in good condition but the biologists didn't note any activities that would have indicated they were currently being used. A photograph of the two nests is found in Figure 7. Cactus wrens are relatively common in the region surrounding the site due to the presence of undeveloped, suitable habitat areas.

Figure 7. Two cactus wren nests found in a silver cholla.

Conclusion

Special-status Plant Species

State or federally-listed plant species were not observed during the updated focused survey of the study area. Only one sensitive (CNPS List 4.2) plant species, crowned muilla, was detected on the site. This species has a limited distribution and is currently on the CNPS Watch List, but it does not have any state or federal protection.

Numerous individuals of beavertail cactus were recorded on the site during the survey. These specimens were determined to be intermediates between the sensitive (*Opuntia basilaris* var. *brachyclada*) and common (*O. basilaris basilaris*) varieties. The individuals recorded within the project area do not currently have protection under any state or federal legislation.

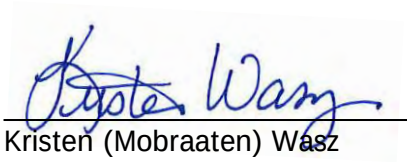
General Wildlife

A total of 31 wildlife species were observed or detected within the study area. One fairly large burrow was documented in the northwestern portion of the study area that had evidence of previous burrowing owl use (whitewash and pellets); however, this sign appeared very old and the burrow did not look as though it had been recently used. The burrowing owl is on the Los Angeles County Sensitive Bird Species List Part II, which includes County sensitive bird species listed by other agencies. Based on the condition of the old burrow, this species is considered absent from the area that was surveyed. Three bird species that are on the Los Angeles County

Bird Watchlist were detected during the survey, including lesser nighthawk, Bell's sparrow, and cactus wren. The lesser nighthawk was observed but no evidence of nesting was found and Bell's sparrows were observed flying and foraging in the creosote bush scrub on the site. Both of these species are commonly seen in the region around the site. Two cactus wren nests were observed in one cholla in the central portion of the study area. The nests appeared to be in good condition but the biologists did not observe any activities that would indicate they were actively being used.

If you have any questions regarding the content of this letter report, please contact me at (714) 648-0630.

I hereby certify that the statements furnished above present the data and information required for this biological survey results report, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.



Kristen (Mobraaten) Wasz

7/23/2014
Date

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Attachment 1

Special-status Plant Species Potential for Occurrence

Attachment 1
Potential for Occurrence of Sensitive Plant Species

Scientific Name Common Name	**Status**		**Flowering Period Elevation (meters)**	**Potential for Occurrence; Habitat**
Abronia villosa var. aurita Chaparral Sand-verbena	Fed: Ca: CNPS: BLM:	none none 1B.1 none	January-September 80-1600	**Presumed Absent;** Chaparral, Coastal Scrub Sandy Areas. No suitable habitat occurs on the site.
Arctostaphylos gabrielensis San Gabriel Manzanita	Fed: Ca: CNPS: BLM:	none none 1B.2 none	March 1500	**Presumed Absent;** Chaparral (Rocky). No suitable habitat occurs on the site.
Astragalus lentiginosus* var. *antonius San Antonio Milk-vetch	Fed: Ca: CNPS: BLM:	none none 1B.3 none	April-July 1500-2600	**Presumed Absent;** Dry Slopes In Open Yellow Pine Forest. No suitable habitat occurs on the site.
Astragalus preussii* var. *preussii Preuss's Milk-vetch	Fed: Ca: CNPS: BLM:	none none 2.3 none	May-June 750-825	**Presumed Absent;** Chenopod Scrub, Mojavean Desert Scrub. Confined To Selenium-Bearing Soils. Limited habitat occurs on the site, but species was not observed during focused surveys.
Calochortus striatus Alkali Mariposa Lily	Fed: Ca: CNPS: BLM:	none none 1B.2 SEN	April-June 90-1595	**Presumed Absent;** Chaparral, Chenopod Scrub, Mojavean Desert Scrub, Meadows. Alkaline Meadows And Ephemeral Washes. Limited habitat occurs on the site, but species was not observed during focused surveys.
Calystegia peirsonii Peirson's morning glory	Fed: Ca: CNPS: BLM:	none none 4.2 SEN	April-June 30-1500	**Presumed Absent;** Chaparral, Chenopod Scrub, Cismontane Woodland, Lower Montane Coniferous Forest. No suitable habitat occurs on the site.
Carex vulpinoidea Fox Sedge	Fed: Ca: CNPS: BLM:	none none 2.2 none	May-June 30-1200	**Presumed Absent;** Marshes And Swamps (Freshwater), Riparian Woodland. No suitable habitat occurs on the site.
Castilleja gleasonii Mount Gleason Indian Paintbrush	Fed: Ca: CNPS: BLM:	none **RAR** 1B.2 none	May-June 1160-2170	**Presumed Absent;** Lower Montane Coniferous Forest, Pinyon And Juniper Woodland/Granitic. No suitable habitat occurs on the site.
Chorizanthe parryi* var. *parryi Parry's Spineflower	Fed: Ca: CNPS: BLM:	none none 3.2 none	April-June 40-1705	**Presumed Absent;** Coastal Scrub, Chaparral. Dry, Sandy Soils. No suitable habitat occurs on the site.

Scientific Name Common Name	**Status**		**Flowering Period** **Elevation (meters)**	**Potential for Occurrence; Habitat**
Clarkia xantiana* ssp. *parviflora Kern Canyon Clarkia	Fed: Ca: CNPS: BLM:	none none 1B.2 none	May-June 1000-1500	**Presumed Absent;** Cismontane Woodland, Great Basin Scrub. No suitable habitat occurs on the site.
Layia heterotricha Pale-yellow Layia	Fed: Ca: CNPS: BLM:	none none 1B.1 SEN	March-June	**Presumed Absent;** Cismontane Woodland, Pinyon And Juniper Woodland, Valley And Foothill Grassland/Alkaline Or Clay. No suitable habitat occurs on the site.
Lilium parryi Lemon Lily	Fed: Ca: CNPS: BLM:	none none 1B.2 none	July-August 1300-2790	**Presumed Absent;** Wet, Mountainous Terrain; Gen. In Forested Areas; On Shady Edges Of Streams, In Open Boggy Meadows & Seeps. No suitable habitat occurs on the site.
Linanthus concinnus San Gabriel Linanthus	Fed: Ca: CNPS: BLM:	none none 1B.2 none	April-June 1575-2545	**Presumed Absent;** Lower Montane Coniferous Forest, Upper Montane Coniferous Forest. Dry Rocky Slopes. No suitable habitat occurs on the site.
Loeflingia squarrosa* var. *artemisiarum Sagebrush Loeflingia	Fed: Ca: CNPS: BLM:	none none 2.2 SEN	April-May 700-1200	**Presumed Absent;** Great Basin Scrub, Sonoran Desert Scrub, Desert Dunes. Sandy Flats And Dunes. Sandy Areas Around Clay Slicks. Limited suitable habitat occurs on the site, but this species was not observed during focused surveys during the bloom period.
Lupinus peirsonii Peirson's Lupine	Fed: Ca: CNPS: BLM:	none none 1B.3 none	April-June 1000-2500	**Presumed Absent;** Joshua Tree Woodland, Lower Montane Coniferous Forest, Pinyon/Juniper Woodland, Upper Montane Coniferous Forest. Limited suitable habitat occurs on the site, but this species was not observed during the focused surveys.
Muhlenbergia californica California muhly	Fed: Ca: CNPS: BLM:	none none 4.3 none	June-September 100-2000	**Presumed Absent;** Coastal Sage, Chaparral, Lower Montane Coniferous Forest, Meadows, near Streams or Seeps. No suitable habitat is present on the site.

Scientific Name Common Name	**Status**		**Flowering Period Elevation (meters)**	**Potential for Occurrence; Habitat**
Muilla coronata Crowned muilla	Fed: Ca: CNPS: BLM:	none none 4.2 none	March-May 765-1960	**Present;** Chenopod scrub, Joshua tree woodland, Mojavean desert scrub, Pinyon and juniper woodland. Crowned muilla individuals were observed during the focused survey.
Opuntia basilaris* var. *brachyclada Short-joint Beavertail	Fed: Ca: CNPS: BLM:	none none 1B.2 none	April-June 425-1800	**Presumed Absent;** Chaparral, Joshua Tree Woodland, Mojavean Desert Scrub, Pinyon-Juniper Woodland, Riparian Woodland. Opuntia basilaris individuals were observed during the focused survey and determined to be an intermediate form, not pure *brachyclada.*
Orobanche valida* ssp. *valida Rock Creek Broomrape	Fed: Ca: CNPS: BLM:	none none 1B.2 none	May-June 1250-1820	**Presumed Absent;** Chaparral, Pinyon-Juniper Woodland. On Slopes Of Loose Decomposed Granite; Parasitic On Various Chaparral Shrubs. No suitable habitat is present on the site.
Plagiobothrys parishii Parish's Popcorn-flower	Fed: Ca: CNPS: BLM:	none none 1B.1 none	March-June (November) 750-1400	**Presumed Absent;** Great Basin Scrub, Joshua Tree Woodland. Alkaline Soils; Mesic Sites. Limited suitable habitat occurs on the site, but this species was not observed during the focused surveys during the bloom period.
Symphyotrichum defoliatum San Bernardino Aster	Fed: Ca: CNPS: BLM:	none none 1B.2 none	July-November 2-2040	**Presumed Absent;** Meadows, Seeps, Marshes And Swamps, Coastal Scrub, Cismontane Woodland, Lower Montane Coniferous Forest. No suitable habitat is present on the site.

Federal Designations:
(Federal Endangered Species Act, United State Fish and Wildlife Service [USFWS])
END: Federally listed, endangered
THR: Federally listed, threatened

State Designations:
(California Endangered Species Act, California Department of Fish and Wildlife [CDFW])
END: State-listed, endangered
THR: State-listed, threatened
FP: State-fully protected
SSC: Species of Special Concern

California Rare Plant Ranks (CRPR):
1A: Presumed extirpated in California and rare or extinct elsewhere
1B: Rare, threatened, or endangered in California and elsewhere
2A: Presumed extirpated in California, but more common elsewhere
2B: Rare, threatened, or endangered in California, but more common elsewhere
3: Review list of plants requiring more study
4: Watch list of plants of limited distribution

California Native Plant Society (CNPS) Threat Code:

Scientific Name Common Name	**Status**	**Flowering Period** **Elevation** **(meters)**	**Potential for Occurrence; Habitat**
RAR: State rare species		**0.1:** Seriously threatened in California **0.2:** Moderately threatened in California **0.3:** Not very threatened in California	
Sources: California Natural Diversity Data Base (CDFW 2014) and California Native Plant Society Electronic Inventory (CNPS 2014) Littlerock, Palmdale, Lancaster East, Alpine Butte, Hi Vista, Lovejoy Buttes, Valyermo, Juniper Hills, and Pacifico Mountain 7.5- minute USGS topographic quadrangles.			

Attachment 2

Representative Site Photographs

Attachment 2
Representative Site Photographs

Photo 1. Overview of vegetation found on the study area.

Photo 2. Overview of annuals found on the study area.

Photo 3. Longview Road running north to south, bisecting the study area.

Photo 4. Trash found in the study area, concentrated around Longview Road.

Photo 5. Gravel and rock mounds found in the southeastern portion of the study area.

Photo 6. Representative creosote bush scrub habitat within the study area.

Attachment 3

Plant Compendium

Attachment 3
Plant Compendium

Scientific Name	Common Name
VASCULAR PLANTS	
ANGIOSPERMS (DICOTYLEDONS)	
AMARANTHACEAE	**AMARANTHE FAMILY**
Grayia spinosa	spiny hop-sage
ASTERACEAE	**SUNFLOWER FAMILY**
Acamptopappus sphaerocephalus	rayless goldenhead
Ambrosia acanthicarpa	annual burweed
Ambrosia dumosa	white bursage
Ambrosia psilostachya	ragweed
Anisocoma acaulis	scale bud
Artemisia tridentata	basin sagebrush
Chaenactis fremontii	Fremont pincushion
Coreopsis bigelovii	Bigelow's tickseed
Encelia frutescens	rayless encelia
Ericameria nauseosa	Mojave rabbitbrush
Ericameria linearifolia	interior goldenbush
Eriophyllum pringlei	Pringle's woolly sunflower
Eriophyllum wallacei	Wallace eriophyllum
Glyptopleura marginata	carveseed
Gutierrezia sarothrae	matchweed
Hymenoclea salsola	cheesebush
Lasthenia californica	California goldfields
Malacothrix glabrata	desert dandelion
Nicolletia occidentalis	hole in the sand plant
Stephanomeria pauciflora	Desert straw
Stephanomeria spinosa	thorn skeletonweed
Rafinesquia neomexicana	Desert chicory
Tetradymia spinosa	spiny horsebrush
Tetradymia stenolepis	Mojave cottonthorn
Xylorhiza tortifolia var. *tortifolia*	Mojave aster
BORAGINACEAE	**BORAGE fAMILY**
Amsinckia menziesii var. intermedia	common fiddleneck
Amsinckia tessellata	Checker fiddleneck
Cryptantha circumscissa	Western forget me not
*Cryptantha sp.***	Popcorn flower
Nama demissum	purple mat
Pectocarya penicillata	combseed
Phacelia crenulata	notch-leaved phacelia
Phacelia distans	distant phacelia
Tiquilia plicata	fanleaf crinklemat

Scientific Name	Common Name
BRASSICACEAE	**MUSTARD FAMILY**
*Hirschfeldia incana**	short-pod mustard
Lepidium flavuum var. *flavum*	peppergrass
Lepidium fremontii	desert peppergrass
*Sysimbrium irio**	London rocket
CACTACEAE	**CACTUS FAMILY**
Opuntia basilaris	beavertail cactus
Opuntia echinocarpa	silver cholla
CHENOPODIACEAE	**GOOSEFOOT FAMILY**
Atriplex canescens	four-wing saltbush
Atriplex spinifera	Mojave saltbush
Krascheninnikovia lanata	winterfat
*Salsola tragus**	Russian thistle
CUSCUTACEAE	**DODDER FAMILY**
Cuscuta sp.**	dodder
EPHEDRACEAE	**EPHEDRA FAMILY**
Ephedra nevadensis	Mormon tea
FABACEAE	**PEA FAMILY**
Lupinus bicolor	miniature lupine
Lupinus odoratus	Mojave lupine
GERANIACEAE	**GERANIUM FAMILY**
Erodium cicutarium	filaree
LAMIACEAE	**MINT FAMILY**
Monardella exilis	Mojave monardella
Monardella viridis	Green monardella
Salazaria mexicana	bladdersage
LOASACEAE	**LOASA FAMILY**
Mentzelia albicaulis	blazing star
MALVACEAE	**MALLOW FAMILY**
Eremalche exilis	small-flowered eremalche
*Malva pariflora**	cheeseweed
NYCTAGINACEAE	**FOUR O'CLOCK FAMILY**
Abronia pogonantha	Mojave sand verbena
Abronia villosa	Desert sand verbena
Mirabilis californica	California four o'clock

Scientific Name	Common Name
ONAGRACEAE	**EVENING PRIMROSE FAMILY**
Camissonia campestris	field primrose
Camissonia brevipes	yellow cups
Chylismia claviformis ssp. *claviformis*	Brown-eyed primrose
Eremothera boothii	Woody bottle-washer
Oneothera californica	Evening primrose
Oneothera deltoides	Dune evening primrose
OROBANCHACEAE	**BROOMRAPE FAMILY**
Orobanche sp.**	broomrape
PAPAVERACEAE	**POPPY FAMILY**
Eschscholzia minutiflora	Coville's poppy
POLEMONIACEAE	**PHLOX FAMILY**
Aliciella micromeria	dainty gilia
Eriastrum sapphirinum	sapphire eriastrum
Leptosiphon breviculus	Mojave linathus
Gilia brecciarum	small gilia
Gilia latiflora	broad-flowered gilia
Linanthus aureus (=leptosiphon)	golden linanthus
Linanthus dichotomus	evening snow
Linanthus parryae	sand blossoms
Loeseliastrum matthewsii	desert calico
POLYGONACEAE	**BUCKWHEAT FAMILY**
Centrostegia thurberi	Thurber's spineflower
Chorizanthe brevicornu var. *brevicornu*	brittle spineflower
Chorizanthe watsonii	Watson's spineflower
Eriogonum deflexum	flat-topped buckwheat
Eriogonum fasciculatum	California buckwheat
Eriogonum gracillimum	rose and white buckwheat
Eriogonum cf. *mohavense*	Western Mojave buckwheat
Eriogonum palmerianum	Palmer's buckwheat
Eriogonum cf. *plumatella*	Yucca buckwheat
Eriogonum trichopes	little desert trumpet
Lastarriaea coriacea	leather spineflower
Rumex hymenosepalus	wild rhubarb
PORTULACACEAE	**PURSLANE FAMILY**
Calyptridium monandrum	common pussy paws
RANUNCULACEAE	**BUTTERCUP FAMILY**
Delphinium parryi ssp. *parryi*	San Bernardino larkspur

Scientific Name	Common Name
ROSACEAE	**ROSE FAMILY**
Purshia tridentata var. *glandulosa*	antelope brush
SCROPHULARIACEAE	**FIGWORT FAMILY**
Castilleja exserta ssp. *venusta*	purple owl's clover
SOLANACEAE	**NIGHTSHADE FAMILY**
Datura discolor	Desert thorn apple
Lycium cooperi	peach thorn
ZYGOPHYLLACEAE	**CALTROP FAMILY**
Larrea tridentata	creosote bush
ANGIOSPERMS (MONOCOTYLEDONS)	
AGAVACEAE	**AGAVE FAMILY**
Yucca brevifolia	Joshua tree
LILIACEAE	**LILY FAMILY**
Muilla coronata[1]	crowned muilla
Dichelostemma capitatum	blue dicks
POACEAE	**GRASS FAMILY**
Achnatherum hymenoides	Indian rice grass
Achnatherum speciosum	desert needlegrass
*Bromus madritensis ssp. rubens**	foxtail chess
*Hordeum vulgare**	wild barley
Nasella pulchra	purple needlegrass
*Schismus barbatus**	Mediterranean grass
*Vulpia myuros**	vulpia

[1] sensitive species
***non-native species**
****dried out condition of the plant made it unidentifiable to species level**

Attachment 4

Wildlife Compendium

Attachment 4
Wildlife Compendium

Scientific Name	**Common Name**
REPTILES	
Phrynosomatidae (North American Spiny Lizards)	
Phrynosoma platyrhinos	desert horned lizard
Sceloporus magister	desert spiny lizard
Sceloporus occidentalis	western fence lizard
Uta stansburiana	side-blotched lizard
Crotophytidae (Collard Lizards, Leopard Lizards)	
Gambelia wislizenii	long-nosed leopard lizard
Teiidae (Ground Lizards, Racerunners, and Whiptails)	
Aspidoscelis tigris	western whiptail
Iguanidae (American Arboreal Lizards, Chuckwallas, Iguanas)	
Dipsosaurus dorsalis	desert iguana
Colubridae (Typical Snakes)	
Masticophus flagellum	coachwhip
Pituophis catenifer	gopher snake
BIRDS	
Troglodytidae (Wrens)	
*Campylorhynchus brunneicapillus***	cactus wren
Corvidae (Crows, Jays, and Magpies)	
Corvus corax	common raven
Tyrannidae (Tyrant Flycatchers)	
Myiarchus cinerascens	ash-throated flycatcher
Tyrannus vociferans Swainson	Cassin's kingbird
Emberizidae (Buntings, Finches, Sparrows, and Towhees)	
Carpodacus mexicanus	house finch
Artemisiospiza belli	Bell's sparrow
Zonotrichia leucophrys	white-crowned sparrow
Alaudidae (Larks)	
Eremophilia alpestris	horned lark
Accipitridae (Eagles, Hawks, and Kites)	
Buteo jamaicensis	red-tailed hawk
Mimidae (Mockingbirds and Thrashers)	
Mimus polyglottos	northern mockingbird
Apodinae (Swifts)	
*Chaetura vauxi**	Vaux's Swift
Hirundinidae (Swallows)	
Hirundo rustica	barn swallow
Caprimulgidae (Nightjars)	
*Chordeiles acutipennis***	lesser nighthawk
Aegithalidae (Bushtits)	
Psaltriparus minimus	bushtit
Columbidae (Doves and Pigeons)	
Zenaida maroura	mourning dove

Scientific Name	**Common Name**
Picidae (Woodpeckers)	
Picoides scalaris	ladder-backed woodpecker
MAMMALS	
Sciuridae (Chipmunks, Marmots, and Squirrels)	
Ammospermophilus leucurus	white-tailed antelope ground squirrel
Heteromyidae (Kangaroo Mice, Kangaroo Rats, and Pocket Mice)	
Dipodomys sp.	unidentified kangaroo rat tracks and burrows
Muridae (Mice, Rats, and Voles)	
Noetoma lepida	desert woodrat
Leporidae (Hares and Rabbits)	
Sylvilagus audubonii	desert cottontail
Lepus californicus	black-tailed jackrabbit
Canidae (Dogs and Their Allies)	
Canis latrans	coyote (scat)

*California Department of Fish and Wildlife (CDFW) Species of Special Concern (SSC)
**Los Angeles County Bird Watchlist Species

ATTACHMENT E

Exhibit 2 - ***Results of Baseline Vegetation Study and Development of Performance Standards*****, prepared by ECORP Consulting, Inc., July 24, 2014**

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ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

July 24, 2014
(2014-054.003/001/001)

Mr. John Hecht
SESPE Consulting, Inc.
468 Poli Street, Suite 2E
Ventura, CA 93001

SUBJECT: Results of Baseline Vegetation Study and Development of Performance Standards for the Lebata Mine Site near Big Rock Creek in Pearblossom, Los Angeles County, California

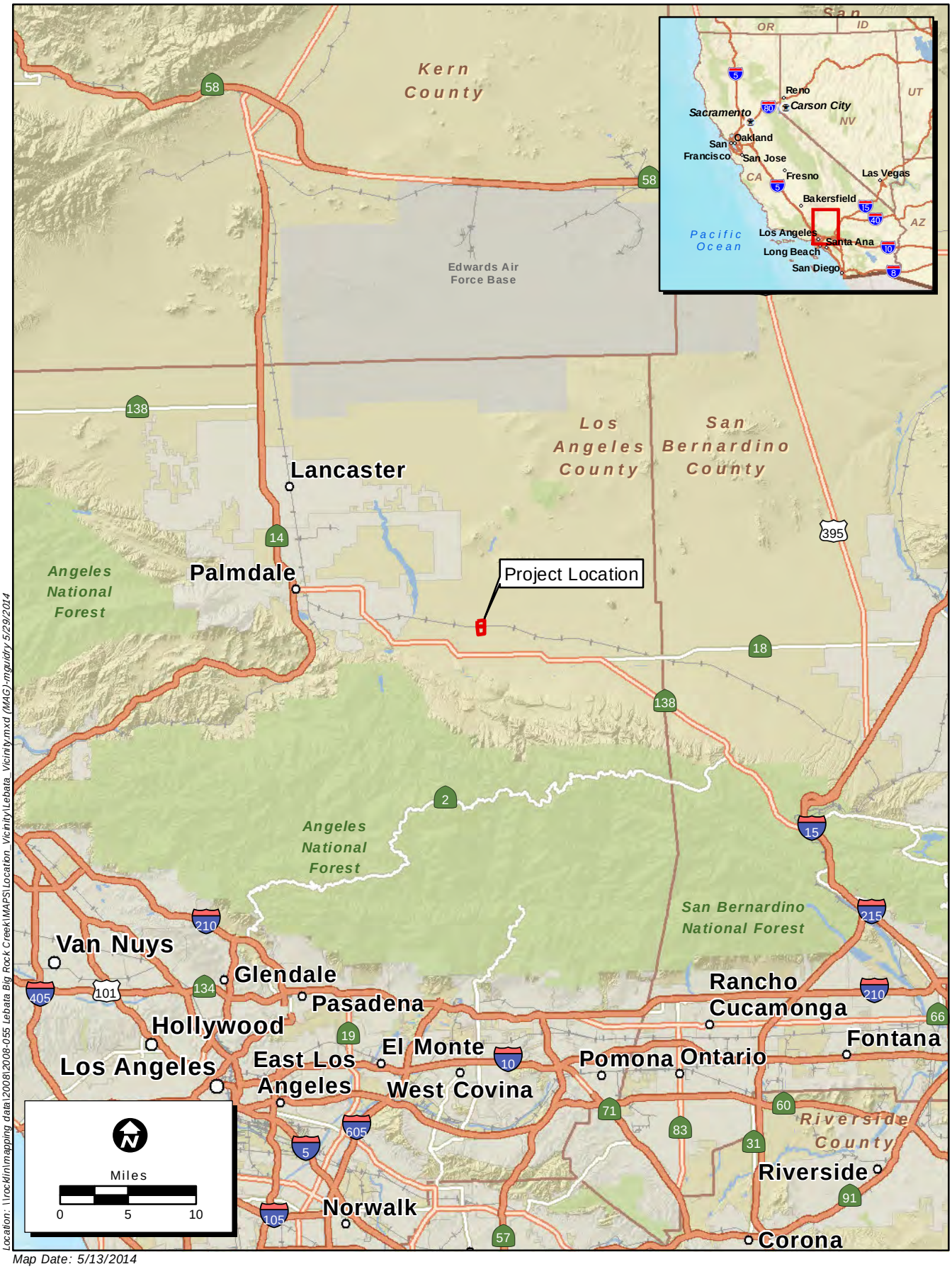
Dear Mr. Hecht,

During May 2014, ECORP Consulting, Inc. (ECORP) conducted baseline vegetation sampling on an approximately 310-acre (125-hectare [ha]) site where Lebata, Inc. (Lebata) is proposing to conduct surface mining activities. The purpose of this letter report is to summarize the results of vegetation sampling. In addition, revegetation performance standards are proposed for inclusion in the updated Reclamation Plan.

Project Location and Description

The Lebata Big Rock Creek Surface Mining Project (Project) is an approximately 310-acre (125-ha) site located south of Avenue T between 131st and 136th Streets East in the unincorporated community of Pearblossom, Los Angeles County (Figure 1). The Project site is bisected by the Union Pacific Railroad (UPRR), located approximately 0.5 mile (mi) (1 kilometer [km]) south of Avenue T. Mining activities may be initiated in the northern portion of the Project site (approximately 135 acres (55 ha)), which is bordered by the UPRR on the south (Figure 2). The northern portion of the Project site will be mined under Phases 1 and 3 of the proposed work plan. The southern portion of the Project site, approximately 175 acres (71 ha) bounded by the UPRR to the north, is also proposed for surface mining activities. The southern portion of the Project site will be mined under Phase 2 of the proposed work plan. Elevations on the site range from approximately 2,850 to 2,940 feet (ft) (870 to 896 meters [m]) above mean sea level (msl).

The Project site is currently dominated by creosote bush-white burr sage scrub (*Larrea tridentata-Ambrosia dumosa* Shrubland Alliance). Cheesebush scrub (*Ambrosia salsola* Shrubland Alliance) covers a very small portion of the site and is limited to the remnant washes. The site is predominately flat with several dirt roads and paths traversing the area. Illegal dumping has occurred in some locations with the dump sites ranging from concentrated piles to scattered rubbish.



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Map Date: 5/13/2014

Service Layer Credits: Sources: USGS, ESRI, TANA, AND

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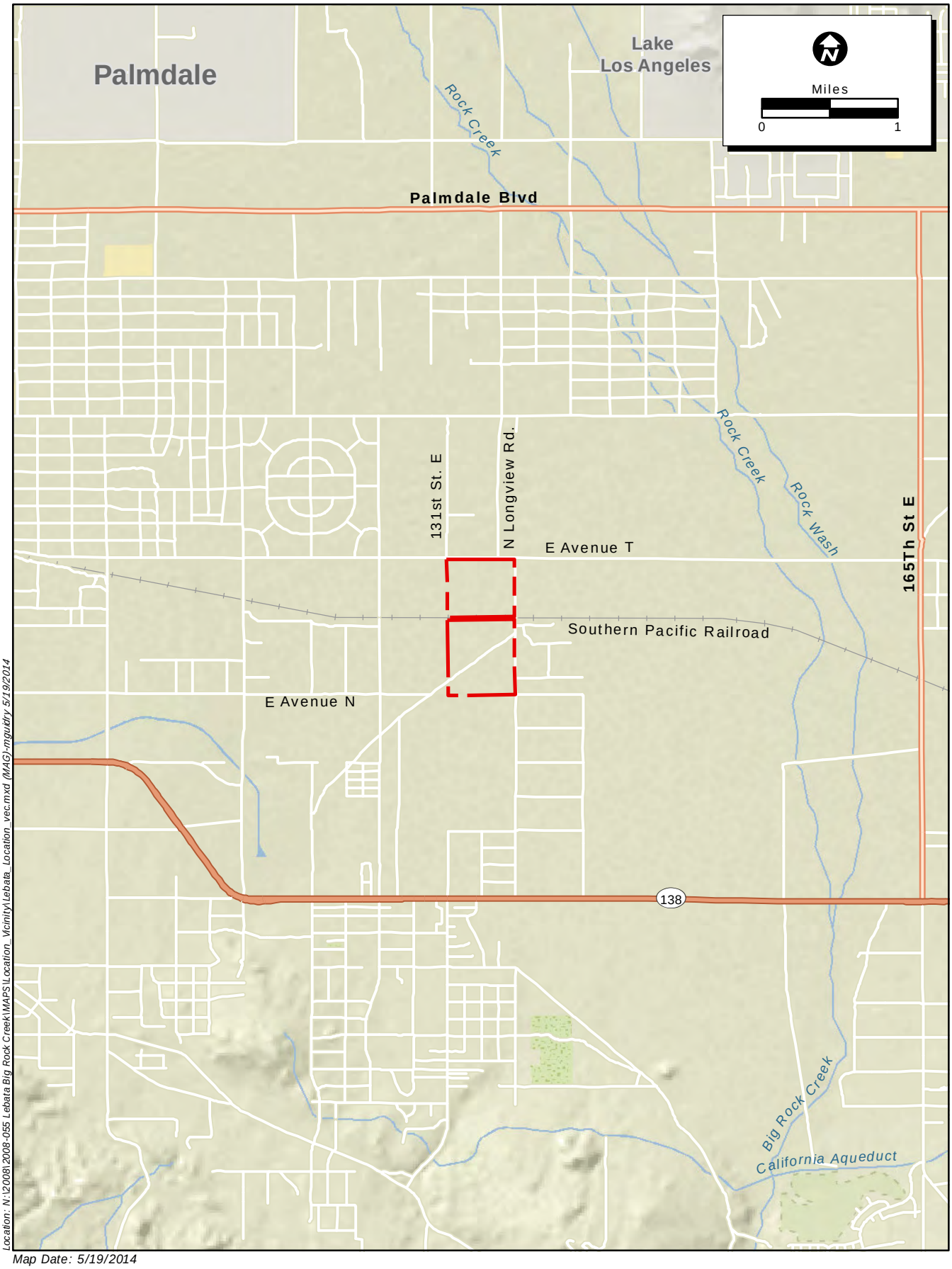
Figure 1. Project Vicinity

2014-054 Lebata Big Rock Creek



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Map Date: 5/19/2014
Source: ESRI

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Figure 2. Project Location

2014-054 Lebata Big Rock Creek

Methods

Vegetation sampling was achieved within the proposed Project site through collection of data along transects. The site was split into quadrants with the northern parcel having six equal sections and the southern parcel having nine equal sections. Within each of the sections, one transect was randomly established. In order to obtain an 80 percent confidence level, as required by the Surface Mining and Reclamation Act (SMARA) and the Lebata Reclamation Plan prepared by SESPE Consulting, Inc., a total of 15 100-m transects were established. ECORP installed 3/8-inch x 3-foot rebar that was fitted with dome-shaped orange safety caps at the start and end of each transect. A Trimble Global Positioning System (GPS) device (Geo XT) was used to record the start and end of each transect and the points collected during the field work were post-processed to achieve submeter accuracy.

Along each transect, the line-intercept method was used to collect cover data for native perennials, native annuals, nonnative annuals, and bare ground. Specifically, the outline of the canopy of each plant species was independently measured along transect tape. In cases where multiple plants were growing as a group, best judgment was used to determine the start and end of each species in order to account for overlap. In collecting cover data in this manner, total cover was determined rather than absolute cover (which takes into account multiple strata of cover and can result in cover values that exceed 100 percent). The method used during vegetation sampling resulted in each transect having a cover value that always totaled 100 percent and included native perennial and annual species, nonnative annual species, and bare ground.

In addition to collecting vegetation cover data, native shrub/tree heights and plant species density were determined for a 2-m belt centered along each transect. Only those species that were rooted within the belt were measured. Perennial grass species were also measured since they are an important component to the vegetation community being sampled. Perennial native species richness (total number of different species) was also determined for each transect. All transect data was recorded on standardized field datasheets. Photographic documentation of the start and end of each transect were recorded with a digital camera and are included as Attachment 1 and are shown in Figure 3.

