

RAU, HAYDON, BORDESSA, FRANZ & ASSOC., INC.	
100 N. Pine St. Ukiah, CA 95482	
JOB NO.: 92-079	NAME:
DATE: 4/30/92	PRESLEY
SHEET 1 OF 2	

## RETENTION POND CALCS.

REF: 4TH ED., C.E.  
REF. MAN.  
LINDEBURG

### 1) FLOW QUANTITY TO DETENTION POND

DRAINAGE AREA = 8 AC ±

$$I_{25} = 1.8 \text{ IN/HR}$$

$$I_{100} = 2.4 \text{ IN/HR (LAYTONVILLE)}$$

C = 0.4 IN OPEN NATURAL AREA

$$Q_{10} = 0.4(1.6)(8) = 5.12 \text{ CFS}$$

$$Q_{100} = 0.4(2.4)(8) = 7.7 \text{ CFS}$$

$$Q_{25} = 0.4(1.8)(8) = 5.8 \text{ CFS}$$

USE C = 0.4

### 2) CALC. DETENTION POND SIZE (C.E. REF. MANUAL, LINDEBURG) 4TH ED. BASED ON 25YR. STORM

a) ASSUME  $V_s = 0.5 \text{ FT/SEC}$

ASSUME SURFACE LOADING FOR RECT. BASIN = 1000 GPD/FT<sup>2</sup>

b) PEAK FLOW = 5.8 FT<sup>3</sup>/SEC (448.83) ≈ 2600 GAL/MIN

$$2600 \text{ GAL/MIN} \times \frac{60 \text{ MIN}}{1 \text{ HR}} \times \frac{24 \text{ HR}}{1 \text{ DAY}} = 3.74 \times 10^6 \text{ GAL/DAY}$$

c) SETTLING POND SURFACE AREA

$$A = \frac{V}{Q} = \frac{3.74 \times 10^6 \text{ GAL/DAY}}{1000 \text{ GPD/FT}^2} = 3740 \text{ FT}^2$$

d)  $t = \frac{\text{TANK VOL}}{Q} =$

$$\text{TANK VOL} = (3740 \times 6) = 22,440 \text{ FT}^3$$

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SHEET 2 OF 2	

d) CONT

$$t = \frac{22440 \text{ FT}^3}{5.8 \text{ FT}^3/\text{SEC}} = 3868 \text{ SEC} \times \frac{1 \text{ MIN}}{60 \text{ SEC}} \times \frac{1 \text{ HR}}{60 \text{ MIN}} = 1.07 \text{ HR.}$$

1.07 > 1.00 OK

e).  $1000 \text{ GAL/DAY} \times 0.1337 \times \frac{1 \text{ DAY}}{24 \text{ HR}} \times \frac{1 \text{ HR}}{60 \text{ MIN}} \times \frac{1 \text{ MIN}}{60 \text{ SEC}} = 0.0015$

$V_s > 0.0015$  ALL PARTICLES WILL BE REMOVED

FOR 100 YR STORM, USE 3740 SQ.FT. X 6' DEEP BASIN.

ON-SITE DETENTION BASIN CLEAN OUT SCHEDULE

(USE PERMIT #U 15-92, "WAYNE WYATT QUARRY")

The purpose of preparing this sedimentation pond clean out schedule is to assure that the required settling pond size is maintained throughout the life of the project. The project environmental assessment concluded that the on-site detention basins are of adequate size if a 6 foot depth is maintained. Following is the recommended detention pond clean-out operation and schedule:

1. Install wood or steel fence post in center of sedimentation pond. Place 60d nail, on the post, at one foot above bottom of pond.
2. The sedimentation pond shall be inspected on the first day of each month, a log shall be made of how far below the nail the sedimentation is.
3. When the sedimentation reaches the nail, the pond shall be cleaned and the bottom grade shall be excavated one foot below the nail to its' original configuration.
4. A log shall be kept of the monthly inspections and times of cleaning out the

sedimentation basins. A copy of this log shall be submitted annually to the county planning department within 60 days of the use permit anniversary.

Jeff H. Larsen 11/3/92  
Prepared by: Jeff H. Larsen

RCE 45911

Expires 12-31-94

George C. Rau 11/3/92  
Review by: George C. Rau

RCE 21908

Expires 9-30-93



<b>RAU AND ASSOCIATES, INC.</b>	
100 N. Pine St. Ukiah, CA 95482	
JOB NO.: R/2023.	PHONE: 707-462-6536
DATE: 12-9-13	FAX: 707-463-2729
SHEET <u>1</u> OF <u>2</u>	

DRAINAGE DOCUMENTATION.

APPENDIX D.2

STORMWATER  
RETENTION VOLUMES

A. RUNOFF VOLUMES

SCS METHOD

AREA = 6.1 ACRES

CN = 91 (GRAVEL)

T<sub>c</sub> = 10 MIN. (CONSERVATIVE)

24 HOUR PRECIPITATION DEPTHS <sup>(2)</sup>

(SEE ATTACHED NOAA  
PRINTOUT)

2 YR = 5.96"

10 YR = 8.89"

25 YR = 10.70"

100 YR = 13.60"

RUNOFF VOLUMES <sup>(1)</sup> 24-HR

(SEE ATTACHED RESULTS)

Q<sub>2</sub> = 108,901 CF

Q<sub>10</sub> = 172,809 CF

Q<sub>25</sub> = 212,535 CF

Q<sub>100</sub> = 276,370 CF



12.9.13

(1) COMPUTED USING HYDRALOW HYDROGRAPH EXTENTION FOR  
AUTOCAD, 2012. VERSION 9.

(2) NOAA ATLAS 14 WEBSITE. HDSC.NWS.NOAA.GOV

RAU AND ASSOCIATES, INC.		
100 N. Pine St. Ukiah, CA 95482		
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SHEET 2 OF 2		

APPENDIX D.2

B. RETENTION VOLUMES.

LOWER QUARRY FLOOR

ELEVATION	AREA (SF)	AVE AREA (SF)	DEPTH	VOL (CF)	VOL (CY)
2080	58582	71,758	40	2,870,320	106,30
2120	84934				

OVERBURDEN

-2,025,000    -75,000

REMAINING VOLUME STORAGE =

845,316    31,303

C. STORMWATER RETENTION ON LOWER QUARRY FLOOR

1. WITHOUT OVERBURDEN.

$$\# \text{ EVENTS}_{100 \text{ YR}} = \frac{2,870,320 \text{ CF}}{276,370 \text{ CF}} = 10.4 \text{ X}$$

2. WITH OVERBURDEN

$$\# \text{ EVENTS}_{100 \text{ YR}} = \frac{845,316 \text{ CF}}{276,370 \text{ CF}} = 3.06 \text{ X}$$



**NOAA Atlas 14, Volume 6, Version 2**  
**Location name: Willits, California, US\***  
**Coordinates: 39.6908, -123.4698**  
**Elevation: 2217 ft\***  
 \* source: Google Maps



**POINT PRECIPITATION FREQUENCY ESTIMATES**

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin,  
 Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao,  
 Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

[PF tabular](#) | [PF graphical](#) | [Maps & aerals](#)

**PF tabular**

<b>PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)<sup>1</sup></b>										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.175 (0.155-0.200)	0.215 (0.190-0.246)	0.268 (0.236-0.307)	0.312 (0.272-0.362)	0.374 (0.313-0.451)	0.423 (0.345-0.522)	0.473 (0.376-0.601)	0.526 (0.404-0.691)	0.599 (0.439-0.827)	0.658 (0.463-0.945)
10-min	0.251 (0.222-0.286)	0.308 (0.272-0.352)	0.384 (0.338-0.441)	0.448 (0.390-0.519)	0.536 (0.449-0.646)	0.606 (0.495-0.748)	0.678 (0.538-0.862)	0.754 (0.579-0.991)	0.859 (0.629-1.19)	0.943 (0.663-1.35)
15-min	0.303 (0.268-0.346)	0.372 (0.329-0.426)	0.464 (0.409-0.533)	0.541 (0.472-0.627)	0.648 (0.543-0.781)	0.732 (0.599-0.905)	0.820 (0.651-1.04)	0.911 (0.700-1.20)	1.04 (0.761-1.43)	1.14 (0.802-1.64)
30-min	0.414 (0.367-0.473)	0.508 (0.449-0.581)	0.634 (0.559-0.728)	0.739 (0.645-0.857)	0.885 (0.742-1.07)	1.00 (0.818-1.24)	1.12 (0.889-1.42)	1.25 (0.957-1.64)	1.42 (1.04-1.96)	1.56 (1.10-2.24)
60-min	0.583 (0.516-0.666)	0.716 (0.632-0.818)	0.893 (0.786-1.02)	1.04 (0.907-1.21)	1.25 (1.04-1.50)	1.41 (1.15-1.74)	1.58 (1.25-2.00)	1.75 (1.35-2.30)	2.00 (1.46-2.75)	2.19 (1.54-3.15)
2-hr	0.953 (0.843-1.09)	1.18 (1.04-1.34)	1.47 (1.29-1.69)	1.71 (1.49-1.99)	2.05 (1.72-2.47)	2.31 (1.89-2.86)	2.58 (2.05-3.28)	2.86 (2.20-3.76)	3.25 (2.38-4.48)	3.56 (2.50-5.10)
3-hr	1.29 (1.15-1.48)	1.59 (1.41-1.82)	1.99 (1.75-2.28)	2.32 (2.02-2.68)	2.77 (2.32-3.33)	3.11 (2.54-3.85)	3.47 (2.76-4.42)	3.84 (2.95-5.05)	4.36 (3.19-6.01)	4.76 (3.35-6.83)
6-hr	2.02 (1.78-2.30)	2.48 (2.19-2.83)	3.09 (2.72-3.54)	3.59 (3.13-4.16)	4.28 (3.59-5.16)	4.82 (3.94-5.95)	5.36 (4.26-6.82)	5.93 (4.56-7.79)	6.71 (4.91-9.26)	7.32 (5.15-10.5)
12-hr	3.02 (2.67-3.45)	3.74 (3.30-4.28)	4.69 (4.13-5.38)	5.48 (4.78-6.35)	6.57 (5.51-7.92)	7.42 (6.07-9.18)	8.30 (6.59-10.6)	9.22 (7.09-12.1)	10.5 (7.68-14.5)	11.5 (8.08-16.5)
24-hr	4.76 (4.27-5.41)	5.96 (5.34-6.79)	7.56 (6.76-8.63)	8.89 (7.89-10.2)	10.7 (9.23-12.7)	12.2 (10.3-14.7)	13.6 (11.3-16.8)	15.2 (12.2-19.2)	17.3 (13.4-22.8)	19.0 (14.2-25.8)
2-day	6.15 (5.51-6.99)	7.82 (7.01-8.90)	9.99 (8.94-11.4)	11.8 (10.4-13.5)	14.2 (12.2-16.8)	16.0 (13.5-19.3)	17.8 (14.7-22.0)	19.7 (15.9-25.0)	22.3 (17.3-29.4)	24.3 (18.2-33.0)
3-day	7.07 (6.35-8.04)	9.07 (8.13-10.3)	11.6 (10.4-13.3)	13.7 (12.2-15.8)	16.5 (14.2-19.5)	18.5 (15.7-22.4)	20.6 (17.0-25.5)	22.7 (18.3-28.8)	25.5 (19.8-33.7)	27.7 (20.8-37.7)
4-day	8.02 (7.19-9.12)	10.3 (9.24-11.7)	13.3 (11.8-15.1)	15.6 (13.8-17.9)	18.7 (16.1-22.2)	21.1 (17.8-25.4)	23.4 (19.3-28.9)	25.7 (20.7-32.6)	28.9 (22.4-38.0)	31.3 (23.4-42.5)
7-day	9.91 (8.90-11.3)	12.7 (11.4-14.5)	16.2 (14.5-18.5)	19.1 (16.9-21.9)	22.8 (19.6-27.1)	25.6 (21.7-31.0)	28.4 (23.5-35.2)	31.3 (25.2-39.7)	35.0 (27.1-46.1)	37.9 (28.4-51.5)
10-day	11.6 (10.4-13.2)	14.8 (13.2-16.8)	18.8 (16.8-21.5)	22.1 (19.6-25.4)	26.4 (22.7-31.2)	29.6 (25.0-35.7)	32.8 (27.1-40.5)	36.0 (29.0-45.7)	40.3 (31.2-53.1)	43.5 (32.7-59.2)
20-day	15.1 (13.5-17.1)	19.1 (17.1-21.7)	24.2 (21.8-27.8)	28.3 (25.1-32.5)	33.6 (28.9-39.9)	37.6 (31.8-45.5)	41.6 (34.3-51.4)	45.6 (36.7-57.8)	50.8 (39.4-67.0)	54.8 (41.1-74.6)
30-day	18.4 (16.5-20.9)	23.1 (20.7-26.3)	29.1 (26.0-33.2)	33.9 (30.1-39.0)	40.1 (34.6-47.6)	44.8 (37.8-54.1)	49.4 (40.8-61.0)	54.0 (43.5-68.5)	60.1 (46.5-79.2)	64.7 (48.5-87.9)
45-day	23.3 (20.9-26.5)	29.0 (26.0-33.0)	36.2 (32.3-41.3)	41.8 (37.1-48.1)	49.2 (42.4-58.4)	54.8 (46.2-66.2)	60.2 (49.7-74.4)	65.6 (52.8-83.2)	72.7 (56.3-95.8)	78.0 (58.5-106)
60-day	26.7 (24.0-30.4)	32.9 (29.5-37.5)	40.8 (36.4-46.5)	46.9 (41.6-53.9)	54.9 (47.3-65.1)	60.8 (51.4-73.5)	66.7 (55.1-82.4)	72.5 (58.3-91.9)	80.0 (62.0-105)	85.7 (64.3-117)

<sup>1</sup> Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values. Please refer to NOAA Atlas 14 document for more information.

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# Hydrograph Report

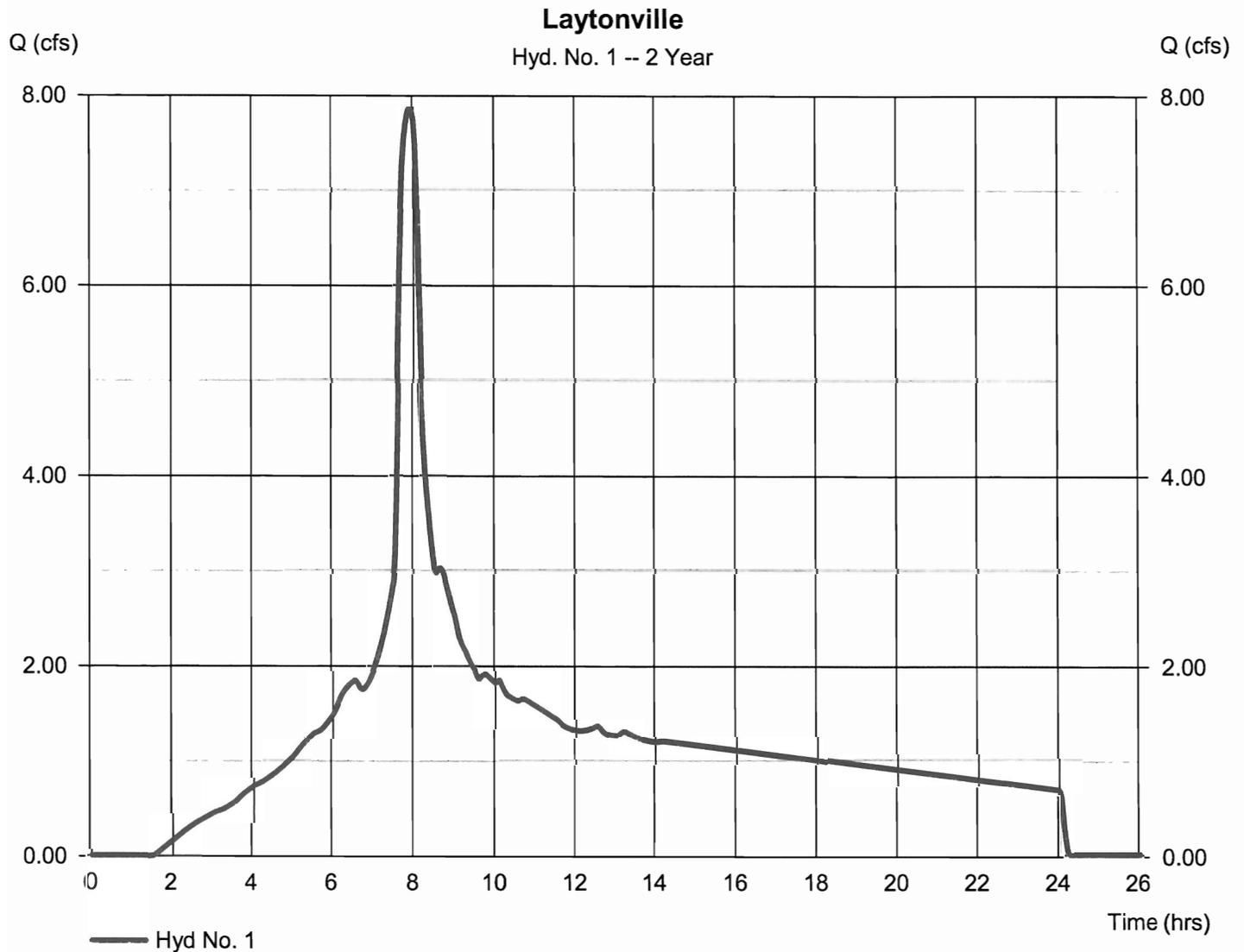
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2012 by Autodesk, Inc. v9

Monday, 12 / 9 / 2013

## Hyd. No. 1

Laytonville

Hydrograph type	= SCS Runoff	Peak discharge	= 7.852 cfs
Storm frequency	= 2 yrs	Time to peak	= 7.92 hrs
Time interval	= 1 min	Hyd. volume	= 108,901 cuft
Drainage area	= 6.100 ac	Curve number	= 91
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 10.00 min
Total precip.	= 5.96 in	Distribution	= Type IA
Storm duration	= 24 hrs	Shape factor	= 484



# Hydrograph Report

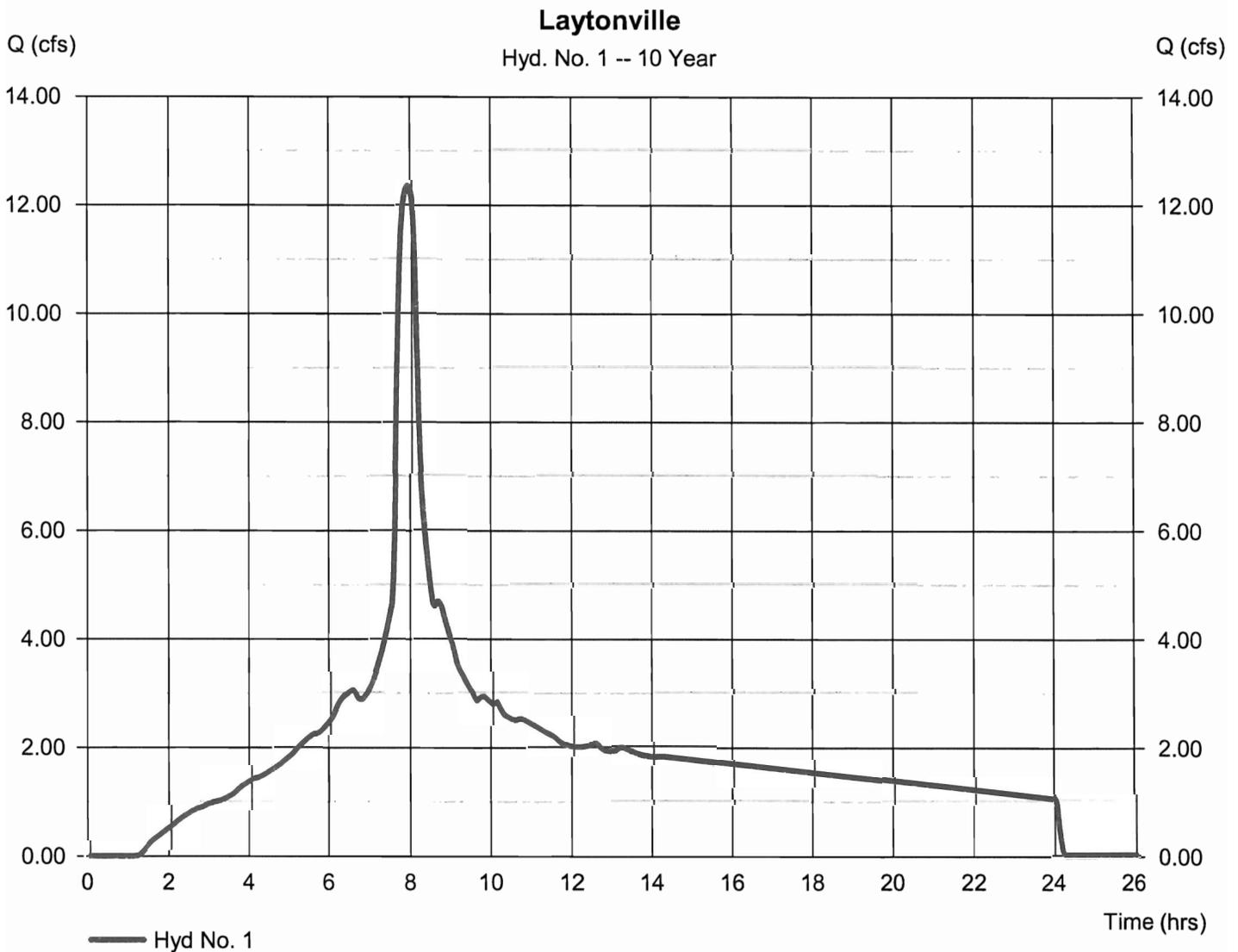
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2012 by Autodesk, Inc. v9

Monday, 12 / 9 / 2013

## Hyd. No. 1

Laytonville

Hydrograph type	= SCS Runoff	Peak discharge	= 12.35 cfs
Storm frequency	= 10 yrs	Time to peak	= 7.90 hrs
Time interval	= 1 min	Hyd. volume	= 172,809 cuft
Drainage area	= 6.100 ac	Curve number	= 91
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 10.00 min
Total precip.	= 8.89 in	Distribution	= Type IA
Storm duration	= 24 hrs	Shape factor	= 484



# Hydrograph Report

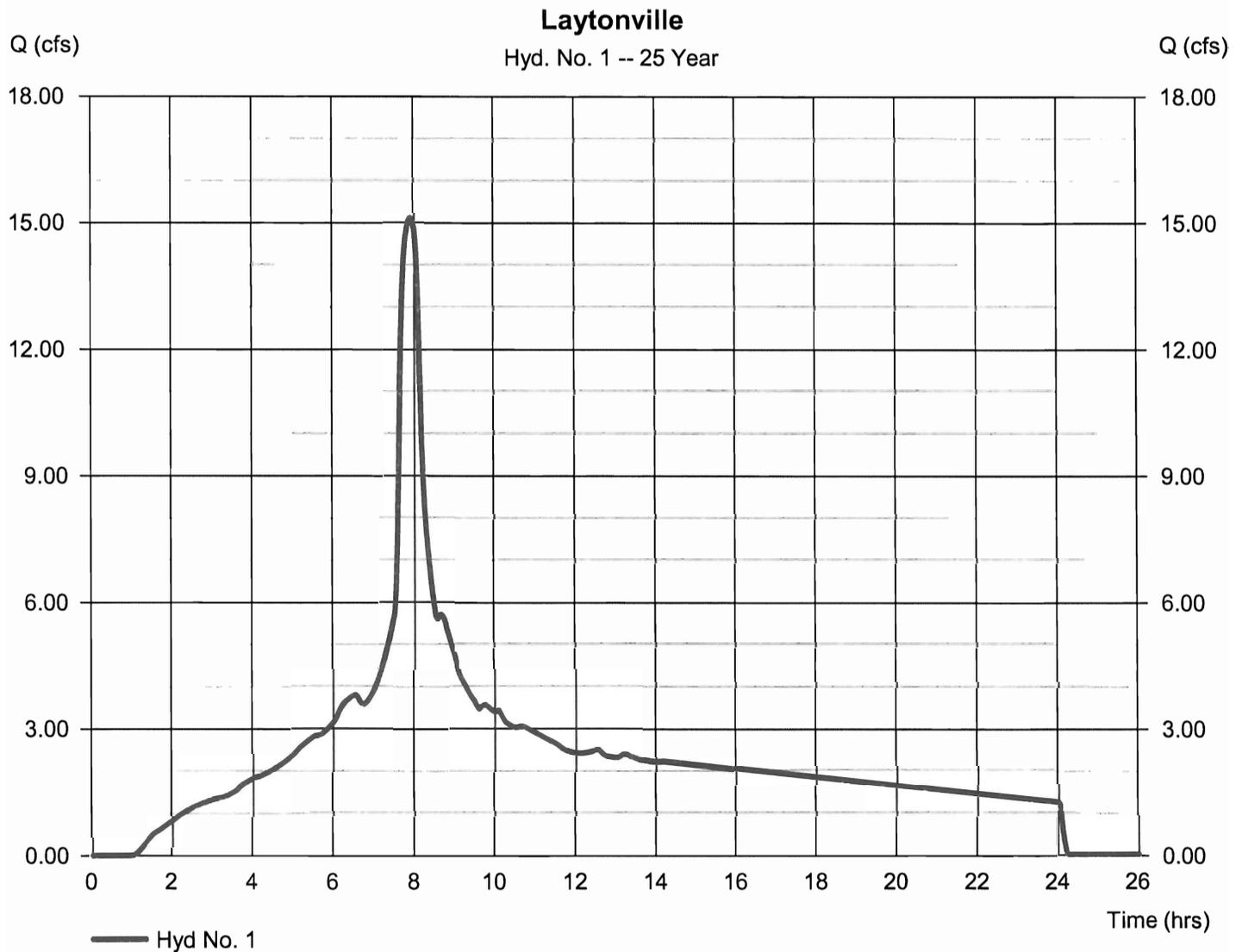
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2012 by Autodesk, Inc. v9

Monday, 12 / 9 / 2013

## Hyd. No. 1

Laytonville

Hydrograph type	= SCS Runoff	Peak discharge	= 15.11 cfs
Storm frequency	= 25 yrs	Time to peak	= 7.90 hrs
Time interval	= 1 min	Hyd. volume	= 212,535 cuft
Drainage area	= 6.100 ac	Curve number	= 91
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 10.00 min
Total precip.	= 10.70 in	Distribution	= Type IA
Storm duration	= 24 hrs	Shape factor	= 484



# Hydrograph Report

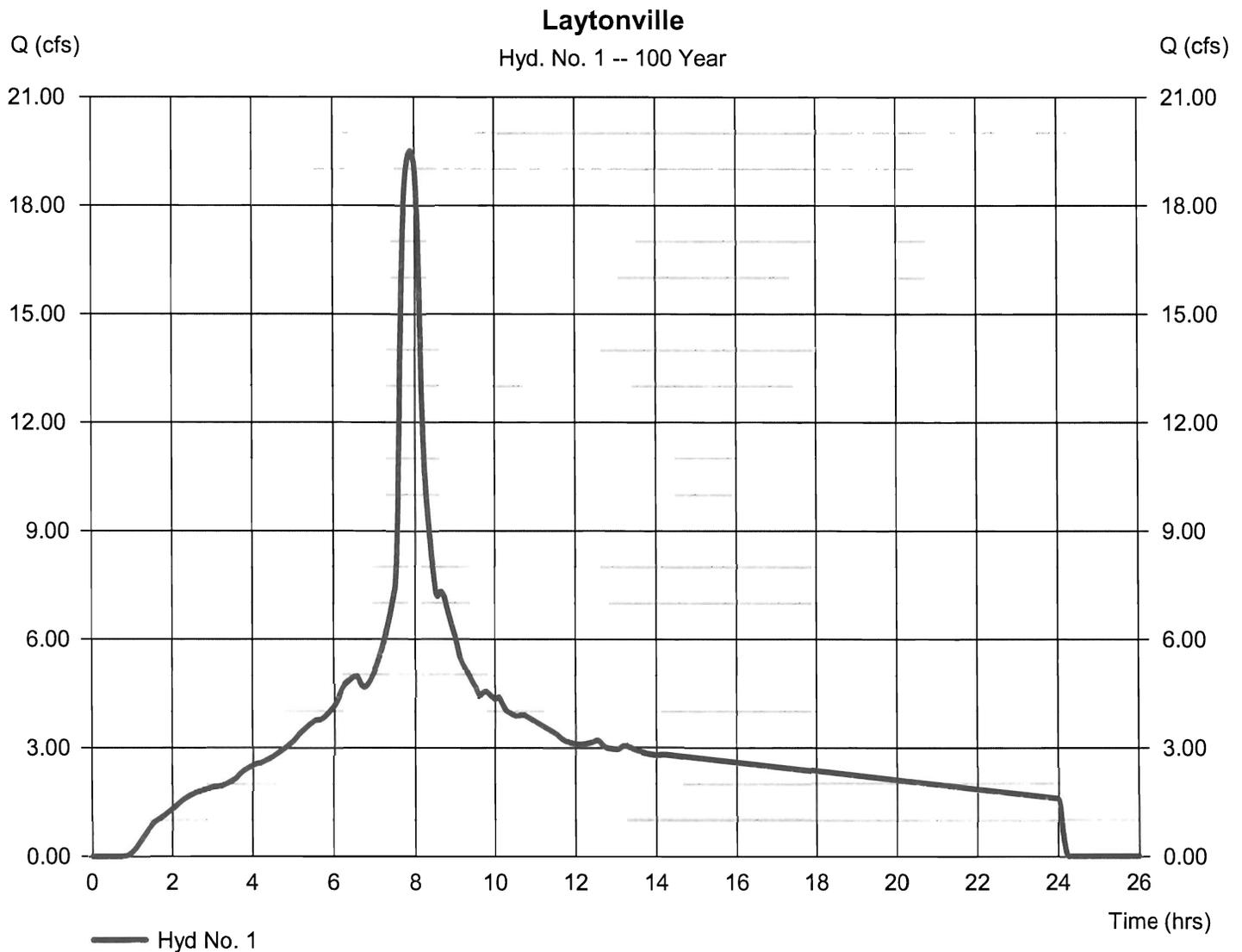
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2012 by Autodesk, Inc. v9

Monday, 12 / 9 / 2013

## Hyd. No. 1

Laytonville

Hydrograph type	= SCS Runoff	Peak discharge	= 19.49 cfs
Storm frequency	= 100 yrs	Time to peak	= 7.90 hrs
Time interval	= 1 min	Hyd. volume	= 276,370 cuft
Drainage area	= 6.100 ac	Curve number	= 91
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 10.00 min
Total precip.	= 13.60 in	Distribution	= Type IA
Storm duration	= 24 hrs	Shape factor	= 484





# BIOLOGICAL ASSESSMENT

For the

***Laytonville Rock Mining and Reclamation Plan***

1136 Dos Rios Road  
Laytonville, Mendocino County, CA

**(Job Number R12023)**

Prepared for

**Rau and Associates, Inc.**

100 North Pine Street  
Ukiah, CA 95482  
(707) 462-6536

By

A handwritten signature in blue ink, appearing to read "Jeff Longcrier", is written over a horizontal line.