Following the field effort, ECORP calculated mean and variance values for the following variables using Microsoft Excel 2010:

- Relative cover of perennial native species
- Total vegetation cover (all native species combined)
- Total non-native annual weed cover
- Perennial native species density
- Perennial native species richness
- Average (average) height of trees and shrubs

Location: \\rocklin\mapping data\2008\2008-055 Lebata Big Rock Creek\MAPS\VEGETATION\VegTransects.mxd (MAG) -mguidry 6/12/2014

Map Date: 6/12/2014
Photo Source: NAIP (2012)

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Figure 3. Vegetation Transect Locations

2014-054.003 / 001 / 001 Baseline Vegetation Sampling

Results

The relative cover of perennial native species averaged 17 percent for all 15 transects, with 27 percent being the highest and eight percent being the lowest relative cover. With regard to total native vegetation cover (i.e., perennials and annuals), the average was determined to be 26 percent. The highest and lowest total native cover values were determined to be 40 percent and 19 percent, respectively. The mode for total native cover was 19 percent. Total nonnative plant cover was determined to average 24 percent. The highest and lowest total nonnative cover values were determined to be 36 percent and 15 percent, respectively. Nonnative perennial species were not encountered during vegetation sampling. Total bare ground was determined to average 50 percent. The highest and lowest bare ground values were determined to be 60 percent and 41 percent, respectively. Table 1 lists native, nonnative, and bare ground cover results for the 15 transects as well as statistical data for the 15 transects (samples).

Table 1. Plant Cover Results per Transect

Transect	Relative Native Perennial Cover	Total Native Vegetation Cover	Total Nonnative Vegetation Cover	Total Bare Ground
1	17	34	16	49
2	21	29	15	57
3	18	29	21	51
4	8	19	36	45
5	16	24	34	41
6	11	20	33	47
7	21	27	30	43
8	18	25	30	45
9	17	23	17	60
10	27	40	16	44
11	14	20	24	56
12	16	22	23	56
13	19	29	23	48
14	18	26	23	51
15	21	29	17	54
Mean	**17**	**26**	**24**	**50**
Variance	**18.31**	**29.57**	**47.34**	**31.02**
Standard Deviation	**4.4**	**5.6**	**7.1**	**5.8**
Confidence Interval (80%)	**1.47**	**1.86**	**2.36**	**1.91**

The native perennial species density averaged 46.5 plants per 200 meter^2, which was extrapolated to a 1-acre area resulting in a total of 940 plants per acre, on average. The highest and lowest native perennial plant species densities per transect were determined to be 104 and 17, respectively. A total of 53 percent of the density values for the 15 transects were between 38 and 46 plants per 200 m^2.

Native species richness (total number of species per transect) averaged 7 species. The highest and lowest native species richness values per transect were determined to be 11 and five, respectively. The mode for native species richness was eight native species. A total of 15 different native plant species were observed during vegetation sampling. A complete list of plant species observed during vegetation sampling (at sampling locations and incidentally observed while walking between sampling locations) is included as Attachment 2.

Table 2 lists native perennial plant density and native perennial species richness results for 15 transects as well as statistical data for the 15 transects (samples).

Table 2. Native Perennial Plant Density and Native Plant Species Richness Results per Transect

Transect	Native Perennial Density per Transect (200 m^2)	Density per Acre	Native Species Richness per Transect
1	17	344	6
2	38	769	9
3	26	526	5
4	46	931	8
5	31	627	5
6	38	769	11
7	42	850	6
8	61	1234	8
9	44	890	6
10	40	809	5
11	43	870	8
12	42	850	6
13	104	2104	9
14	51	1032	8
15	74	1497	8
Mean	**46.5**	**940.2**	**7.2**
Variance	**404.6**	**165673.8**	**2.96**
Standard Deviation	**20.8**	**421.3**	**1.8**
Confidence Interval (80%)	**6.89**	**139.41**	**0.59**

A total of 14 native shrubs and one native tree (*Yucca brevifolia*) were recorded along the transects. The tallest species recorded was *Y. brevifolia*, which was determined to have a mean height of 3.4 meters for the five individuals that were measured. The shortest shrub measured was *Ambrosia dumosa*, which was determined to have a mean height of 0.35 meter for the 52 individuals measured. The two dominant shrubs included *Larrea tridentata* and *Ephedra viridis*, which were determined to have mean heights of 1.57 meters and 0.48 meter, respectively. Table 3 lists native shrub and tree height results for 15 transects as well as, statistical data for the 15 transects (samples).

Table 3. Native Shrub and Tree Height Results

Species	Total Number Recorded (15 Transects)	Mean Height (meters)	Variance	Standard Deviation	Confidence Interval (80%)
Acamptopappus sphaerocephalus	60	0.44	0.165	0.41	0.068
Ambrosia dumosa	52	0.35	0.018	0.14	0.024
Ambrosia salsola	41	0.79	0.470	0.69	0.139
Ephedra viridis	314	0.48	0.042	0.20	0.014
Eriogonum fasciculatum var. *polifolium*	5	0.48	0.021	1.64	0.937
Grayia spinosa	3	0.60	0.027	0.16	0.119
Krasheninnikovia lanata	7	0.48	0.021	0.16	0.076
Larrea tridentata	162	1.57	0.196	0.20	0.020
Lepidium fremontii	1	0.90	-	-	-
Poa secunda	18	0.21	0.005	0.07	0.021
Salazaria mexicana	17	0.45	0.036	0.69	0.216
Acnatherum hymenoides	1	0.40	-	-	-
Stipa speciosa	1	0.35	-	-	-
Tetradymia cf. stenolepis	17	0.74	0.026	0.44	0.138
Yucca brevifolia	5	3.40	2.140	0.21	0.118

Data sheets used during transect vegetation sampling are included in this report as Attachment 3.

Discussion

Data collected for native plant species cover, density, richness, and heights were reviewed for accuracy and statistical analyses were performed to determine the variance, standard deviation and confidence intervals for a confidence level of 80 percent (Tables 1 through 3). A review of the data indicated that density values for *L. tridentata* and *E. viridis* needed to be clarified. In some cases during data collection, it was difficult to distinguish between exactly how many individuals were distinct plants and how many were just an extension of a parent plant. A distance rule was implemented to create consistency during data collection. If plant trunks were concentrated at distances that exceeded one foot apart for *L. tridentata* and 0.5 feet apart for *E. viridis,* then they were counted as distinct plants.

Proposed Performance Standards

The Lebata, Inc. Big Rock Creek Reclamation Plan currently includes Performance Standards for Revegetation that are expressed as percentages of baseline conditions (SESPE 2014). The Office of Mine Reclamation (OMR) is requiring actual target values assigned to the Performance Standards prior to approval of the Reclamation Plan. ECORP has used statistics obtained from analyzing the baseline data and the current Reclamation Plan Performance Criteria (Attachment 4) to calculate target values for revegetation cover, density, and species richness (Table 4).

Table 4. Proposed Performance Standards

Performance Standard Class	Current Reclamation Plan	Baseline Data Results	Proposed Performance Standard
Shrubs and Forbs			
Overall Cover	60% of baseline data.	Average of 26% native cover (including perennials and annuals) for 15 transects.	15.6% cover by native plant species, overall (includes perennial and annual species).
Density	80% of baseline data.	Average of 46 perennial plant species for 15 transects, or, 940 plants per acre.	752 perennial plants per acre.
Species Richness	80% of baseline data.	Average of seven native perennial species per transect.	Minimum of 5.6 native perennial species in revegetation areas.
Joshua Trees			
Density	Two per acre.	Five Joshua trees encountered (across 15 transects).	Two per acre where soil conditions are appropriate (e.g., undisturbed or similar to native soil), or, total of 50% of baseline data (i.e., 50% of 200).[1] Minimum of 100 Joshua Trees must become established and self-sufficient.
Nonnative Plant Species			
Cover	Remove if more than 25% of any 20 square foot area is occupied by weeds greater than six inches in height.	Average of 24% nonnative cover for 15 transects.	Cover of annual nonnative plant species shall not exceed 10%, as verified through ocular estimates and annual performance monitoring. If it is determined that annual nonnative cover is hindering the growth or establishment of planted species then cover of annual nonnative species shall not exceed 5%. All perennial nonnative plant species shall be eradicated.

[1] Site is 310 acres. Environmental Impact Report states that the total population of Joshua trees is estimated at 200.

If you have any questions regarding the results of the baseline vegetation survey and/or the performance standards, please call me at (714) 648-0630.

Sincerely,

ECORP Consulting, Inc.

Mari Quillman
Principal Biological Resources Program Manager

Attachments

1 – Transect Photodocumentation
2 – Plant Species Compendium
3 – Field Data Sheets
4 – Table 7: Revegetation Performance Criteria (From. *Lebata Inc. Big Rock Creek Reclamation Plan,* Sespe 2013)

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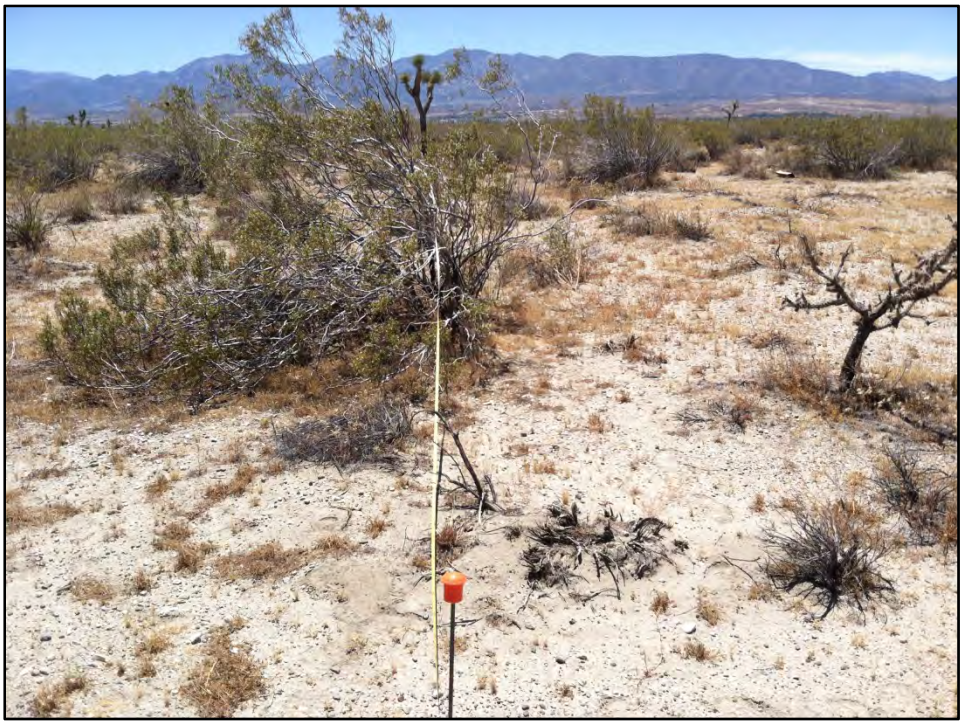
Attachment 1

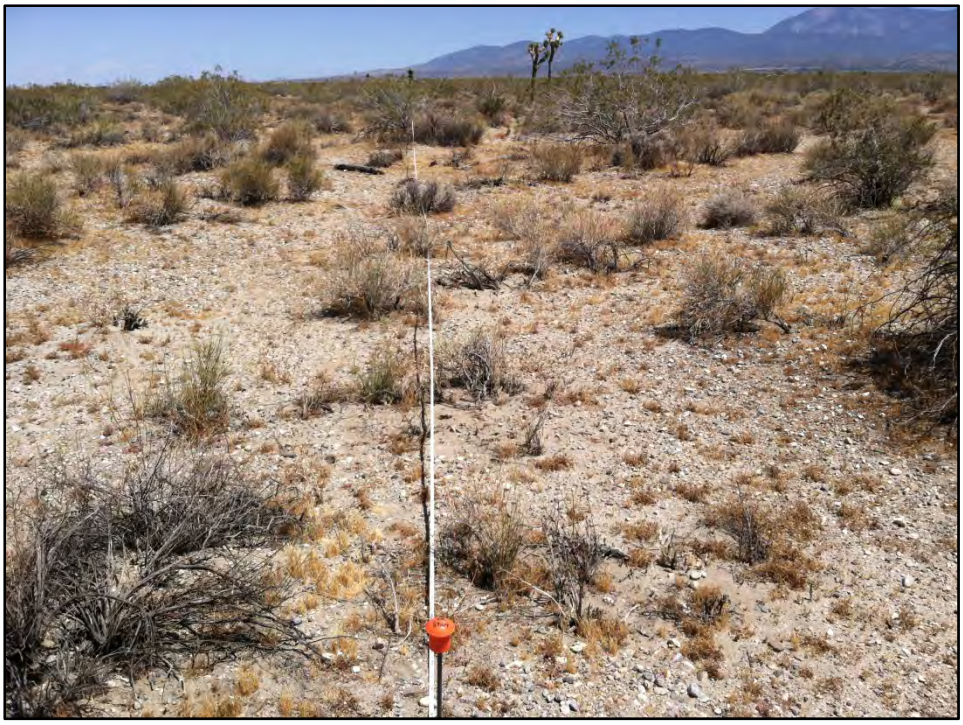
Transect Photodocumentation

Lebata Mine Site Baseline Vegetation Sampling Transect Photodocumentation
May 2014 (ECORP Consulting, Inc.)



Transect 1 Start

Transect 1 End



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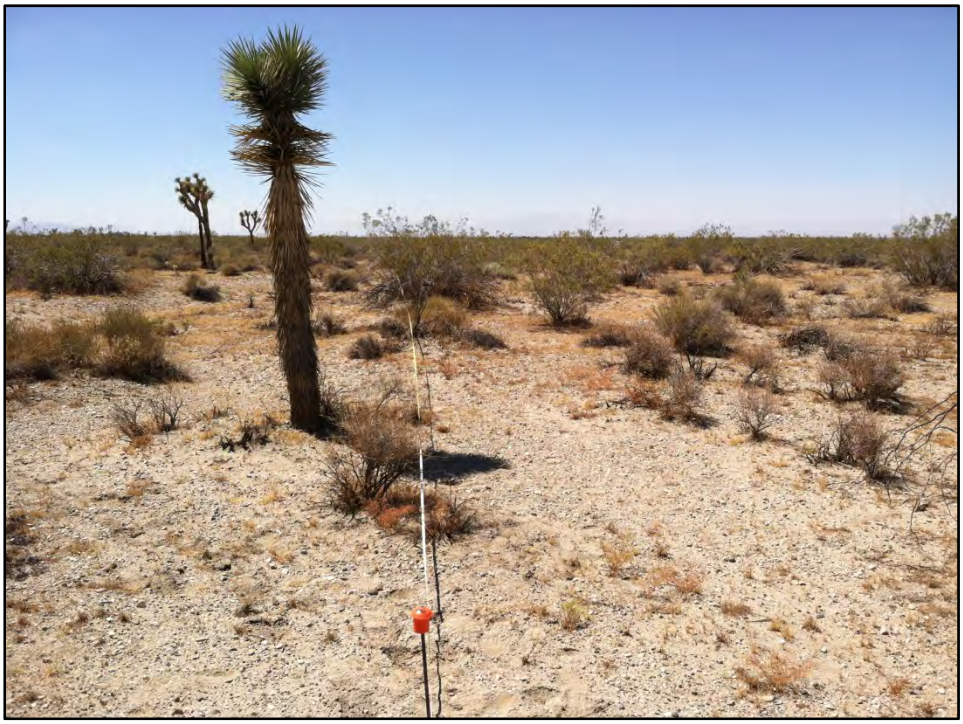
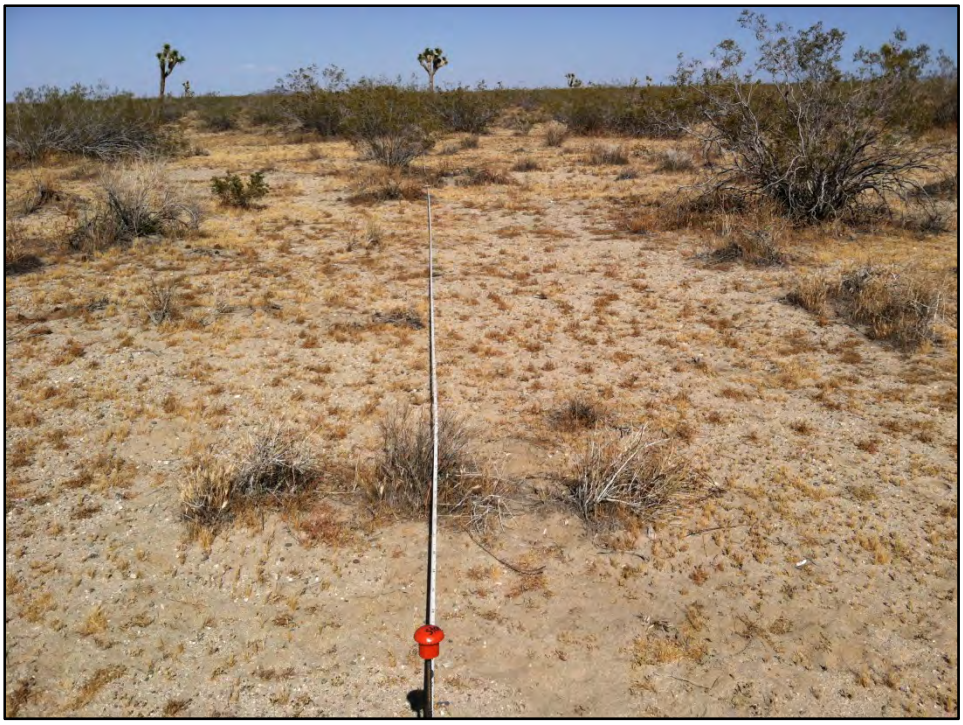
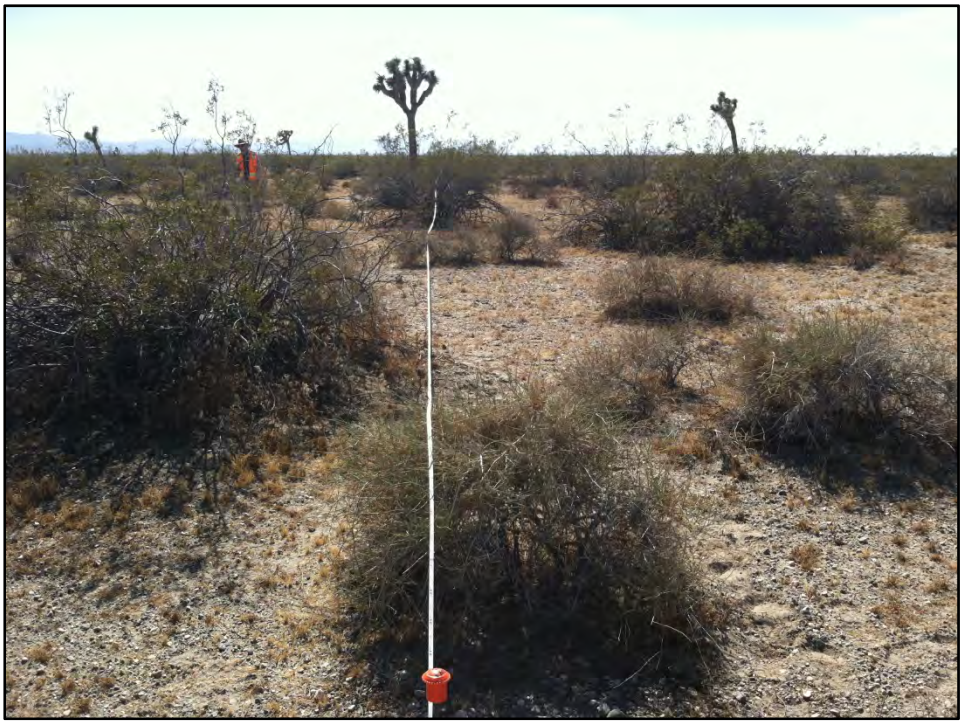


Transect 2 End



Transect 3 Start



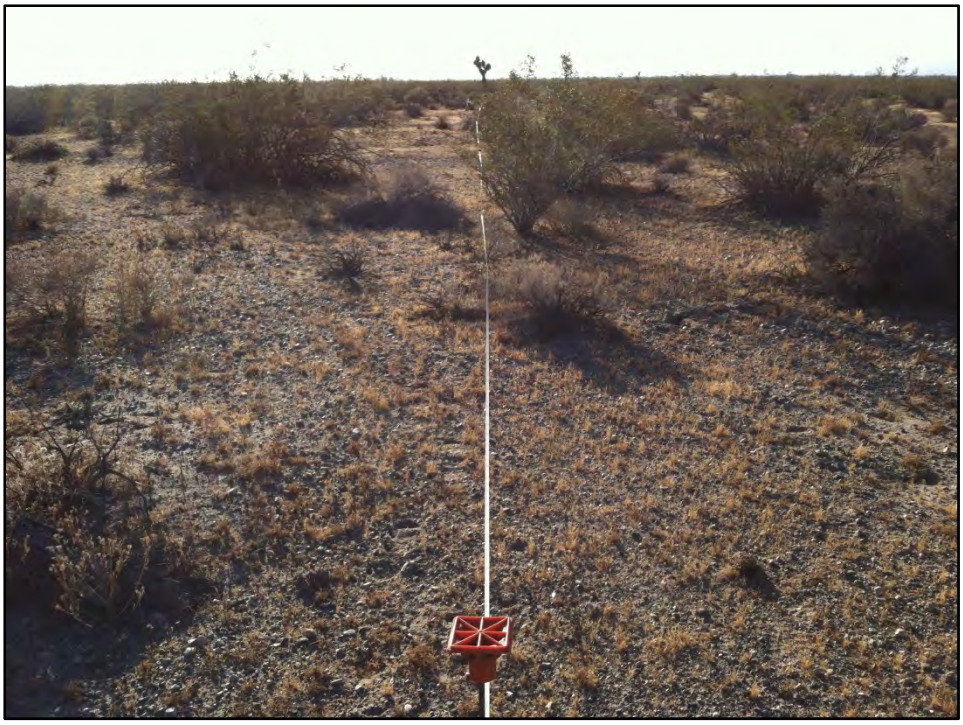
Transect 3 End

Transect 4 Start

Transect 4 End

Transect 5 Start

Transect 5 End



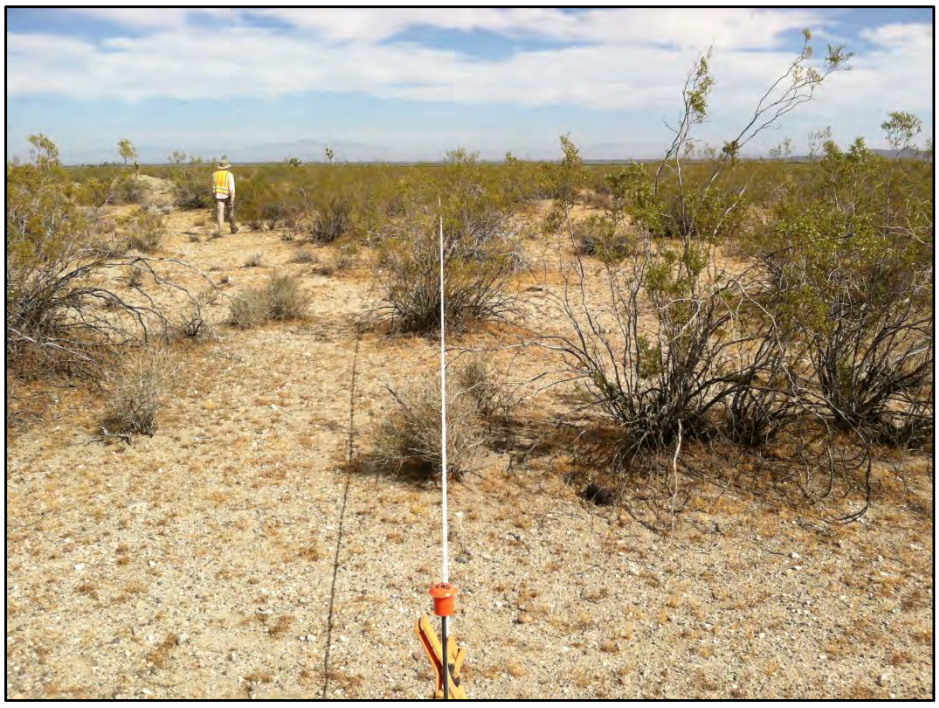
Transect 6 Start

Transect 6 End

Transect 7 Start

Transect 7 End

Transect 8 Start



Transect 8 End

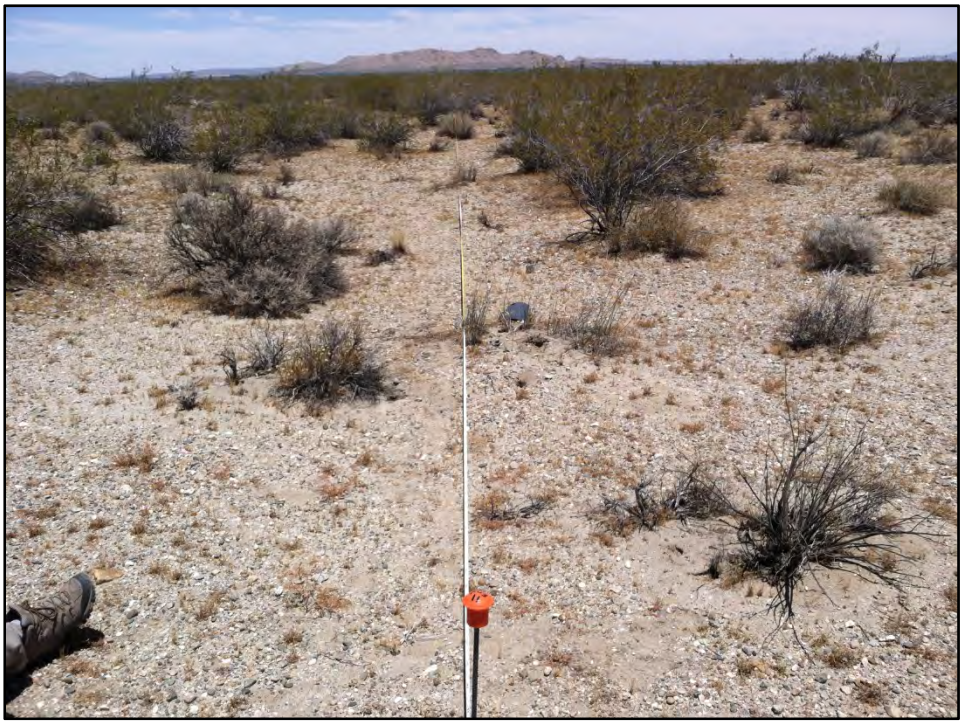
Transect 9 Start

Transect 9 End

Transect 10 Start

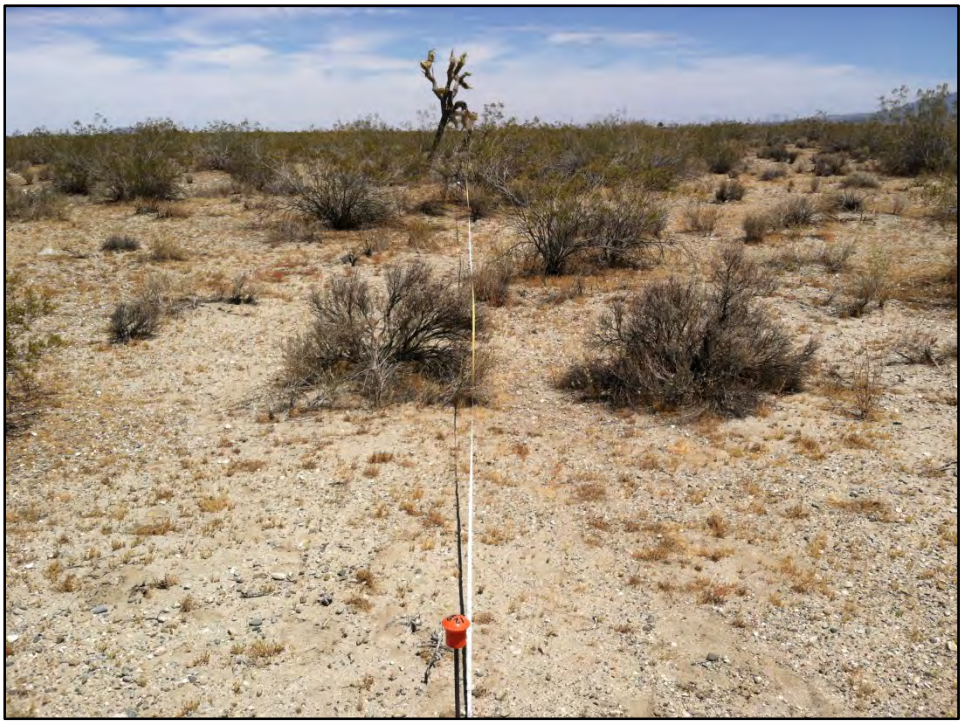
Transect 10 End

Transect 11 Start



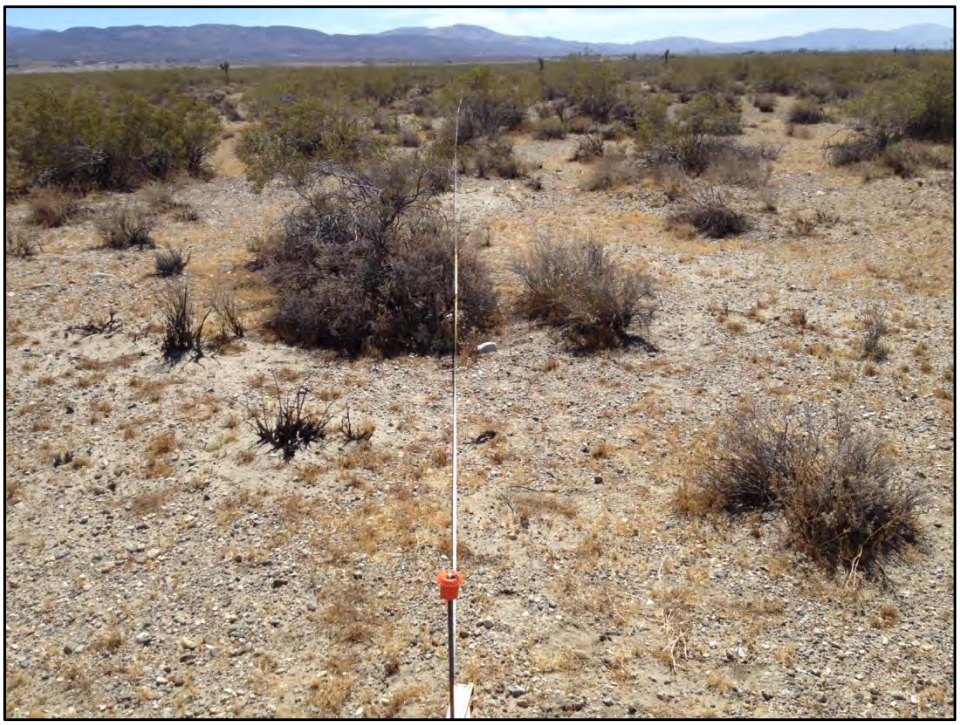
Transect 11 End

Transect 12 Start



Transect 12 End

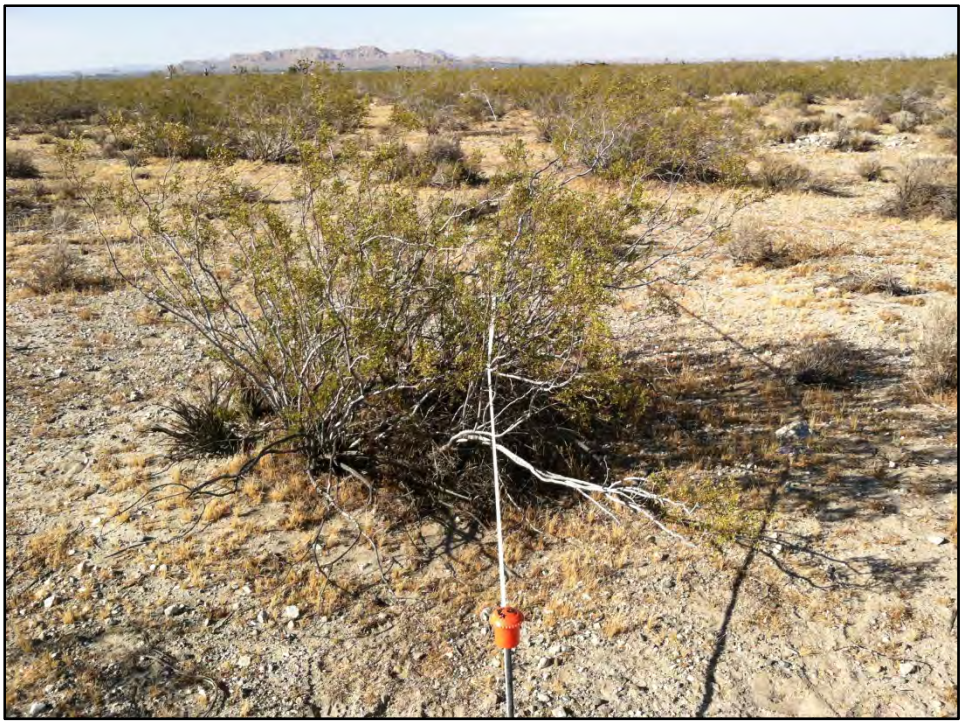
Transect 13 Start



Transect 13 End

Transect 14 Start

Transect 14 End



Transect 15 Start

Transect 15 End

Attachment 2

Plant Species Compendium

Lebata Big Rock Creek Mine Project
2014 PLANT SPECIES COMPENDIUM

Scientific Name	Common Name
VASCULAR PLANTS	
GYNOSPERMS (GNETALES)	
EPHEDRACEAE	**EPHEDRA FAMILY**
Ephedra viridis	green ephedra
ANGIOSPERMS (EUDICOTS)	
ASTERACEAE	**SUNFLOWER FAMILY**
Acamptopappus sphaerocephalus	rayless goldenhead
Ambrosia ancanthicarpa	annual bur-sage
Ambrosia dumosa	burrobush
Ambrosia salsola	cheesebush
Lasthenia californica	California goldfields
Lepidospartum squamatum	scale broom
Logfia depressa	dwarf cottonrose
Malacothrix californica	desert dandelion
Stephanomeria pauciflora	wire lettuce
Tetradymia stenolepis	Mojave cottonthorn
BORAGINACEAE	**BORAGE FAMILY**
Amsinckia tessellata	bristly fiddleneck
Phacelia ciliata	Great Valley phacelia
Phacelia distans	commom phacelia
BRASSICACEAE	**MUSTARD FAMILY**
Lepidium cf. nitidum	yellow pepperweed
CACTACEAE	**CACTUS FAMILY**
Opuntia basilaris var. basilaris	beavertail cactus
Cylindropuntia echinocarpa	golden cholla
CARYOPHYLLACEAE	**PINK FAMILY**
Loeflingia squarrosa	spreading pygmyleaf
CHENOPOPDIACEAE	**GOOSEFOOT FAMILY**
Grayia spinosa	hopsage
Krasheninnikovia lanata	winter fat
GERANIACEAE	**GERANIUM FAMILY**
*Erodium cicutarium**	redstem stork's bill
LAMIACEAE	**MINT FAMILY**
Salazaria mexicana	bladder sage
LOASACEAE	**LOASA FAMILY**
Mentzelia albicaulis	whitestem blazingstar
Petalyonyx thurberi	Thurbers sandpaper plant
MALVACEAE	**MALLOW FAMILY**
Eremalche exilis	white mallow
MONTIACEAE	**MINER'S LETTUCE FAMILY**
Calyptridium monandrum	pussy paws
ONAGRACEAE	**EVENING PRIMROSE FAMILY**
Eulobus californicus	California primrose
Camissonia campestris	Mojave sun cups
Eremothera boothii ssp. *desertorum*	Booth's desert suncup
POLEMONIACEAE	**PHLOX FAMILY**
Eriastrum diffusum	miniature woollstar
Gilia malior	scrub gilia

Scientific Name	Common Name
POLYGONACEAE	**BUCKWHEAT FAMILY**
Centrostegia thurberi	Thurbers' spineflower
Chorizanthe brevicornu	brittle spineflower
Chorizanthe watsonii	Watson's spineflower
Eriogonum fasciculatum var. polifolium	California buckwheat
ROSACEAE	**ROSE FAMILY**
Purshia tridentata	antelope bitterbrush
SOLANACEAE	**NIGHTSHADE FAMILY**
Datura wrightii	sacred thorn-apple
Lycium andersonii	water jacket
Lycium cooperi	Cooper's box thorn
ZYGOPHYLLACEAE	**CALTROP FAMILY**
Larrea tridentata	creosote bush
ANGIOSPERMS (MONOCOTS)	
AGAVACEAE	**CENTURY PLANT FAMILY**
Yucca brevifolia	Joshua tree
POACEAE	**GRASS FAMILY**
Acnatherum hymenoides	indian ricegrass
Bromus madritensis ssp. *rubens**	red brome
*Bromus tectorum**	cheatgrass
Poa cf. secunda	Pine Bluegrass
*Schismus cf. arabicus**	split grass
Stipa speciosa	desert needlegrass
* - Nonnative species.	
cf. - From the latin *confer,* imperative of *conferre* , to compare. Indicates a species was not identified via dichotomous key (e.g., Jepson Manual), but that appeared to be a particular species.	

Attachment 3

Field Data Sheets

LINE INTERCEPT - TRANSECT DATA SHEET

ECORP Consulting, Inc. ENVIRONMENTAL CONSULTANTS

Lebata Mine Site Vegetation Sampling

Project No.: 2014-054.003

Surveyor(s): Josh Corona Bennett, Greg Hampton | **Compass Orientatation:** S degrees 185°

Transect No.: 1 | **Date:** 5/27/14 | **Transect Length - 100 m**

Species	Begin (meters)	End (meters)	Total Cover (meters)	Percent Cover
Bare Ground (BG)	0	2.5		
Native Annuals (NA)	2.5	3.0		
Non Native Annuals (NNA)	3	3.2		
Lac. tri.	3.2	7.4		
BG	7.4	10		
NA	10	11.5		
NNA	11.5	12.1		
Amb. dum.	12.1	12.5		
BG	12.5	13.2		
NNA	13.2	13.3		
Amb. sal.	13.3	14		
BG	14	21		
NNA	21	22		
NA	22	22.5		
Aca. sph.	22.5	22.9		
BG	22.9	28.5		
NA	28.5	29		
NNA	29	29.7		
Lac tri	29.7	33.7		
BG	33.7	34.5		
NNA	34.5	35		
NA	35	35.2		
Yuc bre	35.2	35.9		
NNA	35.9	40.9		
BG	40.9	49.2		
NA	49.2	53.9		
Amb sal.	53.9	54.1		
NA	54.1	54.4		
BG	54.4	54.7		
Eph vir	54.7	55		
BG	55	56.1		
NA	56.1	56.4		
Amb. sal	56.4	57.6		
BG	57.6	57.9		
Amb. sal	57.9	58		

BG	58	69		
NA	69	71		
NNA	71	73.3		
Lar tri	73.3	75		
BG	75	80		
NA	80	85		
NNA	85	90		
Lar tri	90	91		
BG	91	93.3		
NNA	93.3	94.3		
Lar tri	94.3	95.6		
BG	95.6	97.5		
NA	97.5	99.3		
Lar tri	99.3	100		
Total:				

Other Notes: Native Perennials

2m Belt Density:

Lar tri: ~~IIII~~
Amb sal: ~~IIII~~
Eph vir: III
Yuc bre: I
Aca sph: II
Amb dum: I

Species Richness:

Shrub/Tree Height:

Lar tri: 1.3, 2, 1.7, 1.4, 2.5,
Amb sal: .5, .9, .9, .95, .4,
Eph vir: .6, .4, .4
Yuc bre: 3.5,
Aca sph: .6, .3,
Amb dum: .4,

LINE INTERCEPT - TRANSECT DATA SHEET

ECORP Consulting, Inc. ENVIRONMENTAL CONSULTANTS

Lebata Mine Site Vegetation Sampling

Project No.: 2014-054.003

Surveyor(s): Josh Corona-Bennett, Greg Hampton | Compass Orientatation: SE degrees 135°

Transect No.: 2 | Date: 5/27/14 | Transect Length - 100 m

Species	Begin (meters)	End (meters)	Total Cover (meters)	Percent Cover
BG (Bare Ground)	0	.7		
NNA (Non-Native Annuals)	.7	.8		
NA (Native Annuals)	.8	1		
Eph. vir.	1	1.2		
BG	1.2	2.5		
NNA	2.5	2.7		
NA	2.7	2.9		
Aca sph	2.9	3.3		
BG	3.3	4.3		
NA	4.3	4.4		
NNA	4.4	4.5		
Eph vir	4.5	5.1		
BG	5.1	6.3		
NA	6.3	6.5		
NNA	6.5	6.6		
Eph vir	6.6	7.4		
BG	7.4	16		
NNA	16	20		
NA	20	22		
BG	22	22.3		
Gra spi	22.3	22.7		
Sal mex	22.7	22.9		
NA	22.9	23.3		
Lar tri	23.3	25.3		
BG	25.3	28.5		
NNA	28.5	31		
NA	31	32.2		
Eph vir	32.2	33.3		
BG	33.3	38.5		
NNA	38.5	39		
NA	39	39.7		
Kra lan	39.7	40.2		
BG	40.2	40.9		
NNA	40.9	41.3		
NA	41.3	41.5		

Eph vir	41.5	41.9		
BG	41.9	43.1		
NNA	43.1	43.3		
Eph var	43.3	44.3		
BG	44.3	47.5		
NNA	47.5	48		
NA	48	48.7		
Lac tri	48.7	52.6		
BG	52.6	58		
NNA	58	58.5		
NA	58.5	58.9		
Lac tri	58.9	60.7		
BG	60.7	63.5		
NNA	63.5	64.5		
NA	64.5	64.8		
Eri fas ssp. pol	64.8	65.5		
BG	65.5	68.3		
NNA	68.3	68.6		
NA	68.6	68.8		
Eph vir	68.8	69.2		
BG	69.2	77.5		
NNA	77.5	79		
NA	79	79.9		
Lac tri	79.9	83.8		
BG	83.8	86		
NNA	86	87		
Eph vir	87	87.9		
Kar lan	87.9	88.2		
Total:				

Native Perennials

Other Notes:

2m Belt Density:

Eph vir: 𝍸 𝍸 𝍸 𝍸 ||||

Lac tri: ||||

Yucc bra: |

Eri pol: |

Kar lan: ||

Amb sal: |

Sal mex: ||

Gra Spi: |

Aca Sph: |

Species Richness:

Eph vir: .4, .45, .6, .5, .5, .4, .2, .6, .6, .6, .7, .5, .5

Shrub/Tree Heights:

Eph vir: .7, .5, .8, .75, .6, .55, .4, .5, .6, .4, .4, .35

Lac tri: 2, 2.3, 2.5, 1.8,

Yucc bra: 3,

Kra lan: .25, .45

Amb sal: .7,

Eri pol: .5,

Sal mex: .6, .7,

Gra Spi: .8,

Aca Sph: .6

LINE INTERCEPT - TRANSECT DATA SHEET

ECORP Consulting, Inc. ENVIRONMENTAL CONSULTANTS

Lebata Mine Site Vegetation Sampling

Project No.: 2014-054.003

Surveyor(s): Josh Corona-Bennett, Greg Hampton | Compass Orientatation: SE degrees 135°

Transect No.: 2 (cont.) | Date: 5/27/14 | Transect Length - 100 m

Species	Begin (meters)	End (meters)	Total Cover (meters)	Percent Cover
BG (Bare Ground)	88.2	93		
NNA (Non-native Annuals)	93	94		
NA (Native Annuals)	94	94.3		
Eph vir	94.3	94.7		
BG	94.7	96.5		
NNA	96.5	96.9		
Eph vir	96.9	97.4		
NNA	97.4	97.7		
NA	97.7	97.9		
BG	97.9	100		

Total:				

Other Notes: Native Perrenials

2m Belt Density:

Species Richness:

Shrub/Tree Heights:

LINE INTERCEPT - TRANSECT DATA SHEET

ECORP Consulting, Inc. ENVIRONMENTAL CONSULTANTS

Lebata Mine Site Vegetation Sampling

Project No.: 2014-054.003

Surveyor(s): Josh Corona-Bennett | Compass Orientatation: E degrees 95°

Transect No.: 3 | Date: 5/27/14 | Transect Length - 100 m

Species	Begin (meters)	End (meters)	Total Cover (meters)	Percent Cover
BG (Bare Ground)	0	8		
NNA (Non-native Annuals)	8	13		
NA (Native Annuals)	13	16.2		
Lar tri	16.2	17.7		
BG	17.7	20.5		
NNA	20.5	23.0		
NA	23	23.3		
Kra lan	23.3	29.5		
BG	23.5	29		
NNA	29	30		
NA	30	30.6		
Eph vir	30.6	30.8		
BG	30.8	32		
NNA	32	32.4		
NA	32.4	32.5		
Lar tri	32.5	34.5		
NNA	34.5	35.5		
Lar tri	35.5	36		
BG	36	44		
NNA	44	45.5		
NA	45.5	46.7		
Eph vir.	46.7	47.1		
BG	47.1	50		
NNA	50	50.4		
NA	50.4	50.9		
Lar tri	50.9	53		
BG	53	56		
NNA	56	57		
NA	57	57.9		
Lar tri	57.9	58.3		
BG	58.3	60.5		
NNA	60.5	61.5		
NA	61.5	62.6		
Lar tri	62.6	63.1		
BG	63.1	64.5		

NNA	64.5	65.5		
Lar tri	65.5	66.4		
BG	66.4	67.7		
NNA	67.7	68.3		
Yuc bre	68.3	69		
BG	69	70.5		
NNA	70.5	71.2		
NA	71.2	71.5		
Lar tri	71.5	74.2		
BG	74.2	78		
NNA	78	79.5		
NA	79.5	80.5		
Lar tri	80.5	83.5		
BG	83.5	86.5		
NNA	86.5	87.5		
NA	87.5	88.5		
Eph vir	88.5	89.7		
BG	89.7	94		
NNA	94	94.8		
NA	94.8	95.2		
Lar tri	95.2	95.6		
BG	95.6	96.6		
NNA	96.6	97.6		
NA	97.6	98		
Eph vir	98	99		
NNA	99	99.4		
BG	99.4	100		
Total:				

Other Notes: Native Perennials

2m Belt Density

Lar tri: ||||| |

Eph vir: ||||| ||||| ||||| |

Yuc bre: |

Kra lan: |||

Gra spi: |

Species Richness:

Eph: .5, .4

Shrub/Tree Height:

Lar tri: 1.3, 2.4, 1.8, 1.25, 1.8, .8, 1.7

Eph vir: .8, .5, .7, .8, .6, .6, .4, .5, .6, .6, .4, .6, .7, .4, .3

Yuc bre: 5.5

Kra lan: .5, .5, .4,

Gra spi: .4,

LINE INTERCEPT - TRANSECT DATA SHEET

ECORP Consulting, Inc. ENVIRONMENTAL CONSULTANTS

Lebata Mine Site Vegetation Sampling

Project No.: 2014-054.003

Surveyor(s): Josh Corona-Bennett, Greg Hampton | Compass Orientatation: SW degrees 230°

Transect No.: 4 | Date: 5/27/14 | Transect Length - 100 m

Species	Begin (meters)	End (meters)	Total Cover (meters)	Percent Cover	
BG (Bare Ground)	0	3.5			
NNA (Non-Native Annuals)	3.5	5.5			
NA (Native Annuals)	5.5	7.5			
Amb sal	7.5	8			
BG	8	12			Purtri (just off of transect)
NNA	12	14			
NA	14	16			
Amb sal	16	17			
BG	17	19.4			
NNA	19.4	20.3			
Lac tri	20.3	20.7			
BG	20.7	23			
NNA	23	23.7			
NA	23.7	24.1			
Lac tri	24.1	24.2			
NA	24.2	25.3			
NNA	25.3	25.7			
Eph vir	25.7	26.3			
BG	26.3	32.5			
NNA	32.5	33.1			
NA	33.1	33.5			
Amb dum	33.5	34			
BG	34	40			
NNA	40	57.6			
NA	57.6	58.4			
Lac tri	58.4	58.6			
NNA	58.6	60.6			
Lac tri	60.6	60.8			
BG	60.8	63.2			
NNA	63.2	64.1			
NA	64.1	64.4			
Eph vir	64.4	65			
BG	65.5	67.5			
NNA	67.5	68.3			
NA	68.3	68.5			

Eph vir	68.5	69.1		
BG	69.1	74.8		
NNA	74.8	75.8		
NA	75.8	76.7		
Lar tri	76.7	78.1		
BG	78.1	79.5		
NNA	79.5	80.4		
NA	80.4	80.8		
Eph vir	80.8	81.4		
BG	81.4	86.1		
NNA	86.1	86.3		
NA	86.3	86.4		
Eph vir	86.4	87		
NNA	87	87.9		
NA	87.9	88.2		
BG	88.2	88.4		
Eph vir	88.4	89.6		
BG	89.6	93		
NNA	93	98		
NA	98	100		
Total:				

Other Notes: Native Perennials

2m Belt Density:
Eph vir: 𝍸 𝍸 𝍸 𝍸 𝍸 ||||
Aca sph: ||||
Lep fre: |
Lar tri: 𝍸 |
Amb dum: |
Amb sal: |||
~~Acer spi~~
Kra lan: |

Species Richness:

Shrub/Tree Height: Kra lan: .6
Eph vir: .7, .8, .6, .9, .5, .6, .6, .5, .6, .6, .5, .7, .8, .5, .5, .7, .6, .6, .8, .4, .6, .5, .3, .2, .2, .5, .4, .4, .3, .25,
Lar tri: 2, 1.1, 1.8, .95, .9, 1.7
Aca sph: .3, .4, .4, .4
Lep fre: .9,
Amb dum: .2,
Amb sal: .5, .9, .85,
~~Acer spi~~

LINE INTERCEPT - TRANSECT DATA SHEET

ECORP Consulting, Inc. ENVIRONMENTAL CONSULTANTS

Lebata Mine Site Vegetation Sampling

Project No.: 2014-054.003

Surveyor(s): Josh Corona-Bennett, Greg Hampton | Compass Orientatation: SW degrees 220°

Transect No.: 5 | Date: 5/27/14 | Transect Length - 100 m

Species	Begin (meters)	End (meters)	Total Cover (meters)	Percent Cover
BG (Base Ground)	0	1.4		
NNA (Non-Native Annuals)	1.4	1.7		
Aca sph	1.7	1.8		
BG	1.8	6		
NNA	6	7.3		
NA (Native Annuals)	7.3	7.7		
Amb sal	7.7	8.5		
BG	8.5	10.4		
NNA	10.4	10.9		
NA	10.9	11.1		
Aca sph	11.1	11.4		
Eph vir	11.4	11.5		
BG	11.5	12.1		
NNA	12.1	12.5		
NA	12.5	12.8		
Lac tri	12.8	12.9		
BG	12.9	13.1		
NA	13.1	13.5		
NNA	13.5	13.9		
Lac tri	13.9	14.5		
BG	14.5	21		
NNA	21	29		
NA	29	32		
NNA	32	39		
NA	39	40.5		
BG	40.5	46.2		
Lac tri	46.2	49		
BG	49	49.6		
NNA	49.6	50.3		
Amb dum	50.3	50.6		
BG	50.6	51.2		
NNA	51.2	51.5		
Amb dum	51.5	51.7		
NNA	51.7	60		
BG	60	67		

NA	67	67.3		
Lar tri	67.3	70.4		
BG	70.4	71.4		
NNA	71.4	72		
NA	72	72.3		
Lar tri	72.3	72.8		
BG	72.8	74.5		
NNA	74.5	76.5		
NA	76.5	77.3		
Amb dum	77.3	77.6		
BG	77.6	81		
NNA	81	81.8		
NA	81.8	82.2		
Lar tri	82.2	84.7		
NNA	84.7	85.1		
NA	85.1	85.2		
Lar tri	85.2	87.5		
BG	87.5	90.1		
NNA	90.1	91.2		
NA	91.2	91.4		
Eph vir	91.4	92.4		
BG	92.4	93		
NNA	93	95.9		
NA	95.9	96.2		
Eph vir	96.2	97.1		
BG	97.1	98.5		
NNA	98.5	99.7		
NA	99.7	100		
Total:				

Other Notes: Native Perennials

2m Belt Density:

Eph vir: ~~IIII IIII~~

Lar tri: ~~IIII IIII~~ II

Amb dum: ~~IIII~~

Aca sph: III

Amb sal: I

Species Richness:

Shrub/Tree Height:

Eph vir: .5, .5, .45, .7, .7, .6, .7, .2, .6, .2

Lar tri: 1.5, 1.5, 1.5, 1.2, 1.6, 1.8, 1.4, 1.6, 1, 1.8, 1.6, 1.9

Amb dum: .5, .3, .25, .4, .4,

Aca sph: .45, .4, .3

Amb sal: .6,

LINE INTERCEPT - TRANSECT DATA SHEET

ECORP Consulting, Inc. ENVIRONMENTAL CONSULTANTS

Lebata Mine Site Vegetation Sampling

Project No.: 2014-054.003

Surveyor(s): Josh Corona-Bennett, Greg Hampton | Compass Orientatation: NW degrees 315°

Transect No.: 6 | Date: 5/28/14 | Transect Length - 100 m

Species	Begin (meters)	End (meters)	Total Cover (meters)	Percent Cover
BG (Bare Ground)	0	2.5		
NNA (Non-Native Annuals)	2.5	4		
NA (Native Annuals)	4	4.6		
Amb dum	4.6	4.9		
BG	4.9	5.5		
NA	5.5	6.2		
NNA	6.2	6.5		
Eph vir	6.5	7.1		
BG	7.1	7.3		
Eph vir	7.3	7.5		
BG	7.5	7.7		
NNA	7.7	7.9		
Lac tri	7.9	9		
NNA	9	9.2		
Eph vir	9.2	9.6		
BG	9.6	10.4		
NNA	10.4	11.2		
NA	11.2	11.5		
Lac tri	11.5	12.6		
BG	12.6	20		
NNA	20	22.3		
NA	22.5	23.1		
Lac tri	23.1	24.7		
BG	24.7	28		
NNA	28	29.8		
NA	29.8	30.2		
Amb dum	30.2	30.8		
BG	30.8	33.5		
NNA	33.5	35.5		
NA	35.5	36.5		
Lac tri	36.5	38.8		
BG	38.8	48		
NNA	48	56		
NA	56	58		
Sal mex	58	58.1		

BG	58.1	67		
NNA	67	73		
NA	73	75		
Eph vir	75	75.2		
BG	75.2	76.2		
NNA	76.2	76.7		
Yuc bre	76.7	77.9		
BG	77.9	80.5		
NNA	80.5	82.3		
NA	82.3	82.6		
Tet ste	82.6	83.1		
BG	83.1	90		
NNA	90	96.5		
NA	96.5	97.7		
Lac tri	97.7	98		
BG	98	99		
NNA	99	99.8		
NA	99.8	100		
Total:				

Other Notes: Native Perennials
2 meter belt density
Lac tri: ||||
Poa scc: ||
Sti hym: |
Tet ste: |
Aca sph: |
Yuc brev: |
Eph vir: ||||
Amb sal: ||
Kra lan: |
Sal mex: ||
Amb dum: |||

Species Richness:

Shrub/Tree Heights: Kra lan: .45,
Lac tri: 1.4, 1.3, 1.5, 1.3, 1.5, 1.4, 1.5, 1.3, 1.9

Poa scc: .1, .2, .1
Sti hym: .4,
Tet ste: .5,
Aca sph: .4,
Yuc brev: 4,
Amb dum: .4, .2, .4
Eph vir: .4, .7, .2, .5, .4, .5, .5, .5, .7, .4, .7, .25, .2, .45, .55
Amb sal: .8, .7,
Sal mex: .4, .45

LINE INTERCEPT - TRANSECT DATA SHEET

ECORP Consulting, Inc. ENVIRONMENTAL CONSULTANTS

Lebata Mine Site Vegetation Sampling

Project No.: 2014-054.003

Surveyor(s): Josh Corona-Bennett, Greg Hampton | Compass Orientatation: SW degrees 225°

Transect No.: 7 | Date: 5/28/14 | Transect Length - 100 m

Species	Begin (meters)	End (meters)	Total Cover (meters)	Percent Cover
BG (Bare Ground)	0	1.07		
NNA (Non-Native Annuals)	1.07	2.07		
NA (Native Annuals)	2.7	3		
BG	3	5.5		
NNA	5.5	5.8		
NA	5.8	6		
Lar tri	6	7.2		
BG	7.2	8.6		
NNA	8.6	9.1		
Eph vir	9.1	9.9		
BG	9.9	14.5		
NNA	14.5	16		
NA	16	16.4		
Eph vir	16.4	16.9		
BG	16.9	20		
NNA	20	20.6		
NA	20.6	20.8		
Eph vir	20.8	21.2		
BG	21.2	31		
NNA	31	33		
NA	33	33.5		
Lar tri	33.5	34.8		
BG	34.8	39		
NNA	39	40.5		
NA	40.5	41.1		
Lar tri	41.1	43.5		
BG	43.5	48		
NNA	48	49.5		
NA	49.5	50		
Lar tri	50	51.4		
BG	51.4	58		
NNA	58	73		
NA	73	76.1		
Amb sal	76.1	76.3		
BG	76.3	79.7		

NNA	79.7	80.4		
NA	80.4	80.6		
Lar tri	80.6	85.1		
BG	85.1	86.7		
NNA	86.7	87.6		
Lar tri	87.6	88.8		
BG	88.8	96		
NNA	96	100		
Total:				

Other Notes: Native Perennials

2m Belt Density:

Lar tri: 𝍸 |||

Eph ver: 𝍸 𝍸 𝍸 𝍸 𝍸 |

Amb sal: |

Aca sph: |||

Eri pol: |

Amb dum: |||

Species Richness:

~~Species Heigh~~ Shrub / Tree Heights:

Lar tri: 1.8, 2.2, 1.3, 1.4, 1, 1.5, 1.4, .9

Eph ver: .5, .5, .2, .2, .55, .65, .6, .4, .3, .5, .6, .65, .6, .3
→ .4, .6, .4, .5, .25, .4, .55, .5, .75, .7, .75, .7

Amb Sal: .55,

Aca sph: .4, .3, .25

Amb dum: .3, .2, .5

Eri fas ssp. pol: 0.7

LINE INTERCEPT - TRANSECT DATA SHEET

ECORP Consulting, Inc. ENVIRONMENTAL CONSULTANTS

Lebata Mine Site Vegetation Sampling

Project No.: 2014-054.003

Surveyor(s): Josh Corona-Bennett, Greg Hampton | Compass Orientation: SE degrees 140°

Transect No.: 8 | Date: 5/28/14 | Transect Length - 100 m

Species	Begin (meters)	End (meters)	Total Cover (meters)	Percent Cover
BG (Bare Ground)	0	3.5		
NNA (Non-Native Annuals)	3.5	4.5		
NA (Native Annuals)	4.5	4.7		
Lar tri	4.7	6.7		
NNA	6.7	7.6		
Lar tri	7.6	8.4		
BG	8.4	15		
NNA	15	20		
NA	20	20.9		
Tet ste	20.9	21.1		
BG	21.1	22.8		
NNA	22.8	24.4		
NA	24.4	24.8		
Eph vir	24.8	25.2		
BG	25.2	29		
NNA	29	31.8		
NA	31.8	32.4		
Tet ste	32.4	33.4		
BG	33.4	37.4		
NNA	37.4	40.9		
NA	40.9	41.4		
Eph vir	41.4	42.3		
BG	42.3	45		
NNA	45	47		
NA	47	47.5		
Lar tri	47.5	49.2		
BG	49.2	49.7		
NNA	49.7	50.8		
Eph vir	50.8	51.5		
BG	51.5	55.4		
NNA	55.4	56.6		
NA	56.6	56.9		
Eph vir	56.9	58.1		
BG	58.1	60.2		
NNA	60.2	61.1		

BG	97.1	98.5
NNA	98.5	100
Total		

NA	61.1	61.3		
Lar tri	61.3	62.2		
BG	62.2	68		
NNA	68	70.5		
NA	70.5	70.8		
Lar tri	70.8	72.9		
BG	72.9	74		
NNA	74	75.3		
NA	75.3	75.7		
Lar tri	75.7	75.9		
BG	75.9	78.5		
NNA	78.5	80		
NA	80	80.4		
Lar tri	80.4	81.4		
BG	81.4	83.5		
NNA	83.5	84.7		
NA	84.7	85		
Lar tri	85	88		
BG	88	89.5		
NNA	89.5	91		
NA	91	91.3		
Lar tri	91.3	93		
BG	93	94.5		
NNA	94.5	95.3		
NA	95.3	95.5		
Eph vir	95.5	96		
BG	96	96.1		
NA	96.1	96.3		
~~Total:~~ Eph vir	96.3	97.1		

Other Notes: Native Perennials

2m Belt Density:
Eph vir: 𝍸 𝍸 𝍸 𝍸 ||||
Lar tri: 𝍸 𝍸 |||| |
Poa sec: ||||
Amb dum: |||
Aca sph: 𝍸 ||
Amb sal: |||
Tet ste: ||
Sal mex: |

Species Richness:

Shrub/Tree Heights:
Eph vir: .5, .55, .6, .5, .5, .7, .5, .5, .7, .7, .7, .75, .75
→ .6, .6, .5, .4, .4, .35, .5, .5, .5, .5, .4,
Lar tri 1.73, 1.85, 1.6, 1.6, 1.35, 1.3, 1.6, 1.5, 1.6, 2, 1.4, 1.4, 1.7, 1.7, 1.5, 1.1
Poa sec: .2, .3, .15, .15
Amb dum: .25, .25, .5
Aca sph: .4, .4, .25, .45, .3, .25, .35, .25
Amb sal: .8, .8, 1.2
Tet ste: .75, .7,
Sal mex: .5,

LINE INTERCEPT - TRANSECT DATA SHEET

ECORP Consulting, Inc. ENVIRONMENTAL CONSULTANTS

Lebata Mine Site Vegetation Sampling

Project No.: 2014-054.003

Surveyor(s): Josh Corona-Bennett, Greg Hampton

Compass Orientatation: E degrees 90°

Transect No.: 9

Date: 5/28/14

Transect Length - 100 m

Species	Begin (meters)	End (meters)	Total Cover (meters)	Percent Cover
BG (Bare Ground)	0	5		
NNA (Non-Native Annuals)	5	5.9		
NA (Native Annuals)	5.9	6.4		
Lac tri	6.4	8.7		
NNA	8.7	9.4		
BG	9.4	9.9		
Eph vir	9.9	10.5		
BG	10.5	12.5		
NNA	12.5	12.8		
NA	12.8	13		
BG	13	18.5		
NNA	18.5	19.8		
NA	19.8	20.3		
Lac tri	20.3	21.5		
BG	21.5	27		
NNA	27	29		
NA	29	29.5		
Eph vir	29.5	29.7		
BG	29.7	36		
NNA	36	37.5		
NA	37.5	38		
Lac tri	38	38.8		
BG	38.8	43		
NNA	43	44		
NA	44	44.4		
Lac tri	44.4	46		
BG	46	47.5		
NNA	47.5	49		
NA	49	49.2		
Lac tri	49.2	51.9		
BG	51.9	56.3		
NNA	56.3	57.2		
NA	57.2	57.5		
Lac tri	57.5	60.5		
BG	60.5	65		

NNA	65	66.3		
NA	66.3	66.8		
Eph vir	66.8	67.2		
BG	67.2	72.5		
NNA	72.5	74.5		
NA	74.5	75.4		
Lac tri	75.4	77.2		
BG	77.2	91		
NNA	91	94		
NA	94	95.4		
Lac tri	95.4	97.3		
BG	97.3	99		
NNA	99	99.8		
NA	99.8	100		
Total:				

Other Notes: Native Perennials

2m Belt Density:

Lac tri: 𝍸 𝍸 𝍸 |||

Eph vir: 𝍸 𝍸 ||||

Sal mex: 𝍸 ||

Amb sal: |

Aca sph: ||

Tet ste: |

Species Richness:

Shrub/Tree Heights:

Eph vir: .25, .55, .4, .65, .2, .5, .5, .25, .5, .5, .25, .6, .4 → .4, .3, .3, .5, .5,

Lac tri: 1.4, 1.3, .8, .9, 1.4, 1.9, 1.7, 1.5, 1.7, 1.7, 1.6, → 1.3, 1.3, 1.4

Sal mex: .1, .2, .5, .4, .5, .3, .5,

Amb sal: .8, .5

Aca sph: .45, .2

Tet ste: .9,

LINE INTERCEPT - TRANSECT DATA SHEET

ECORP Consulting, Inc. ENVIRONMENTAL CONSULTANTS

Lebata Mine Site Vegetation Sampling

Project No.: 2014-054.003

Surveyor(s): Josh Corona-Bennett, Greg Hampton | Compass Orientatation: N degrees 330°

Transect No.: 10 | Date: 5/28/14 | Transect Length - 100 m

Species	Begin (meters)	End (meters)	Total Cover (meters)	Percent Cover
BG (Bare Ground)	0	5		
NNA (Non-Native Annuals)	5	9.5		
NA (Native Annuals	9.5	10.1		
Eph vir	10.1	10.8		
BG	10.8	12		
NNA	12	12.8		
NA	12.8	13		
Amb dum	13	13.2		
BG	13.2	14		
NNA	14	14.4		
Lac tri	14.4	18.4		
NNA	18.4	18.8		
Lac tri	18.8	22.1		
BG	22.1	24.6		
NNA	24.6	25.5		
NA	25.5	25.8		
Eph ver	25.8	26.1		
BG	26.1	36		
NNA	36	40		
NA	40	40.3		
Eph vir	40.3	40.7		
Lac tri	40.7	41.2		
Eph vir	41.2	41.5		
NA	41.5	41.7		
Lac tri	41.7	44.7		
BG	44.7	46		
NNA	46	46.7		
NA	46.7	46.9		
Lac tri	46.9	49.8		
NA	49.8	50.6		
BG	30.6	52		
NNA	52	52.6		
NA	52.6	52.9		
Lac tri	52.9	55.5		
NA	55.5	56.6		