Jeff Longcrier, Wildlife Biologist

**North Coast Resource Management**

P.O. Box 435  
Calpella, CA 95418  
(707) 485-7211

January 7, 2014



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## **SECTION 1. INTRODUCTION & PROJECT DESCRIPTION**

This Biological Assessment was prepared for Rau and Associates for the Laytonville Rock Mining and Reclamation Plan project (#R12023), located at 1136 Dos Rios Road approximately 1 mile east of Laytonville, CA. The proposed project is an expansion of an existing rock quarry, located in Section 7 of Township 21 North, Range 14 West, M.D.B.&M, within the Laytonville U.S.G.S. 7.5' Quadrangle. See Appendix A for a General Project Location Map. The purpose of the Biological Assessment is to review the biological resources present, or potentially present, and determine the potential impacts to the biological resources resulting from the proposed quarry expansion.

The Laytonville Rock Quarry was originally permitted by the County of Mendocino in 1993 (U 15-92) for a rock quarry and crushing operations. The use permit allowed for an average extraction rate between 15,000- 20,000 cubic yards (CY) per year, with a maximum extraction rate of 50,000 (CY) per year, over a 20-year period, for a total extraction of 325,000 CY over the 20-year permitted period. Aggregate processing was permitted. The existing and proposed quarry access is directly from Dos Rios Road east of the town of Laytonville and State Highway 101. The proposed operation is requesting an expansion to allow mining for an additional 30 years. The longer time frames are due to the cost of processing.

The expansion would allow for the extraction of 325,000 CY at a reduced average production rate of 11,000 CY but an overall peak extraction rate similar to the previous permit, 50,000 CY. Rock extraction/processing will be limited to 20,000 CY. The remaining 30,000 CY would be utilized to sell overburden, should the opportunity arise.

7.5 acres of the 11.5 acre mine boundary are projected to be disturbed by the proposed operations and 4.97 acres are planned for reclamation.

## **SECTION 2. STUDY METHODS**

### **2.1. Regulatory Review**

The following agencies were consulted and/or their policies were considered in preparation of this Biological Assessment.

- California Department of Fish and Wildlife (CDFW)
- County of Mendocino
- U.S. Fish and Wildlife Service (USFWS)



## **2.2. Pre-field Research**

To determine the potential for special status plant and wildlife species to occur within the general project area, topographical maps, aerial photographs, and queries of the following database programs were reviewed prior to conducting the field survey:

The California Natural Diversity Database (CNDDDB) was queried for known occurrences of wildlife species, listed as Federal or State Rare, Endangered, Threatened, or Species of Special Concern. A nine quad search was conducted including the Laytonville, Iron Peak, Covelo West, Cahto Peak, Sherwood Peak, Tan Oak Park, Dos Rios, Longvale, and Willis Ridge 7.5' U.S.G.S. Quadrangles. Some species reported in the CNDDDB query are not likely to occur within the project area, but are reported if there are known occurrences reported within a queried quadrangle.

The California Wildlife Habitat Relationships System (CWHHR) was queried, for Annual Grassland, Chamise-redshank Chaparral, Mixed Chaparral, Montane Hardwood Conifer, Douglas fir and Ponderosa Pine habitats within Mendocino County, to create a list of possibly occurring special status wildlife species. Some species reported in the CWHHR query were not applicable to this specific project because the status pertains to a distinct subspecies located well outside the project assessment area, typically another County.

## **2.3. Survey Methods**

A general biological survey was conducted by wildlife biologist, Mike Stephens on December 20, 2013. The existing quarry and area proposed for expansion were walked and existing habitat conditions were noted. A visual search of the project site and immediate vicinity was utilized to determine the wildlife species present, the potential for the listed sensitive species to occur, and any potential impacts to those biological resources.

Photographs of the project site were taken in order to document the habitat conditions present during the time of the survey. Please see Appendix B for photographs of the project site.

## **SECTION 3. RESULTS - ENVIRONMENTAL SETTING**

### **3.1. Physical Conditions**

The project site is located at 1136 Dos Rios Road approximately 1 mile east/northeast of the town of Laytonville in Mendocino County. The site is situated at approximately 2,300 feet above sea level and contains mainly west facing slopes. The project site is located in a mainly rural residential area and is surrounded by rural residential properties with varying habitat types.



### **3.2. Biological Setting**

CWHR Habitat types present in the vicinity of the project area consist of Annual Grassland, Barren Ground, Chamise-redshank Chaparral, Mixed Chaparral, Montane Hardwood, Montane Hardwood-Conifer, Douglas Fir and Ponderosa Pine. Please see Appendix A for a map of the CWHR habitat types in the vicinity of the project site. The plant communities on the property vary from mixed conifer Ponderosa pine (*Pinus Ponderosa*), Douglas fir (*Pseudotsuga menziesii*) and hardwood forest (Oak/Madrone) to mixed chaparral (Manzanita) and barren ground. The expansion area is also partly barren but also consists of various grass species, with shrubs such as poison oak (*Toxicodendron diversilobum*), coyote brush (*Baccharis pilularis*) and star thistle (*Centaurea solstitialis*). One 20" dbh and 50' high Ponderosa Pine snag in an advanced state of decay is located on the project area.

The quarry has three (3) catchment ponds which vary in depth throughout the year depending on rainfall amounts but appear to have overflow drainage pipes which may keep water depth to approximately 12 inches or less. Quarry employees stated that the catchment ponds are dry in the summer. There are also two seasonal (Class III) watercourses on either side of the quarry.

### **3.3. Sensitive Species and Habitats of Concern**

Sensitive, or special status, plant and wildlife species are those listed as Rare, Endangered, Threatened, Sensitive, or Species of Special Concern, by the U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), California Department of Forestry (CDF), Bureau of Land Management (BLM), the U.S. Forest Service (USFS), or National Marine Fisheries Service (NMFS).

The database queries reported a total of 21 listed wildlife species that may have some potential to occur within or near the project area. None of the reported species were found at the project area during the site survey. Please see Appendix C for a list of the potentially occurring wildlife species, their Life History Accounts and a discussion of their potential to be impacted by the proposed operations.

## **SECTION 4. BIOLOGICAL RESOURCES - IMPACTS & MITIGATION**

### **4.1. Special Status Wildlife Species and Wildlife Habitat**

As discussed above, the database queries reported a total of 21 listed wildlife species that may have some potential to occur within or near the project area. None of the reported species were found at the project area during the site survey. Appendix C contains a list of the potentially occurring wildlife species, their Life History Accounts and a discussion of their potential to be impacted by the proposed operations.



#### **4.2. Survey Results & Resource Status**

No listed wildlife species were observed at the project area. According to the CNDDDB report, there are no known occurrences of any listed wildlife species within 1 mile of the project site.

#### **4.3. Project Impacts**

The project area currently receives a fairly high level of disturbance. Operation of the existing quarry and the high level of rural residential activity on adjacent parcels makes the area unsuitable for any wildlife species that are sensitive to such disturbance. In addition, the habitat on the area of proposed expansion (barren ground, star thistle, and grass and shrub species) is not suitable for any potential listed wildlife species. Thus, the project operations are not likely to impact any listed wildlife species.

#### **4.4. Avoidance & Minimization Efforts**

In order to avoid and minimize impacts to wildlife species the proposed operations should comply with the landowners Mining and Reclamation Plan. The proposed rock extraction rate should remain at similar levels to the current extraction rate and the proposed area of expansion should not exceed the 7.5 acres identified in the plan.

### **SECTION 5. CONCLUSIONS**

The proposed 'Laytonville Rock Mining and Reclamation Plan' project is not likely to impact any known, or potentially occurring, sensitive or special status wildlife species, or any significant wildlife habitat.

The proposed area of expansion will not impact any potentially significant wildlife habitat as it consists of barren ground and grass and shrub species. The majority of the expansion area is covered by star thistle, an invasive and pestilent species which provides very low-quality wildlife habitat.

In addition, the quarry is not proposing to expand their operations to include processing more rock, doing more blasting or drilling. This means that noise and activity levels should remain the same as they have been in previous years.

Given the existing relatively high noise and activity level in the area and the low quality wildlife habitat present on site, the expansion of quarry is not likely to cause any long term or irreversible impacts to the biological resources evaluated.

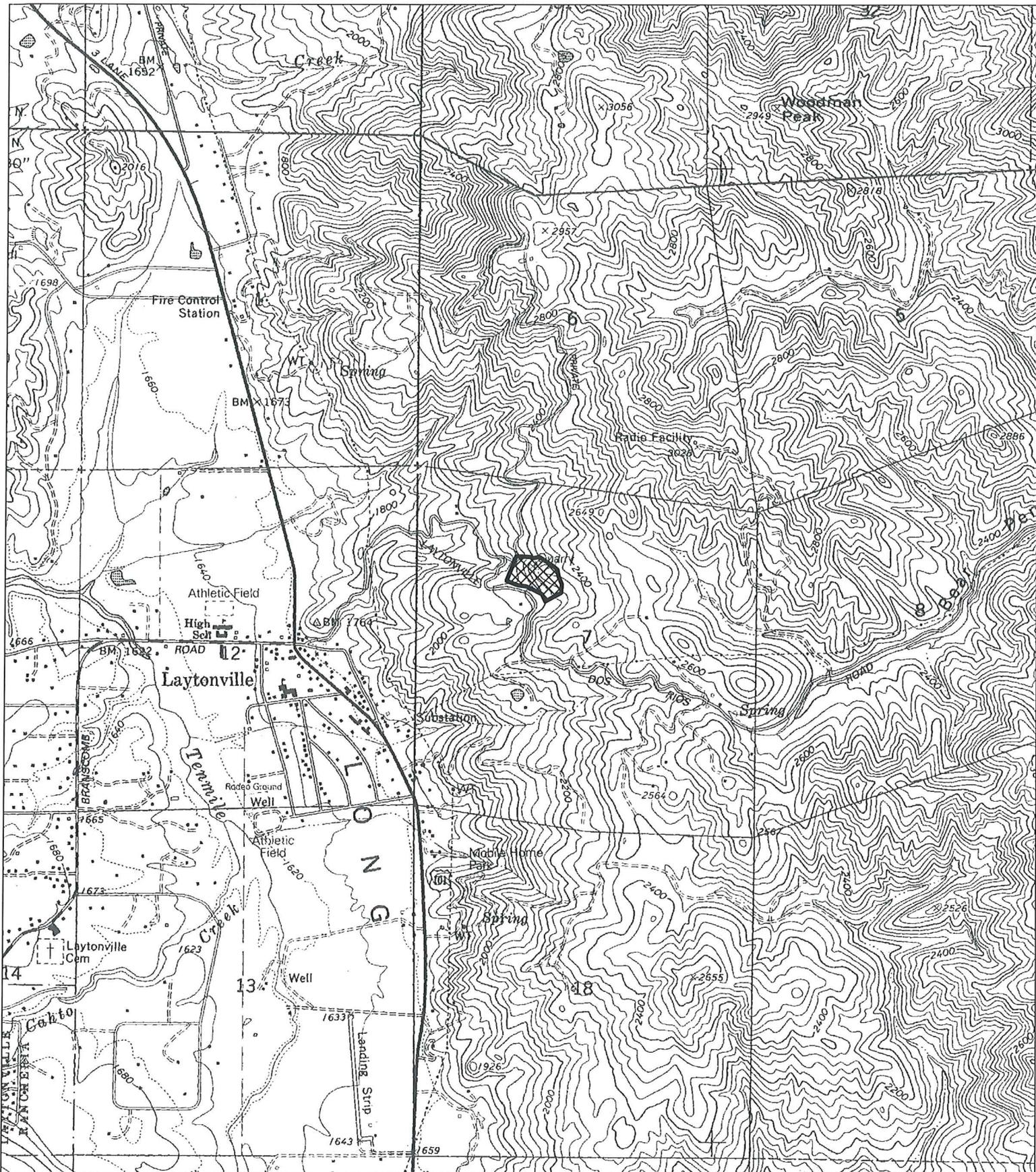


## SECTION 6. REFERENCES

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- Zeiner, D., W. Laudenslayer, Jr., K. Mayer, and M. White, eds. 1990. *California's Wildlife, Volume III, Mammals*. California Department of Fish and Game, The Resources Agency, Sacramento, Ca. 407 pp.

**Appendix A:**

**General Project Location Map  
WHR Habitat Type Map  
Aerial Photograph**



### General Project Location

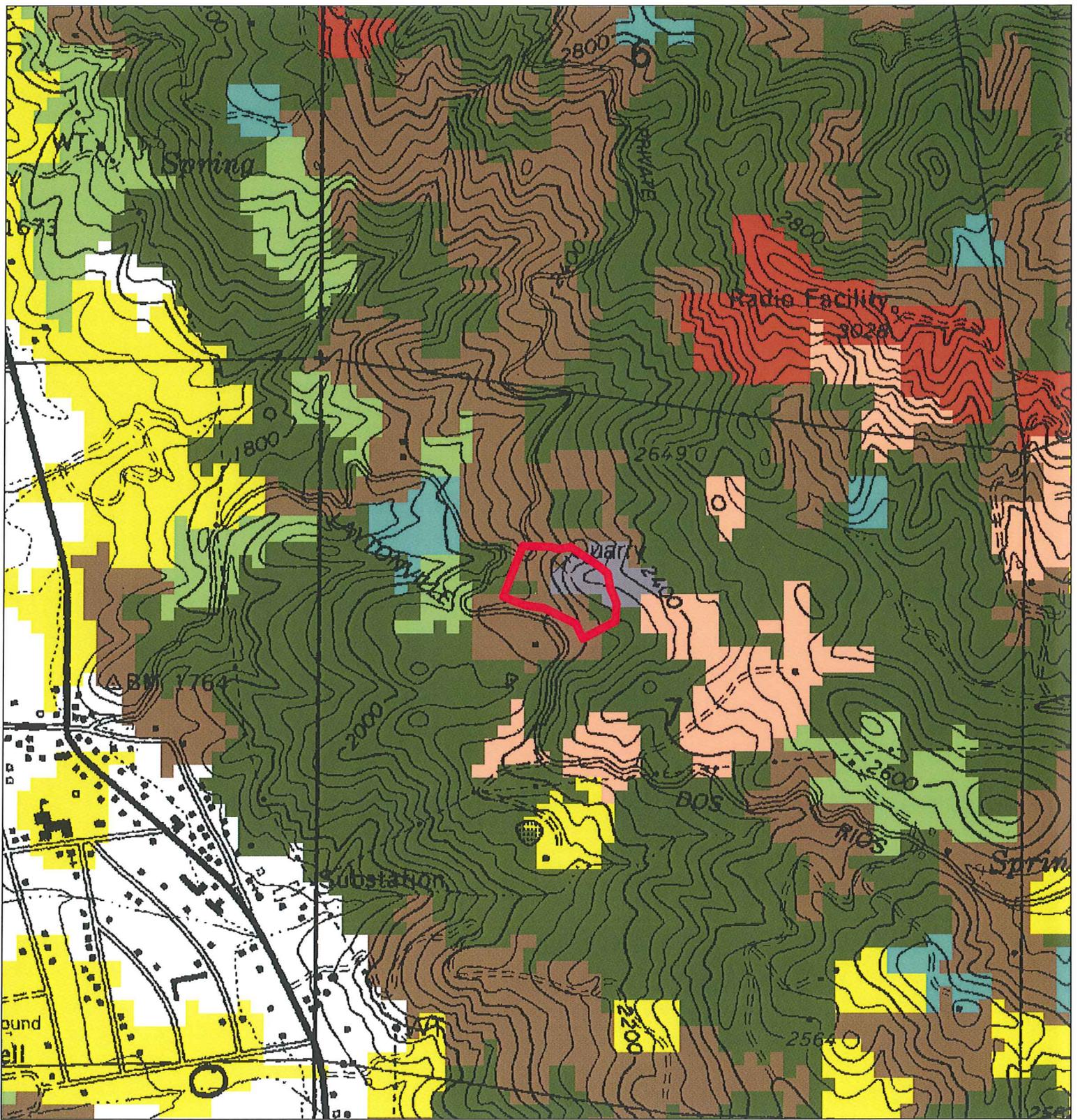
**Laytonville Rock**  
 1136 Dos Rios Road  
 Laytonville, CA



Scale 1:24,000  
 1" = 2,000'



 Approximate Quarry Location



**Project Area WHR Types**

 Approximate Quarry Location

**WHR TYPE**

-  Annual Grassland (AGS)
-  Barren (BAR)
-  Chamise-Redshank Chaparral (CRC)
-  Mixed Chaparral (MCH)
-  Montane Hardwood (MHW)
-  Montane Hardwood-Conifer (MHC)
-  Douglas Fir (DFR)
-  Ponderosa Pine (PPN)

**Laytonville Rock**  
 1136 Dos Rios Road  
 Laytonville, CA



Scale 1:12,000  
 1" = 1,000'





**Aerial Photograph**

**Laytonville Rock**  
1136 Dos Rios Road  
Laytonville, CA



Scale 1:6,000  
1" = 500'



 Approximate Quarry Location

## Appendix B:

### Laytonville Quarry Photographs



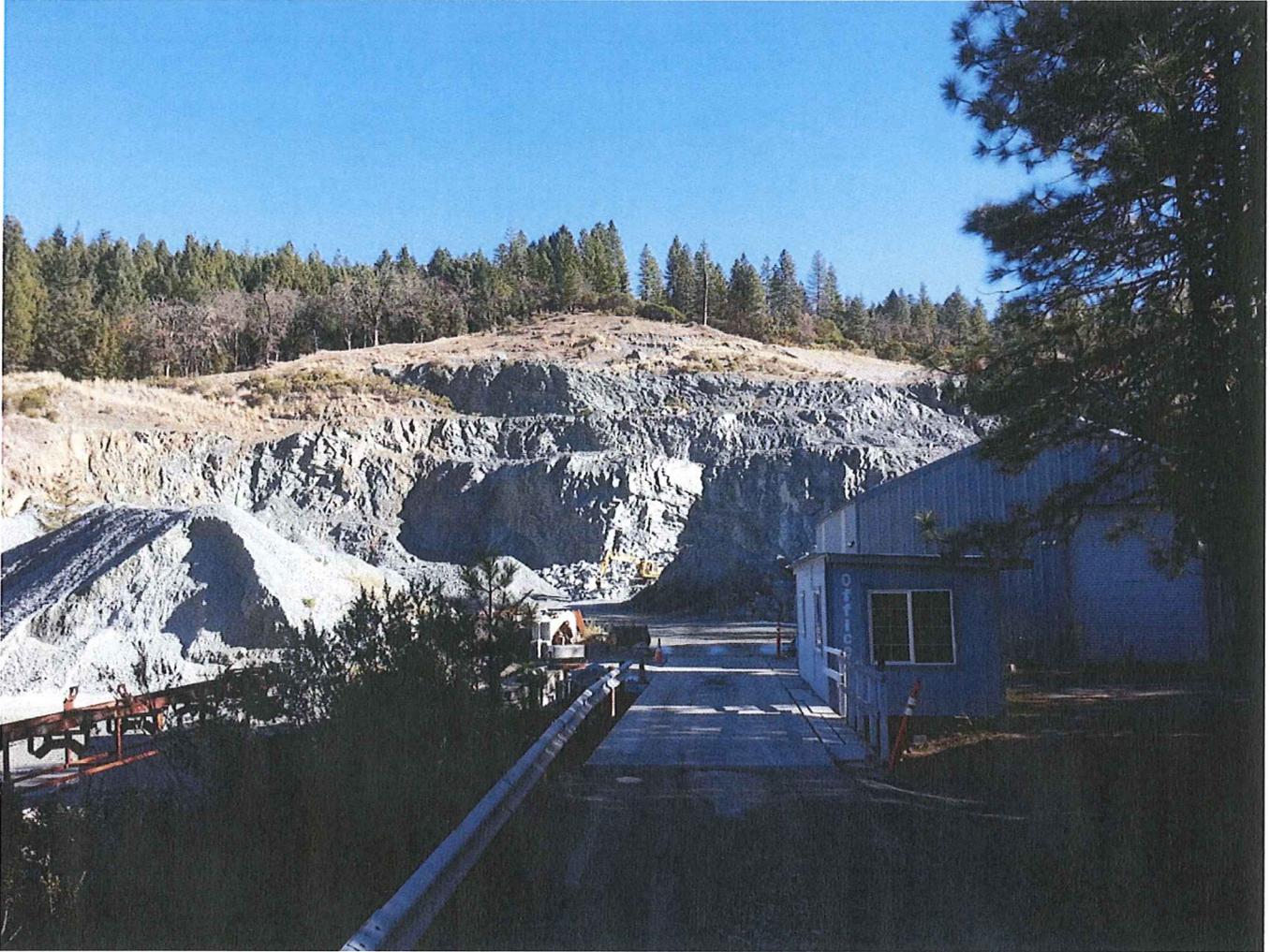
**Photo #1.**

This photograph looks north from an equipment road showing the area of quarrying expansion. Much of this land is barren or covered in grasses and star thistle with a few coyote brush plants and pine seedlings.



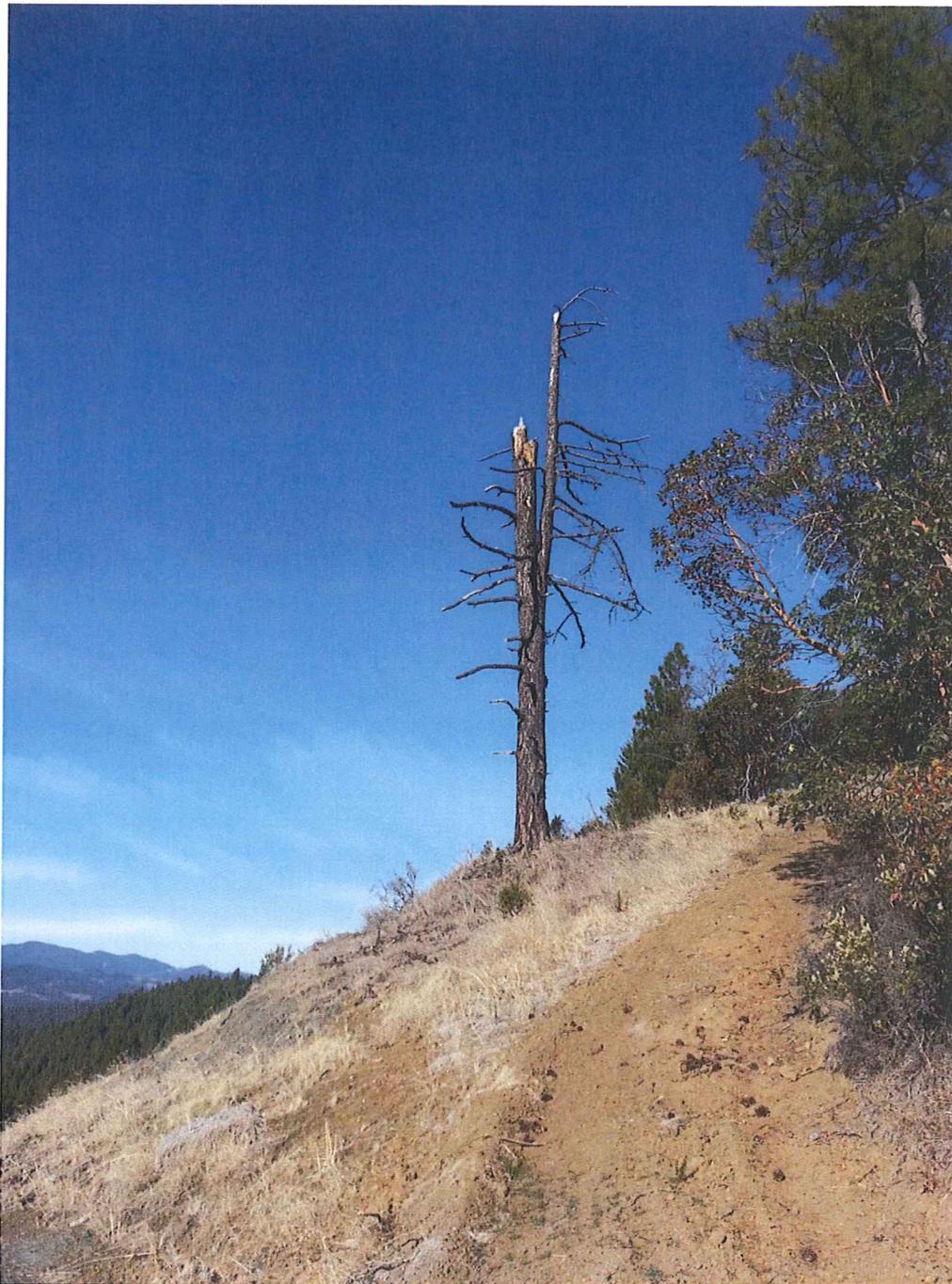
**Photo #2.**

This photograph looks west from the upper area of the proposed quarry expansion. The photo shows the typical quarrying activity. Two settling ponds are visible in the photo.



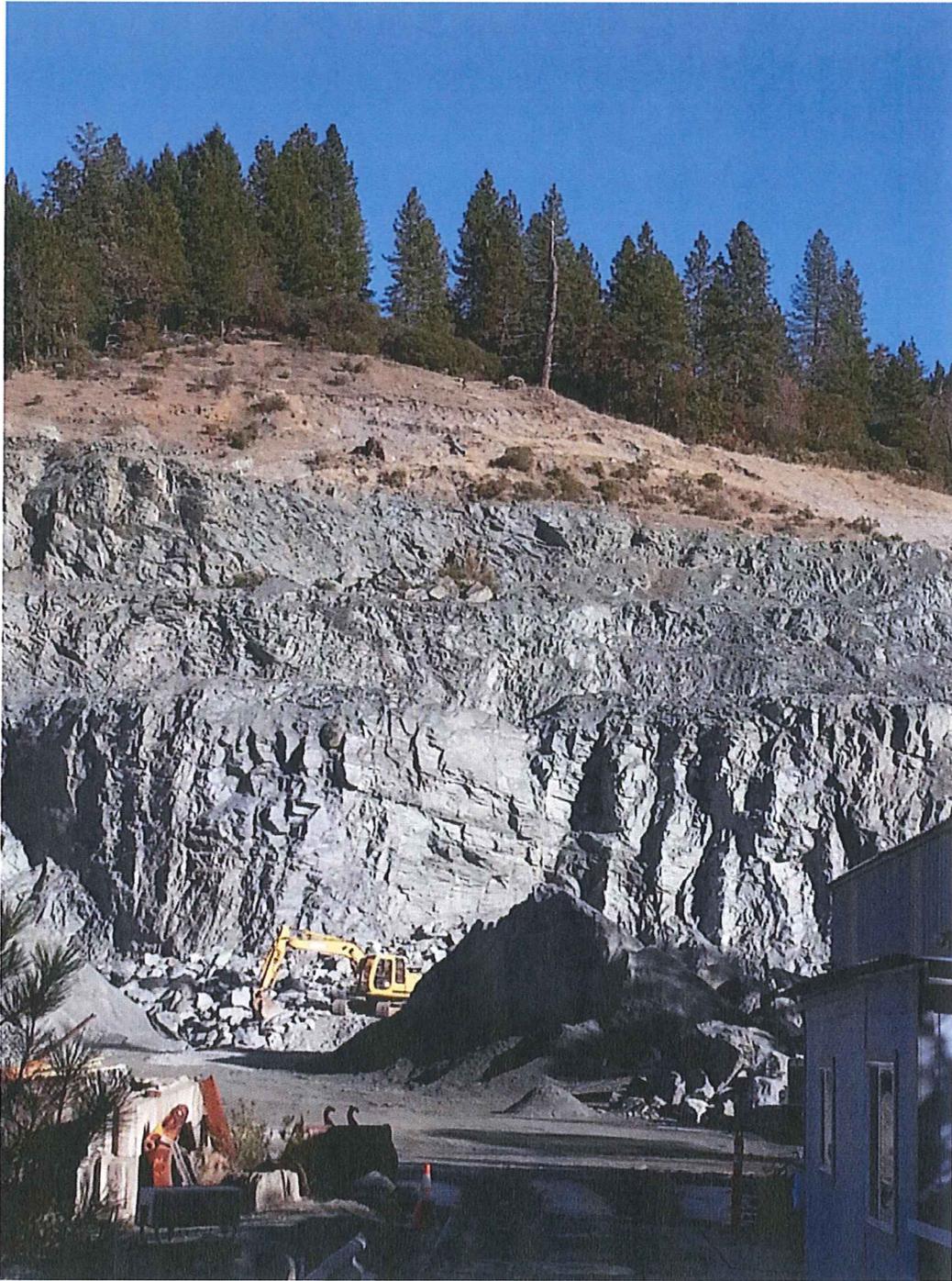
**Photo #3.**

This photograph looks east from the main entrance of the quarry uphill to the active operations.