BG	56.6	61		
NA	61	65.5		
NNA	65.5	66.5		
Lar tri	66.5	69.3		
BG	69.3	74		
NA	74	75.5		
NNA	75.5	76.5		
Lar tri	76.5	77.9		
BG	77.9	86.5		
NA	86.5	88		
NNA	88	88.9		
Lar tri	88.9	92.5		
BG	92.5	96.5		
NA	96.5	98		
NNA	98	99		
Lar tri	99	100		
Total:				

Other Notes: Native Perennials

2m Belt Density:

Lar tri: 𝍸 𝍸 𝍸 𝍸

Eph ver: 𝍸 𝍸 ||||

Amb dum: ||

Aca sph: ||

Tet ste: |

Species Richness:

Shrub/Tree Heights:

Lar tri: x25, 1.4, 2.5, 1.7, 2, 1.9, 1.7, 2, 2, 2.1, 2.2, 2.2, 1.9, 1.7, 1.7, 1.8, 2, 1.6, 1.65,

Eph ver: .45, .6, .3, .4, .5, .5, .5, .4, .4, .5, .5, .4, .4, .45, .35

Amb dum: .4, .2,

Aca sph: .3, .45

Tet ste: 1,

LINE INTERCEPT - TRANSECT DATA SHEET

ECORP Consulting, Inc. ENVIRONMENTAL CONSULTANTS

Lebata Mine Site Vegetation Sampling

Project No.: 2014 - 054.003

Surveyor(s): Josh Cocona Bennett, Greg Hampton | Compass Orientatation: SE degrees 195°

Transect No.: 11 | Date: 5/28/14 | Transect Length - 100 m

Species	Begin (meters)	End (meters)	Total Cover (meters)	Percent Cover
Eph vir	0	.7		
BG (Bare Ground)	.7	2.9		
Amb dum	2.9	3.1		
BG	3.1	14		
NNA (Non-Native Annuals)	14	18.5		
NA (Native Annuals)	18.5	19.4		
Amb sal	19.4	20.1		
BG	20.1	27		
NNA	27	31		
NA	31	31.4		
Eph vir	31.4	32		
BG	32	46		
NNA	46	53		
NA	53	55.2		
Lar tri	55.2	59.5		
BG	59.5	61		
NNA	61	62		
NA	62	62.3		
Lar tri	62.3	66.8		
Amb dum	66.8	66.9		
BG	66.9	69.5		
NNA	69.5	70.3		
NA	70.3	70.6		
Amb dum	70.6	70.9		
BG	70.9	72.5		
NNA	72.5	72.7		
NA	72.7	72.9		
Amb sal	72.9	73.7		
NNA	73.7	74.2		
Amb sal	74.2	74.5		
BG	74.5	77.5		
NNA	77.5	78.5		
Amb dum	78.5	78.6		
BG	78.6	82		
NNA	82	84.5		

NA	84.5	85.1		
Eph vir	85.1	85.7		
BG	85.7	92.5		
N/A	92.5	93.8		
N/A	93.8	94.2		
Eph vir	94.2	95		
BG	95	98.5		
N/A	98.5	99.5		
N/A	99.5	100		
Total:				

Other Notes: Native Perennials

2m Belt Density:

Eph vir: ~~IIII IIII IIII~~

Amb sal: ~~IIII~~

Lar tri: IIII

Amb dum: ~~IIII~~ II

Aca sph: ~~IIII~~ II

Sti spe: ~~IIII~~ I

Poa sec: III

Kra lan: I

Species Richness

Shrub/Tree Heights:

Eph vir: .3, .5, .5, .2, .5, .5, .4, .25, .2, .2, .2, .4, .4, .3 Δ .3

Lar tri: 2.1, 1.7, 1.6, 1.6

Kra lan: .2,

Amb sal: .5, .7, .6, .7, .6

Amb dum: .4, .4, .35, .4, .4, .4, .25,

Aca sph: .3, .2, .3, .5, .2, .3, .35,

Sti Spe: .35

Poa sec: .3, .2, .2

LINE INTERCEPT - TRANSECT DATA SHEET

ECORP Consulting, Inc. ENVIRONMENTAL CONSULTANTS

Lebata Mine Site Vegetation Sampling

Project No.: 2014-054.003

Surveyor(s): Josh Corona-Bennett, Greg Hampton | Compass Orientatation: W degrees 275°

Transect No.: 12 | Date: 5/28/14 | Transect Length - 100 m

Species	Begin (meters)	End (meters)	Total Cover (meters)	Percent Cover
BG (Bare Ground)	0	1.5		
NNA (Non-Native Annuals)	1.5	2.2		
Lac tri	2.2	3.3		
BG	3.3	4		
NNA	4	4.6		
Eph vir	4.6	5		
BG	5	8.5		
NNA	8.5	9.7		
NA (Native Annuals)	9.7	10		
Lac tri	10	10.2		
BG	10.2	18		
NNA	18	22		
NA	22	22.7		
Lac tri	22.7	23.2		
Eph vir	23.2	23.4		
BG	23.4	37		
NNA	37	44		
NA	44	45.5		
Lac tri	45.5	48.5		
BG	48.5	57		
NNA	57	58.5		
NA	58.5	59		
Amb dum	59	59.6		
BG	59.6	60.1		
NNA	60.1	60.4		
Amb dum	60.4	60.8		
BG	60.8	64.3		
NNA	64.3	65.1		
NA	65.1	65.3		
Vuc bro	65.3	67.3		
BG	67.3	68.5		
NNA	68.5	69.5		
NA	69.5	70		
Lac tri	70	71.7		
NNA	71.7	73.1		

Lar tri	73.1	73.8		
BG	73.8	79.5		
NNA	79.5	81		
NA	81	81.5		
Lar tri	81.5	83.2		
NNA	83.2	83.9		
Amb sal	83.9	84.6		
BG	84.6	88.5		
NNA	88.5	90		
NA	90	90.5		
Lar tri	90.5	90.5		
NA	91.5	91.8		
Eph vir	91.8	92.2		
BG	92.2	94.2		
NA	94.2	94.7		
NNA	94.7	94.8		
Tet ste	94.8	95.5		
Eph vir	95.5	95.9		
BG	95.9	99		
NNA	99	99.5		
NA	99.5	100		
Total:				

Other Notes: Native Perennials

2m Belt Density
Eph vir: 𝍸 𝍸 𝍸
Lar tri: 𝍸 𝍸 𝍸 |
Tet ste: |
Amb sal: |
Amb dum: 𝍸 ||
Aca sph: ||

Species Richness:

Shrub/Tree Heights

Lar tri: 1.6, 2.2, 1.6, 1.2, 1.5, 1.45, 1.5, 1.4, 1.8, 1.6, 1.8, 1.6, 1.4, 1.5, 1.3, 1.4,
Eph vir: .5, .5, .5, .7, .5, .5, .3, .5, .5, .3, .5, .7, .5, .6, .4

Tet ste: .8,

Amb sal: .6
Amb dum: .25, .4, .2, .35, .3, .5, .25
Aca sph: .45, .4

LINE INTERCEPT - TRANSECT DATA SHEET

ECORP Consulting, Inc. ENVIRONMENTAL CONSULTANTS

Lebata Mine Site Vegetation Sampling

Project No.: 2014-054.003

Surveyor(s): Josh Corona-Bennett, Greg Hampton | Compass Orientatation: NE degrees 67°

Transect No.: 13 | Date: 5/28/14 | Transect Length - 100 m

Species	Begin (meters)	End (meters)	Total Cover (meters)	Percent Cover
BG (Bare Ground)	0	.6		
NNA (Non-Native Annuals)	.6	.7		
Eph vir	.7	1.1		
NA (Native Annuals)	1.1	1.3		
Amb sa.	1.3	2.7		
BG	2.7	3.8		
NNA	3.8	4.0		
NA	4	4.3		
Aca sph	4.3	4.8		
BG	4.8	5.1		
Eph vir	5.1	5.5		
BG	5.5	9		
NA	9	9.5		
NNA	9.5	9.8		
Lar tri	9.8	11.2		
Eph vir	11.2	11.4		
NNA	11.4	12.2		
Gra sp.	12.2	12.8		
Eph vir	12.8	13.3		
Lar tri	13.3	13.7		
BG	13.7	18		
NA	18	18.5		
NNA	18.5	18.7		
Eph vir	18.7	19		
BG	19	26		
NNA	26	32		
NA	32	33.9		
Lar tri	33.9	34.1		
BG	34.1	41		
NNA	41	46		
NA	46	46.5		
Eph vir	46.5	46.7		
Lar tri	46.7	47.3		
BG	47.3	49.5		
NNA	49.5	49.9		

NA	49.9	50.1		
Eph vir	50.1	50.3		
BG	50.3	50.7		
Eph vir	50.7	50.9		
BG	50.9	53.5		
NNA	53.5	54		
NA	54	54.3		
Aca sph	54.3	55.1		
BG	55.1	58.5		
NNA	58.5	59.5		
NA	59.5	59.9		
Eph vir	59.9	60.3		
NNA	60.3	61.7		
Tet ste	61.7	62.9		
BG	62.9	64.7		
NNA	64.7	65.3		
NA	65.3	65.6		
Eph vir	65.6	66.1		
BG	66.1	67.1		
NNA	67.1	67.6		
Aca sph	67.6	68		
BG	68	68.3		
Eph vir	68.3	68.9		
NNA	68.9	69.8		
Lar tri	68.9	72.8		
BG	72.8	74		
NNA	74	75.5		
NA	75.5	76		
Total:				

Other Notes: Native Perennials

2meter belt density 卌 卌 卌 卌 |||

Eph vir: 卌 卌 卌 卌 卌 卌 卌

Lar tri: 卌 |||

Aca sph: 卌 |||

Tet ste: 卌 ||

Amb sal: 卌 |

Sal mex: |||

Amb dum: 卌 |

Poa Sec: |

Gra spi: |

~~Amb sal~~: .8

Species Richness:

Shrub/Tree Heights:

Eph vir: .4, .6, .5, .5, .4, .4, .4, .5, .5, .5, .4, .2, .4,
.6, .4, .3, .5, .3, .4, .5, .3, .5, .5, .4, .4, .4, .45, .45, .5, .3
.4, .3, .4
.3, .25, .25
.2, .2, .6
.5, .3, .6, .3
.6, .6, .4,
.7, .5, .3,
.2, .5, .3
.6, .5, .5
.5, .4, .4
.6, .3,
.6, .4

Lar tri: 1.4, 1.9, 1.4, 1.5, 1.6, 1.3, 1, 1.7, 0.7

Aca sph: .2, .5, .5, .5, .25, .4, .5, .5

Tet ste: .75, .7, 1, .6, .6, .6, .5, 1

Amb sal: .6, .5, .6, .8, .7, .6, .8

Sal mex. .3, .4, .8

Amb dum: .1, .3, .3, .45, .3, .4

Poa Sec: .4,

Gra spi: .6

LINE INTERCEPT - TRANSECT DATA SHEET

ECORP Consulting, Inc. ENVIRONMENTAL CONSULTANTS

Lebata Mine Site Vegetation Sampling

Project No.: 2014-054.003

Surveyor(s): Josh Corona-Bennett,

Compass Orientation: NE degrees 67°

Transect No.: 13 (cont.)

Date: 5/28/14

Transect Length - 100 m

Species	Begin (meters)	End (meters)	Total Cover (meters)	Percent Cover
Eph vir	76	76.4		
BG (Bare Ground)	76.4	77.4		
NNA (Non-Native Annuals)	77.4	77.6		
NA (Native Annuals)	77.6	77.8		
Tet ste	77.8	78.7		
Amb sal	78.7	78.9		
NA	78.9	79.4		
Eph vir	79.4	79.7		
BG	79.7	83.5		
NA	83.5	85.2		
NNA	85.2	85.8		
Eph vir	85.8	86.5		
BG	86.5	87.8		
NA	87.8	88.1		
NNA	88.1	88.5		
Eph vir	88.5	88.9		
BG	88.9	92		
NNA	92	93.5		
NA	93.5	94.1		
Lax tri	94.1	94.8		
NA	94.8	95.5		
Tet ste	95.5	96.2		
BG	96.2	98.5		
NNA	98.5	99.5		
NA	99.5	100		

Total:				

Other Notes:

LINE INTERCEPT - TRANSECT DATA SHEET

ECORP Consulting, Inc. ENVIRONMENTAL CONSULTANTS

Lebata Mine Site Vegetation Sampling

Project No.: 2014-054.003

Surveyor(s): Josh Corona-Bennett, Greg Hampton | Compass Orientatation: NE degrees 315°

Transect No.: 14 | Date: 5/28/14 | Transect Length - 100 m

Species	Begin (meters)	End (meters)	Total Cover (meters)	Percent Cover
BG (Bare Ground)	0	10		
NNA (Non-Native Annuals)	10	16		
NA (Native Annuals)	16	17.1		
Lac tri	17.1	18.6		
BG	18.6	20.8		
NNA	20.8	21.3		
NA	21.3	21.7		
Eph vir	21.7	21.9		
BG	21.9	22.9		
NNA	22.9	23.5		
Eph vir	23.5	23.8		
BG	23.8	26.5		
NNA	26.5	27.3		
NA	27.3	27.6		
Lac tri	27.6	30.8		
BG	30.8	35		
NNA	35	36.5		
NA	36.5	36.9		
Lac tri	36.9	38.5		
BG	38.5	39		
NNA	39	39.5		
NA	39.5	39.9		
Lac tri	39.9	40.8		
BG	40.8	42.3		
NA	42.3	43		
NNA	43	44		
Amb sal	44	44.4		
BG	44.4	45.2		
NA	45.2	45.8		
Lac tri	45.8	48		
BG	48	52		
NNA	52	55.5		
NA	55.5	56.5		
Aca sph	56.5	56.7		
BG	56.7	58.5		

NNA	58.5	59.2		
NA	59.2	59.7		
Eph vir	59.7	59.8		
Amb sal	59.8	60.6		
BG	60.6	63		
NA	63	63.5		
NNA	63.5	64.5		
Amb sal	64.5	65		
BG	65	66.5		
NNA	66.5	67.5		
NA	67.5	67.8		
Lac tri	67.8	68.5		
BG	68.5	72.5		
NNA	72.5	74		
NA	74	74.5		
Aca sph	74.5	75.1		
Eri fas ssp. pol	75.1	75.6		
BG	75.6	83.5		
NNA	83.5	85		
NA	85	85.7		
Eph vir	85.7	86.6		
BG	86.6	87.8		
Poa sec	87.8	87.9		
BG	87.9	88.4		
NNA	88.4	88.8		
NA	88.8	88.9		
Eph vir	88.9	89.9		
NNA	89.9	90.2		
Total:				

Other Notes: Native Perennials:

2 meter belt density

Amb sal: ||||

Sal mex: ||

Amb dum: |||

Eph vir: |||| |||| |||| ||

Poa sec: |

Lar tri: |||| |||| |

Eri pol: |

Aca sph: |||| ||

Species Richness:

Shrub/Tree Height:

Eph vir: .5, .6, .6, .65, .6, .2, .3, .5, .4, .4, .5, .45, .4, .3, .4, .5, .25, .3

Lar tri: 1.6, 1.4, 1.4, 1.4, 1.5, 1.6, 1.4, 1.1, 1, 1.4, 1.6

Amb sal: .8, .6, .85, .5, .8, .5

Eri pol: .5

Poa sec: .2,

Sal mex: .8, .25,

Amb dum: .25, .4, .3, .25, .4

Aca sph: .5, .3, .3, .25, .25, .15, .5,

LINE INTERCEPT - TRANSECT DATA SHEET

ECORP Consulting, Inc. ENVIRONMENTAL CONSULTANTS

Lebata Mine Site Vegetation Sampling

Project No.: 2014-054.003

Surveyor(s): Josh Corona-Bennett, Greg Hampton | Compass Orientatation: NE degrees 315°

Transect No.: 14 (cont.) | Date: 8/28/14 | Transect Length - 100 m

Species	Begin (meters)	End (meters)	Total Cover (meters)	Percent Cover
Eph vis	90.2	90.8		
BG (Bare Ground)	90.8	91.1		
NA (Native Annuals)	91.1	91.4		
Amb dum	91.4	91.8		
BG	91.8	92.5		
Sal mex	92.5	93.4		
BG	93.4	97		
NNA (Non-Native Annuals)	97	99.3		
NA	99.3	100		

Total:				

Other Notes: Native Perennials

2m Belt Density:

Species Richness:

Shrub/Tree Height:

LINE INTERCEPT - TRANSECT DATA SHEET

ECORP Consulting, Inc. ENVIRONMENTAL CONSULTANTS

Lebata Mine Site Vegetation Sampling

Project No.: 2014-054.003

Surveyor(s): Josh Corona-Bennett, Greg Hampton | Compass Orientatation: NE degrees 30°

Transect No.: 15 | Date: 5/28/14 | Transect Length - 100 m

Species	Begin (meters)	End (meters)	Total Cover (meters)	Percent Cover
BG (Bare Ground)	0	.8		
NNA (Non-Native Annuals)	.8	1.1		
Lar tri	1.1	3.7		
BG	3.7	5.7		
NNA	5.7	8.5		
NA (Native Annuals)	8.5	9.1		
Amb dum	9.1	9.5		
BG	9.5	9.9		
NNA	9.9	10		
Aca sph	10	10.6		
BG	10.6	12.5		
NNA	12.5	13.2		
Eph vir	13.2	13.4		
BG	13.4	21.5		
NNA	21.5	23.5		
NA	23.5	24.8		
Lar tri	24.8	26.6		
BG	26.6	31		
NNA	31	32.5		
NA	32.5	33		
Eph vir	33	33.2		
Aca sph	33.2	33.5		
BG	33.5	34.1		
NNA	34.1	34.5		
Las tri	34.5	36.8		
NA	36.8	37.1		
NNA	37.1	37.4		
Amb sel	37.4	38.3		
BG	38.3	47		
NNA	47	49.2		
NA	49.2	50.2		
Amb dum	50.2	50.7		
BG	50.7	57		
NNA	57	59		
	59	59.8		

Lar tri	59.8	64		
BG	64	69.5		
NNA	69.5	70.5		
NA	70.5	71.2		
Lar tri	71.2	71.5		
NA	71.5	72.5		
BG	72.5	78.5		
NNA	78.5	79.5		
NA	79.5	79.5		
Lar tri	79.5	82.3		
BG	82.3	83.1		
NA	83.1	83.3		
NNA	83.3	83.5		
Lar tri	83.5	84.3		
BG	84.3	87		
NNA	87	88.3		
NA	88.3	88.7		
Lar tri	88.7	90.6		
BG	90.6	96.5		
NNA	96.5	97.5		
NA	97.5	98.2		
Lar tri	98.2	99.6		
BG	99.6	99.8		
NNA	99.8	100		
Total:				

Other Notes: Native Perennials

2m Belt Density:

Lar tri: 卌卌卌||||
Eph vir: 卌卌卌卌||
Aca sph: 卌|||
Amb dum: 卌|||
Poa sec: 卌|
Tet ste: |||
Amb sal: ||
Eri fas ssp. pol: |

Species Richness:

Shrub/Tree Height:

Lar tri: 1.2, 1.3, 1.5, 1.4, 1.6, 2.1, 1, 1.1, 1.3, 1.5, 1.5, 1.4,
1.2, 1.3, 1.5, 1.1, 1.3, 1.7, 1.4, 1.5,
Eph vir: .4, .3, .4, .25, .3, .5, .5, .3, .5, .25, .4, .3, .3, .3, .5, .5
.5, .25, .3
.2, .4, .4, .4
Aca sph: .4, .4, .4, .3, .4, .4, .5, .3, .5
Amb dum: .5, .5, .3, .5, .3, .2, .4, .25
Poa sec: .2, .2, .2, .2, .2, .2
~~Atr dem~~
Tet ste: .85, .6, .8
Amb sal: .5, .8, .6
Eri fas ssp. pol: .5

Attachment 4

Revegetation Performance Criteria

(From *Lebata Inc. Big Rock Creek Reclamation Plan,* Sespe 2014)

Lebata Inc. Big Rock Creek Reclamation Plan - Revegetation Performance Criteria

Shrub and Forbs	
Goal	Reestablish native vegetation exhibiting cover, density and species richness comparable to that of the undisturbed condition.
Baseline	Average of 26% native cover (including perennials and annuals).
Performance Criteria	Overall cover: 60 percent of baseline; 15.6% cover by native plant species, overall (includes perennial and annual species). Density: 80 percent of baseline; 752 perennial plants per acre. Species Richness: 80 percent of baseline; Minimum of 5.6 native perennial species in revegetation areas. (Refer to Attachment E, Exhibit 2 - *Results of Baseline Vegetation Study and Development of Performance Standards*, prepared by ECORP Consulting, Inc., July 24, 2014.)
Contingency Action	Hand weed if weeds interfere with native plant establishment and reseed if density and/or diversity of native plants are low.
Joshua Trees	
Goal	Reestablish over the entire Project site at a density 50 percent of the undisturbed condition.
Baseline	Where Joshua trees are present, there are 3 to 5 trees per acre, with an estimated total population of 200.
Performance Criteria	Density of two (2) trees per acre overall, where soil conditions are appropriate (e.g., undisturbed or similar to native soil), or, total of 50% of baseline data (i.e., 50% of 200). Minimum of 100 Joshua trees must become established and self-sufficient.
Contingency Action	Alter transplanting technique or increase number of relocated trees.
Erosion	
Goal	Erosion does not interfere with native plant establishment. Loss of topsoil from wind erosion is minimal.
Performance Criteria	Erosion control measures employed onsite are designed to capture and accommodate the Capital Flood flows described in the *Drainage Concept* (EIR Appendix 3 and its Addendum), which are considerably greater than the those of a 20-year, 1-hour intensity storm event. Evaluation of the effectiveness of erosion control measures and a check on slope stability will be conducted and recorded yearly as part of the SMARA annual inspection.
Contingency Action	Backfilling activities, if needed, will be conducted in accordance with the *Drainage Concept*.
Resistance to Invasion by Non-Natives	
Goal	Less than 10 percent of any 20 square foot area.
Baseline	Average of 24% non-native cover.
Performance Criteria	Cover of annual nonnative plant species shall not exceed 10 percent, as verified through ocular estimates and annual performance monitoring. If it is determined that annual nonnative cover is hindering the growth or establishment of planted species then cover of annual nonnative species shall not exceed 5 percent. All perennial nonnative plant species shall be eradicated.
Contingency Action	Remove manually or mechanically. No herbicide treatment will be permitted without specific, written authorization from the Project Biologist/Revegetation Specialist.

ATTACHMENT E

Exhibit 3 - *Mohave Ground Squirrel Trapping Report,* prepared by ECORP Consulting, Inc., July 24, 2014

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Mohave Ground Squirrel Trapping Report
for the
Lebata, Inc. Big Rock Creek Surface Mining Project
Los Angeles County, California

Submitted to:
SESPE Consulting, Inc.
468 Poli Street, Suite 2E
Ventura, CA 93001
(530) 477-9507

Submitted by:
ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS
1801 Park Court Place
Building B103
Santa Ana, CA 92701
(714) 721-3793

July 2014

MOHAVE GROUND SQUIRREL TRAPPING REPORT

LEBATA, INC.

BIG ROCK CREEK SURFACE MINING PROJECT
LOS ANGELES COUNTY, CALIFORNIA

JULY 2014

Prepared by:
ECORP Consulting

In Coordination With:
SESPE Consulting, Inc./McGee & Associates
468 Poli Street, Suite 2E
Ventura, California 93001

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1.0 INTRODUCTION

ECORP Consulting, Inc. (ECORP) was contracted by SESPE Consulting, Inc./McGee & Associates (Client), to perform Mohave ground squirrel (*Xerospermophilus mohavensis*) trapping for the Lebata, Inc. (Lebata) Big Rock Creek Surface Mining Project in Pearblossom, Los Angeles County, California (project site). Focused protocol live-trapping surveys for the state-listed (threatened) Mohave ground squirrel was conducted on one (1) trapping grid covering 80 acres that are proposed to be the first portion mined within the approximately 135-acre northern parcel that Lebata plans to use for mining operations. To clarify, the actual Mohave ground squirrel trapping grid was not 80 acres in size but was sufficient in size to sample 80 acres of the project area, as outlined in the current trapping protocol (California Department of Fish and Wildlife [CDFW] 2010). These focused surveys were conducted in order to determine if this species was present on the site since it is listed as threatened under the California Endangered Species Act (CESA).

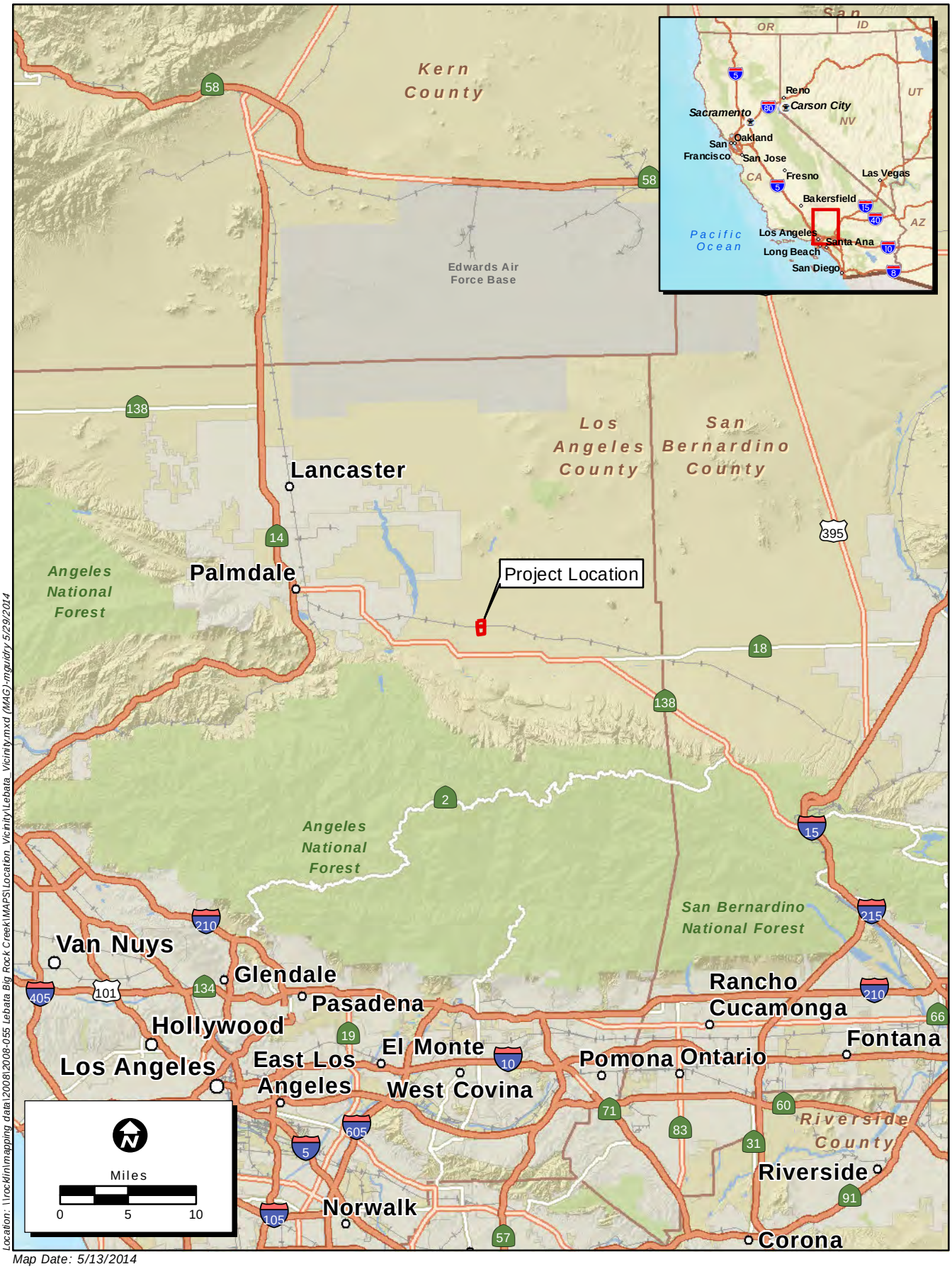
1.1 Project Location

The approximately 310-acre project site is located south of Avenue T between 131st and 136th Streets East in the unincorporated community of Pearblossom, Los Angeles County, (Figure 1) approximately 5.5 miles (mi) northeast of the town of Littlerock, and approximately 13 mi southeast of the city of Palmdale. The project site is bisected by the Union Pacific Railroad (UPRR), located approximately 0.5 mi south of Avenue T. The project site is located on the United States Geological Survey (USGS) Littlerock 7.5-minute topographic quadrangle, Section 11 of Township 5 North, Range 10 West (USGS 2014).

1.2 Project Description

The project site is comprised of two parcels of land, which are bisected by the Union Pacific Railroad (UPRR). The northern parcel encompasses approximately 135 acres and the southern parcel encompasses approximately 175 acres (Figure 2). Surface mining activities may be initiated in the northern portion of the project site in early 2015. The northern 80 acres of the project site the the Mohave ground squirrel trapping study covered will be mined under Phase 1 of the proposed work plan. The southern portion of the project site is also proposed for surface mining activities; however, the activities in this portion of the project site are not proposed to break ground until a later date. The southern portion of the project site will be mined under Phase 2 of the proposed work plan.

Due to the fact that a portion of Phase 1 is proposed for ground breaking activities in early 2015, the trapping survey was only conducted in the northern 80-acre portion of the northern parcel of the project site during the 2014 study (Figure 2). For the purposes of this report, the northern 80-acre portion of the northern parcel will be referred to as the study area.



Location: \\rocklin\mapping data\2008\2008-055 Lebata Big Rock Creek\MAPS\Location_Vicinity\Lebata_Vicinity.mxd (MAG)-mguidry 5/29/2014

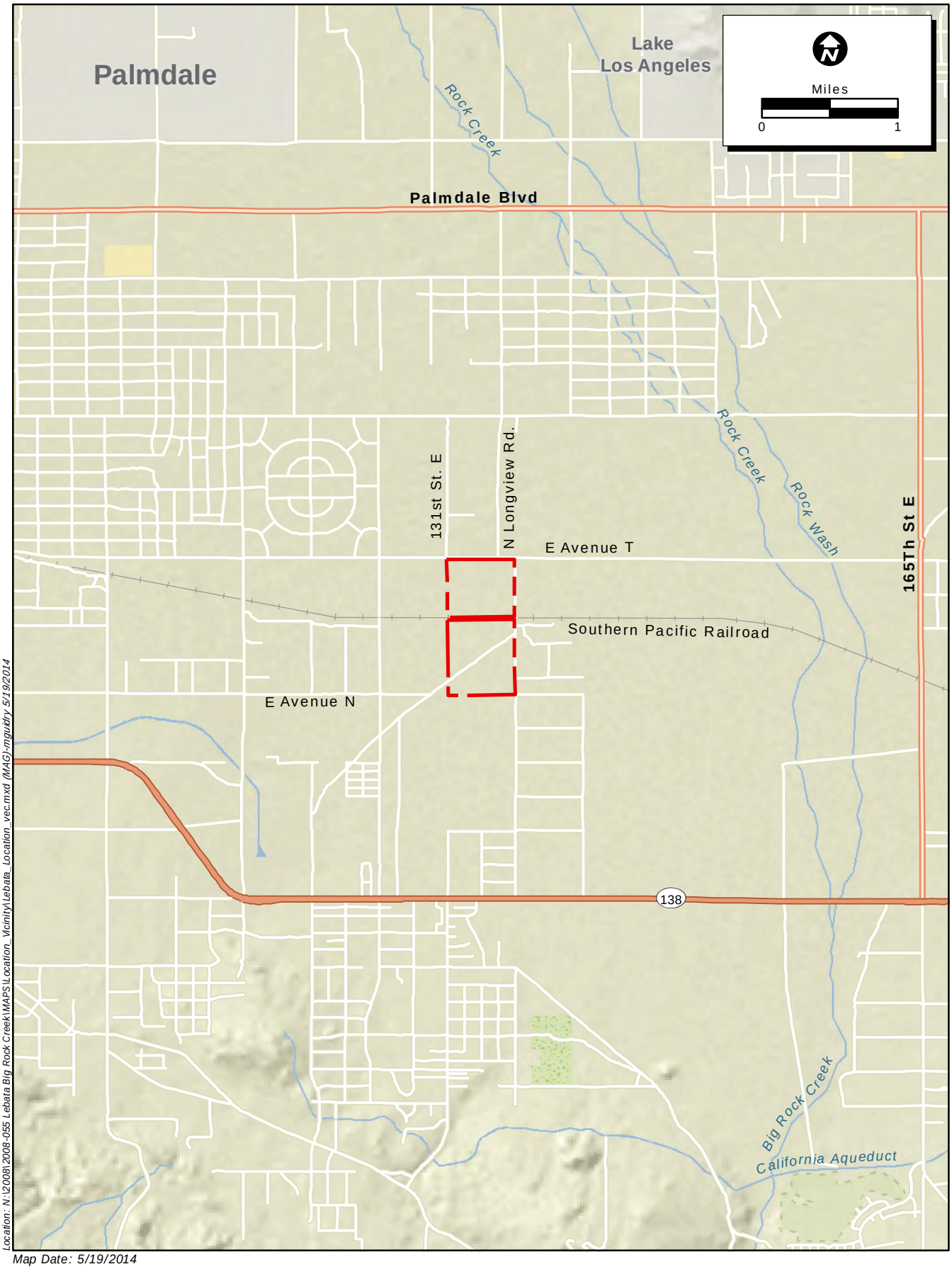
Map Date: 5/13/2014

Service Layer Credits: Sources: USGS, ESRI, TANA, AND

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Figure 1. Project Vicinity

2014-054 Lebata Big Rock Creek



Location: N:\2008\2008-055 Lebata Big Rock Creek\MAPS\Location_Vicinity\Lebata_Location_vec.mxd (MAG)-mgudry 5/19/2014

Map Date: 5/19/2014
Source: ESRI

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Figure 2. Project Location

2014-054 Lebata Big Rock Creek

1.3 Mohave Ground Squirrel Natural History

The Mohave ground squirrel is listed as threatened under CESA (CDFW 2011). In 2009, the Mohave ground squirrel underwent a taxonomic revision to its genus. Squirrels classified under the genus *Spermophilus* (under which the Mohave ground squirrel has been classified since the mid-20th century) were split into two groups based on genetic and morphological features: *Spermophilus* and *Xerospermophilus* (Helgen et al. 2009). The Mohave ground squirrel is now classified under the genus *Xerospermophilus*.