**Photo #4.**

This photograph shows the ponderosa pine snag at the top of the expansion area.



**Photo #5.**

This photograph looks east from the main entrance of the quarry uphill to the active operations.

## Appendix C:

### Laytonville Quarry Species List

<u>Scientific Name</u>	<u>Common Name</u>	<u>Federal Status</u>	<u>California Status</u>	<u>DFG Status</u>
Accipiter cooperii	Cooper's hawk	None	None	SSC
Accipiter gentilis	Northern goshawk	None	None	SSC
Accipiter striatus	Sharp-shinned hawk	None	None	SSC
Antrozous pallidus	Pallid bat	None	None	SSC
Aquila chrysaetos	Golden Eagle	None	Fully Protected	SSC
Arborimus pomo	Sonoma tree vole	None	None	SSC
Ascaphus truei	Pacific tailed frog	None	None	SSC
Bassariscus astutus	Ringtail	None	Fully Protected	SSC
Circus cyaneus	Northern harrier	None	None	SSC
Corynorhinus townsendii	Townsend's big-eared bat	None	Candidate Threatened	SSC
Dendroica petechia	Yellow Warbler	None	None	SSC
Elanus leucurus	White-tailed kite	None	Fully Protected	SSC
Emys marmorata	Western pond turtle	None	None	SSC
Lasiurus blossevillii	Western red bat	None	None	SSC
Martes americana	Humboldt marten	None	None	SSC
Martes pennanti	Fisher	Candidate	Candidate Threatened	SSC
Progne subis	Purple Martin	None	None	SSC
Rhyacotriton variegatus	Southern torrent salamander	None	None	SSC
Rana boylei	Foothill yellow-legged frog	None	None	SSC
Strix occidentalis	Spotted Owl	Threatened	Candidate Threatened	SSC
Taxidea taxus	American badger	None	None	SSC

## Life History Accounts/Habitat Discussion

### *Accipiter cooperii* Cooper's hawk:

The preferred habitat of Cooper's hawks consists of wooded areas that occur in patches within close proximity to water. Dense stands with moderate crown depths are utilized for nesting. Nesting usually occurs in second-growth conifer stands near streams. Hunting consists of explosive flights from perches or harrier-style low, gliding flight, using trees and terrain for concealment. Cooper's hawks feed mostly on small birds, mammals, reptiles and amphibians. Cover is utilized to approach and attack prey. Breeding occurs March through August with peak activity in May, June and July. Incubation lasts between 35 and 65 days. Annual fledging success is (about) 2 young per pair. The Cooper's hawk is a widely distributed breeding species. Nests in live trees with good cover on a stick platform nest, lined with bark.

While there is forested habitat surrounding the project area containing potentially suitable habitat, no forested habitat suitable for the Cooper's hawk is present on site. If present on adjacent forested habitat, the proposed operations are similar in nature to the current operations and would not have an impact on the adjacent habitat. No Cooper's hawks or signs of Cooper's hawk presence were located during the biological survey and no Cooper's hawks are known to occur in the project vicinity. This project will not have a significant impact on this species or its habitat.

### *Accipiter gentilis* Northern goshawk:

The goshawk preys mainly upon other bird species such as band tailed pigeons, quail, jays, woodpeckers, flickers, robins, etc and occasionally preys upon rabbits, squirrels, and chipmunks. The goshawk is a pursuit predator that does most of its hunting in mature forests. Forest understories hamper goshawk hunting success by lessening the goshawk's ability to visually scan for prey, restricting flight access during prey pursuit, and providing cover for prey to escape. Goshawk nesting habitat is also usually in well developed forest with a sparse understory.

While there is forested habitat surrounding the project area, no forested habitat suitable for goshawks is present on site. The forested habitat surrounding the project area also does not provide suitable habitat given the younger aged timber stands with a dense understory and a high level of human disturbance/activity. No goshawks or signs of goshawk presence were located during the biological survey and no goshawks are known to occur in the project vicinity. This project will not have a significant impact on this species or its habitat.

### *Accipiter striatus* Sharp-shinned hawk:

Sharp-shinned hawks hunt in open areas adjacent to dense stands, feeding on small birds, small mammals, insects, reptiles, and amphibians. Hunting consists of sudden flight from perch sites, although the low, sweeping flight of the harrier is also utilized. Openings at the edges of woodlands, hedgerows, brushy pastures and shorelines are preferred hunting habitats. Sharp-shinned

hawks usually nest within 300' of water. They use dense stands in close proximity to open areas. Forested habitats with openings in close proximity are the preferred nesting and cover environment. Nests are typically built in dense foliage against the trunk or in the crotch of a large branch. The sharp-shinned hawk nest is the most inconspicuous of all *Accipiter* nests. The breeding period is April through August with peak activity in late May and June. The incubation period is approximately 34 days with the young fledged at 60 days. This species is an important predator of small birds. It is the least common breeding *Accipiter* in California.

While there is forested habitat surrounding the project area containing potentially suitable habitat, no forested habitat suitable for the sharp-shinned hawk is present on site. If present on adjacent forested habitat, the proposed operations are similar in nature to the current operations and would not have an impact on the adjacent habitat. No sharp-shinned hawks or signs of sharp-shinned hawk presence were located during the biological survey and no sharp-shinned hawks are known to occur in the project vicinity. This project will not have a significant impact on this species or its habitat.

***Antrozous pallidus* Pallid bat:**

Pallid bats utilize a variety of habitats, including grasslands, shrublands, woodlands, and mixed conifer forests. They roost in rocky outcrops, cliffs, and crevices. Pallid bats forage in open habitats, 1-3mi. from day roost, on a variety of large hard-shelled insects & beetles. They are very sensitive to disturbance of roosting sites. Breeding occurs from October through February, and birthing in May to June.

While the current quarrying operations have resulted in the creation of rocky cliff faces and crevices, the sensitivity of pallid bats to disturbance of roost sites would prevent them from utilizing an active quarry as a suitable roost site. No suitable habitat is known to occur on adjacent properties and pallid bats are not known to occur in the project vicinity. This project will not have a significant impact on this species or its habitat.

***Aquila chrysaetos* Golden Eagle:**

The golden eagle preys primarily on rabbits, jackrabbits, and ground squirrels. Suitable foraging habitat has large openings with little underbrush, free of obstacles, which would hinder this large bird from detecting and then swooping down on its prey. Golden eagles build large platform nests in sturdy trees that overlook expanses of foraging habitat, or on cliff ledges and are fairly visible and usually not difficult to locate. Eagles require open approaches to the nest for both takeoff and landing. Typical nests are located on ridges and other prominent geographical features. Fidelity to the nest site is high. A pair of eagles will use the same nest for many years, adding to it at the beginning of each nesting season. These nests are usually fairly easy to spot and during fieldwork in the area the forest stands were searched for signs of the golden eagle.

While there is forested habitat surrounding the project area, no forested habitat or cliff ledges suitable for golden eagle nesting is present on site. The open/meadow habitat surrounding the project area also does not provide suitable foraging habitat as the

meadows are generally small openings with a high level of human disturbance/activity. No golden eagles or signs of golden eagle presence were located during the biological survey and no golden eagles are known to occur in the project vicinity. This project will not have a significant impact on this species or its habitat.

***Arborimus pomio* Sonoma tree vole:**

The Sonoma tree vole is a California species of special concern. This species occurs mainly in mature Douglas-fir and montane hardwood conifer forests. The presence of this small arboreal mammal is detectable by the large, dome shaped nests made from Douglas-fir needles it constructs in trees. Sonoma tree voles feed on Douglas-fir needles. The vole eats the lamina and discards the central resin duct. These discarded resin ducts accumulate on the ground under occupied nests.

While there is forested habitat surrounding the project area containing potentially suitable habitat, no forested habitat suitable for the Sonoma tree vole is present on site. If present on adjacent forested habitat, the proposed operations are similar in nature to the current operations and would not have an impact on the adjacent habitat. No tree voles or signs of tree vole presence were located during the biological survey and no tree voles are known to occur in the project vicinity. This project will not have a significant impact on this species or its habitat.

***Ascaphus truei* Pacific tailed frog:**

The tailed frog is listed as a Federal Species of Concern and a California Species of Special Concern. Although considered uncommon, experienced observation reveals abundant populations in suitable habitat. Preferred habitat includes montane hardwood-conifer, redwood, Douglas-fir and ponderosa pine forests with perennial streams in steep-walled, densely-vegetated valleys. Adult frogs consume a wide array of prey, taken along stream banks and in the water. Aquatic and terrestrial insects (larval and adult), spiders and snails are all consumed. Tadpoles derive their energy by grazing diatoms on submerged rocks; small quantities of filamentous algae are also consumed. Conifer pollen is consumed in large quantities when available. Cover is sought under submerged rocks and logs in the stream, or under similar objects close to the stream. Tadpoles require cool stream temperatures (15<sup>o</sup>C or less). Tadpoles require rocks around 2½ inches in diameter to which they attach themselves via a large oral sucker; turbulent water is preferred to smooth, swiftly flowing water. The breeding period typically occurs in the early fall with the eggs being laid during the following summer. Eggs hatch in about 1 month with aquatic larvae requiring 2 to 3 years to fully transform. Metamorphosis usually takes place in the fall.

While there are permanent water sources in the vicinity of the project area, no suitable habitat for tailed frogs is present on site or in the project vicinity. The small, shallow settling ponds on the project area are seasonal in nature and do not provide suitable habitat for tailed frogs. No tailed frogs or signs of tailed frog presence were located during the biological survey. This project will not have a significant impact on this species or its habitat.

***Bassariscus astutus* Ringtail:**

The ringtail is a common to uncommon resident, widely distributed. They utilize a mixture of forest and shrubland habitats, with rocky areas and riparian habitats. Hollow trees, logs, snags, and cavities in rocky areas used for cover. They feed on rodents, woodrat, mice & rabbits. The peak breeding season is February through June.

While there is suitable habitat in the vicinity of the project area, suitable habitat on the project area is very limited. While there is a conifer snag and rocky areas on the project site, the activity level on site and the human activity level on adjacent properties including household pets roaming free would result in the seemingly suitable habitat being not suitable for use by ringtails. This project will not have a significant impact on this species or its habitat.

***Circus cyaneus* Northern harrier:**

The northern harrier is listed as a California Species of Special Concern. Voles and other small mammals, birds, frogs, small reptiles, crustaceans and insects are the primary food sources; fish is rarely consumed. They frequent meadows, grasslands, open rangelands, desert sinks and fresh and salt water emergent wetlands. They do not commonly occur in wooded areas. Northern harriers typically hunt by making low, sweeping flights a short distance above the ground (3 to 30 feet). Nests are built in shrubby vegetation, typically at marsh edge on a mound of sticks. They mostly nest in emergent wetlands or along rivers and lakes, but will also nest near grain fields, grasslands, or on sagebrush flats. The harrier breeds April to September with peak activity in June and July. The nesting period lasts about 53 days. Clutch-size average 5 eggs. The California population has declined in recent years as a result of wetland drainage, grassland conversion to agriculture and burning and plowing of nesting areas during critical stages of breeding.

As harriers typically do not utilize wooded areas the suitable habitat within and adjacent to the project area is very limited. The open/meadow habitat on and surrounding the project area does not provide suitable foraging habitat as the meadows are generally small openings with a high level of human disturbance/activity. No northern harriers or signs of northern harrier presence were located during the biological survey and no northern harriers are known to occur in the project vicinity. This project will not have a significant impact on this species or its habitat.

***Corynorhinus townsendii* Townsend's big-eared bat:**

Mesic habitats, with caves, mines, tunnels or buildings are used for roosting by Townsend's big-eared bats. They glean small moths from brush or trees along habitat edges. They may use separate sites for night, day, hibernation, or maternity roosts. They are very sensitive to disturbance of roosting sites, which are the most critical limiting factor. Breeding occurs from November through February, and birthing in May to June.

While there are some old buildings in the vicinity of the project area, the sensitivity of Townsend's big-eared bats to disturbance of roost sites would prevent them from utilizing an active quarry as a suitable roost site. Townsend's big-eared bats are not known to occur in the project vicinity. This project will not have a significant impact on this species or its habitat.

***Dendroica petechia* Yellow Warbler:**

The yellow warbler is an uncommon to common migrant in northern California. It frequents open to medium-density woodlands and forests with a heavy brush understory (during the breeding period). During migration, a multitude of habitats are utilized, including sparse to dense woodlands and forests. Habitat most conducive to the yellow warbler during the breeding season is found in deciduous riparian areas with cottonwoods, alder, willow and other miscellaneous small trees and shrubs. Nests consist of an open cup placed approximately 2 to 16 feet above the ground in a deciduous sapling or shrub. Tall trees adjacent to the nest are used for singing and foraging. The breeding period is from mid-April into early August with peak activity occurring in June. The incubation period is 11 days with the young being fledged between days 9-12. Brood parasitism by brown-headed cowbirds plays a significant role in yellow warbler population declines.

While there is suitable habitat in the vicinity of the project area, suitable habitat on the project area is very limited. The deciduous riparian areas that are most conducive to yellow warbler breeding are not present on the project area. No yellow warblers or signs of yellow warbler presence were located during the biological survey and no yellow warblers are known to occur in the project vicinity. This project will not have a significant impact on this species or its habitat.

***Elanus leucurus* White-tailed kite:**

White-tailed kite foraging occurs in undisturbed, open grasslands, meadows, farmlands and emergent wetlands. Voles and other small diurnal mammals constitute the primary diet; birds, reptiles, amphibians and insects are also taken. White-tailed kites hunt by soaring, gliding and hovering under 100 feet above the ground and then slowly descending on their prey. Cover is sought in dense canopies of various woody species. Preferred nest locations are in dense oaks, willows or other tree stands. Nests consist of loosely piled sticks and twigs lined with grass, straw or roots, located near open foraging grounds. The breeding period is from February through October, with peak activity from May to August. The incubation period is approximately 28 days. Young fledge in 35 to 40 days.

While there is suitable nesting habitat (dense oaks, willows or other tree stands) in the vicinity of the project area, there is none on the project area. The deciduous riparian areas that are most conducive to yellow warbler breeding are not present on the project area. If present on adjacent forested habitat, the proposed operations are similar in nature to the current operations and would not have an impact on the adjacent habitat. No white-tailed kites or signs of white-tailed kite presence were located during the biological survey and no white-tailed kites are known to occur in the project vicinity. This project will not have a significant impact on this species or its habitat.

***Emys marmorata* Western pond turtle:**

The western pond turtle is a California and Federal Species of Special Concern. This species utilizes a variety of habitats, with nearly permanent water. They feed on aquatic plants, invertebrates, fish, frogs. They require basking sites (partially submerged logs, rocks, floating veg.). Oviposition occurs along large slow-moving streams; eggs are deposited in sandy banks or along foothill streams; nest sites may be uphill in sandy to hard soils. Soils need fairly high humidity. In colder areas, western pond turtles hibernate underwater in mud. Nesting sites typically have compact soil, with significant amounts of clay or silt. Nests are generally located on south, southwest or southeast facing exposures, with slopes of 25 degrees or less. Surrounding vegetation tends to be short grasses or forbs. Nesting may occur adjacent to or in openings of forest habitat. Peak breeding season is April through June. Pond turtles are known to occur in small ponds and slow moving streams and rivers on the north coast.

While there are permanent water sources in the vicinity of the project area, no suitable habitat for western pond turtles is present on site or in the project vicinity. The small, shallow settling ponds on the project area are seasonal in nature and do not provide suitable habitat for western pond turtles. No western pond turtles or signs of western pond turtle presence were located during the biological survey. This project will not have a significant impact on this species or its habitat.

***Lasius blossevillii* Western red bat:**

The red bat is locally common in some areas of California, occurring from Shasta Co. to the Mexican border, west of the Sierra Nevada/Cascade crest and deserts. The winter range includes western lowlands and coastal regions south of San Francisco Bay. There is migration between summer and winter ranges, and migrants may be found outside the normal range. They feed over a wide variety of habitats including grasslands, shrublands, open woodlands and forests, and croplands. Red bats roost primarily in trees, less often in shrubs. Roost sites often are in edge habitats adjacent to streams, fields, or urban areas. Preferred roost sites are protected from above, open below, and located above dark ground-cover.

While there is potentially suitable habitat surrounding the project area, habitat on the project site is very limited. If present on adjacent forested habitat, the proposed operations are similar in nature to the current operations and would not have an impact on the adjacent habitat. Western red bats are not known to occur in the project vicinity. This project will not have a significant impact on this species or its habitat.

***Martes americana humboldtensis* Humboldt marten:**

The Humboldt marten is listed by the California Department of Fish and Game as a California Species of Special Concern and is endemic to coastal forests of northwestern California with a historical range described as "narrow northwest humid coast strip, chiefly within the redwood belt" from the Oregon border to northern Sonoma County (Slauson 2003). Martens require a variety of different-aged stands, particularly old-growth conifers and snags, which provide abundant cavities for denning and nesting. Tend to

travel along ridgetops, and rarely move across large areas devoid of canopy cover. Small clearings, meadows, and riparian areas provide foraging habitats, particularly during snow-free periods.

While there is forested habitat surrounding the project area, no forested habitat suitable for marten is present on site. The project area is not within the redwood belt and the forested habitat surrounding the site does not contain old growth or structural elements suitable for marten habitat. No marten or signs of marten presence were located during the biological survey and no marten are known to occur in the project vicinity. This project will not have a significant impact on this species or its habitat.

#### ***Martes pennanti* Fisher:**

The Pacific Fisher is listed by the California Department of Fish and Wildlife as a California Species of Special Concern and is a candidate species for listing as threatened or endangered. Take of the fisher is prohibited.

The Fisher is a large member of the weasel family occurring in Canada and the U.S. including portions of the Pacific Northwest into northern California. Historical distribution included coastal northwestern California down to Sonoma County, east to the Klamath Mountains and Cascade Range, and south through the entire Sierra Nevada. The plan area is located within the current Pacific fisher range (Quick Reference: Range of *Martes pennanti*, The Pacific fisher in California, Coastal California Map, CDF&FP, August 2009). The fisher is known to inhabit intermediate to large-tree stages of coniferous forests and deciduous-riparian habitats with a high percent canopy closure. Size class 4 stands (11 to 24 inches in dbh) with canopy closure class D (61-100%) occupied the highest proportion of home ranges. Structural elements used by fisher include: 1) live trees with cavities, broken tops or other similar features; 2) snags, particularly those with cavities or broken tops; 3) platforms formed by other nesting animals or witches broom associated with mistletoe; 4) existing logs either individual or in aggregations of coarse woody material, stumps etc.; and, 5) ground cavities. Other stand characteristics selected by fisher include high levels of canopy cover (>60%) and relative greater height and average diameter of the stand in relationship to the surrounding areas. Natal den trees are large enough to accommodate a cavity large enough for an adult female and kits. Potential den structures for inland Forest Districts include: 1) hardwoods with visible indicators of cavity formation (dead or alive)  $\geq 15$  inches dbh; 2) a conifer snag  $\geq 22$  inches dbh; or 3) a live green cull or green wildlife conifer  $\geq 22$  inches dbh. A live green cull is a conifer tree with less than 25% merchantable wood by volume. A green wildlife conifer is considered a potential den or resting structure when it has mistletoe brooms, or large rest branches, and visible signs of fungus or other indications of cavity formation or visible cavity openings. The critical period for fishers is March 1 through July 31, where reproduction and caring for young occurs and when the highest potential for disturbance exists. The natal denning period is March 1 – May 15. The maternal denning period is May 16 – July 31.

While there is forested habitat surrounding the project area, no forested habitat suitable for fisher is present on site. While the CNDDDB indicates that there may be suitable habitat within 1.5 miles of the project site, the forested habitat surrounding the project area does not provide suitable habitat given the younger aged timber stands with a lack of structural elements and a high level of

human disturbance/activity. No fisher or signs of fisher presence were located during the biological survey. This project will not have a significant impact on this species or its habitat.

***Progne subis* Purple Martin:**

This species is a rare, local summer resident within northern California. The preferred habitat of the purple martin during the breeding season is old-growth, multi-layered open forests and woodlands with snags. During migration a number of different habitats are used. The primary food source is insects, hawked in flight. Nests are built in old woodpecker cavities, or less often in nest boxes. April through August constitutes the breeding season, with peak activity occurring in June. Young leave the nest 24 to 31 days following hatching. This species has declined markedly in numbers due to destruction of riparian habitat, removal of snags and competition for nest cavities from house sparrows and European starlings.

There are no old-growth, multi-layered forests on or adjacent to the project area. While there is one snag present on the project area, the open and exposed nature of the tree immediately adjacent to an active quarrying operation would make it unsuitable for purple martin nesting. No purple martins or signs of purple martin presence were located during the biological survey. This project will not have a significant impact on this species or its habitat.

***Rhyacotriton variegatus* Southern torrent salamander:**

The southern torrent salamander is listed as a Federal Species of Concern and a California Species of Special Concern. Torrent salamanders occur in small streams, springs and seeps in mixed conifer-hardwood forests with a closed canopy. Ideal habitat conditions exist in small, cold perennial streams with water filtering through moss-covered gravel. Preferred water temperatures range between 8 and 12°C. Large streams are avoided. Surface flow is not critical as long as there is perennial subsurface flow. The torrent salamander can live deep in the gravel as long as the interstitial pores remain free of silt. In harvested areas this species tends to occur in steeper gradient streams (10% or more) where the faster flowing water flushes sediment through and out of the pores. In unharvested forests, lower gradient streams are used where silt is not a problem. The torrent salamander has an aquatic larval and semi-aquatic adult phase. The aquatic larval stage lasts 3 to 3<sup>1</sup>/<sub>2</sub> years while the semi-aquatic adult stage spans a period of 1 to 2<sup>1</sup>/<sub>2</sub>. An adult is fully mature in 4 to 5<sup>1</sup>/<sub>2</sub> years. The reproduction cycle of this salamander is not well understood. It is believed that egg laying occurs in late spring and early summer. Eggs are laid singly in cracks in the rock or between gravel where cold water continually flows. The principle prey of the torrent salamander are small aquatic and semi-aquatic invertebrates, notably insects and other arthropods. Adult salamanders forage both in water and along stream margins, whereas larvae feed exclusively in the water.

While there are permanent water sources in the vicinity of the project area, no suitable habitat for southern torrent salamanders is present on site or in the project vicinity. The small, shallow settling ponds on the project area are seasonal in nature and do not provide suitable habitat for southern torrent salamanders. No southern torrent salamanders or signs of southern torrent salamander presence were located during the biological survey. This project will not have a significant impact on this species or its habitat.

***Rana boylei* Foothill yellow-legged frog:**

The yellow-legged frog is a species of special concern within California. They inhabit partially shaded, permanent rocky streams at low to moderate elevations, in areas of chaparral, open woodland, and forest. Yellow-legged frogs feed on aquatic & terrestrial insects & invertebrates. Breeding occurs in pools of streams. Eggs are usually attached to gravel or rocks at pool or stream edges. Peak breeding season is March through July.

While there are permanent water sources in the vicinity of the project area, no suitable habitat for yellow-legged frogs is present on site. The small, shallow settling ponds on the project area are seasonal in nature and do not provide suitable habitat for yellow-legged frogs. No yellow-legged frogs or signs of yellow-legged frog presence were located during the biological survey. This project will not have a significant impact on this species or its habitat.

***Strix occidentalis* Spotted owl:**

The project area is within the range of the northern spotted owl, listed as a threatened species by the U.S. Fish and Wildlife Service and a Board of Forestry Sensitive Species. The northern spotted owl is an uncommon permanent resident in northern California. It typically inhabits dense, mature, multi-layered mixed conifer, redwood and Douglas-fir forests. A water source in close proximity to the nest site and roost site are believed to be required. The primary prey of the spotted owl is the woodrat, although flying squirrels, mice, voles and rabbits are also taken. Hunting is usually done by swooping onto prey from a perch or pouncing on prey in vegetation or on the ground. Nesting usually occurs in tree or snag cavities or in broken tops of large trees. Abandoned raven or raptor nests are also utilized. Breeding occurs from early March through June with peak activity in April and May. A pair may use the same breeding site for 5 to 10 years, although they may not breed every year. The spotted owl is sensitive to habitat destruction and fragmentation.

While there is forested habitat surrounding the project area, no forested habitat suitable for spotted owls is present on site. The forested habitat surrounding the project area also does not provide suitable habitat given the younger aged timber stands with a dense understory and a high level of human disturbance/activity. No spotted owls or signs of spotted owl presence were located during the biological survey. The closest known spotted owl territory is located approximately 3 miles to the north of the project area. This project will not have a significant impact on this species or its habitat.

***Taxidea taxus* American badger:**

The badger is listed as a California Species of Special Concern. The badger is an uncommon resident within most of the state. It is most abundant in drier open stages of most shrub, forest and herbaceous habitats, with friable soils. Fossorial species such as rats, mice, chipmunks and especially ground squirrels and pocket gophers are consumed. Secondary dietary sources include reptiles,

insects, earthworms, eggs, birds, and carrion. Cover is sought in burrows dug in friable soil. Old burrows are often re-used, although it is typical for a new burrow to be dug every night during summer months. Young are born in burrows in March and April. The gestation period ranges between 183 and 265 days. Highly specialized fossorial mustelids, badgers are helpful in controlling small mammal populations. Unlike many other species, the badger is tolerant to disturbance by humans.

The extremely rocky soils on the project site make them unsuitable for use by badgers. Potentially suitable habitat is available in the vicinity of the project site and should badgers be present on adjacent areas, their tolerance of human disturbance would result in no significant impacts to this species or its habitat.

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Botanical Survey  
Of the  
Laytonville Quarry  
Laytonville, Mendocino County, California

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## **Section 1- Introduction**

This report addresses the impact that quarry expansion will have on rare or endangered plants within the project area. It is recognized that continued extraction of rock and site maintenance have the potential to impact sensitive plants. The purpose of this study is to determine if rare or endangered plants or plant communities occur within the vicinity of the Laytonville Quarry project area, and, if so recommend alternative strategies to protect naturally occurring rare plant populations as well as species and plant communities considered locally rare.

The 13.68 acre site is located in the inner North Coast Range in the hills east of Laytonville at 1136 Dos Rios Road, Laytonville, Mendocino County, California. It is an active quarry site. (Figure 1.) The site plan (Figure 2.) shows the limits of the project area.

## **Section 2 - CEQA Requirements Regarding Rare Plants**

The California Department of Fish and Wildlife (CDFW) has jurisdiction over the conservation, protection and management of native plants and habitat necessary to maintain biologically sustainable populations. CDFW as the trustee agency under The California Environmental Quality Act (CEQA) makes protocols regarding potential negative impacts to those resources held in trust for the people of California.

Botanical surveys provide information used to determine the potential environmental effects of proposed projects on all special status plants and natural communities as required by law [ie. CEQA, the California Endangered Species Act (CESA), and the federal Endangered Species Act (ESA)]. Special status plants include all plant species that are protected under ESA, CESA and the California Native Plant Protection Act and plants that meet the definition of rare and endangered under CEQA. CEQA provides protection not only for State-listed plant species, but also for any species, which can be shown to meet the criteria for State listing. CDFW recognizes that California Rare Plant Rank (CRPR) 1A, formerly CNPS List 1A (presumed extinct in California), 1B (Rare or endangered in California and elsewhere), and 2 (rare or endangered in California, more common elsewhere) of the California Native Plant Society (CNPS) *Inventory of Rare and Endangered Plants* (CNPS 2001) consist of plants that, in a majority of cases, would qualify for listing, and it is mandatory that they be addressed in environmental documents relating to construction plans.

In addition, although few of the plants from CRPR 3 (formerly CNPS List 3) (plants about which more information is needed, a review list) and 4 (plants of limited distribution, a watch list) are eligible for state listing, many of them are significant locally and therefore the CDFW recommends, but does not require, that Rank 3 and 4 plants be evaluated for consideration in preparation of CEQA documents (CNPS 2001). However, these species are more likely to become rarer over time from habitat loss and the

associated impacts of climate, so it is important to consider these plants during preliminary investigations and field surveys.

Additionally CDFW and the CNPS considers any plant or community with local as well as ecological and biological significance to be worthy of protection and warrant consideration as a special status plant species or community. A locally significant species is one that is not rare from a statewide perspective but is rare or uncommon in a local context such as within a county or region or is so designated by local or regional plans or policies.