The Mohave ground squirrel is a rodent species endemic to California, which is limited to a geographic range in the western Mojave Desert in San Bernardino, Los Angeles, Kern, and Inyo Counties. Studies have shown that the optimal habitat types typically include plant communities that support spiny hopsage (*Grayia spinosa*) and winterfat (*Kraschenninikovia lanata*), including creosote bush scrub, saltbush scrub, and Joshua tree woodland communities (Scarry et al. 1996; Leitner and Leitner 1998). Mohave ground squirrels have been found at elevations ranging from 1,800 to 5,000 feet (549 to 1,524 meters) above msl (Brooks and Matchett 2002; U.S. Department of the Interior [USDI] Bureau of Land Management [BLM] 2005).

The natural history and habitat requirements for the Mohave ground squirrel are very dependent on elevation, climate, topography, and weather. This diurnal squirrel is only active in the early spring through early summer (approximately mid-February through mid-August) when they feed on native shrubs and annual plants. Adults begin to emerge from their burrows in February to begin reproduction, males emerging approximately two weeks before females. By the end of March, litters of four to ten young (average of six) are born and by late May the young begin to disperse (USDI BLM 2005). As summer approaches and vegetation begins to dry out, Mohave ground squirrels prepare for a long period of winter dormancy (hibernation) by consuming as many nutrients and fats as they can in their diet. By midsummer (July to mid-August), the squirrels return to the underground nests and by this time body temperature, heart rate, and metabolism have fallen drastically to prepare for hibernation. This species is able to survive in this physiological state on their stored body fats until the winter rains come and restore the vegetation. If sufficient rains (more than 3 inches [7 centimeters]) do not occur during the winter, Mohave ground squirrels will likely not reproduce due to lack of sufficient vegetation to support the young (Harris and Leitner 2004). When a drought year occurs, the squirrels will convert all available forage to body fat and enter hibernation as early as April. These biological and physiological adaptations allow them to survive the harsh conditions which occur in the Mojave Desert.

Threats to Mohave ground squirrel populations include agricultural development, grazing, off-road vehicle use, and other human disturbances (USDI BLM 2005). Overall, about 10 percent of the habitat for Mohave ground squirrel has deteriorated due to development (agricultural, residential, industrial, and commercial), with more of that habitat being lost as development spreads rapidly in the southern part of their range (Laabs 1998).

2.0 METHODOLOGY

2.1 Literature Review

A review of the CDFW California Natural Diversity Database (CNDDB) was conducted prior to the start of trapping to determine whether Mohave ground squirrels have been previously reported in the areas covered by the Littlerock USGS 7.5-minute topographic quadrangle (CDFW 2014). Documented Mohave ground squirrel observations in surrounding topographic quadrangles (Alpine Butte, Hi Vista, Juniper Hills, Lancaster East, Lovejoy Buttes, Pacifico Mountain, Palmdale, and Valyermo) were also reviewed.

2.2 Site Characterization

Prior to establishing the trapping grid, suitable Mohave ground squirrel habitat was characterized in the study area by an authorized Field Investigator under a Memorandum of Understanding (MOU) with CDFW. The trapping grid was placed in suitable habitat based on the results of this habitat assessment (described below).

Once the grid was established, Field Investigators documented all dominant perennial and annual plant species present within the grid to create a more detailed vegetation community description of the grid. In addition, land use surrounding the grid, disturbances present, and all wildlife species observed were documented throughout the course of trapping.

2.3 Mohave Ground Squirrel Trapping

Protocol Mohave ground squirrel trapping was conducted within the study area according to the CDFW Mohave Ground Squirrel Survey Guidelines (2010; Appendix A). Trapping was conducted under a MOU with CDFW, issued to ECORP Consulting, Inc. (ECORP; Donald Mitchell as Principal Investigator). Trapping for the project was conducted by Field Investigators Kristen (Mobraaten) Wasz and Phillip Wasz. Field Assistants Amy Trost and Wendy Turner assisted Field Investigators in setting up and taking down grids, opening and baiting the traps, processing animals captured, closing the traps, and recording data during the inventory.

During the initial grid set-up in the first trapping session, the Field Investigator conducted an initial visual survey according to CDFW trapping protocol (CDFW 2010) to detect Mohave ground squirrels prior to live-trapping.

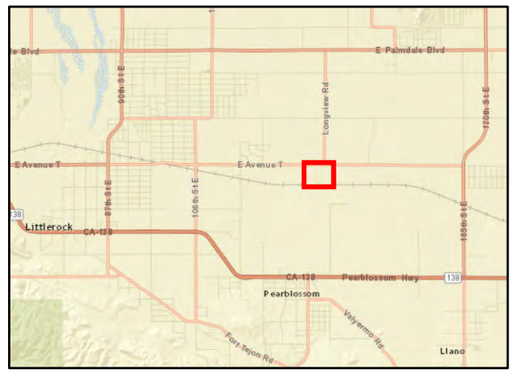
The timeframe for conducting live-trapping inventories for Mohave ground squirrel is divided into three sessions: Session 1 occurs between March 15 and April 30; Session 2 occurs between May 1 to May 31; and Session 3 occurs between June 15 and July 15 (CDFW 2010).

Figure 3. Lebata Big Rock Creek Mohave Ground Squirrel Trapping Grid

Map Features

- Study Area
- Grid Corner
- Grid

Service Layer Credits: Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom,



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Location: N:\2008\2008-055 Lebata Big Rock Creek\MAPS\MGS\Lebata_MGS_Grid_20140626.mxd (JDS)-dwagnon 7/1/2014

2014-054 Lebata Big Rock Creek

Scale in Feet
0 300

Photo Source: USGS 2010

Map Date: 7/1/2014

One grid was trapped in suitable habitat within the study area. The grid was established in such a way as to maximize trapping in suitable habitat within the northernmost 80 acres in the study area (Figure 3). The grid consisted of 100 traps arranged in five lines of 20 traps each and spaced 115 feet apart, covering a rectangular area of approximately 22.5 acres. The Mohave ground squirrel grid was 2,125 feet long by 475 feet wide. Trap lines were labeled A through E and traps were numbered 1 through 20. The grid location was recorded using a global positioning system (GPS) unit in Universal Transverse Mercator (UTM) coordinates, North American Datum 1983 (NAD 83), Zone 11.

The grid location was maintained for five consecutive days during each of the three trapping sessions, for a total of 1,500 trap-days per grid. Traps used were standard Sherman™ 12-inch aluminum folding traps. Each trap was shaded with a cardboard box frame oriented north-south to keep temperatures moderate inside the shade and trap. Traps were opened within one hour of sunrise in the morning and checked at least every 4 hours. Traps were closed within one hour of sunset or when the air temperature at 6 inches above the ground exceeded 90 degrees Fahrenheit (°F). Trapping was conducted during appropriate weather conditions with periods of extremely high winds, precipitation and/or snowfall, and low temperatures (less than 50°F) being avoided during all three sessions of trapping.

When individual squirrels were captured, the species, age class (adult, subadult, or juvenile), sex, reproductive condition, and any notes of unusual or abnormal circumstances (including a general health assessment) were recorded. Additional data collected at each trapping grid included vegetation (dominant perennial and annual species, and other species), land forms, soil description, invasive or exotic species presence, and disturbances. Weather data were recorded throughout the day during trapping. Digital photographs were taken from the center of both ends of the grid.

2.4 Incidental Sensitive Species Observations

Throughout the trapping survey, incidental sightings of sensitive species were recorded within the study area with particular attention being paid to Mohave ground squirrel, desert tortoise (*Gopherus agassizii*), burrowing owl (*Athene cunicularia*), and sensitive plant species. If individuals were observed, they were mapped and coordinates of their location(s) were documented with pertinent information such as date, breeding status (if determined), notes on location, and etc.

3.0 RESULTS

3.1 Literature Review

A review of the CDFW's CNDDB resulted in many documented Mohave ground squirrel observations in the vicinity of the proposed mining area. The results of the CNDDB search indicated that there were a total of 15 documented records of Mohave ground squirrels within 10 mi of the study area. All of these occurrences are considered

historical records and date back more than 20 years (CDFW 2014). The closest and most recent CNDDB recorded occurrences are described in detail below.

The most recent documented occurrence was at Saddleback Butte State Park in 1992 where an unknown number of squirrels were observed. The park is located approximately 2 mi north of Lake Los Angeles and approximately 10 mi north of the study area (CNDDB Element Occurrence Record 227). The record states that Mohave ground squirrels were observed throughout the park in many types of habitats, except in the rocky areas.

The closest documented occurrence was northwest of East Avenue S at 140th Street East in 1989. The occurrence is approximately 1 mi from the study area (CNDDB Element Occurrence Record 453). One Mohave ground squirrel was observed during surveys for an underground pipeline.

The remaining 13 CNDDB recorded occurrences were observed between 1930 and 1991. The observations were approximately 1.75 to 10 mi from the study area (CNDDB Element Occurrence Records 23, 25, 54, 134, 135, 226, 229, 230, 255, 256, 268, 279, 280).

3.2 General Site Information

The Mojave Desert Province is a geologically defined region in which the City of Palmdale and the surrounding areas are located. Topography within the study area was mostly flat with hummocks and old gravel piles. Soils were sandy and gravelly. Elevation in the study area began at approximately 2,860 feet above mean sea level (msl) in the north and gradually increased to 2,900 feet above msl in the south. Predominant land use in the vicinity of the study area was sparsely developed with rural residential communities, mining operations, and agricultural areas, with large areas of relatively undisturbed desert habitat. One small remnant desert wash was present in the study area. The remnant wash, which runs south to north, bisected the eastern half of the trapping grid running south to north and no flowing water was observed during the trapping study. Trash dumping and off highway vehicle (OHV) use are prevalent in the study area, particularly along Longview Road.

3.2.1 Vegetation

The trapping grid consisted of suitable habitat for Mohave ground squirrel. The vegetation community present within the study area consisted of creosote bush scrub. The creosote bush scrub habitat on site was mostly undisturbed but some portions of the habitat, especially those close to roads, were disturbed and showed evidence of trash dumping and off highway vehicle use. Although some areas showed signs of disturbance, the level of disturbance was not great enough to make these areas unsuitable for Mohave ground squirrel. Creosote bush scrub occurs throughout much of the Mojave Desert on well-drained soils. This community is characterized primarily by creosote bushes (*Larrea tridentata*) that are of medium-height and widely-spaced with bare ground between shrubs. This vegetation community occurs at elevations ranging

from 246 feet (75 meters) below msl to 3,937 feet (1,200 meters) above msl. Other species that make up this community in the study area included white bursage (*Ambrosia dumosa*), ephedras (*Ephedra* sp.), cheesebush (*Hymenoclea salsola*), cholla (*Cylindropuntia echinocarpa*), horsebush (*Tetradymia* sp.), and Joshua tree (*Yucca brevifolia*). In addition, two plant species typically associated with Mohave ground squirrel, winterfat and spiny hopsage, were present in the study area. Representative photographs of the site are found in Appendix B.

3.2.2 Wildlife

Wildlife species observed or detected on the study area are characteristic of those typically associated with Mojave scrub communities in the region. A total of eight reptile, 16 bird, and five mammal species were observed during the trapping study. Common wildlife species observed included long-nosed leopard lizard (*Gambelia wislizenii*), house finch (*Carpodacus mexicanus*), horned lark (*Eremophila alpestris*), red-tailed hawk (*Buteo jamaicensis*), and black-tailed jackrabbit (*Lepus californicus*). All wildlife species observed or detected during the trapping sessions are listed in the wildlife compendium presented in Appendix C.

3.3 Mohave Ground Squirrel

The initial visual survey for the study area was conducted during grid setup by Ms. Wasz on April 19, 2014. Mohave ground squirrels were neither observed nor detected on or in the vicinity of the grid during the initial visual surveys. The grid was trapped according to CDFW protocol (2010) following the negative visual survey results. Table 1 lists the dates of each trapping session and the Field Investigator responsible for each session.

Table 1. Mohave Ground Squirrel Trapping Dates and Surveyors

Session	Field Investigator (Field Assistant)	2014 Trapping Dates
1	Kristen Wasz (Amy Trost)	April 19 - 23
2	Phillip Wasz (Wendy Turner)	May 19 - 23
3	Kristen Wasz (Amy Trost)	June 17 - 21

Mohave ground squirrels were neither captured nor detected on the trapping grid during the focused protocol live-trapping studies conducted in 2014. One squirrel species was captured during the trapping effort, the white-tailed antelope ground squirrel (*Ammospermophilus leucurus*). A total of 64 individual white-tailed antelope ground squirrels were captured during the 2014 trapping effort. Of the antelope ground squirrels captured, 32 were males, 32 were females, and there were 24 recaptures (Table 2).

Table 2. Trapping Results Summary†

	AMLE*										Non-target Species*		
	Female				Male								
Grid #	Adult	Sub-adult	Juvenile	*Total # Repro*	Adult	Sub-adult	Juvenile	*Total # Repro*	Recap-tures	Total AMLE Captures	ASTI	SCMA	Total Captures
1	18	7	7	*3*	24	5	3	*6*	24	**88**	5	1	**94**
Gender Subtotal	**32**			*3*	**32**			*6*					
TOTAL	**64**								**24**	**88**	**5**	**1**	**94**
*Amount Reproductive from **TOTAL***	*9*												

† Mohave ground squirrels were not captured

* AMLE - white-tailed antelope ground squirrel (*Ammospermophilus leucurus*)

ASTI - western whiptail (*Aspidoscelis tigris*)

SCMA - desert spiny lizard (*Sceloporus magister*)

Approximately 17 percent of adult females (n=3) exhibited signs of reproductive readiness or evidence of recent reproduction (i.e., swollen genitals, lactation, pregnancy, post-lactation), while approximately 25 percent of adult males (n=6) exhibited signs of reproductive readiness (i.e., scrotal or post-scrotal). General information, representative site photographs, and trapping data for the trapping grid are found in Appendix B.

Two non-target species were captured during the trapping effort, western whiptail (*Aspidoscelis tigris*) and desert spiny lizard (*Sceloporus magister*). Age, sex, and reproductive data were not collected for non-target species. Although no Mohave ground squirrels were captured, the trapping results for the incidental species captured during the study are included in Table 2.

3.3.1 Weather Conditions during Trapping

Weather during the study was typical of the Mojave Desert ecosystem; high temperatures and wind events. The average high temperature during the first session was 83°F, 80°F during the second session, and 93°F during the third session. It is important to note that the averaged temperature readings were taken from the highest recorded temperature during each trapping day, not the average temperature at which biologists began closing traps. High average weather temperatures (above 90°F) during the third trapping session are typical. The rate at which temperatures rise can be unpredictable at this time of the year (June/July timeframe) and can result in temperatures climbing at an alarmingly high rate in a short amount of time, oftentimes increasing by several degrees within a matter of minutes. Even though the biologists began closing the grid at or just before 90°F on the warm trapping days, temperatures usually rose well above 90°F once the grid was completely closed, approximately 45 minutes to 1.5 hours after the biologists began closing traps. In these instances, biologists paid close attention to the health and safety of the animals captured in the traps. There were no signs of heat stress due to high ambient temperatures in any of the animals captured in the traps (including the non-target species) during any portion of the trapping effort.

Inclement weather occurred during Session 2 on May 20 (rain) and May 22 (thunder/lightning storm), which resulted in the early closure of the grid on those dates. Additional days of trapping were not conducted to make up for lost trapping time because the grid closures occurred at 1645 and 1700 on those days, respectively, which was only approximately two hours prior to the normal grid closing time (sunset ranged from 1950 to 1953 during Session 2, which would put grid closure times between 1850 and 1853 [one hour prior to sunset]). The total trapping time lost between the two days was only approximately four hours and, therefore, did not warrant another day of trapping to make up for lost time. Weather data recorded during the trapping survey are provided in Appendix D.

3.4 Incidental Sensitive Species Observations

One Vaux's swift (*Chaetura vauxi*) was observed flying over the grid on May 21, 2014. This species is not listed under CESA or FESA, but is considered a CDFW Species of

Special Concern (SSC). The individual was likely observed during its migration period because Vaux's swifts are generally not year-round or breeding residents in the Mojave Desert.

4.0 DISCUSSION

One protocol Mohave ground squirrel trapping grid was placed in suitable habitat within the study area at the Lebata Big Rock Creek Project site and was trapped for a total of 15 days each over three trapping sessions between March 15 and July 15, 2014. Mohave ground squirrels were neither detected by observation or vocalization nor captured on the grid during the trapping study. A total of 64 white-tailed antelope ground squirrels and two non-target wildlife species (western whiptail and desert spiny lizard) were captured during the trapping study. Mohave ground squirrels were neither captured nor detected on the trapping grid during the focused protocol live-trapping studies conducted in 2014.

Creosote bush scrub was the dominant vegetation community present on the site. Small areas of disturbances in the form of trash dumping and off highway vehicle use were found associated with the dirt roads that bisected the site. However, the level of disturbances in these areas was not so great to make these areas unsuitable as Mohave ground squirrel habitat. Winterfat and spiny hopsage were present throughout the study area.

The CNDDB literature search resulted in 15 records of Mohave ground squirrel observations or detections within 10 mi of the study area. All of these occurrences were documented more than 20 years ago and are now considered historic observations. The most recent observation of Mohave ground squirrel in the area occurred in 1992 in Saddleback Butte State Park in 1991 where an unknown number of squirrels were detected (CDFW 2014). The closest record was one Mohave ground squirrel observed in 1989 northwest of the intersection of East Avenue S and 140th Street East, approximately one mile northeast of the study area (CDFW 2014). There have not been any recent (within the last 15 years) detections, observations, or captures of Mohave ground squirrels within 10 mi of the study area.

The Lebata Big Rock Creek project site is located within the extreme southwestern portion of the historic range of the Mohave ground squirrel and, although suitable desert scrub habitat is present on the site, Mohave ground squirrels are not expected to occur.

5.0 REFERENCES CITED

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APPENDIX A

Mohave Ground Squirrel Trapping Protocol

CALIFORNIA DEPARTMENT OF FISH AND GAME

MOHAVE GROUND SQUIRREL SURVEY GUIDELINES

(January 2003; minor process and contact changes in July 2010)

Unless a certain circumstance[1] applies, the Department of Fish and Game (Department) requires a survey to be undertaken for the Mohave ground squirrel (*Xerospermophilus mohavensis*) on a project site if the proposed site has potential habitat of this species and the presence of the species on the project site is unknown. Potential habitat is land supporting desert shrub vegetation[2] within or adjacent to the geographic range[3] of the species. A project is an action that results in temporary or permanent removal or degradation of potential habitat. The Department considers a project site to be an area of land controlled by the project proponent, including but not limited to the portion proposed for removal or degradation of potential habitat. The Department considers a project site to be occupied by the Mohave ground squirrel, if an individual of this species is observed, or is captured on any sampling grid, on the project site.

The Department intends for these survey guidelines to apply to projects that would negatively affect ≤180 acres or to linear projects ≤ 5 miles in length. For projects of larger scale, the Department requires special survey protocol(s) to be developed through its consultation with either the project proponent or the local lead agency (if appropriate) or both entities.

For projects of the appropriate scale, each survey shall adhere to the following conditions:

1. Studies that include trapping for the Mohave ground squirrel shall be authorized by a Memorandum of Understanding (MOU) or Letter Permit issued by the Wildlife Branch of the Department, or by other permit as determined by the Department, and shall be undertaken only by a qualified biologist. A qualified biologist is a biologist who has demonstrated pertinent field experience in capturing and handling ground squirrels or other small mammals in desert/arid communities and who has been permitted by the Department to work without supervision. Each biologist setting traps, opening traps containing captured animals, or handling captured animals must be named in the MOU or Letter Permit as an authorized person, whether qualified or not to work without supervision.

2. Visual surveys to determine Mohave ground squirrel activity and habitat quality shall be undertaken during the period of 15 March through 15 April. All potential habitat

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1 A survey is not necessary in the circumstance that the project proponent prefers to assume that the Mohave ground squirrel is present on the project site and applies for a California Endangered Species Act incidental-take permit (Fish and Game Code Section 2081b) requiring mitigation and compensation.

2 Examples of desert shrub vegetation that is known to provide habitat for the Mohave ground squirrel include (but are not limited to) Mojave Creosote Bush Scrub, Mojave Mixed Woody Scrub, and Desert Saltbush Scrub as described in Holland 1986.

3 Because the limits of the geographic range are not known precisely, surveys may be required in areas up to five miles from currently-documented boundaries.

on a project site shall be visually surveyed during daylight hours by a biologist who can readily identify the Mohave ground squirrel and the white-tailed antelope squirrel (*Ammospermophilus leucurus*).

3. If visual surveys do not reveal presence of the Mohave ground squirrel on the project site, standard small-mammal trapping grids shall be established in potential Mohave ground squirrel habitat. The number of grids will depend on the amount of potential habitat on the project site, as determined by the guidelines presented in paragraphs 4 and 5 of these guidelines.

4. For linear projects (for example, highways, pipelines, or electric transmission lines), each sampling grid shall consist of 100 Sherman live-traps (or equivalent; the minimum length of any trap is 12 inches) arranged in a rectangular pattern, 4 traps wide by 25 traps long, with traps spaced 35 meters apart along each of the four trap lines. At a minimum, one sampling grid of this type shall be established in each linear mile, or fraction thereof, of potential Mohave ground squirrel habitat along the project corridor.

5. For all other types of projects, one sampling grid consisting of 100 Sherman live-traps (or equivalent; the minimum length of any trap is 12 inches) shall be established for each 80 acres, or fraction thereof, of potential Mohave ground squirrel habitat on the project site. The traps shall be arranged in a 10 x 10 grid, with 35-meter spacing between traps.

6. Each sampling grid shall be trapped for a minimum five consecutive days, unless a Mohave ground squirrel is captured before the end of the five-day term on the grid or on another grid on the project site. If no Mohave ground squirrel is captured on a sampling grid on the project site in the first five-consecutive-day term, each sampling grid shall be sampled for a SECOND five-consecutive-day term. Trapping may be stopped before the end of the second term if a Mohave ground squirrel is captured on any sampling grid on the project site. If no Mohave ground squirrel is captured during the second five-consecutive-day term, each sampling grid shall be sampled for a THIRD five-consecutive-day term. The FIRST trapping term shall begin and be completed in the period of 15 March through 30 April. If a SECOND term is required, it shall begin at least two weeks after the end of the first term, but shall begin no earlier than 01 May, and shall be completed by 31 May. If a THIRD term is required, it shall begin at least two weeks after the end of the second term, but shall begin no earlier than 15 June, and shall be completed by 15 July. All trapping shall be conducted during appropriate weather conditions, avoiding periods of high wind, precipitation, and low temperatures ($<50^{o}$F or 10^{o}C).

7. For projects requiring two or more sampling grids, capture of a Mohave ground squirrel on any grid will establish presence of the species on the project site. Trapping may be stopped on all grids on the project site at that time. For linear projects, very large project sites, project sites characterized by fragmented or highly-heterogeneous habitats, or in other special circumstances, continued

trapping may be necessary.

8. A maximum 100 traps shall be operated by each qualified biologist. Each trap shall be covered with a cardboard A-frame or equivalent non-metal shelter to provide shade. Trap and shelter orientation shall be on a north-south axis. All traps shall be opened within one hour of sunrise and may be closed beginning one hour before sunset. Traps shall be checked at least once every four hours to minimize heat stress to captured animals. When traps are open, temperature shall be measured at a location within the sampling grid, in the shade, and one foot (approx. 0.3 meters) above the ground at least once every hour. Traps shall be closed when the ambient air temperature at one foot above the ground in the shade exceeds 90^{o}F (32^{o}C). Trapping shall resume on the same day after the ambient temperature at one foot (approx. 0.3 meters) above the ground in the shade falls to 90^{o}F (32^{o}C) and shall continue until one hour before sunset. Suggested baits are mixed grains, rolled oats, or bird seed, with a small amount of peanut butter.

9. A qualified biologist shall complete the Survey and Trapping Form, which is found on the last page of these guidelines. This biologist, or the lead agency for the project, shall submit the completed form to the appropriate Department office (see page 4) with the biological report on the project site.

10. The Department may allow variation on these guidelines, with the advance written approval of the appropriate regional habitat conservation planning office (see page 4). Such variations could include biologically-appropriate modification of the trapping dates or changes in grid configuration that would enhance the probability of detecting Mohave ground squirrels. Any variation which concerns trapping or marking methods must be incorporated into the MOU or permit that authorizes the work.

11. If a survey conducted according to these guidelines results in no capture or observation of the Mohave ground squirrel on a project site, this is not necessarily evidence that the Mohave ground squirrel does not exist on the site or that the site is not actual or potential habitat of the species. However, in the circumstance of such a negative result, the Department will stipulate that the project site harbors no Mohave ground squirrels. This stipulation will expire one year from the ending date of the last trapping on the project site conducted according to these guidelines.

Literature Cited

Holland, R. F. 1986. Preliminary descriptions of the terrestrial natural communities of California. Nongame Heritage Program report. California Department of Fish and Game (Sacramento), 156 pages.

CONTACTS

A. For information on obtaining an MOU or on the type of experience that a qualified biologist must have, contact the following:

Scott D. Osborn
Wildlife Branch, Nongame Wildlife Program
Department of Fish and Game
1812 Ninth Street
Sacramento, CA 95811

voice: (916) 324-3564
fax: (916) 445--4048
e-mail: sosborn@dfg.ca.gov

B. For information on project review and conservation planning by the Department, as these activities regard the Mohave ground squirrel, contact the following:

(for Kern County)
Habitat Conservation Planning
San Joaquin Valley and Southern Sierra Region
Department of Fish and Game
1234 E. Shaw Avenue
Fresno, California 93710
telephone: (559) 243-4005

(for Los Angeles County)
Habitat Conservation Planning
South Coast Region
Department of Fish and Game
4949 View Ridge Avenue
San Diego, California 92123
telephone: (858) 467-4201

(for Inyo and San Bernardino counties)
Habitat Conservation Planning
Eastern Sierra and Inland Deserts Region
Department of Fish and Game
407 West Line Street
Bishop, California 93514
telephone: (760) 872-1171

Mohave Ground Squirrel (MGS) Survey and Trapping Form (photocopy as needed)

PART I - PROJECT INFORMATION (use a separate form for each sampling grid)

Project name: _____ Property owner:_____

Location: Township _____; Range _____; Section _____ ; ¼ Section _____

Quad map/series: _____ UTM coordinates: _____
GPS coordinates of trapping-grid corners

Acreage of Project Site: _____ Acreage of potential MGS habitat on site: _____

Total acreage visually surveyed on project site: _____ Date(s): _____
visual surveys

Visual surveys conducted by: _____
names of all persons by date (use back of form, if needed)

Total acres trapped: _____ Number of sampling grids: _____

Trapping conducted by: _____
names of all persons by sampling term and sampling grid (use back of form, if needed)

Dates of sampling term(s): FIRST_____ SECOND _____ THIRD _____
if required if required

PART II - GENERAL HABITAT DESCRIPTION (use back of form, if needed)
Vegetation: dominant perennials: _____
other perennials: _____
dominant annuals: _____
_____
other annuals: _____
_____

Land forms (mesa, bajada, wash): _____

Soils description: _____

Elevation: _____ Slope: _____

PART III - WEATHER (report measurements in the following categories for each day of visual survey and each day of trapping; using 24-hour clock, indicate time of day that each measurement was made; use a separate blank sheet for each day)

Temperature: AIR minimum and maximum; SOIL minimum and maximum; Cloud Cover: % in AM and % in PM; Wind Speed: in AM and in PM

APPENDIX B

Grid Information, Representative Site Photographs, and Trapping Data

Mohave Ground Squirrel (MGS) Survey and Trapping Form

Part I - Project Information

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Grid #
1

Project Name: Lebata Big Rock Creek
Property Owner: Lebata, Inc.
Quad Map/ Series: Littlerock

Township: 5N
Range: 10W
Section (1/4): 11

UTM Coordinates of grid corners (NAD 83, error <6m)

NW Corner (A1)		NE Corner (A20)		SE Corner (E20)		SW Corner (E1)	
Easting	Northing	Easting	Northing	Easting	Northing	Easting	Northing
417823	3822506	418469	3822542	418456	3822403	417810	3822364

PICTURES (from each end of grid) 2 photos Camera #02 4/20/14

Acreage of Project Site (or linear distance) 80 (Northern Portion)
Acreage of potential MGS habitat on site (or linear distance) 80
All areas of potential MGS habitat were visually surveyed on April 19, 2014
These visual surveys were conducted by Kristen (Mobraaten) Wasz
Total # of grids 1

Session	Start Date	End Date
1	4/19/2014	4/23/2014
2	5/19/2014	5/23/2014
3	6/17/2014	6/21/2014

Trapping conducted by:
Kristen Wasz
Phillip Wasz
Kristen Wasz

Part II - General Habitat Description

Vegetation

dominant perennials	creosote bush, saltbush
other perennials	winterfat, rubber rabbitbrush, ephedra, beavertail cactus, cholla, indigo bush, matchweed, California buckwheat, Joshua tree
dominant annuals	desert dandelion, phacelia, fiddleneck, erodium, mentzelia
other annuals	desert calico, mojave linanthus, fiddleneck, slender buckwheat, gilia, desert primrose, sand-verbena, fremont pincushion, suncups

Land Forms (i.e. bajadas, washes) mostly flat with hummocks; old gravel piles
Soils Description sandy, gravelly
Elevation 2871 **Slope** 0-2% slopes

Representative Site Photographs

Photo 1. Trapping Grid, facing west from trap C20.

Photo 2. Trapping grid, facing east from trap C1.