The Oak Woodlands Conservation Act (SB1334) “provides funding for the conservation and protection of California’s oak woodlands”. In an effort to help planners implement the Oak Woodlands Conservation Act, Guisti et al (2008) developed guidelines for determining the levels of impact and mitigation options. In these guidelines it states, “The designation *Intact* refers mainly to being free from destructive land use practices that inhibit or limit oak woodland to naturally sustain itself and associated flora and fauna. If a site is classified as *Intact*, any proposed project that would substantially change its conditions may be determined to have significant impacts.”

## **Section 3 – Methods**

### **Preliminary Scoping**

An extensive presurvey investigation was conducted to provide data on the rare or endangered plant species and their habitat that could potentially occur in the Laytonville Quarry project area. This investigation consisted of two stages.

An initial query was conducted from the most recent CNPS Inventory of Rare and Endangered Plants, the On-line 8th Edition, and the California Natural Diversity Database (CNDDDB) for Mendocino County (Appendix A). From this query a list was developed of all rare plants from California Rare Plant Rank (formerly CNPS List) 1A, 1B, 2, 3, and 4 and any additional species included in the CNDDDB for this area with current threat rankings for each taxon. Additionally, a sub-query was conducted for the 9 USGS quads surrounding the project area. These species appear in bold in Appendix A which graphically illustrates the rare plant richness that has been documented for this area. Vegetation types considered rare or significant were investigated (CNDDDB; Sawyer et al 2009). Although all species encountered during the field surveys were identified, special consideration in the design of the survey was given to soils and habitats that reflected the preferences of these rare species that are known to occur within the 9-quad search area.

Habitat and vegetation types were identified in A Manual of California Vegetation (Sawyer et al, 2009). Sensitive species habitat information was investigated in the Inventory of Rare and Endangered Plants of California, the CNPS on-line 8<sup>th</sup> edition of the Inventory, the Consortium of California Herbaria and CNDDDB. Plant morphology and current taxonomic status of rare species were investigated from the Jepson Manual, second edition (Baldwin et al 2012), the online 2<sup>nd</sup> edition treatments for The Jepson Manual, Sedges of the Pacific Northwest (Wilson et al, 2008) and images from Calphoto.

It is essential that searches for rare plants are conducted during known blooming and fruiting times so that accurate determinations can be made. In the case of herbaceous flowering plants, that search should take place during the blooming window when all of the material necessary for identification is present. Plant phenology for each target species determined the timing and frequency of surveys. Field surveys were scheduled to coincide with the window of bloom times for potential rare plants, roughly April through September.

### **Survey Methodology**

Plant surveys were conducted over two years, 2012 and 2013, capturing an entire blooming window. These surveys took place on Sept. 6, 2012 and April 26 and June 21 2013. The survey was floristic in nature and took into account all vascular plant species encountered. The entire project area was covered on foot as thoroughly as possible so that all representative habitat types, topographic features and aspects were investigated. Material that could not be identified in the field was collected so that a determination could be made at a latter time using a dissecting scope and reference materials. A complete list of plant species was recorded along with habitat and plant community characteristics.

On May 2, 2013 a field survey was conducted to identify the species of each oak (*Quercus* spp.) that had potential to be impacted by this project. All oaks were identified, and then mapped with a Garmin 60CSx GPS unit. Each tree was measured and dbh (diameter at breast height) was recorded for each specimen. This information was supplied to Rau and Associates, Inc., where it was developed into a map providing locations of each of the native oaks and their relationship to the grading boundary (Figure 2.). Impacts were determined by identifying all trees inside the grading boundary and within 40 feet of the outside grading boundary to account for variation up to 15 feet in GPS data accuracy and protection of oak root zones. Actual counts of trees within 20' of the final limits of the quarry should be accomplished at final reclamation to determine the required replacement quantity for oaks.

## **Section 4 - Site Description**

The project site is located on the Laytonville 7.5 minute topographic quadrangle, within township 21N and Range 14W section 7. It is bounded by Dos Rios Road to the south and a private access road to the west. The center of the study area is at approximately N39 41.459 W123 28.267 (UTM 10S 0459605 4393566).

### **Topography and Hydrology**

The project area is situated on a west-facing slope and surrounds the existing Laytonville Quarry.

Three sediment ponds occur on the site. These ponds were constructed as industrial settling ponds to capture sediment from quarry operations in the form of storm water runoff and allow particulate matter to settle. These ponds are regularly maintained by

removal of sediment and vegetation. The first pond is located on the north side of the quarry on the quarry floor. The second pond is less than half the size of the first and is located approximately 120 feet to the south of the first on the quarry floor. The third pond is located below the quarry floor on the west side of the project area and is slightly larger than the second. Two intermittent streams drain the project area. One occurs on the south side draining the southern edge of the project area along a narrow channel behind the structures that make up the office and shop area. This ditch drains into a pipe that delivers water into the third pond. Overflow from pond #1 drains by pipe into the pond #2 that is drained by pipe into catchment pond #3. The locations of the streams and ponds are shown on the Existing Conditions Plan of the Mining and Reclamation Plan. Water from the third pond overflows into a narrow seasonal stream channel that flows via culvert under Dos Rios Road to the northwest. This intermittent stream ultimately drains into Ten Mile Creek that flows northward and westward until it discharges into the South Fork of the Eel River which discharges into the Pacific Ocean. A small isolated wetland seep was observed outside of the impact area within the survey area on the east side of the quarry perched on a terrace above the quarry operations.

## Soils

The area consists of a single soil type, Hopland-Sanhedrin-Kekawaka complex, formed from sandstone and siltstone. Soils in this complex are well drained and demonstrate a depth to water table of greater than 80 inches. (USDA Web Soil Survey)

## Section 5 - Vegetation

The vegetation within the project area is comprised of woodland, non-native grassland, scrubland and emergent wetland vegetation and is identified by the following alliances described in *A Manual of California Vegetation* (Sawyer, Keeler-Wolf, Evans 2009).

***Pinus ponderosa-Pseudotsuga menziesii Forest Alliance***- Ponderosa pine – Douglas-fir forest.

This alliance is comprised of a plant community where ponderosa pine and Douglas fir comprise greater than 30 percent relative cover in the canopy. While the shrub and herbaceous layers are sparse the canopy is a diverse hardwood mix. **Trees** within the canopy include black oak (*Quercus kelloggii*), valley oak (*Quercus lobata*), Oregon oak (*Quercus garryana*), canyon live oak (*Quercus chrysolepis*), and madrone (*Arbutus menziesii*) and understory **shrubs** include poison oak (*Toxicodendron diversilobum*), creeping snowberry (*Symphoricarpos mollis*), toyon (*Heteromeles, arbutifolius*) and canyon live oak in shrub form. Occasional wood **fern** (*Dryopteris arguta*) are found in the understory while **native grass species** California fescue (*Festuca californica*) and blue wildrye (*Elymus glaucus ssp. glaucus*) are generally more common on the edges of the woodland.

This alliance was observed on the northeastern side of the project area and is the dominant alliance surrounding the project area.

### ***Arctostaphylos manzanita* Provisional Shrubland Alliance**

Just west of the woodland on the east side of the study area is a dense shrubland dominated by common manzanita. This community may be a remnant of prior disturbance. Other shrubs in this stand include toyon and coyote brush (*Baccharis pilularis*). Coyote brush grows abundantly in the area and is prospering in many parts of the quarry that display historical disturbance.

On the west side of the active quarry on a west-facing slope this type of shrubland occurs as well with a larger proportion of coyote brush represented in the plant community and supports occasional ponderosa pine and Douglas-fir saplings. This plant community is also likely one resulting from prior disturbance and may represent a successional stage returning to ponderosa pine/ Douglas-fir forest.

### ***Phalaris aquatica* Semi-Natural Herbaceous Stands- Harding grass swards**

This alliance is comprised of an herbaceous plant community where Harding grass comprises greater than 20 percent absolute cover as the dominant grass in grasslands (Sawyer, et al. 2009).

Just east of the active quarry and west of the woodland/shrubland described above lies a disturbed area where Harding grass is the dominant cover. Coyote brush occurs as a scattered emergent **shrub**. **Non-native annual grasses** within the grassland include slender wild oat (*Avena barbata*), medusahead (*Elymus caput-medusae*), *Rytidosperma pencillatum*, soft chess (*Bromus hordeaceus*) foxtail chess (*Bromus madritensis*) and hedgehog dogtail (*Cynosurus echinatus*). Where more bare ground is present a suite of **native forbes** that include Fitch's spikeweed (*Centromadia fitchii*), slender madia (*Madia gracilis*), Spanish lotus (*Acmispon americana*) and occasional California poppy (*Eschscholtzia californica*) and grand mountain dandelion (*Agoseris grandiflora* var. *grandiflora*) occurs. **Non-native forbes** include yellow star-thistle (*Centaurea solstitialis*), rose clover (*Trifolium hirtum*) little hop clover (*Trifolium dubium*) and sour clover (*Melilotus indicus*).

### ***Typha (angustifolia, domingensis, latifolia)* Herbaceous Alliance – Cattail marshes**

This alliance occurs in semi-permanently flooded freshwater marshes (Sawyer, et al. 2009). Membership in this alliance calls for greater than 50 percent relative cover of a combination or a single one of these species in the herbaceous layer. This plant community occurs in the first, second and third catchment basins described above. Because these ponds are regularly maintained cattail is periodically removed and as a result generally represents less than 50 percent of herbaceous vegetation while the habitat would support a greater percentage if it remained un-disturbed. *Typha* species create dense stands connected by shallow, branched rhizomes that terminate in additional leafy shoots. Plants die after fruiting in the second year (Sawyer, et al. 2009). Regular pond maintenance activities seem to promote the continuance of plant communities as rhizomes remain viable and easily root after disturbance where hydrology supports them. Though the catchment basins all can be described by this alliance each supports its own unique plant community.

The first pond located on the north side of the quarry floor supports native broad-leaved cattail (*Typha latifolia*) and narrow-leaved cattail (*Typha angustifolia*) both emergent plants occupying the margins of the catchment basin. Slightly above the cattail stands

along the edges of the pond occur non-native coyote mint (*Mentha pulegium*) and Mediterranean beard grass (*Polypogon monspeliensis*) as well as native pale spikerush (*Eleocharis macrostachya*). Above this in a slightly less saturated hydrologic niche occur white sweet clover (*Melilotus albus*) and nut-sedge (*Cyperus eragrostis*). On the margin a hydrophytic tree, red willow (*Salix laevigata*) occurs.

Within the catchment basin aquatic hornwort (*Ceratophyllum demersum*) grows submerged below the surface.

The second pond, to the south of the first, also supports both types of cattails on the margins as well as coyote mint, Mediterranean beard grass, nut-sedge and red willow. Additionally small stands of Bolander's sedge (*Carex bolanderi*) occur near the water's edge. On the north edge of the pond in compacted rock a small annual, Brewer's snapdragon (*Antirrhinum vexillocalyculatum* ssp. *breweri*) was observed.

The third pond below the quarry floor on the west side supports narrow-leaved cattail on the margins and a combination of common rush (*Juncus patens*) and lamp rush (*Juncus effusus*). Native spiny cocklebur (*Xanthium spinosum*) grows on the upper slope of the pond and on the upper edge several non-native grasses crowd the edge. These include velvet grass (*Holcus lanatus*), tall-fescue (*Festuca arundinaceae*) and Mediterranean beard grass.

***Juncus patens* Provisional Herbaceous Alliance** – Western rush marshes

This alliance occurs in seasonally saturated soils on flats, depressions or gentle slopes. Western rush is a perennial rush species that forms both distinct clumps and short rhizomes (Sawyer, et al. 2009). A small Western rush dominated community, less than 300 square feet, was observed within the study area but outside of the impact area on the southeast side. The seep was dominated by Western rush and dense sedge (*Carex densa*).

**Hydrophytic graminoids** observed include spikerush, toad rush (*Juncus bufonius*) and Mediterranean beard grass. **Non-native grasses** include Mediterranean barley (*Hordium marinum* ssp. *gussoneanum*) and Italian ryegrass (*Festuca perennis*). **Native forbes** include large monkeyflower (*Mimulus guttatus*), clammy clover (*Trifolium obtusifolium*) and white-tipped clover (*Trifolium variegatum*). **Non-native forbes** include *Lathyrus angulatus* and *Parentucellia viscosa*.

## Section 6 – Results and Discussion

A total of 190 vascular plant taxa in 55 families were found during the survey period within the Laytonville Quarry project area. Of these 62 were exotic species mostly in the Aster (*Asteraceae*), Pea (*Fabaceae*) and Grass (*Poaceae*) families.

No rare taxa were found during the survey. No sensitive plant communities were observed within the survey area. No mitigation measures are necessary for the protection of rare and endangered plants or sensitive plant habitat. None are recommended.

An Intact oak woodland was observed within the area to be impacted. An **Intact** oak woodland according to the Oak Woodlands Conservation Act (Guisti et al 2008) is free from destructive land use practices that inhibit or limit oak woodland to naturally sustain itself and associated flora and fauna. A map of native oak trees within the study area was

developed by Rau and Associates, Inc and provided here in Figure 2. The tables below describe the species and size of oaks within 40 feet of the project impact area.

**Table 1: Number and size of native oaks within the impact area of the Laytonville Quarry project area**

<b>California native oaks: dbh</b>	<b>&lt;6"</b>	<b>6"-11"</b>	<b>12" - 23"</b>	<b>24-" - 36"</b>	<b>37"-48"</b>	<b>&gt; 48"</b>	<b>Totals By species</b>
<i>Quercus chrysolepis</i> , canyon live oak	4	7	3	1	2	0	17
<i>Quercus garryana</i> , Oregon oak	4	7	9	5	0	1	26
<i>Quercus kelloggii</i> , black oak	0	5	8	0	1	0	14
<i>Quercus lobata</i> , valley oak	0	0	4	3	1	0	8
<b>Totals By dbh</b>	<b>8</b>	<b>19</b>	<b>24</b>	<b>9</b>	<b>4</b>	<b>1</b>	
<b>TOTAL OAKS TO BE IMPACTED = 65</b>							

The above table represents the worst case impacts of the expansion of the Laytonville Quarry to oak woodlands. The actual number of oaks impacted may be far less, based on the actual location of the excavation with respect to the trees rather than the GPS data that was collected for this survey. As the quarry proceeds, the operator will need to determine which trees are actually within 20' of the quarry disturbance limits and account for the actual loss of the trees with the reclamation plan. According to Section 1 of Section 21083.4 of the Public Resources Code "If a county determines that there may be significant effect to oak woodlands, the county shall require one or more mitigation alternatives to mitigate the significant effect of the conversion of oak woodlands." This would include the planting of an appropriate number of trees, including maintaining the plantings and replacing dead or diseased trees in accordance with the approved Reclamation Plan. "The requirements imposed pursuant to this paragraph also may be used to restore former oak woodlands." It will be up to the County of Mendocino to determine if the impact on oak woodlands is significant and the subsequent mitigation.