Grid 1 Raw Data

DATE	TIME	TRAP #	SPECIES	RECAP	SEX	AGE	REPRO	COMMENTS
04/19/14	10:41	A12	AMLE	N	F	A	No	
04/20/14	10:56	B3	ASTI					
04/20/14	11:14	A13	AMLE	N	M	A	No	
04/20/14	11:16	A12	AMLE	N	M	A	No	
04/20/14	14:32	E9	AMLE	N	M	A	No	
04/20/14	14:47	B12	ASTI					
04/21/14	10:42	E8	AMLE	N	M	A	No	
04/21/14	10:57	B15	SCMA					
04/22/14	10:48	E8	AMLE	N	F	J	No	
04/22/14	14:40	E7	AMLE	N	F	A	Yes	lactating; old tail injury
04/22/14	18:48	C12	AMLE	N	F	A	No	
04/22/14	19:01	A13	AMLE	N	F	A	No	
04/23/14	12:10	A20	AMLE	N	M	A	No	fleas
04/23/14	15:28	A20	AMLE	N	F	A	Yes	lactating
04/23/14	15:12	E8	AMLE	N	M	SA	No	
04/23/14	15:30	A19	AMLE	N	F	J	No	
04/23/14	18:45	A20	AMLE	N	M	SA	No	
05/19/14	9:53	A17	AMLE	N	F	SA	No	
05/19/14	10:00	A8	AMLE	N	M	A	No	
05/19/14	10:14	B13	AMLE	N	M	SA	No	
05/19/14	10:55	E3	AMLE	N	M	A	No	missing half of tail, old injury
05/19/14	13:02	A11	AMLE	N	M	SA	No	
05/19/14	13:06	A6	AMLE	N	F	A	No	
05/19/14	13:10	A3	AMLE	N	M	A	No	
05/19/14	13:20	B16	AMLE	N	F	A	No	
05/19/14	13:46	E11	AMLE	N	F	A	No	
05/19/14	16:00	A10	AMLE	N	F	J	No	
05/19/14	16:03	A8	AMLE	Y				
05/19/14	16:24	C4	AMLE	N	F	SA	No	
05/19/14	16:44	E18	ASTI					
05/20/14	10:38	A6	AMLE	N	M	J	No	
05/20/14	10:41	A1	ASTI					
05/20/14	10:52	B16	AMLE	N	M	A	Yes	post-scrotal
05/20/14	11:20	E19	AMLE	N	F	SA	No	
05/20/14	13:40	A12	AMLE	N	F	A	No	
05/20/14	13:55	B13	AMLE	N	M	A	No	
05/20/14	13:57	B14	AMLE	Y				
05/20/14	17:05	A7	AMLE	N	F	J	No	
05/20/14	17:07	A4	AMLE	Y				
05/20/14	17:30	C8	AMLE	Y				
05/21/14	10:30	A3	AMLE	N	F	A	Yes	lactating
05/21/14	10:32	A2	AMLE	N	M	A	No	

DATE	TIME	TRAP #	SPECIES	RECAP	SEX	AGE	REPRO	COMMENTS
05/21/14	10:55	E3	AMLE	N	M	A	No	
05/21/14	11:03	E10	AMLE	N	F	A	No	
05/21/14	11:09	D15	AMLE	Y				
05/21/14	13:40	A14	AMLE	Y				
05/21/14	13:49	B1	AMLE	N	M	A	No	
05/21/14	13:52	B5	AMLE	Y				
05/21/14	14:31	E20	AMLE	Y				
05/21/14	16:25	A6	AMLE	Y				
05/21/14	17:07	E19	AMLE	N	M	A	No	
05/22/14	10:17	A17	AMLE	Y				
05/22/14	10:27	A4	AMLE	Y				
05/22/14	10:31	B2	AMLE	Y				
05/22/14	10:43	C17	AMLE	Y				
05/22/14	15:40	A11	AMLE	Y				
05/22/14	17:25	D12	AMLE	Y				
05/23/14	10:41	E12	AMLE	N	F	A	No	
05/23/14	13:19	D12	AMLE	N	M	A	No	
05/23/14	13:23	E9	ASTI					
05/23/14	13:30	E1	AMLE	N	F	A	No	
05/23/14	13:36	B6	AMLE	Y				
05/23/14	16:27	D17	AMLE	N	F	A	No	
05/23/14	16:45	C16	AMLE	N	F	A	No	
05/23/14	16:55	A5	AMLE	Y				
05/23/14	16:59	A2	AMLE	N	M	J	No	
06/17/14	9:55	E15	AMLE	N	M	A	No	
06/17/14	10:02	B3	AMLE	N	F	J	No	bloody front paw
06/17/14	10:10	B10	AMLE	N	M	A	No	
06/17/14	10:25	A19	AMLE	N	F	SA	No	
06/17/14	13:29	E12	AMLE	N	M	SA	No	
06/18/14	9:56	D7	AMLE	N	F	SA	No	
06/18/14	10:03	E1	AMLE	N	M	A	Yes	post-scrotal
06/18/14	12:38	C16	AMLE	N	M	A	Yes	post-scrotal
06/18/14	12:40	C17	AMLE	N	M	A	Yes	post-scrotal
06/19/14	9:31	E20	AMLE	N	M	A	No	not marked - escaped
06/19/14	9:44	E9	AMLE	N	F	A	No	
06/19/14	9:54	B4	AMLE	N	F	SA	No	
06/19/14	10:06	C19	AMLE	N	F	SA	No	
06/19/14	10:11	A18	AMLE	Y				
06/19/14	10:18	A9	AMLE	N	F	A	No	
06/19/14	11:27	D9	AMLE	N	F	A	No	
06/20/14	9:24	B19	AMLE	Y				
06/20/14	9:43	A3	AMLE	N	F	J	No	
06/20/14	10:57	A3	AMLE	N	M	A	Yes	post-scrotal

DATE	TIME	TRAP #	SPECIES	RECAP	SEX	AGE	REPRO	COMMENTS
06/21/14	9:33	E9	AMLE	Y				
06/21/14	9:42	E3	AMLE	Y				
06/21/14	9:52	B1	AMLE	N	M	J	No	
06/21/14	9:53	C1	AMLE	Y				
06/21/14	9:57	C4	AMLE	N	M	A	No	
06/21/14	10:04	C10	AMLE	Y				
06/21/14	10:11	C14	AMLE	N	M	A	Yes	post-scrotal
06/21/14	10:22	B9	AMLE	N	F	J	No	
06/21/14	10:49	A5	AMLE	Y				

A – Adult
J – Juvenile
SA – Subadult
AMLE – white-tailed antelope ground squirrel (*Ammospermophilus leucurus*)
ASTI – western whiptail (*Aspidoscelis tigris*)
SCMA – desert spiny lizard (*Sceloporus magister*)

APPENDIX C

Wildlife Compendium

Scientific Name	**Common Name**
REPTILES	
Phrynosomatidae (North American Spiny Lizards)	
Phrynosoma platyrhinos	desert horned lizard
Sceloporus magister	desert spiny lizard
Sceloporus occidentalis	western fence lizard
Uta stansburiana	side-blotched lizard
Crotophytidae (Collard Lizards, Leopard Lizards)	
Gambelia wislizenii	long-nosed leopard lizard
Teiidae (Ground Lizards, Racerunners, and Whiptails)	
Aspidoscelis tigris	western whiptail
Iguanidae (American Arboreal Lizards, Chuckwallas, Iguanas)	
Dipsosaurus dorsalis	desert iguana
Colubridae (Typical Snakes)	
Masticophus flagellum	coachwhip
Pituophis catenifer	gopher snake
BIRDS	
Troglodytidae (Wrens)	
Campylorhynchus brunneicapillus	cactus wren
Corvidae (Crows, Jays, and Magpies)	
Corvus corax	common raven
Tyrannidae (Tyrant Flycatchers)	
Myiarchus cinerascens	ash-throated flycatcher
Tyrannus vociferans Swainson	Cassin's kingbird
Emberizidae (Buntings, Finches, Sparrows, and Towhees)	
Carpodacus mexicanus	house finch
Amphispiza nevadensis	sagebrush sparrow
Zonotrichia leucophrys	white-crowned sparrow
Alaudidae (Larks)	
Eremophilia alpestris	horned lark
Accipitridae (Eagles, Hawks, and Kites)	
Buteo jamaicensis	red-tailed hawk
Mimidae (Mockingbirds and Thrashers)	
Mimus polyglottos	northern mockingbird
Apodinae (Swifts)	
*Chaetura vauxi**	Vaux's Swift
Hirundinidae (Swallows)	
Hirundo rustica	barn swallow
Caprimulgidae (Nightjars)	
Chordeiles acutipennis	lesser nighthawk
Aegithalidae (Bushtits)	
Psaltriparus minimus	bushtit
Columbidae (Doves and Pigeons)	
Zenaida maroura	mourning dove
Picidae (Woodpeckers)	
Picoides scalaris	ladder-backed woodpecker

Scientific Name	**Common Name**
MAMMALS	
Sciuridae (Chipmunks, Marmots, and Squirrels)	
Ammospermophilus leucurus	white-tailed antelope ground squirrel
Heteromyidae (Kangaroo Mice, Kangaroo Rats, and Pocket Mice)	
Dipodomys sp.	unidentified kangaroo rat tracks and burrows
Muridae (Mice, Rats, and Voles)	
Noetoma lepida	desert woodrat
Leporidae (Hares and Rabbits)	
Sylvilagus audubonii	desert cottontail
Lepus californicus	black-tailed jackrabbit
Canidae (Dogs and Their Allies)	
Canis latrans	coyote (scat)

*California Department of Fish and Wildlife (CDFW) Species of Special Concern (SSC)

APPENDIX D

Weather Data

Weather Data during 2014 Trapping

Session	Day	Date	Air Temperature (°F)				Cloud Cover (%)				Wind Speed (mph)			
			Maximum	Time	Minimum	Time	Maximum	Time	Minimum	Time	Maximum	Time	Minimum	Time
1	1	04/19/14	85	14:30	50	6:30	35%	15:10	0%	6:30	5-12	19:30	0-1	6:30
	2	04/20/14	90	14:30	50	6:30	0%	6:30	0%	19:05	7-12	18:30	0-2	7:10
	3	04/21/14	91	12:25	50	6:30	10%	10:30	0%	6:30	0-1	6:30	0-2	11:15
	4	04/22/14	72	11:10	54	6:35	75%	6:35	5%	15:10	7-15	10:30	0-2	7:12
	5	04/23/14	76	15:00	50	7:45	75%	7:45	50%	19:00	5-8	19:00	0-1	15:00
2	1	05/19/14	83	15:50	54	5:54	30%	13:51	0%	5:54	10-12	16:55	1-3	5:54
	2	05/20/14	73	13:30	50	6:30	90%	17:55	15%	6:30	15-20	17:55	1-3	6:30
	3	05/21/14	78	13:35	50	6:16	80%	16:15	5%	6:16	7-10	14:30	2-5	6:16
	4	05/22/14	81	13:00	50	6:15	100%	15:30	30%	7:26	5-10	15:30	1-3	6:15
	5	05/23/14	87	13:40	50	6:00	60%	17:00	0%	6:00	7-12	17:00	1-3	6:00
3	1	06/17/14	91	14:00	55	5:45	0%	5:45	0%	14:00	8-12	13:20	0-2	5:45
	2	06/18/14	91	13:00	50	5:35	0%	5:35	0%	13:00	3-6	10:35	0-1	5:35
	3	06/19/14	91	12:00	54	5:40	0%	5:40	0%	12:00	3-5	11:16	0-1	9:30
	4	06/20/14	95	11:01	63	5:30	25%	11:01	0%	5:30	3-5	9:47	0-1	5:30
	5	06/21/14	95	11:00	61	5:35	15%	6:15	5%	5:35	2-5	9:20	0-2	5:35

ATTACHMENT E

Exhibit 4 - ***Jurisdictional Delineation Lebata Big Rock Creek Project,*** **prepared by ECORP Consulting, Inc., July 23, 2014**

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Jurisdictional Delineation
Lebata Big Rock Creek Project

Submitted to:
SESPE Consulting, Inc.
468 Poli Street, Suite 2E
Ventura, CA 93001

Submitted by:

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS
215 North 5th Street
Redlands, CA 92374

July 23, 2014

Jurisdictional Delineation

CONTENTS

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LIST OF TABLES

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1.0 INTRODUCTION

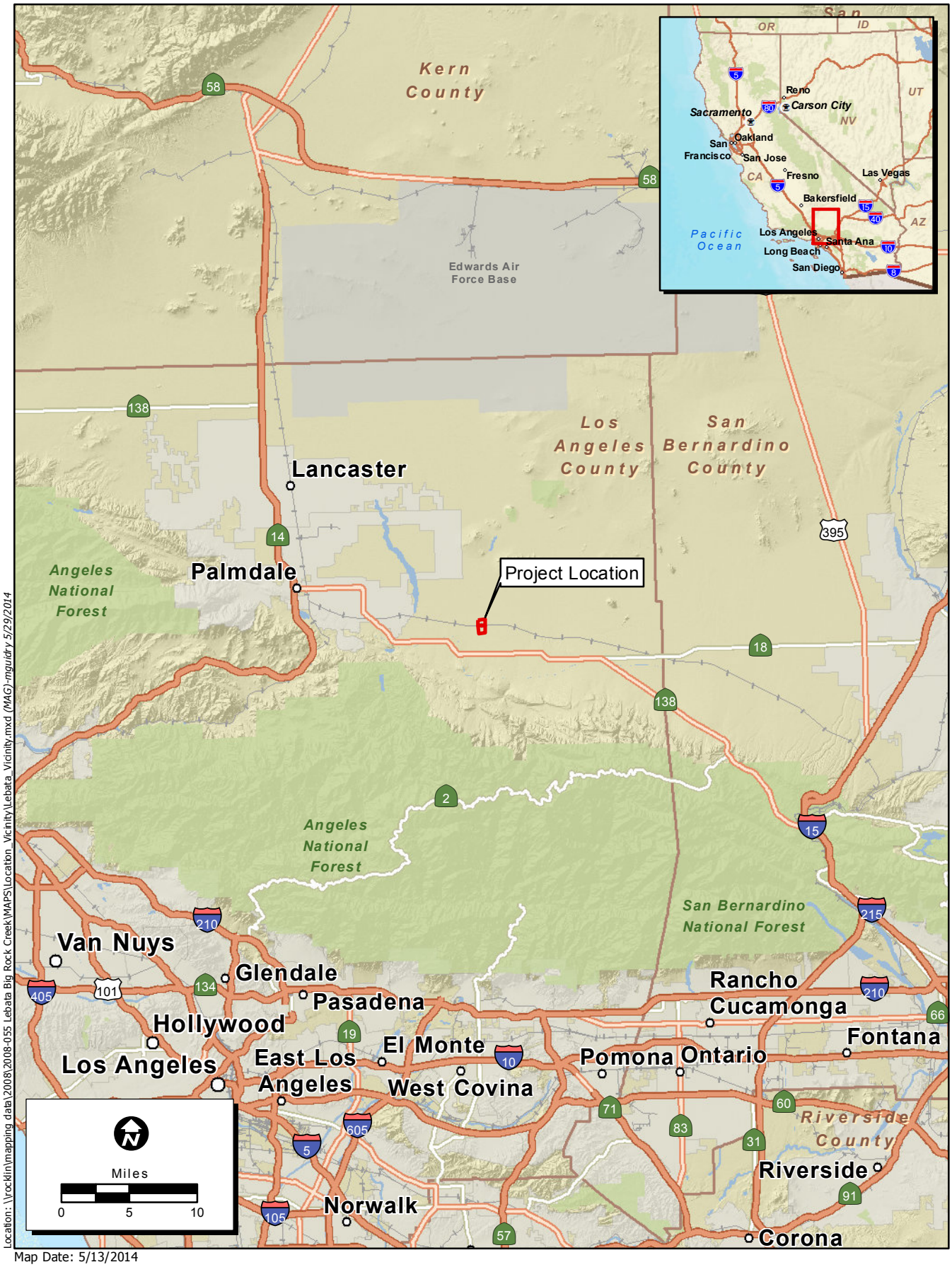
The following report documents the results of a federal and State of California jurisdictional delineation of a proposed surface mining operation (Project) that was conducted by ECORP Consulting, Inc. (ECORP).. The Project, proposed by Lebata, Inc. (Lebata) is situated over approximately 310 acres (125 hectares [ha]) near Big Rock Creek, near the community of Pearblossom, Los Angeles County, California. ECORP was contracted to conduct a jurisdictional delineation of the Project site for the presence or absence of features jurisdictional to federal or state agencies. ECORP conducted other surveys, with results being provided under separate cover: rare plant survey, general wildlife survey, and focused Mohave Ground Squirrel trapping study.

The Project will occur over three phases. Phases 1 and 3 of the Project will include surface mining activities in the northern portion of the Project site (approximately 135 acres (55 ha)), which is bordered by the Union Pacific Railroad (UPRR) on the south (Figure 2). During Phase 2 of the Project, surface mining activities will occur over approximately 175 acres (71 ha) in the southern portion of the Project site, bounded by the UPRR to the north. The Phase 2 mining activities will occur at a later date (10 years or longer). Elevations on the site range from approximately 2,850 to 2,940 feet (ft) (870 to 896 meters [m]) above mean sea level (msl).

The jurisdictional delineation performed by ECORP conformed to the unified federal method, as defined by the Army *Corps of Engineers*, using methodology outlined in the *Corps of Engineers Wetlands Delineation Manual* [USACE 1987] and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Arid West Region Supplement Version 2.0) [USACE 2008]. This method consists of conducting field work using paired sample point analysis, made in conjunction with aerial photograph interpretation, and mapping of jurisdictional resources based on the location of Ordinary High Water Mark (OHWM) for Waters of the US and limits of floodplain for Waters of the State, also known as California Department of Fish and Wildlife Streambeds [USACE 2008].

2.0 PROJECT LOCATION

The approximately 310-acre (125-ha) Project site is located south of Avenue T between 131st and 136th Streets East in the unincorporated community of Pearblossom, Los Angeles County (Figure 1). The Project site is bisected by the UPRR, located approximately 0.5 mile (mi) (1 kilometer [km]) south of Avenue T. The property can be found within Section 11, in Township 5 north, Range 10 West, San Bernardino Base Meridian, of the US Geological Survey Littlerock California 7.5-minute topographic quadrangle (Figure 2). It is located north of State Route (SR) 138. The Project is made up of three land parcels (Assessor's Parcel Numbers (APN) 3039021009, 3039036002, and 3039036001). The approximate center of the Project area is 418145E 3821853N Universal Transverse Mercator (UTM), Datum NAD 83, and Zone 11 north.



Location: \\rocklin\mapping data\2008\2008-055 Lebata Big Rock Creek\MAPS\Location_Vicinity\Lebata_Vicinity.mxd (MAG)-mguidry 5/29/2014

Map Date: 5/13/2014

Service Layer Credits: Sources: USGS, ESRI, TANA, AND

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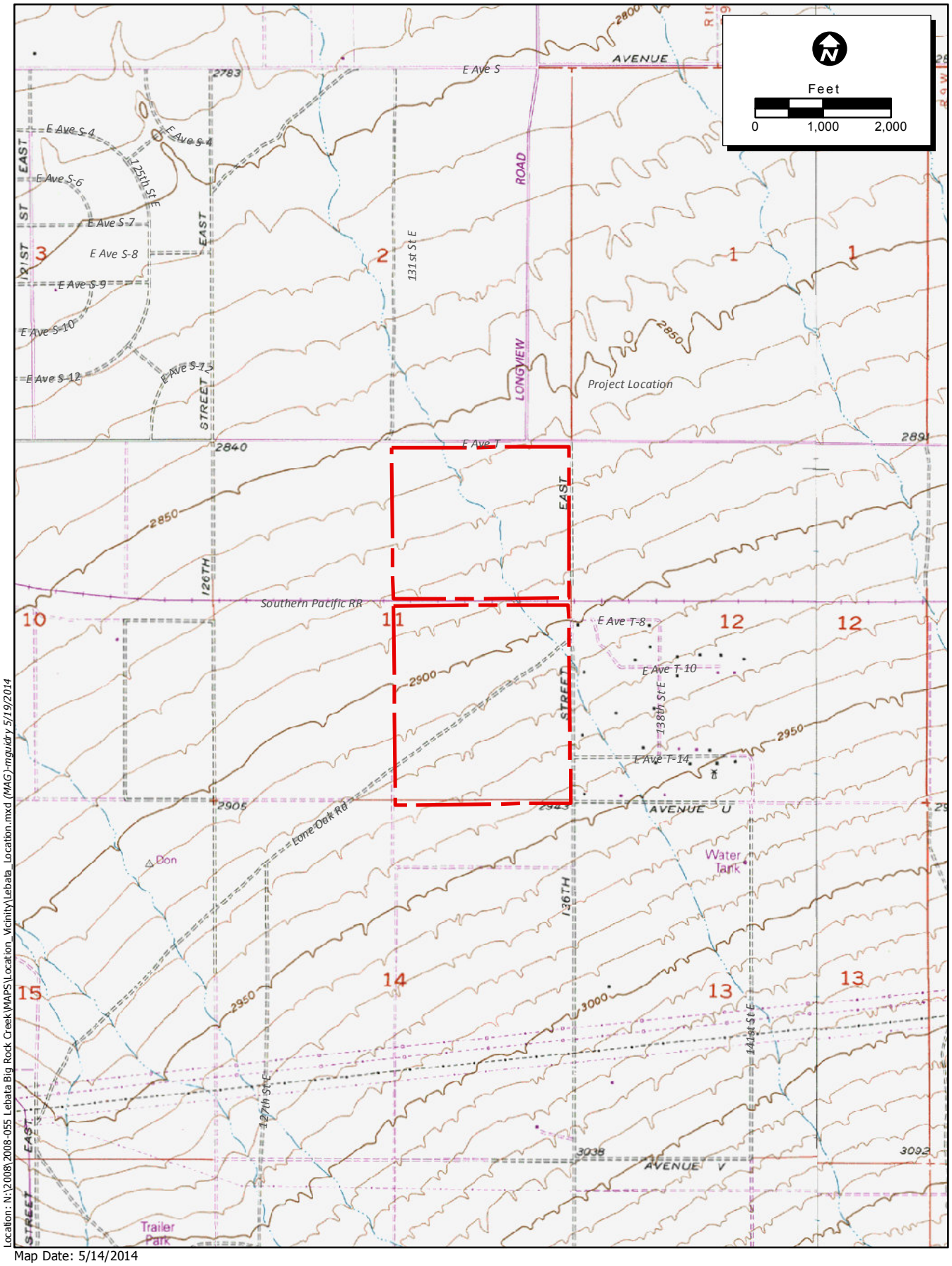
Figure 1. Project Vicinity

2014-054 Lebata Big Rock Creek



Location: N:\2008\2008-055 Lebata Big Rock Creek\MAPS\Location_Vicinity\Lebata_Location.mxd (MAG)-mguidry 5/19/2014

Map Date: 5/14/2014
USGS Topographic Quadrangle: Littlerock (1991)

ECORP Consulting, Inc.
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Figure 2. Project Location

2014-054 Lebata Big Rock Creek

3.0 BACKGROUND INFORMATION

The Project area and surrounding vicinity are within the alluvial fan of Big Rock Creek. Big Rock Creek is an intermittent to perennial stream that originates in the San Gabriel Mountains and historically flowed north, fanning out between Pearblossom and Llano to the east in an alluvial fan covering an area of several square miles. The Project site is located within the Lebata Braid and Big Rock subwatersheds of the fan (Hydrologic Unit Code (HUC) 180902061602 and 180902062301). The source point of the Big Rock alluvial fan is at the foot of the San Gabriel Mountains several miles south of the Project site. Flows originating at that point mostly enter Big Rock Creek to flow from south to north, while flows within the associated alluvial braids of the main channel trend towards the northwest and northeast.

According to the National Wetland Indicator (NWI) data, two blue-line streams have been recorded within the Project site. They both originate from the Lebata braid of the Big Rock alluvial fan. Other blue line streams located in the area are Rock Creek to the east of the Project site, Big Rock Creek itself, and other unnamed tributaries closer to Big Rock Creek.

High flooding has been a present happenstance within the Big Rock Creek area, and its associated streams, throughout recorded history. But as development has encroached on the region, changes have been made to the historic flow patterns. State Route 138 (Pearblossom Highway) bisects both Big Rock Wash and the majority of its historic alluvial fan. The highway was originally constructed in the 1940s, as a single-lane arterial to connect the Inland Empire, High Desert, and Antelope Valley areas. During the construction, flows in Big Rock Creek were partially channelized, resulting in dewatering several formerly active channel braids of the historic Big Rock fan. A levee was later constructed at the point where Big Rock Creek historically split into its major component braids, near the northern foot of the San Gabriel Mountains, the result of which was to further confine flows to the main channel braid only. Other disturbances to the alluvial fan have included continuing road improvements along State Route 138 (discussed below), construction, agricultural uses, and other development.

Recently (2011), State Route 138 was widened from approximately one mile east of Big Rock Wash west to Pearblossom. Drainage improvements and construction of stormwater control features were incorporated into the State Route 138 widening to improve safe vehicle passage and further minimize and eliminate flooding in the area. Drainage control features consisted primarily of a system of detention basins, culverts, bridges, and drainage swales. Near Big Rock Wash, improvements included channelization and a bridge over Big Rock Wash, construction of several swales to collect drainage flows entering the Right-of-Way from the south, and culverts to direct some of the larger washes near Big Rock Creek under the highway. One drainage swale, constructed on both north and south sides of State Route 138, was constructed within the Lebata Braid and Rock Creek subwatersheds. Each roadside swale is approximately 100 feet wide and about 3,000 feet long. The many culverts along swale crossing under the highway serve to distribute higher flows between the two swales. The berm along the southern swale boundary is approximately 6 feet high.

In a letter dated 06-01-06, the US Army Corps determined there is no federal jurisdiction over drainage courses within the Project site. The letter concludes that features located on the Project site are isolated in nature and do not support substantial interstate commerce. ECORP concurs with this finding, since the watershed is known to drain into the interior of the Mojave

Desert and drainage features within the watershed terminate into one of several different isolated desert playas.

During a field meeting with California Department of Fish and Wildlife (CDFW), CDFW personnel suggested that the client should pursue a 1605 Streambed Alteration Agreement (Long-term) if there are Waters of the State that could be impacted by the proposed Project. In addition, potential methods for mitigation of the impacts on-site were discussed.

4.0 EXISTING SITE CONDITIONS

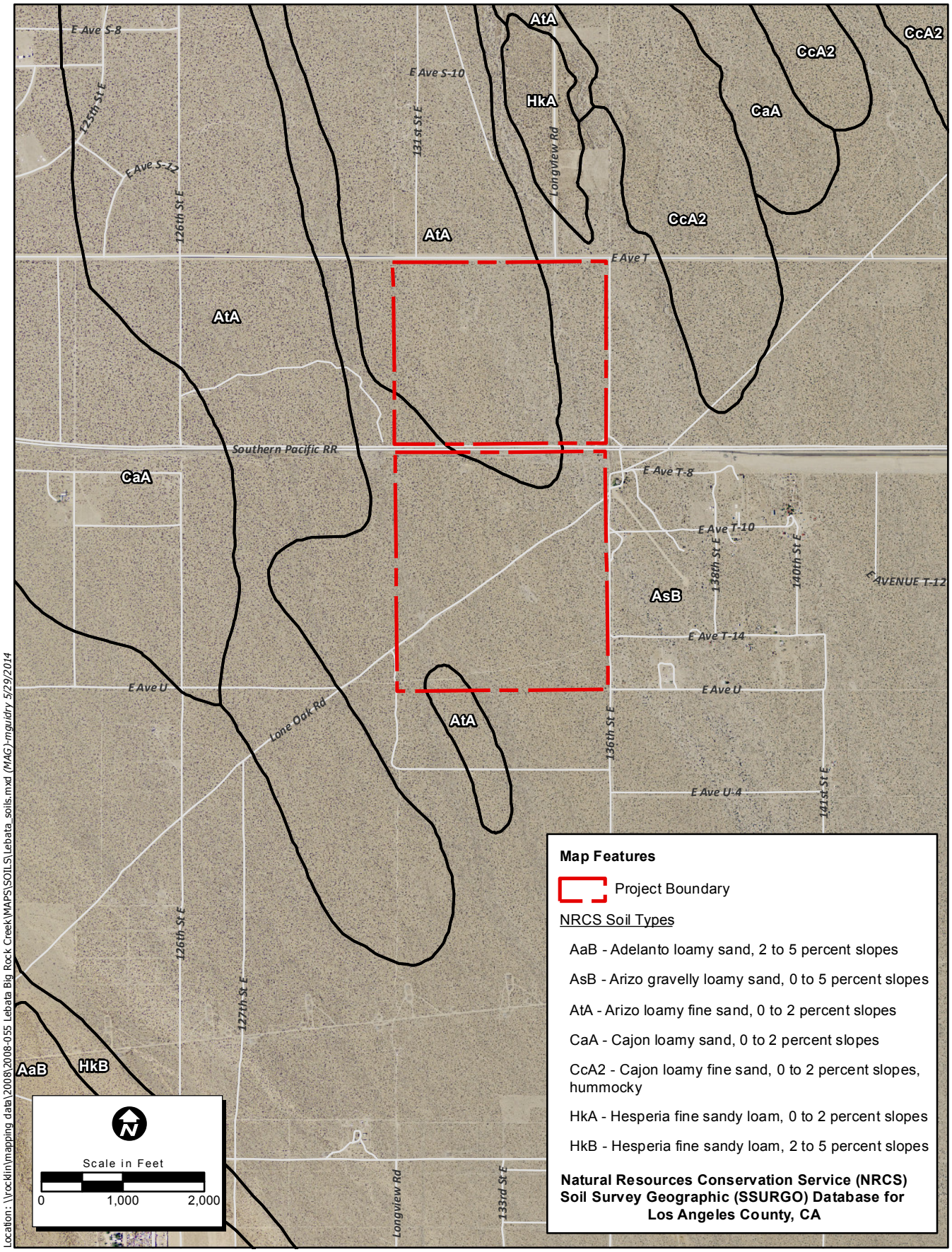
4.1 Soils

Within the Project area, much of the desert floor is composed of alluvial deposits. These areas contain coarse-textured, well-drained soils developed from alluvium that is derived primarily from granite and other related rock sources. The following soil series occur within the Project area: Adelanto loamy sand, 2 to 5 percent slopes (AaB), Arizo gravelly loamy sand, 0 to 5 percent slopes (AsB), Arizo loamy fine sand, 0 to 2 percent slopes (AtA), Cajon loamy sand, 0 to 2 percent slopes (CaA), Cajon loamy fine sand, 0 to 2 percent slopes, Hummocky (CcA2) , Hesperia fine sandy loam, 0 to 2 percent slopes (HkA), Hesperia fine sandy loam, 2 to 5 percent slopes (HkB), (Figure 3) (NRCS 2014).

4.2 Hydrology

The Project is within an arid region, and therefore there is little natural perennial surface water. As a result of the variability of rainfall, surface hydrology is dominated by ephemeral washes, flowing only during storm events and remaining dry for most of the year. The hydrologic regime for the area follows the general Mediterranean climate, with cool, wet winters and warm, dry summers. The average annual rainfall within the Project is 6.69 (in) (U.S. Climate Data 2014). Most of the rain falls between the months of December and March. A storm event passed through the Project area between 2/28/14 and 3/1/14. The storm event resulted in 0.99 inches of rainfall, which is typical of this area at this time of year (US Climate Data 2014). The majority of the Project site is located within the Antelope-Fremont Valley Watershed (HUC 180902061602) and the Rock Creek Subwatershed (Figure 4).

The Antelope-Fremont Valleys Watershed (2,160,629 acres) is predominantly within Kern and Los Angeles counties and extends from the community of Boron west to the community of Mojave and south to the Lancaster-Palmdale area. The most hydrologically significant streams in the Antelope Valley region begin in the San Gabriel Mountains on the southwestern edge of the Antelope Valley Region and include, from east to west, Big Rock Creek, Little Rock Creek, Amargosa Creek, and Oak Creek from the Tehachapi Mountains. All of the drainages recorded within the Antelope-Fremont Valleys Watershed within the Project site are thought to be isolated and flow toward the three dry lakes on Edwards Air Force Base. Except during the largest rainfall events of a season, surface water flows quickly percolate into stream beds and recharge the groundwater basin before reaching the Project site (refer to section 8.1 below). Surface water flows that reach the dry lakes are generally lost to evaporation. The Antelope-Fremont Valley Watershed enters the project and extends approximately from E Avenue T south to the end of the Project boundary E Avenue north.



Location: \\rocklin\mapping data\2008\2008-055 Lebata Big Rock Creek\MAPS\SOILS\Lebata_soils.mxd (MAG) mguidry 5/29/2014

Map Date: 5/14/2014
Photo Source: NAIP 2012

Figure 3. Natural Resource Conservation Service Soil Types

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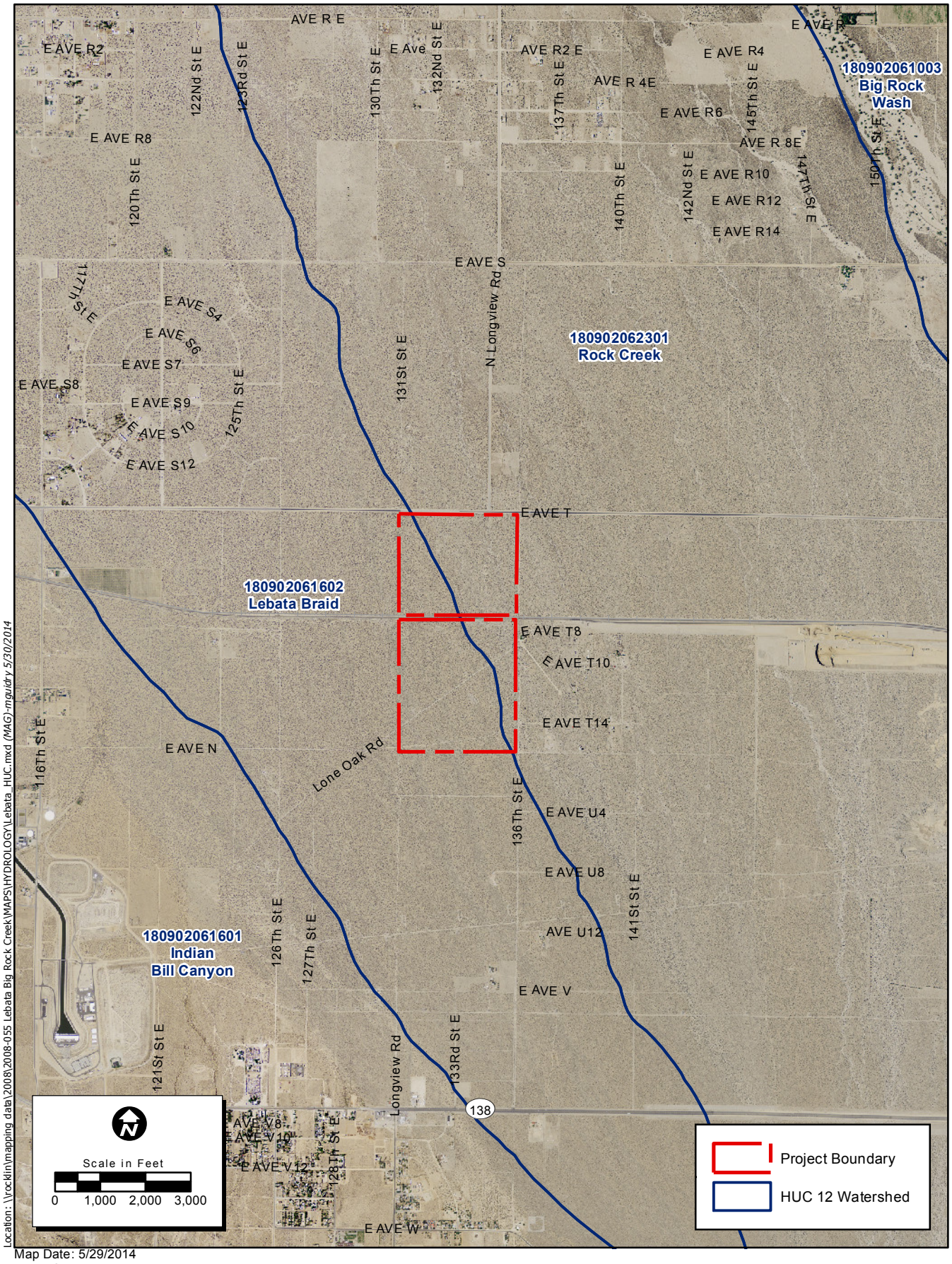

Location: \\rocklin\mapping data\2008\2008-055 Lebata Big Rock Creek\MAPS\HYDROLOGY\Lebata_HUC.mxd *(MAG)-mguidry 5/30/2014*

Map Date: 5/29/2014
Photo Source: NAIP 2012

Figure 4. HUC 12 Watersheds

2014-054 Lebata Big Rock Creek

ECORP Consulting, Inc.
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4.3 Vegetation Communities

The Project site supports creosote bush scrub series vegetation (Sawyer & Keeler-Wolf 1995) that is relatively undisturbed with the exception of moderate disturbance around the UPRR track that approximately bisects the site, as well as narrow dirt roads and OHV tracks on the property. Representative photographs of the habitat on Project site are shown in Figures 5 and 6, from the years 2008 and 2010, respectively.

4.3.1 Creosote Bush Scrub Series

Creosote bush scrub series vegetation is found throughout the Project site. This community is characterized by fairly open stands of the dominant shrub creosote bush (*Larrea tridentata*) with white bur-sage (*Ambrosia dumosa*). Typically it occurs on well-drained sandy soils at elevations below 1,219 m (4,000 ft) amsl. Associated species within this community on site include cheesebush (*Hymenoclea salsola*), antelope bush (*Purshia tridentata*), big sagebrush (*Artemisia tridentata*), and California buckwheat (*Eriogonum fasciculatum*) with annual species including brown-eyed evening primrose (*Camissonia claviformis*), desert dandelion (*Malacothrix glabrata*), and sapphire eriastrum (*Eriastrum sapphirinum*). Small amounts of non-native annual grasses were observed in the understory.

4.3.2 Rubber Rabbitbrush Series

Rubber rabbitbrush series vegetation is a disturbance-maintained shrub community dominated by rabbitbrush (*Ericameria nauseosus*). Rubber rabbitbrush is an additional dominant shrub species found along drainage channels and associated with disturbance on the Project site. This community intergrades with the creosote bush scrub on the site. Associated species observed in this community include: four-wing saltbush (*Atriplex canescens),* antelope bush*,* and mormon tea (*Ephedra nevadensis*).

4.3.3 Disturbed/Unvegetated

Portions of the Project site consist of weedy, disturbed areas, which are mainly located along existing dirt access roads and the UPRR line. Much of the ground within disturbed areas is bare, with little to no vegetation. But where there is vegetation present, a higher density of non-native grasses occurs in these areas.

Figure 5 – Representative Habitat Photograph (2008)

Figure 6 – Representative Habitat Photograph (2014)

5.0 REGULATORY BACKGROUND INFORMATION

5.1 U.S. Army Corps of Engineers (USACE)

This report describes potential "Waters of the United States" ("Waters") that may be regulated by the USACE under Section 404 of the Clean Water Act (CWA). USACE-regulated activities under Section 404 involve a discharge of dredged or fill material including, but not limited to, grading, placing of riprap for erosion control, pouring concrete, laying sod, and stockpiling excavated material into Waters of the United States. Activities that generally do not involve a regulated discharge (if performed specifically in a manner to avoid discharges) include driving pilings, some drainage channel maintenance activities, constructing temporary mining and farm/forest roads, and excavating without stockpiling.

Non-wetland "Waters" are non-tidal, perennial, and intermittent watercourses and tributaries to such watercourses (USACE 1986a). The limit of USACE jurisdiction for non-tidal watercourses (without adjacent wetlands) is defined in 33 CFR 328.4(c)(1) as the ordinary high water mark (OHWM). The OHWM is defined as the *"line on the shore established by the fluctuations of water and indicated by physical characteristics including clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas"* (USACE 1986c). The bank-to-bank extent of the channel that contains the water-flow during a normal rainfall year generally serves as a good first approximation of the lateral limit of USACE jurisdiction. The upstream limits of other Waters are defined as the point where the OHWM is no longer perceptible.

Wetlands are *"those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions*" (USACE 1986b). Wetlands can be perennial or intermittent, and isolated or adjacent to other waters. To be determined a wetland, the following three criteria should be met:

- A majority (greater than 50 percent) of dominant vegetation species are wetland associated species;
- hydrologic conditions exist that result in periods of flooding, ponding, or saturation for at least 5 percent of the growing season; and,
- soils saturate, flood, or pond long enough during the growing season to develop anaerobic conditions in the upper part and should exhibit hydric soil characteristics indicative of permanent or periodic inundation.

Wetland vegetation is normally characterized by vegetation in which more than 50 percent of the cover of dominant plant species is composed of obligate wetland, facultative wetland, or facultative species that occur in wetlands.

The aforementioned characteristics may not apply to isolated, non-navigable waters (including vernal pools) pursuant to the January 9, 2001 Supreme Court decision in the case of *Solid Waste Agency of Northern Cook County versus U.S. Army Corps of Engineers* (SWANCC). The SWANCC decision eliminated jurisdiction over isolated, intrastate, non-navigable Waters where the sole basis of jurisdiction is founded on the presence of migratory bird habitat.

A guidance memorandum, dated June 5, 2007 (revised 2008), was issued by the USACE to address a pair of court cases: *Rapanos versus United States* and *Carabell versus United States*. The guidance identifies those waters over which the agencies (USACE and Environmental Protection Agency [EPA]) will assert jurisdiction categorically and on a case-by-case basis, based on the reasoning of the justices hearing the Rapanos case. In summary of the guidance, the USACE will continue to assert jurisdiction over:

1) Traditional navigable waters (TNWs) and their adjacent wetlands;
2) Nonnavigable tributaries of TNWs that are relatively permanent waters (RPWs) (e.g., tributaries that typically flow year-round or have a continuous flow at least seasonally) and wetlands that directly abut such tributaries (e.g., not separated by uplands, berm, dike, or similar feature); and,
3) Non-RPWs if determined (on a fact-specific analysis) to have a significant nexus with a TNW, including nonnavigable tributaries that do not typically flow year round or have continuous flow at least seasonally, wetlands adjacent to such tributaries, and wetlands adjacent to but that do not directly abut a relatively permanent, nonnavigable tributary. Absent a significant nexus, jurisdiction is lacking.

Of particular note is that RPWs do not include ephemeral tributaries, which flow only in response to precipitation, and intermittent streams, which do not typically flow year round or have continuous flow at least seasonally (e.g., typically three months). Determination of a significant nexus involves a functional analysis, and consideration of both hydrological and ecological factors for each tributary.

5.2 Regional Water Quality Control Board (RWQCB)

The RWQCB regulates activities within state and federal Waters under Section 401 of the Clean Water Act (CWA) and the Porter-Cologne Water Quality Control Act (Porter-Cologne Act). Section 401 of the CWA requires that "any applicant for a Federal permit for activities that involve a discharge to Waters of the United States, shall provide the Federal permitting agency a certification from the State in which the discharge is proposed that states that the discharge will comply with the applicable provisions under the Federal Clean Water Act." Therefore, in California, before the USACE will issue a Section 404 permit, applicants must apply for and receive a Section 401 Water Quality Certification or waiver from the RWQCB. Although the Water Quality Certification must be sought for the same effects to Waters of the United States as indicated in a Section 404 permit, certification can also cover effects to water bodies that are not USACE jurisdictional (i.e., isolated wetlands).

The RWQCB regulates actions that would involve "*discharging waste, or proposing to discharge waste, within any region that could affect the water of the state*" (Water Code 13260(a)), pursuant to provisions of the state Porter-Cologne Act. The RWQCB takes jurisdiction of surface waters that are outside of the jurisdiction of USACE as "Waters of the State", which generally includes all surface water features. Under this Act, the RWQCB regulates all such activities, as well as dredging, filling, or discharging materials into Waters of the State, that are not regulated by the USACE due to a lack of connectivity with a navigable water body or lack of an OHWM. Waters of the State are defined as "*any surface water or groundwater, including saline waters, within the boundaries of the state*" (Water Code 13050 (e)).

5.3 California Department of Fish and Wildlife

Under current California Fish and Game Code Sections 1600–1616, the CDFW regulates projects that propose to (1) divert, obstruct, or change the natural flow or the bed, channel, or bank of any river, stream, or lake designated by the CDFW in which there is at any time an existing fish or wildlife resource or from which these resources derive benefit, (2) use material from the streambeds designated by the CDFW, or (3) result in the disposal or deposition of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into any river, stream, or lake designated by the CDFW. If an existing fish or wildlife resource may be substantially adversely affected by that construction, the CDFW shall notify the government agency or public utility of the existence of the fish or wildlife resource together with a description thereof and shall propose reasonable modifications in the proposed construction that will allow for the protection and continuance of the fish or wildlife resource, including procedures to review the operation of those protective, measures. This regulation takes the form of a requirement for a Lake or Streambed Alteration Agreement and is applicable to all projects involving state or local government discretionary approvals.

In accordance with Sections 1601/3 of Fish and Game Code, the indicators for a river or stream are:

- Definable bed, bank, or channel
- Periodic or intermittent surface flows
- Perennial surface flows
- Subsurface flows
- Supports fish or other aquatic life
- Supports riparian or hydrophytic vegetation
- Watercourse having a source and/or terminus

CDFW generally considers all natural lakes, streams, and man-made reservoirs to be jurisdictional. Artificial waterways like ditches and canals also may be considered jurisdictional. Generally, jurisdictional areas include all areas that have “acquired the physical attributes of natural stream courses and which have been viewed by the community as natural streamcourses.” This can include isolated or intrastate drainage features that have no federal jurisdiction.

The state has no published methodology for determining jurisdictional status of a waterbody. State jurisdictional limits are normally considered to include the stream, bed, and bank and continue to the outside limits of any riparian (that is, stream associate) vegetation within a channel corridor. Generally, the presence of the OHWM and/or the 3-parameter wetland methodology utilized by the USACE is considered valid methodology for identification of streambeds and wetlands (excluding Rapanos and other case considerations).

Generally the CDFW jurisdictional boundaries are broader than USACE jurisdictional boundaries and include rivers/streams, lakes, entire floodplains, and artificial drainage ditches under some circumstances. CDFW jurisdiction includes the definable bed, bank, or channel, areas that support periodic or intermittent flows, perennial flows, subsurface flows, support fish or other aquatic life, support riparian or hydrophilic vegetation in association with a streambed, or simply have a hydrologic source and/or terminus.

6.0 METHODOLOGY

6.1 Pre-Survey Investigations

Prior to conducting the field delineations, the following resources were reviewed to identify potentially jurisdictional areas within the Project site: aerial imagery (USGS 2010 and 2011), 7.5' USGS quadrangle (Little Rock), the National Wetlands Database, the on-line web soil survey (NRCS 2014), and hydric soils list for the area. The aerial imagery from 2010 for Los Angeles County was 1-meter resolution and used at a scale from 1:500 to 1:800 to examine potential jurisdictional features scale using ArcGIS™. The imagery was analyzed during a preliminary desktop delineation effort to identify differences in vegetative cover, the presence of breaks in a slope, and other areas of potential water disturbance (USACE 2008a). The aerial imagery, combined with these other resources, was used to create a map with potentially jurisdictional features within the Project site. Field maps were produced at a scale of 1:1000.

References from past studies at and around the Project site were also consulted in preparation of this report. References consulted include: Drainage Concept for the Lebata, Inc. Surface Mine (Stetson Engineers, Inc. 2008), 2010 Drainage Concept for Lebata, Inc. Surface Mine – Lowered Facilities Alternative (Stetson Engineers, Inc. 2010), Environmental Impact Report for the State Route 138 Widening Project (Caltrans and FHWA 2001), and notes from a site visit with CDFW (2008).

6.2 Field Survey

The field survey was conducted by ECORP wetland delineation biologists who have conducted delineations in both the Antelope Valley area and in the vicinity of Big Rock Wash previously. The entire Project site was visually surveyed, and walked on foot to examine potential features identified during the pre-survey investigations. Where jurisdictional features were present, the extent of CDFW jurisdiction were determined in accordance with agency requirements and guidelines, including *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE 2008a), *Arid West Delineation Manual* (USACE 2008b), the *Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United* States (USACE 2010), and *A Field Guide to Lake and Streambed Alteration Agreements Sections 1600-1607* (CDFG 1994).

The perimeter and/or stream center of the majority of features was mapped using a post-processing capable global positioning system (GPS) unit with sub-meter accuracy (e.g., Trimble™ GeoXT). Streambed widths were based on evidence of OHWM as observed during the field survey. In addition, each of the drainages was evaluated for the presence or absence of sediment deposits, litter/debris, water stains, soil shelving, and/or exposed roots indicating active hydrology within the channel. Streambed widths and other lateral limits of jurisdiction were measured with a tape measure and recorded in the GPS units or occasionally on a map for later digitization. The extent of associated riparian habitat was based on the extent of the canopy of the riparian community within or directly adjacent to the feature. Bank-to-bank width measures were also taken and used as a measure of CDFW jurisdictional boundary where features lacked riparian vegetation. Feature characteristics and measurements were recorded

directly into the data dictionary in the GPS unit. Characteristics of the majority of drainage features were also documented in photographs.

Delineation of wetlands was conducted in accordance with the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Arid West Region Supplement, Version 2.0) (USACE 2008b). At suspected wetland locations, two paired data point locations were sampled as to their vegetation, hydrology, and soils. At each paired location, one point was located within the estimated wetland area, and the other point was situated outside the limits of the estimated wetland area. These data were used to support a determination of wetland or non-wetland status. All wetland data were recorded on Arid West Region - Wetland Determination Data Forms. A soil pit was excavated to a depth of 18 inches each data point. The soil was then examined for hydric soil indicators or the absence of such indicators. The matrix color and mottle color (if present) of the soil was determined using the Munsell Soil Color Charts. Features with no evidence of wetland hydrology, and which supported only upland vegetation, were evaluated for upward limits of jurisdiction only and not for wetland parameters.

6.3 Post-Processing of Field Data

The data collected in the field were transferred from the GPS to a personal computer, and differential correction post-processing was performed. The data were then viewed and analyzed for verification, edited, and converted to a Geographic Information System (GIS) format at the time of download. ArcGIS™ software was used to develop the geodatabase and the shapefiles depicted on the attached maps.

6.4 Limitations

There were few limitations that affected the results of the survey. Rainfall within the past year is considered to be lower than normal, which may have some bearing on the conditions observed in the field. The rainfall limitation is expected to be minor, however, as to its influence on conditions on the property. Most desert wash areas exhibit very slow change over time and year to year fluctuations in rainfall are normal. Features indicative of water flow would be presumed to still be present from past years, had flow occurred on a regular basis. The entire Project site was accessible during the field survey and there were no limitations due to access to the property.

7.0 RESULTS

ECORP biologists and regulatory specialists Scott Taylor and Katherine Vienne conducted the jurisdictional delineation on May 15, 2014. Weather conditions and other survey information are provided in Table 1.

Table 1. Survey Conditions

Date	Surveyors*	Time		Temperature (˚F)		Cloud Cover (%)		Wind Speed (m.p.h)	
		start	end	min	max	min	max	min	max
05/15/14	ST, KV	0950	1430	78	93	0	0	0	3

* ST = Scott Taylor, KV = Katherine Vienne

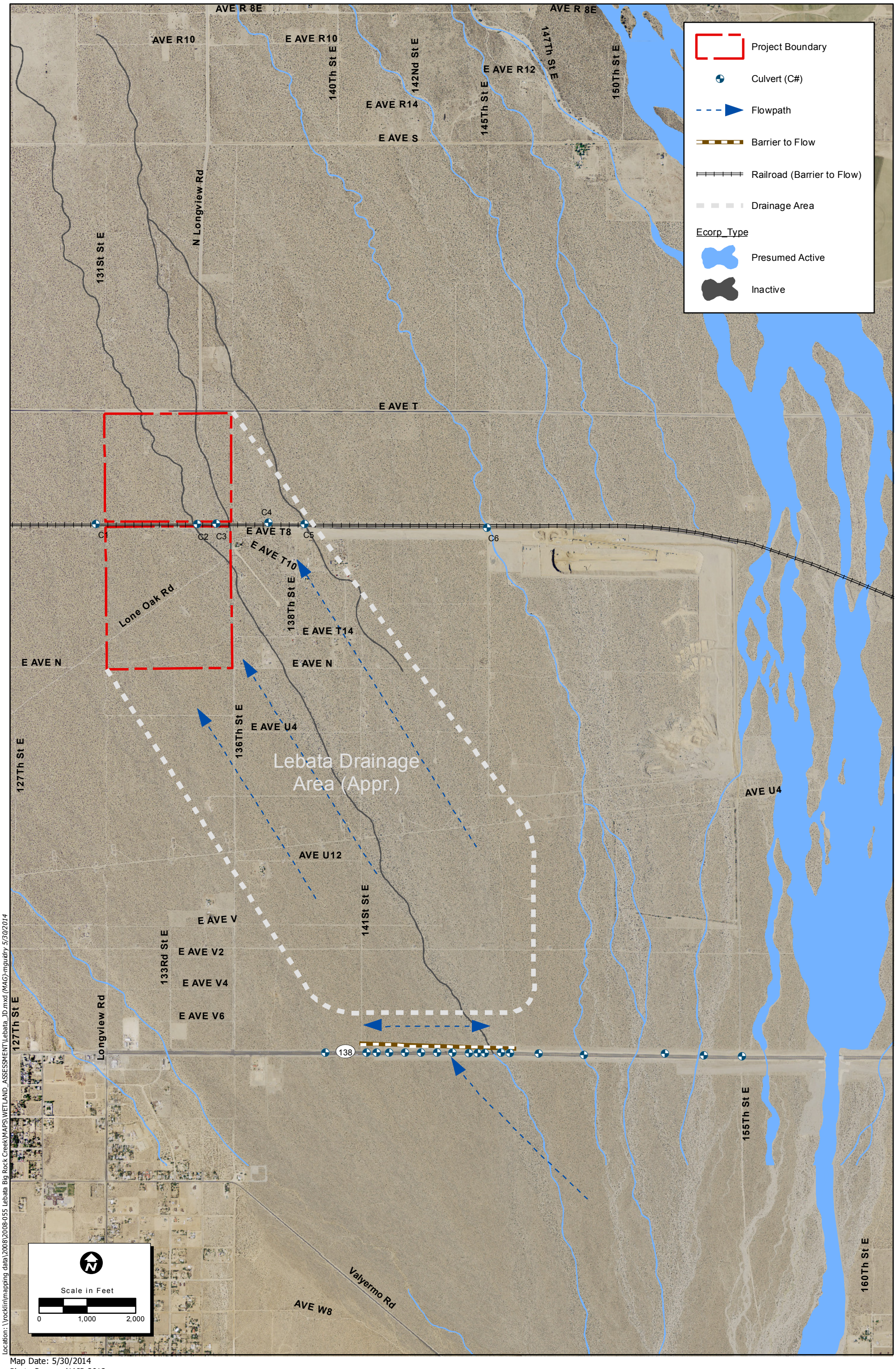
No active jurisdictional features or riparian habitat areas were identified on the Project site during the study. A description of the results is below. The jurisdictional delineation map is located on the following page (Figure 7). A photo reference map for all photos taken that characterize the features observed in the study area are in Appendix A.

7.1.1 Inactive Channels

Within Section 3, there is a discussion of the various changes over time in the flow path of water through the Big Rock alluvial fan. Due to those changes, the most recent being the widening of State Route 138, the current flow path within the Lebata and Rock Creek subwatersheds is highly restricted. Flows are partially curtailed at a levee well to the south of the Project site and south of State Route 138. Any waters that come past the levee or around it, or that originate locally, are then directed northwest where they are collected within drainage swales on either side of State Route 138. From that point, the flows spread out to the east and west along the swales. The ECORP biologists saw no evidence of water flows leaving these swales to the north. Within the swale, there was evidence of sediment deposition and weak drainage features associated with waters moving to the bottom portion of the swales. Figure 7 depicts the suspected flow pattern within the Lebata braid.

The historic drainage area for the Project site consisted of most of the western half of the Big Rock fan. The approximate current drainage area has been depicted on Figure 7, based on the flow evidence found in the field. The change in drainage area is due to the lack of flows from the south of State Route 138. As a result the only flows which are presumed to be capable of reaching the Project site are those which fall due to rain events between the site and State Route 138. However, as is explained below, no evidence of surface flow from such rain events reaching the site was observed.

Various channels were observed within the Project site, consistent with what is expected within an alluvial fan. Active alluvial fans for larger stream channels support channels based on the flow patterns during any given year. A low rainfall year results in some side channels being inactive, whereas a high rainfall year can result in most channels being active and the opening of new channels. High rainfall or violent flood events also will re-direct channels away from previous flow paths, due to the force of the flowing water. Therefore a typical alluvial fan that has existed for thousands of years, such as the Big Rock Creek fan, can have a mixture of inactive and active channels.



Location: \\rocklin\mapping data\2008\2008-055 Lebata Big Rock Creek\MAPS\WETLAND_ASSESSMENT\Lebata_JD.mxd (MAG)-mguidry 5/30/2014

Map Date: 5/30/2014
Photo Source: NAIP 2012

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Figure 7. Jurisdictional Delineation

2014-054 Lebata Big Rock Creek

The ECORP biologists walked the entire Project site, with particular attention paid to every channel found. Evidence of active flows was absent from any of the channels found on the site. Normal flow patterns are indicated by deposition of sediment, scouring of vegetation, shelving along the drainage sides, and sorting of sediment layers. Although there were gullies in several locations that could have supported historic flows, prior to the Caltrans widening of State Route 138, none of these indicators were present in any of the gullies. Loose debris was observed in several of the gullies, which would also not have been present in the midst of flowing waters. Upland vegetation was observed growing in the bottom of these gullies as well. While the presence of upland vegetation is not unusual within channel features in a desert region, the vegetation in this case was often highly developed and rooted within the bottom of the historic channels consistent with the time frame of the widening of State Route 138. Grasses were also present within the gullies, in approximately the same observed density as that found in surrounding habitat areas.

The following paragraphs describe further evidence for this result. Evidence examined in the field to support the delineation included UPRR culvert evidence and examinations of flow patterns along State Route 138.

7.1.2 UPRR Culverts

One of the most convenient methods to ascertain flows of a drainage course is through examination of culverts or undercrossings at barriers or pinch points. All of the streams located within the Big Rock alluvial fan cross both State Route 138 and the UPRR, both of which are effective barriers to flows. Several culverts have been placed along both of these barriers, mostly coinciding with historical flowpaths of main drainages in the fan. Along the UPRR, there were six culverts examined for evidence of flows, with two occurring on the Project site. Culverts both on and offsite were examined for comparison purposes. Biologists examined all of the culverts located within an approximate two-mile stretch of the UPRR. Table 2 describes the culverts and their characteristics.

Table 2. UPRR Culvert Descriptions

Culvert No.	Composition	Width	Evidence of flows	Photo
C1	CSP	4 ft.	None; Barrier present downstream	App. A
C2	CSP	4 ft.	None; Barrier present downstream	Figure 8
C3	CSP	4 ft.	None; Barrier present downstream	Figure 9
C4	CSP	4 ft.	None; Barrier present downstream	App. A
C5	Twin CSP	4 ft. each	Weak evidence, some sand deposits; Barrier present downstream	App. A
C6	Twin CSP	4 ft. each	Active channel evident by sand deposits and shelving/banks.	Figure 10

Culverts 2 and 3 were positioned approximately where historic blue-line streams had been mapped. Evidence of through-flows in and near these two culverts would be expected if the Lebata Braid were still active. North of the UPRR, the approach to each of these culverts was bisected by a dirt access road raised higher than the culverts and running parallel to the railroad alignment. The road had no culverts or undercrossings or overcrossings incorporated. Historic channels of the blue-line streams were observed in the expected areas, but neither

appeared to cross over or under the dirt access road. The approach towards each of the culverts from the north, between the dirt road and the culverts, appeared to also lack a clear flow path. On the north side of each of these culverts, another dirt access road was also present parallel to the railroad. Gravel and cobbles had been piled up to the north of this road near each of the culverts, and there was no evidence of water flow in or around these piles. Figures 8 and 9 depict views of each of these culverts from the north, showing the apparent barriers present to flows. There was also no evidence that waters flowed down the northern dirt access road to find another path northwards.

The same situation was observed at Culvert 1, Culvert 4, and Culvert 5. Each of these culverts would have previously collected flows associated with three blue-line streams recorded within the historic Lebata and Rock Creek braids of the Big Rock alluvial fan. All three of these blue-line streams are presumed to be curtailed due to flow pattern changes along State Route 138.

Culvert 6, located approximately 5,000 feet to the east of the Project area along the railroad tracks, exhibited signs of active flows through the culvert. Only the northern side of the culvert was examined, but it showed signs of sediment deposits, shelving, defined banks and water patterns within the stream path. There were no barriers to flow in evidence, and there was a defined flow path observed through a gully of approximately three feet in depth. The downstream portion of this culvert is depicted in Figure 10. This culvert is associated with a larger stream channel which crosses State Route 138 and for which no barriers to flows have been constructed south of the highway. This channel exhibits the expected features of an active stream channel within this region of Pearblossom.

Figure 8 – Culvert 2 Showing Barrier to Flow

Figure 9 – Culvert 3 Showing Barrier to Flow

Figure 10 – Culvert 6 Showing an Active Channel

Information pertaining to the remaining culverts, as well as further photographic evidence for them, is presented in Appendix A.

7.1.3 State Route 138 Flow Patterns

As described in an earlier section, the flow patterns south and north of State Route 138 were investigated. There is a barrier to flows along the primary blue-line stream that crosses the Project site. Flows are collected and distributed with swales on both the north and south sides of the highway, and contained by an approximate six foot differential between the bottom of the swale and the top of a berm along its northern boundary (Figure 11). The swale system acts as a percolation basin for any flows that come from the north into the historic channels. The swales, parallel to each other, are about 3,000 feet in length and 100 feet in width. Twelve culverts occur along the length of the swale, acting to distribute flows between the north and south sides of the highway. Photos of seven of the culverts within the swale are provided (Appendix A; Culverts C8 to C14).Each of these culverts is four feet in diameter and is comprised of corrugated steel piping.

An additional five culverts are situated underneath the highway to the east of this swale system, as well as additional swales on the south side of the highway, but not on the north side of the highway. Thus flows that go under the highway can enter into the historic alluvial fan to the west of the Lebata swale system. Due to the natural topography, these flows were observed to be consolidated within the historic blue-line stream to the east of the Project site's blue-line streams. Evidence of the flows remaining active within this stream was described above for Culvert 6 along the UPRR.

Within the eastern 2,000 feet west of Big Rock Creek's main channel, an armored channel has been constructed to catch and direct flows into the mainstem. The channel is approximately 200 feet wide and is approximately 10 feet in depth. The channel likely effectively prevents stormwater that might break free of the Big Rock Creek mainstem upstream from creating new channels to the west, since it would be collected before it could reach State Route 138.

Figure 11 – Swale Along North Side of State Route 138

8.0 DISCUSSION

8.1 Drainage Concept Study

The 2008 Drainage Concept Study was reviewed for its details on the current hydrology within the Big Rock Wash watershed. The study provides a basis for analysis of the storm flows reaching the Lebata site. It draws a conclusion that flows would not normally reach the Lebata site unless there was a worst-case scenario of catastrophic failure of the levee upstream, combined with a 50-year rainfall event. These circumstances are not generally considered to be applicable to the jurisdictional nature of a drainage course, as they present exceptional rather than ordinary circumstances. A summary of the conclusion of the Drainage Concept is depicted graphically in Appendix B, showing previous and current hydrologic conditions.

According to the 2008 and 2010 Drainage Concept studies for the Lebata site, there are thirteen reinforced concrete pipe culverts located within the watershed for Lebata that pass under State Route 138, four of which are located directly within the Lebata Braid. Results of the study conclude that, due to the presence of the two swales on the north and south side of the highway, only one of the culverts contains flows that could conceivably reach the Lebata site during a Capital Flood event. The only conceivable circumstances under which that would occur involve overlapping catastrophic failure of existing flood control measures. The culvert is a 4-foot diameter circular culvert with a capacity for 70 cubic feet per second (cfs) of flows and is located just east of where the Lebata Braid historically crossed the highway location.

The 2008 Drainage Concept Study describes the circumstances on which flows would be expected to the Lebata site:

> *However, there is a possibility that the mountain front flood levee could catastrophically fail during the Capital Flood. This represents a worst case scenario of the levee being absent. As mentioned in Section 2.1.1 of the Stetson 2003 report (Stetson Engineers, 2003), catastrophic channel avulsion and diversion of all or the majority of the total flow into the remnant secondary braids is prevented by the California Aqueduct Siphon buried concrete encasement structure. Therefore, there is no potential for the flows in the secondary braids to be increased during the Capital Flood in excess of the complete levee failure scenario (Stetson Engineers, 2003).*
>
> *The Lebata Braids were estimated using a split flow analysis assuming complete erosion of the mountain front flood levee and downstream transport of all eroded materials. Historic aerial photography and observations taken during a site inspection on October 25, 2006 indicate that the Lebata Braid is an overflow of the main channel and not of the VMC Braid, and that the channel split is approximately in the same location as the VMC Braid – main channel split, at a location approximately 5,000 ft downstream of the mountain front. Hence, during the levee-failure scenario, the Capital Flood flow would split into three channels at the junction of the main channel and the secondary VMC and Lebata Braids.*

A 2010 Drainage Concept Study analyzes the Caltrans improvements that were made since the original Drainage Concept was prepared in 2010. It concludes these additional improvements have served to further reduce the Capital Flood flows into the Lebata site.

> *The vertical infiltration rate of gravel material (1,134 feet per day) is much higher than the average maximum rainfall intensity (2.8 inches per day) at the mine site during the 50-year design storm.*

This means that local rainfall-runoff will not generate sheetflow within the Project site, nor will water gather in pools. Therefore, we conclude that there is even less likelihood of Capital Flood volumes entering the Lebata site from upstream unless a catastrophic failure of the mountain front levee were to occur during a 50-year rainfall event.

8.2 CDFW Jurisdiction on the Lebata Site

Due to historic changes noted in the Big Rock Wash, its watershed and alluvial fan, the Lebata site is not expected to contain flows except under extreme conditions, such as the failure of the mountain front levee during a 50-year storm. In spite of these documented changes, it is likely that there are apparent drainage features within the Lebata site due to its position within the historic alluvial fan. Based on the evidence, it is likely that any drainages present are non-functional relicts and would not convey flows as they did historically. It is common for drainage features in desert areas to remain physiographically similar to their historic conditions even if they have been dewatered for many years.

The presence of bed and bank and the existence of a source (presumably Big Rock Creek) alone do not conclusively indicate the presence of Waters of the State if there is reason to believe that a feature may be a relict drainage. In the desert regions of California, landscape features can change very little over time. Within alluvial fan situations, large portions can be inactive for decades and yet still exhibit bed and bank. Periodic subsurface flows (at depth) may occur rarely in one or more of the drainage features due to very localized sheet flows, but the area exhibits a very high rate of percolation and has been effectively cut off from its historic sources in Big Rock Wash. Surface flows are not expected to occur, even during Capital Floods.

9.0 CONCLUSION

Based on the evidence collected in the field, information collected in the Drainage Concept study and other sources, and documented changes in flows due to highway construction, it is our opinion the drainage features within the Project area do not meet CDFW jurisdictional criteria. Drainage features are unlikely to contain consistent enough, discrete surface or subsurface flows to qualify as perennial, intermittent or ephemeral.

Through the years, the many highway improvements along State Route 138 have resulted in progressively less potential for stormwater flows to reach the Lebata site. Currently Caltrans improvements along State Route 138 have likely excluded alluvial flows from the south from reaching their historic channels to the north of the highway. Any waters that collect and flow toward the Project site would be the result of local runoff over a drainage area that is much smaller than that which existed historically.

10.0 REFERENCES

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APPENDIX A

Photo Point Reference Map and Photos

GENERAL PHOTOS

Photo 1 View of Historic Blue-Line

Photo 2 – Berm along East Avenue T Road

Photo 3 – Historic Blue-Line Stream

Photo 4 – Relictual Alluvial Fan Gully

Photo 5 Historic Blue-Line Stream

Photo 6 Historic Blue-Line Stream (Cross View)

Photo 7 – Historic Blue-Line Stream

Photo 8 – Historic Blue-Line Stream Confluence

Photo 9 – Relictual Alluvial Fan Stream

Photo 10 – Former Alluvial Channel, now reclaimed

Photo 11 - Former Alluvial Channel, Reclaimed

Photo 12 – Former Alluvial Channel, Reclaimed

CULVERTS

C4 – Culvert 4

C5 – Culvert 5

C7 – Culvert 7 (Looking North)

C8 – Culvert 8 Looking North

C9 – Culvert 9 Looking North

C10 – Culvert 9 Looking West

C11 – Culvert 11 Typical Culvert Design

C12 – Culvert 12 Looking North

C13 – Culvert 13 Looking North

C14 – Culvert 14 Looking East

APPENDIX B

Hydrology Past and Current

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LEBATA PROJECT BOUNDARY (NORTH PIT)

LEBATA PROJECT BOUNDARY (SOUTH PIT)

ZONE 2-5 (5 cfs)

ZONE 1-1B (6 cfs)

ZONE 1-1A (44 cfs)

ZONE 2-1 (25 cfs)

ZONE 2-2 (35 cfs)

ZONE 2-3 (29 cfs)

ZONE 2-4 (49 cfs)

5 cfs

50 cfs

75 cfs (44+6+25)

50 cfs (Culvert Capacity)

25 cfs

CMP 18 50 cfs (Qcap)

CMP 17 100 cfs (Qcap)

CMP 16 100 cfs (Qcap)

44cfs

189cfs (160+29)

160cfs (210-50)

238 cfs (189+49)

25 cfs

210 cfs (175+35)

49 cfs

29 cfs

Southern Pacific Railroad

VMC Mine Site

LEVEE

CONCRETE BOX CULVERT (TYP)

LONGVIEW RD

E AVENUE T

E AVENUE U14

E AVENUE U8

AVENUE U 12

E AVENUE V2

E AVENUE V4

E AVENUE V 6

PEARBLOSSOM HIGHWAY

128TH ST E.

EAST AVE V 10

EAST AVE V 11

EAST AVE V 12

EAST AVE V 13

EAST AVE V 14

EAST AVE W

EAST AVE W 2

EAST AVE W 4

EAST AVE W 6

EAST AVE W 8

EAST AVE W 12

EAST AVE W 14

133RD ST E

131 TH ST E

VALYERMO RD

LEBATA BRAID (175 CFS)

VULCAN BRAID (140 CFS)

BIG ROCK CREEK MAIN CHANNEL (21,385 CFS)

175 cfs

140 cfs

21,385 cfs

SOUTH LEVEE

21,700 cfs

FAN APEX

Hydrologic Data	
Storm Frequency	50-Year
24-Hour Rainfall Depth (Area Weighted Average)	3.2 inches
Soil Type	121
Debris Production Area (DPA)	Zone 11
Burn Factor	0
Bulking Factor	1
Percent Imperviousness	1%

Legend

- Main channel / VMC braid flow area
- Local rainfall - runoff drainage area
- Channel/braid flow
- Runoff flow direction
- Existing culvert

Estimated 50-Year Rainfall-Runoff Sheetflows for Sub-Watersheds

Basin/Zone	Basin Area (acres)	50-yr Peak Discharge, Q (cfs)
1-1A	489	44
1-1B	65	6
2-1	279	25
2-2	392	35
2-3	323	29
2-4	544	49
2-5	53	5
Total	2,132	194

N W E S

SCALE (FEET) 0 1000 2000

STETSON ENGINEERS INC.

DATE: October 4, 2013 JN: 2192

Project Alternative and Alternative 1

Existing Offsite and Onsite Drainage

(Same as Figure 3a Except Different Background Map)

FIGURE 3b

Location: \\rocklin\mapping data\2008\2008-055 Lebata Big Rock Creek\MAPS\HYDROLOGY\Lebata_Hydro_Past.mxd (MAG)-mguidry 5/30/2014

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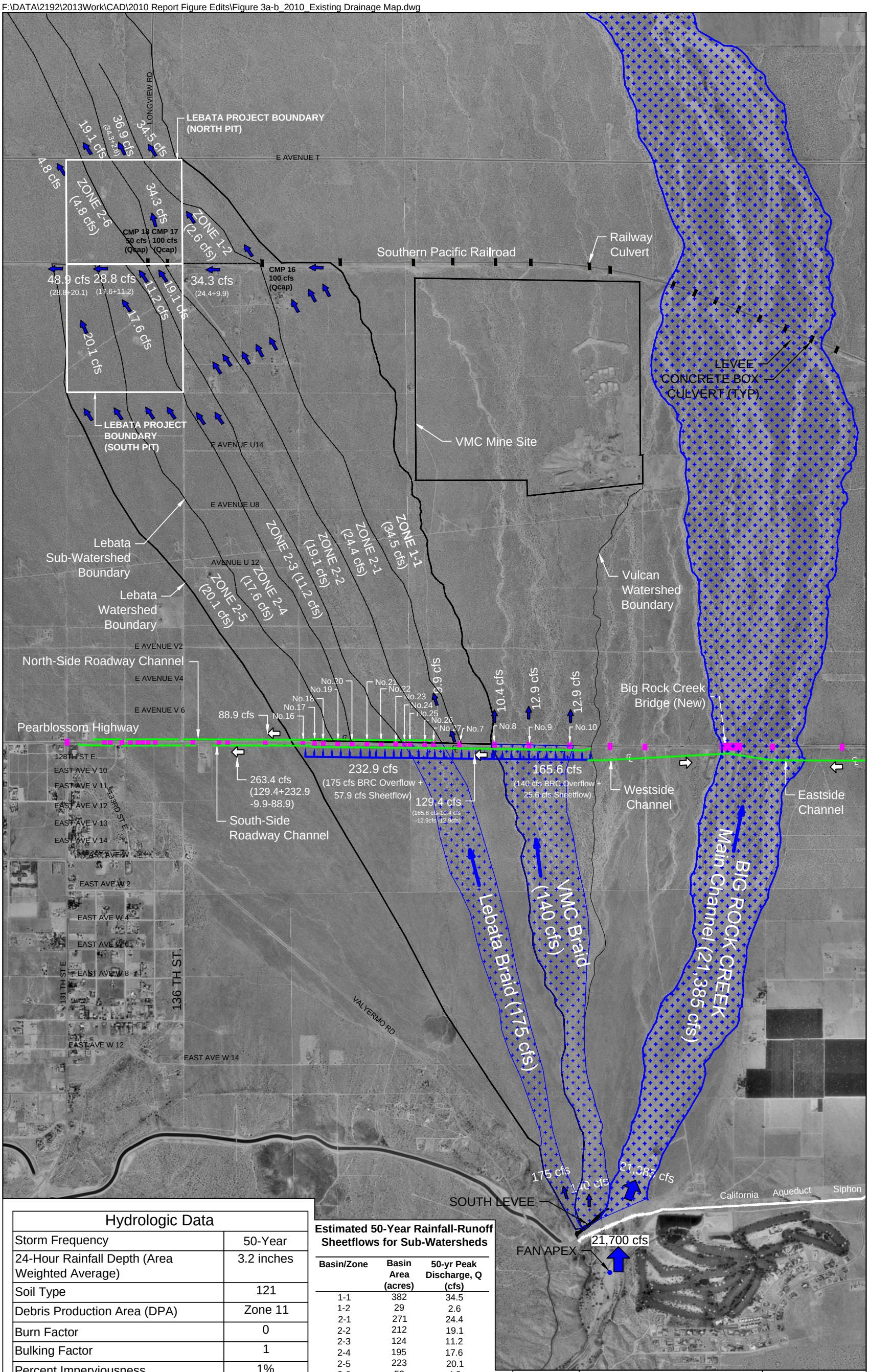

Hydrologic Data	
Storm Frequency	50-Year
24-Hour Rainfall Depth (Area Weighted Average)	3.2 inches
Soil Type	121
Debris Production Area (DPA)	Zone 11
Burn Factor	0
Bulking Factor	1
Percent Imperviousness	1%

Legend

- Roadside Channel Flow/Center Line
- Pearblossom Highway Culvert
- Flow Direction
- Runoff flow direction
- Roadside Channel Flow

Estimated 50-Year Rainfall-Runoff Sheetflows for Sub-Watersheds

Basin/Zone	Basin Area (acres)	50-yr Peak Discharge, Q (cfs)
1-1	382	34.5
1-2	29	2.6
2-1	271	24.4
2-2	212	19.1
2-3	124	11.2
2-4	195	17.6
2-5	223	20.1
2-6	53	4.8
Total	1,489	134.4

N W E S

SCALE (Feet) 0 1000 2000

STETSON ENGINEERS INC.

DATE: October 4, 2013 | JN: 2192

Lowered Facilities Alternative

Existing Offsite and Onsite Drainage

(Same as Figure 3a Except Different Background Map)

FIGURE 3b

Location: \\rocklin\mapping data\2008\2008-055 Lebata Big Rock Creek\MAPS\HYDROLOGY\Lebata_Hydro_Current.mxd (MAG)-mguidry 5/30/2014

ATTACHMENT E

Exhibit 5 - ***Lebata Big Rock Creek Mine Short-joint Beavertail Cactus Protection Plan*****, prepared by ECORP Consulting, Inc., August, 2014**

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Lebata Big Rock Creek Mine
Short-joint Beavertail Cactus
Protection Plan

Prepared For:

SESPE Consulting, Inc.
468 Poli Street
Suite 2E
Ventura, CA 93001

Prepared By:

ECORP CONSULTING, INC.
1801 E. Park Court Place
Building B, Suite 103
Santa Ana, California 92701
Phone: (714) 648-0630

August 2014

CONTENTS

Lebata Big Rock Creek Mine Short-joint Beavertail Cactus Protection Plan

LIST OF FIGURES

1.0 INTRODUCTION

Lebata, Inc. (Lebata) has proposed surface mining activities on approximately 310 acres (125 hectares [ha]) near Big Rock Creek, near the community of Pearblossom, Los Angeles County, California. During focused surveys conducted for the presence or absence of listed and/or sensitive plant species, 37 intermediate beavertail cactus individuals, hybrids between short-joint beavertail (*Opuntia basilaris* var. *brachyclada*) and the common variety (*O. basilaris* var. *basilaris*), were identified on the project site (ECORP Consulting, Inc. [ECORP] 2008, 2014). ECORP was contracted to design and submit a short-joint beavertail cactus protection plan for inclusion in the Lebata Environmental Impact Report (EIR).

1.1 Project Location and Description

The project site is located on Assessor's Parcel Numbers (APNs) 3039-021-009, 3039-036-001, and 3039-036-002 near the unincorporated community of Pearblossom, Los Angeles County, California (Figure 1). The project site is located on the U.S. Geological Survey (USGS) Littlerock 7.5 minute topographic quadrangle and is bounded by Avenue T on the north, by 131st Street East on the west, and by 136th Street East on the east. The project site is bisected by the Union Pacific Railroad (UPRR), located approximately 0.5 mile (mi) (1 kilometer [km]) south of Avenue T. (Figure 2). Elevations on the site range from 870 to 896 meters (m) [2,850 to 2,940 feet (ft)] above mean sea level (amsl).

Lebata proposes surface mining activities, which involves both on-site mining and processing of material, on the project site. Per the proposed work plan, the project is divided into three phases, with Phases 1 and 3 located north of the UPRR tracks and Phase 2 located south of the tracks. The Phase 1 mining area consists of the majority of the parcel north of the UPRR tracks. The Phase 3 area, located in the northwestern portion of the northern parcel, is the proposed location for processing facilities, as well as the point of transfer and distribution of materials via rail. Phases 1 and 3, consisting of approximately 135 acres (55 ha) are expected to break ground in early 2015. Mining activities on Phase 2, the southern parcel, are proposed to break ground at a later date.

1.2 Purpose of the Cactus Protection Plan

Twenty-five individuals of beavertail cactus (*Opuntia basilaris* var. *basilaris*) with some characteristics of the sensitive variety (*O. basilaris* var. *brachyclada*) were recorded at numerous locations on the project site in 2008 (ECORP 2008). A taxonomic study including collection and comparative propagation through Rancho Santa Ana Botanic Garden was conducted of similar beavertail specimens on a nearby property in Big Rock Wash (Chambers Group 2002). The individuals of the study were determined to be intermediates expressing some genes of the sensitive variety (*O. basilaris* var. *brachyclada*) along with the common variety (*O. basilaris* var. *basilaris*). Botanist Pamela DeVries, who was involved with the prior study, was consulted regarding the individuals observed on the Lebata project site. She confirmed that these individuals are most likely intermediates containing physical characteristics of both the common and the sensitive varieties and that they are not likely the pure *brachyclada* varietal (personal communication 2008). A second survey was conducted for the

Location: N:\2008\2008-055 Lebata Big Rock Creek\MAPS\Location_Vicinity\Lebata_Vicinity.mxd (MAG)-dwagnon 8/19/2014

Map Date: 5/29/2014

Service Layer Credits: Sources: Esri, USGS, NOAA

Figure 1. Project Vicinity

2013-122 Lebata Big Rock Creek Mine EIR Revision

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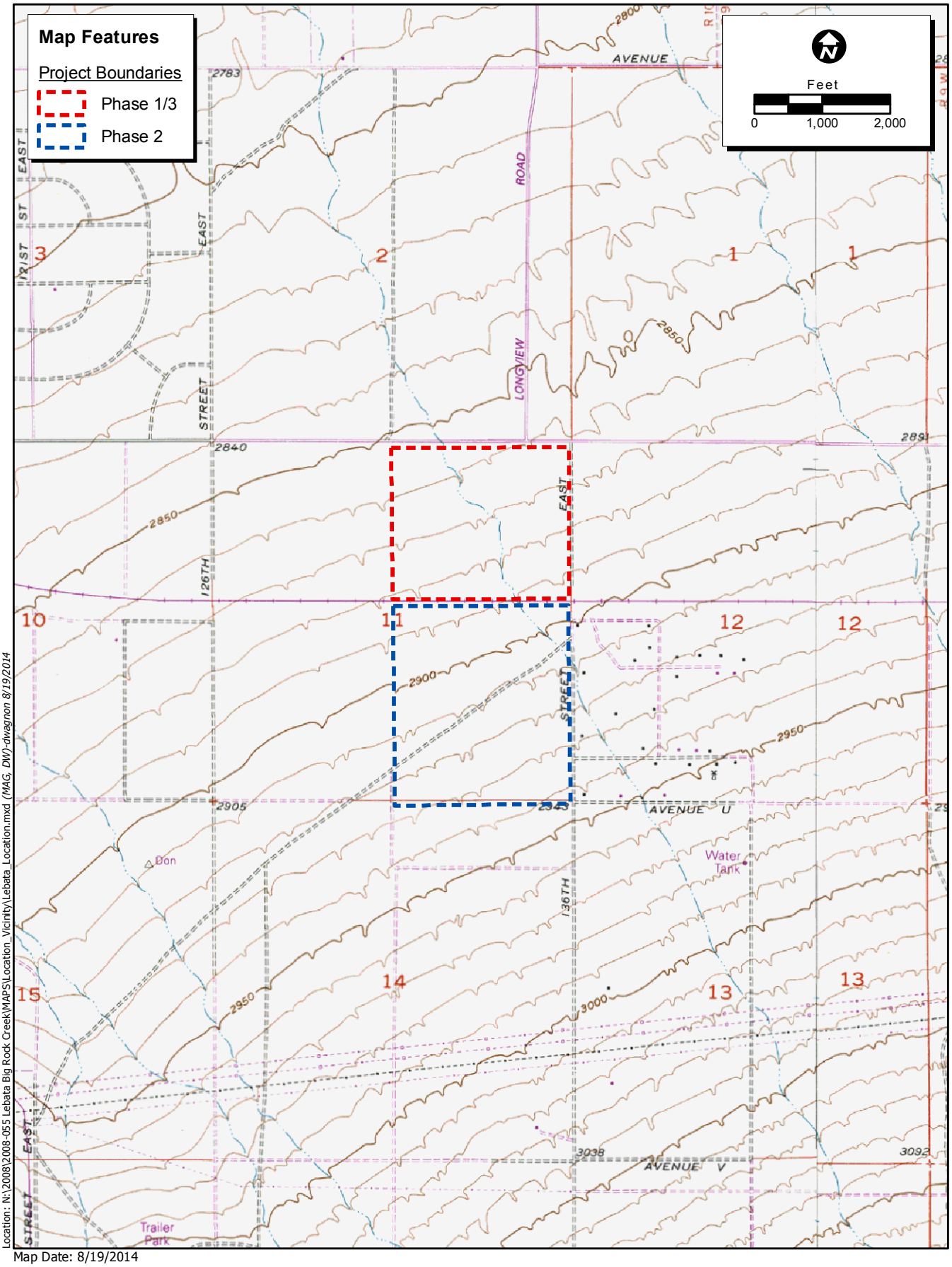

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Map Date: 8/19/2014
USGS Topographic Quadrangle: Littlerock (1991)

Figure 2. Project Location

2013-122 Lebata Big Rock Creek Mine EIR Revision

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

northern parcel (Phase 1 and 3) in 2014; twelve additional individuals exhibiting characteristics of both species were identified. Currently, there are 37 intermediates present in the project site (Figure 3).

The intermediate between the two beavertail cactus species does not have any legal protection under state or federal legislation. However, California Department of Fish and Wildlife (CDFW), Los Angeles County, and the Office of Mine Reclamation (OMR) have requested that a plan be developed for the protection of the intermediate beavertail cactus individuals currently present on the project site as part of the EIR Mitigation Measure (MM) BIO-4, which addresses the protection of sensitive native plants.

2.0 CACTUS PROTECTION METHODOLOGY

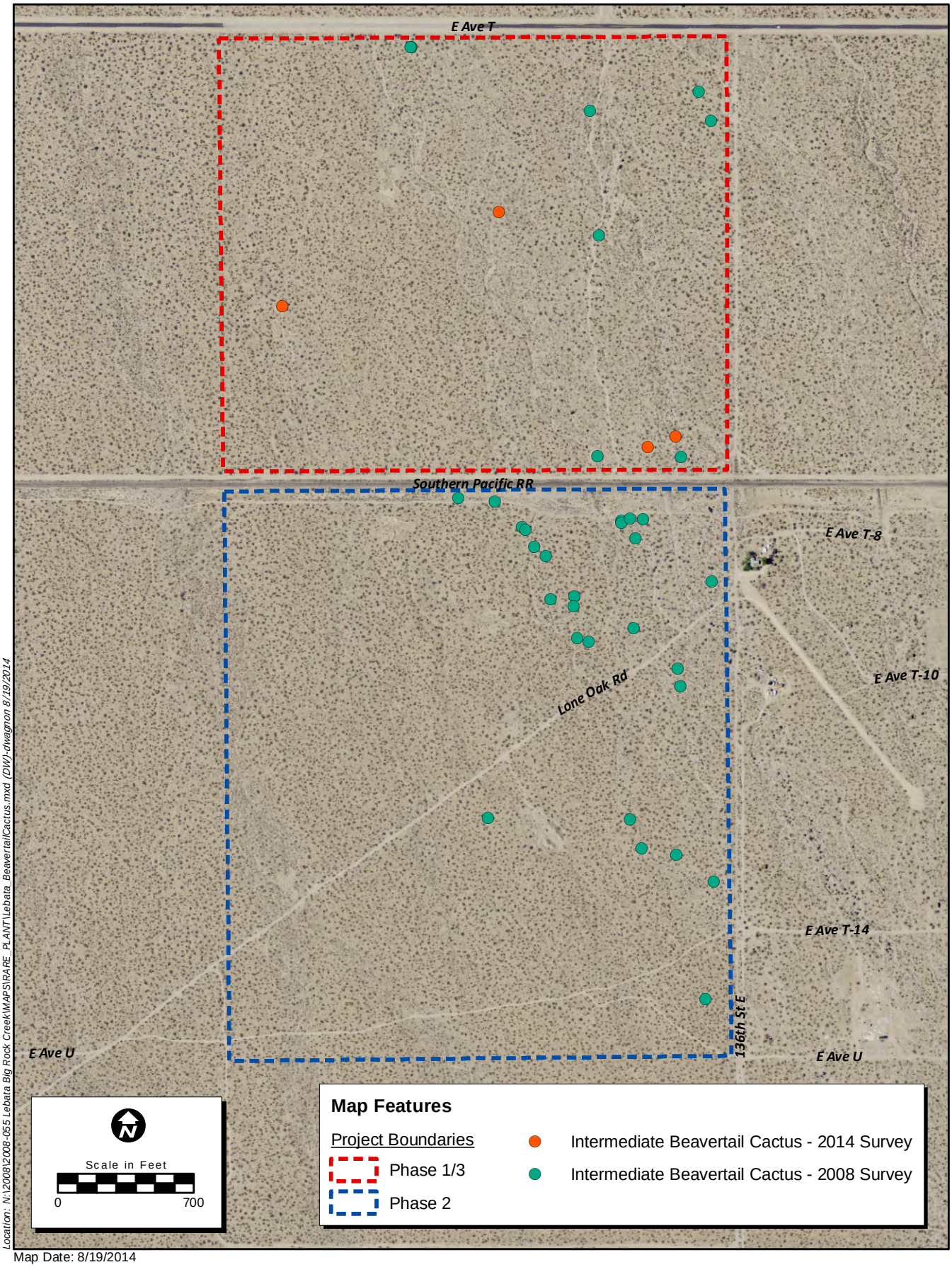
In order to provide protection for the intermediate beavertail cactus as requested, individuals deemed suitable for salvage will be transplanted and later incorporated into final reclamation efforts. Mining on the project site is scheduled to occur in phases; salvage activities will be completed accordingly. Prior to vegetation clearing and soil disturbance on Phase 1, suitable individuals present in this area will be salvaged and transplanted in setback areas located around the perimeter of the project site (see Reclamation Plan Figures 13 and 14). The only disturbance planned for the setback areas is initial perimeter berm construction, which will be completed prior to transplantation. Suitable individuals present on subsequent phases will be salvaged and transplanted in reclaimed areas as mining moves forward and suitable reclaimed areas have been finished. If mining of subsequent phases is not initiated within two years of the latest botanical surveys (i.e., April 2016), a new survey to identify intermediate beavertail cactus present is required per MM BIO-4. Transplanted cactus will be monitored over a period of five years to determine successfulness of the effort and contingency measures will be incorporated in the event that revegetation goals are not met.

2.1 Cactus Salvage and Transplantation

Prior to clearing of vegetation in each phase, a botanist will determine which of the intermediates are suitable for salvage. Factors that might inhibit the salvage of the species include access issues (individuals should only be salvaged if it can be done safely), soil conditions (often individuals growing in rocky soils cannot be extracted without destroying much of the root system), and unacceptable general condition of the species (i.e., less than 40% live branches or live tissue). If an individual is determined to be suitable for salvage upon inspection, the botanist will mark the north side of the plant to aid in correct reorientation during transplanting.

Equipment needed during salvage and transplantation may include shovels, mattocks, buckets, rope/straps, pruning snips, wood pallets, pitch forks, brown paper bags, and a standard 4x4 truck.

Successful extraction and salvage requires the safe removal of the aboveground individual with as-large-as-possible root ball incorporating intact soil. The salvageable individual will be dug up with shovels. The rooting distance of beavertail cactus is typically three to five times the width



Location: N:\2008\2008-055 Lebata Big Rock Creek\MAPS\RARE_PLANT\Lebata_BeavertailCactus.mxd (DW)-dwagnon 8/19/2014

Map Date: 8/19/2014
Photo Source: NAIP (2012)

Figure 3. Intermediate Beavertail Cactus Locations

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of the plant. Therefore, excavation will begin no less than six inches and an average of four times the width of the above-ground pad segments from the base of the individual to avoid damaging the roots. As this species is very shallowly rooted, all individuals will be excavated with a shovel just below the root ball, typically four to eight inches below the soil surface.

Transplant holes can be prepared within the setback areas prior to transplantation. When the holes are prepared, several shovel-loads of surface soil from around the each target plant base will be carefully extracted and mixed into the planting hole to promote native mycorrhizal soil symbionts to be in close proximity to the root structure. Each hole will be two to three times the width of the target individual, but only as deep as the root ball (3 feet by 18 inches). These holes will then be filled with water and allowed to drain.

Transplanting of the salvaged individuals will take place immediately into the freshly wetted receiving hole. The salvaged individuals will be transplanted with the original north-facing orientation and the soil will be lightly tamped by hand or with the handle of a shovel around the individual so that there are no air pockets around the roots. A depression around each individual will be formed to hold water. Each individual will be watered 2 to 3 times during the week immediately following transplantation.

As mining progress into subsequent phases, intermediates present will be salvaged using the methods outlined above. However, transplant holes will be prepared within reclaimed areas of the project site.

3.0 MONITORING AND PERFORMANCE CRITERIA

All transplanted intermediate beavertail cactus will be monitored for a period of five years to determine the successfulness of the revegetation effort. Transplants are expected to have a 75 percent survival rate in Year 1 and a 50 percent survival rate in Years 2 through 5. Native volunteers may be used to meet these goals and replace dead transplants. The annual survival rate of each transplant and cutting species will be calculated according to the following formula:

$$\text{Annual Survival Rate } \% = \frac{\text{Total \# plants alive during survey}}{\text{Total \# plants alive in previous season}} * 100$$

Each phase of transplants will be visited once per year during the growing season. All individuals for each target phase will be relocated within their respective transplant areas and visually assessed. Additionally, the status of each will be recorded as dead or alive. New individuals that may have become established as volunteers (natural recruitment), if observed, will be included in the transplant counts. Field data will be entered into a spreadsheet for analysis. Separate annual monitoring reports will be submitted documenting the results of the field monitoring visit and the survival rate of each transplant phase. Additionally, the reports will discuss the performance trends of each transplant phase and provide recommendations as needed.

3.1 Contingency Measures

As mining is scheduled to be completed in phases over a long period of time, it is presumed that the first transplant effort (for Phase 1) will be monitored for long enough to evaluate the successfulness of the transplant effort and to identify performance trends. If it is determined that the transplanted individuals are faring poorly or not surviving, the salvage and transplant methodology will be modified for subsequent phases. Alternate techniques, such as transplanting segment pads from the target intermediates, may be considered. If implemented, the alternate techniques will also be evaluated during monitoring. It is also possible that new, highly successful techniques will be developed in the future; these would be incorporated to potentially improve survival and ensure protection of the intermediate beavertail cactus.

Currently, no maintenance of the transplanted individuals is scheduled beyond the first week of watering. However, if it is determined from the monitoring visits that the transplanted individuals are showing signs of water stress, a supplemental watering regime will be considered, after which it must be demonstrated that the vegetation has been self-sustaining without irrigation for a minimum of two years.

4.0 REFERENCES

Chambers Group. 2002. Biological Reconnaissance Survey of Big Rock Creek Mine.

[ECORP] ECORP Consulting, Inc. 2008. Final Sensitive Plant Survey Report, Lebata, Inc. Big Rock Creek Surface Mining Project.

[ECORP] ECORP Consulting, Inc. 2014. Updated Special-status Plant Survey and General Wildlife Survey Results for the Big Rock Creek Surface Mining Project.

RECLAMATION PLAN
LEBATA BIG ROCK CREEK
AGGREGATE SURFACE MINE AND PROCESSING FACILITIES

AUGUST 2014

ATTACHMENT F
Streambed Alteration Agreement (pending, if required)

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RECLAMATION PLAN
LEBATA BIG ROCK CREEK
AGGREGATE SURFACE MINE AND PROCESSING FACILITIES

AUGUST 2014

ATTACHMENT G
Memorandum from Mari Quillman to Lou Merzario, dated August 21, 2014, Re: *Comments Regarding the Establishment of Creosote Bush Scrub on Revegetation Sites*

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Memorandum

To: Mr. Lou Merzario, SESPE Consulting Inc.

CC: Mr. John Hecht, SESPE Consulting Inc.

From: Ms. Mari Quillman, ECORP Consulting, Inc.

Date: 8/22/2014

Re: Comments Regarding the Establishment of Creosote Bush Scrub on Revegetation Sites

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The purpose of this memorandum is to provide comments in response to a comment by the California Department of Fish and Wildlife (CDFW) on the proposed revegetation program for the Lebata Inc. Big Rock Creek Mine. I have read through the article referenced in the following comment:

> Because stockpiled topsoil containing existing creosote bush seed is the proposed seed source for creosote bush restoration on the Project site, it may take decades to restore the Project site to the approved success criteria for cover density. Concepts described within the following reference may be useful for further consideration and implementation into the restoration plan: *"Effects of Pipeline Construction on Creosote Bush Scrub Vegetation of the Mojave Desert"* Article Stable URL:http://www.jstor.org/stable/41423976

I believe that the article has some valid points about the ages of creosote bush and the cloning of this species. However, I don't believe it is directly applicable to the restoration plan at the Lebata Big Rock Creek Mine for a number of reasons.

The article states that the pipeline was constructed in 1960 but it does not indicate if native topsoil was spread over the disturbed areas following construction and prior to the revegetation effort, if creosote bush seed was included in the seed mix or how the seed mix was applied, if mulch or fiber matrix was included in the seed application to hold the seed in place after the application, or if mycorrhizae was included in the seed application. All of these variables could have a significant impact on the success of the revegetation effort. A lot has been learned about revegetation techniques in the 54 years since the pipeline was constructed and revegetated. The success of revegetation projects has greatly improved with the techniques that have been developed over the years.

In order to show that creosote bush can successfully be grown as part of revegetation projects, I provide the following discussion about two of ECORP's projects. Undoubtedly, there are many more revegetation projects that have also successfully reestablished creosote bush.

Project 1 – Revegetation Project at Vulcan Materials Company's Big Rock Creek Mine near Pearblossom in San Bernardino County, California

[Martha Blane & Associates, 2002. *Vulcan Big Rock Creek Annual Revegetation Monitoring Report*. Prepared for Vulcan Materials Company. September 28, 2002.]

In 1996, a 26 acres revegetation project was implemented at Vulcan Materials Company's Big Rock Creek Mine near Pearblossom in Los Angeles County, California. Creosote bush seed was included in the two seed mixes that were applied on the revegetation area and the application method was seed imprinting. These two mixes included a desert wash mix and a creosote bush scrub mix. Creosote bush scrub was noted on the revegetation area beginning in 1997, which indicated it germinated either from the seed mix or the topsoil that was applied on the site. In 2000 and 2002, quantitative monitoring was conducted on the revegetation site. The average shrub cover determined during baseline vegetation transects for the creosote bush scrub community was 23% and for the desert wash community was 18%. Total shrub cover was considered the most important characteristic for determining revegetation success rather than individual shrub species cover. The performance standards for cover of creosote bush scrub and desert wash were 12% and 10%, respectively. The results of the 2002 quantitative monitoring determined that the creosote bush scrub had achieved a total shrub cover ranging from 19.3 to 25.3% for the various transects, thus satisfying the performance standard. Similarly, the desert wash community also satisfied the total shrub cover performance standard with values ranging from 19.4 to 44.1% for the various transects. The results of the 2002 quantitative monitoring indicated that the creosote bush scrub community had exceeded the performance standard for shrub cover by 95% and the desert wash community had exceeded the performance standard for shrub cover by 165%.

Project 2 – Revegetation of the Phase I Area at the Morning Star Mine in the Mojave National Preserve, San Bernardino County, California

[ECORP Consulting, Inc. 2012. *2012 (Third Year) Revegetation Monitoring Report for the Phase I Restoration Area at the Morning Star Mine, Mojave National Preserve, San Bernardino County, California.* Prepared for Brittan Industries, Inc. September 2012.]

In December 2008 and January 2009, a revegetation project was implemented at the Morning Star Mine in the Mojave National Preserve, San Bernardino, California. Topsoil containing creosote bush seeds was spread over a portion of the revegetation site prior to hydroseeding. Creosote bush (*Larrea tridentata*) was also included in the seed mix as were 12 other native species of desert plants. The application rate for the creosote bush seed was 1.25 pounds per acre and the application method was hydroseeding. During the as-

built site visit in July of 2009, creosote bush was noted as present in the revegetation area. It was also noted during the annual monitoring visits in 2010, 2011, and 2012. Qualitative monitoring at the site did not continue after 2012 and quantitative monitoring was never conducted because the prime contractor (Brittan Industries, Inc.) declared bankruptcy and the contract was terminated by the National Park Service.

A site visit was conducted at the revegetation site on August 21, 2014 to look at the progress and to qualitatively reevaluate the status of Joshua Trees and creosote bush. The Joshua trees continue to survive and many have flowered and produced seed during the 2014 season. In addition, recruitment of Joshua Tree "pups" was also noted. The creosote bush seed that was included in the seed mix germinated very well and new plants continue to germinate. The plants ranged from a few inches to approximately three feet tall. Creosote bush was a common species throughout much of the revegetation site. Photograph 1 shows a broad view of a portion of the revegetation site and the dark green plants in the photograph are the creosote bushes. Photograph 2 shows a closer view of one of the creosote bushes on the revegetation site with a cellphone at the base to demonstrate the size of the shrub. The revegetation site was seeded in December 2008 and January 2009, which was about 5.5 years ago. The growth and density of the creosote bush shrubs in approximately five years shows that creosote bush can be successfully grown on revegetation sites.

Photograph 1 – Overview of the Phase I revegetation site at the Morning Star Mine

Photograph 2 – Creosote bush shrub on the Phase I Revegetation Area

In conclusion, the referenced article, *"Effects of Pipeline Construction on Creosote Bush Scrub Vegetation of the Mojave Desert,"* is not applicable to the revegetation project for the Lebata Big Rock Creek Mine because revegetation techniques have greatly improved since 1960 when the pipeline was revegetated. Current revegetation projects show that creosote bush can be successfully grown when seeds are included in topsoil and are included in the seed mix.