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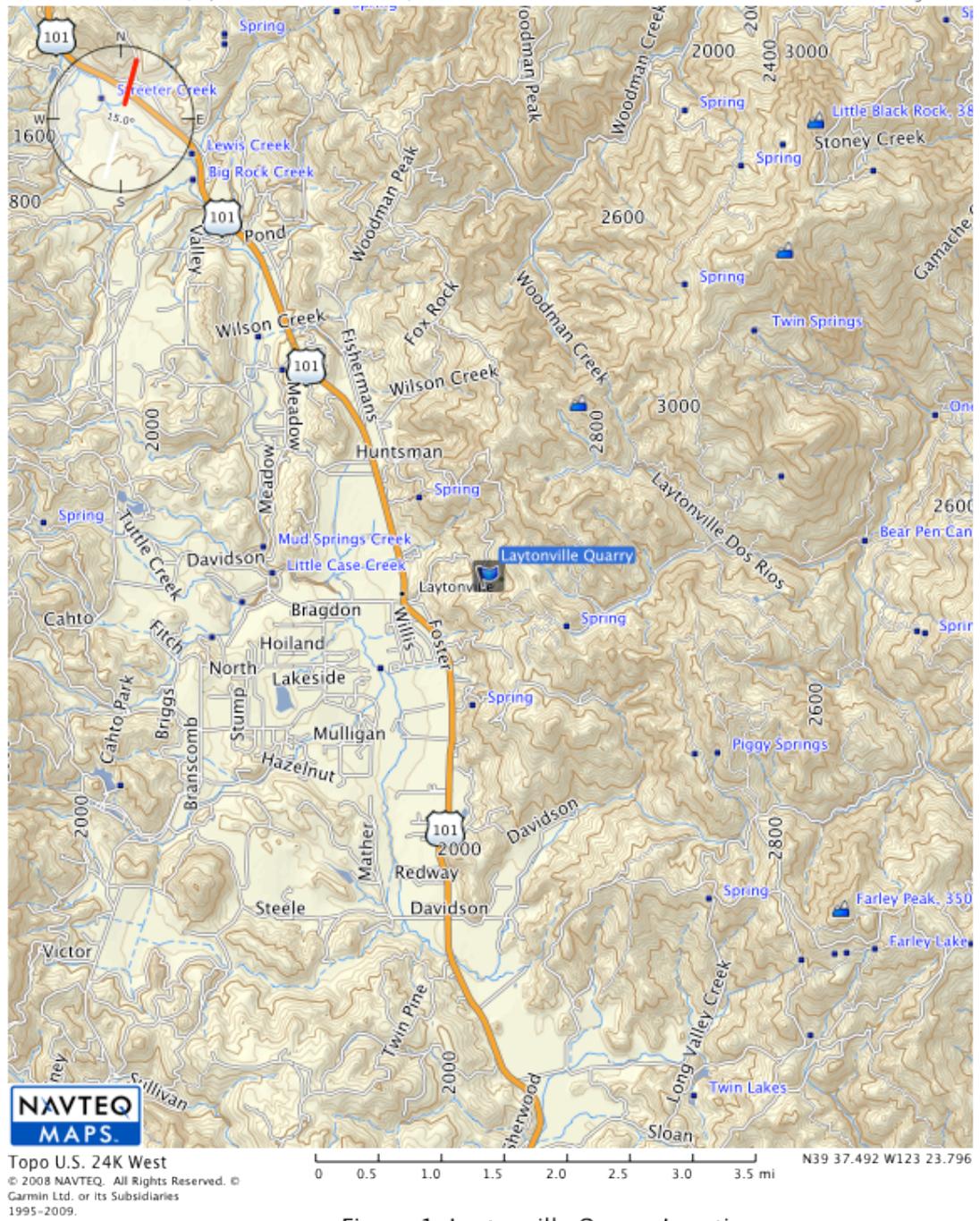


Figure 1. Laytonville Quarry Location



## Appendix A

List of rare vascular plants documented in Mendocino County from CNDDDB and CNPS Electronic Inventory, March 2012. Those in bold are known to occur within a 9 quad area surrounding the Laytonville quad where the Laytonville Quarry is located.

E = Endangered, T = Threatened, R = rare

Scientific Name	Common Name	CNPS List	Global rank	State status	Fed. status	Natural communities	Blooming
<b><i>Alisma gramineum</i></b>	grass alisma	List 2.2	G5			Marshes and swamps (assorted shallow freshwater)	Jun-Aug
<i>Allium peninsulare</i> var. <i>franciscanum</i>	Franciscan onion	List 1B.2	G5T2			Cismontane woodland, Valley and foothill grassland/clay, volcanic, often serpentinite	May-Jun
<i>Anisocarpus scabridus</i>	scabrid alpine tarplant	List 1B.3	G2G3			Upper montane coniferous forest (metamorphic, rocky)	Jul-Aug
<i>Antirrhinum virga</i>	twig-like snapdragon	List 4.3	G3			Chaparral, Lower montane coniferous forest/rocky, openings, often serpentinite	Jun-Jul
<i>Arabis mcdonaldiana</i>	McDonald's rock cress	List 1B.1	G2	E	E	Lower montane coniferous forest, Upper montane coniferous forest/serpentinite	May-Jul
<i>Arctostaphylos canescens</i> ssp. <i>sonomensis</i>	Sonoma canescent manzanita	List 1B.2	G3G4 T2			Chaparral, Lower montane coniferous forest/sometimes serpentinite	Jan-Jun
<i>Arctostaphylos nummularia</i> ssp. <i>mendocinoensis</i>	pygmy manzanita	List 1B.2	G3?T1			Closed-cone coniferous forest (acidic sandy clay)	Jan
<i>Arctostaphylos stanfordiana</i> ssp. <i>raichei</i>	Raiche's manzanita	List 1B.1	G3T2?			Chaparral, Lower montane coniferous forest (openings)/rocky, often serpentinite	Feb-Apr
<i>Asclepias solanoana</i>	serpentine milkweed	List 4.2	G3			Chaparral, Cismontane woodland, Lower montane coniferous forest/serpentinite	May-Jul (Aug)
<b><i>Astragalus agnicidus</i></b>	Humboldt County	List 1B.1	G2	E		Broadleaved upland forest,	Apr-Sep

	milk-vetch					North Coast coniferous forest/openings, disturbed areas, sometimes roadsides	
<i>Astragalus brewery</i>	Brewer's milk-vetch	List 4.2	G3			Chaparral, Cismontane woodland, Meadows and seeps, Valley and foothill grassland(open, often gravelly)/often serpentinite, volcanic	Apr-Jun
<b><i>Astragalus rattanii</i> var. <i>jepsonianus</i></b>	Jepson's milk-vetch	List 1B.2	G4T3			Chaparral, Cismontane woodland, Valley and foothill grassland/often serpentinite	Mar-Jun
<i>Astragalus rattanii</i> var. <i>rattanii</i>	Rattan's milk-vetch	List 4.3	G4T3			Chaparral, Cismontane woodland, Lower montane coniferous forest/gravelly streambanks	Apr-Jul
<i>Botrychium virginianum</i>	rattlesnake fern	List 2.2	G5			Bogs and fens, Lower montane coniferous forest(mesic), Meadows and seeps, Riparian forest/streams	Jun-Sep
<b><i>Brasenia schreberi</i></b>	watershield	List 2.3	G5			Marshes and swamps/freshwater	Jun-Sep
<b><i>Calamagrostis bolanderi</i></b>	Bolander's reed grass	List 4.2	G3			Bogs and fens, Broadleafed upland forest, Closed-cone coniferous forest, Coastal scrub, Meadows and seeps(mesic), Marshes and swamps(freshwater), North Coast coniferous forest/mesic	May-Aug
<i>Calamagrostis ophitidis</i>	serpentine reed grass	List 4.3	G3			Chaparral(open, often north-facing slopes), Lower montane coniferous forest,	Apr-Jul

						Meadows and seeps, Valley and foothill grassland/serpentine, rocky	
<i>Calandrinia breweri</i>	Brewer's calandrinia	List 4.2	G4			Chaparral, Coastal scrub/sandy or loamy, disturbed sites and burns	Mar-Jun
<i>Calyptidium quadripetalum</i>	four-petaled pussypaws	List 4.3	G3			Chaparral, Lower montane coniferous forest/sandy or gravelly, usually serpentinite	Apr-Jun
<i>Calystegia atriplicifolia ssp. buttensis</i>	Butte County morning-glory	List 4.2	G5T3			Chaparral, Lower montane coniferous forest/rocky, sometimes roadside	May-Jul
<i>Calystegia collina ssp. oxyphylla</i>	Mt. Saint Helena morning-glory	List 4.2	G4T3			Chaparral, Lower montane coniferous forest, Valley and foothill grassland/serpentine	Apr-Jun
<b><i>Calystegia collina ssp. tridactylosa</i></b>	three-fingered morning-glory	List 1B.2	G4T1			Chaparral, Cismontane woodland/serpentine, rocky, gravelly, openings	Apr-Jun
<i>Campanula californica</i>	swamp harebell	List 1B.2	G3			Bogs and fens, Closed-cone coniferous forest, Coastal prairie, Meadows and seeps, Marshes and swamps(freshwater), North Coast coniferous forest/mesic	Jun-Oct
<i>Cardamine pachystigma var. dissectifolia</i>	dissected-leaved toothwort	List 3	G3G5 T3			Chaparral, Lower montane coniferous forest/usually serpentinite, rocky	Feb-May
<i>Carex arcta</i>	northern clustered sedge	List 2.2	G5			Bogs and fens, North Coast coniferous forest(mesic)	Jun-Sep
<i>Carex californica</i>	California sedge	List 2.3	G5			Bogs and fens, Closed-cone coniferous forest, Coastal prairie, Meadows and seeps, Marshes	May-Aug

						and swamps(margins)	
<i>Carex lenticularis</i> var. <i>limnophila</i>	lagoon sedge	List 2.2	G5T5			Bogs and fens, Marshes and swamps, North Coast coniferous forest/shores, beaches; often gravelly	Jun-Aug
<i>Carex livida</i>	livid sedge	List 1A	G5			Bogs and fens	Jun
<i>Carex lyngbyei</i>	Lyngbye's sedge	List 2.2	G5			Marshes and swamps(brackish or freshwater)	Apr-Aug
<i>Carex viridula</i> var. <i>viridula</i>	green yellow sedge	List 2.3	G5T5			Bogs and fens, Marshes and swamps(freshwater), North Coast coniferous forest(mesic)	(Jun) ,Jul-Sep
<i>Ceanothus confusus</i>	Rincon Ridge ceanothus	List 1B.1	G2			Closed-cone coniferous forest, Chaparral, Cismontane woodland/volcanic or serpentinite	Feb-Jun
<i>Ceanothus foliosus</i> var. <i>vineatus</i>	Vine Hill ceanothus	List 1B.1	G3T1			Chaparral	Mar-May
<b><i>Coptis laciniata</i></b>	Oregon goldthread	List 2.2	G4G5			Meadows and seeps, North Coast coniferous forest(streambanks)/Mesic	Mar-Apr
<i>Epilobium septentrionale</i>	Humboldt County fuchsia	List 4.3	G3			Broadleafed upland forest, North Coast coniferous forest/sandy or rocky	Jul-Sep
<b><i>Erythronium revolutum</i></b>	coast fawn lily	List 2.2	G4			Bogs and fens, Broadleafed upland forest, North Coast coniferous forest/Mesic, streambanks	Mar-Jul(Aug)
<b><i>Hesperolinon adenophyllum</i></b>	glandular western flax	List 1B.2	G2			Chaparral, Cismontane woodland, Valley and foothill grassland/usually serpentinite	May-Aug
<i>Hesperolinon tehamense</i>	Tehama County western flax	List 1B.3	G2			Chaparral, Cismontane woodland/serpentinite	May-Jul
<b><i>Horkelia tenuiloba</i></b>	thin-lobed horkelia	List 1B.2	G2			Broadleafed upland forest,	May-Jul

						Chaparral, Valley and foothill grassland/mesic openings, sandy	
<i>Limnanthes bakeri</i>	Baker's meadowfoam	List 1B.1	G1	R		Meadows and seeps, Marshes and swamps(freshwater), Valley and foothill grassland(vernally mesic), Vernal pools	Apr-May
<i>Lilium rubescens</i>	redwood lily	List.4.2	G3			Broad-leaf upland forest, Chaparral, Lower montane, North Coast and Upper montane coniferous forest. Sometimes serpentinite and roadsides.	Apr-Aug
<i>Lupinus milobakeri</i>	Milo Baker's lupine	List 1B.1	G1Q	T		Cismontane woodland(often along roadsides), Valley and foothill grassland	Jun-Sep
<i>Navarretia leucocephala ssp. bakeri</i>	Baker's navarretia	List 1B.1	G4T2			Cismontane woodland, Lower montane coniferous forest, Meadows and seeps, Valley and foothill grassland, Vernal pools/Mesic	Apr-Jul
<i>Piperia candida</i>	white-flowered rein orchid	List 1B.2	G2			Broadleafed upland forest, Lower montane coniferous forest, North Coast coniferous forest/sometimes serpentinite	(Mar), May-Sep
<i>Pityopus californica</i>	California pinefoot	List.4.2	G4G5			Broad-leafed upland forest, Lower montane, North Coast and Upper montane coniferous forests	(Apr) May-Aug
<i>Pleuropogon hooverianus</i>	North Coast semaphore grass	List 1B.1	G1	T		Broadleafed upland forest, Meadows and seeps, North Coast coniferous forest/open areas, mesic	Apr-Jun
<i>Potamogeton epiphydrus</i>	Nuttall's ribbon-	List 2.2	G5			Marshes and swamps(assorted	Jul-Sep

	leaved pondweed					shallow freshwater)	
<b><i>Sanguisorba officinalis</i></b>	great burnet	List 2.2	G5?			Bogs and fens, Broadleaved upland forest, Meadows and seeps, Marshes and swamps, North Coast coniferous forest, Riparian forest/often serpentinite	Jul-Oct
<b><i>Viburnum ellipticum</i></b>	oval-leaved viburnum	List 2.3	G5			Chaparral, Cismontane woodland, Lower montane coniferous forest	May-Jun
<i>Wyethia longicaulis</i>	Humboldt County wyethia	List 4.3	G3			Broadleaved upland forest, Coastal prairie, Lower montane coniferous forest/sometimes roadsides	May-Jul

**Sensitive habitats known to occur within the 9-quad search area:**

Habitat	Comments
Upland Douglas fir forest	Habitat not observed within the study area.

## Appendix B.

Vascular Plants observed in the project study area, Laytonville Quarry, Mendocino County, California

Surveys conducted Sept. 6, 2012 and April 26 and June 21 2013. By G. Hulse-Stephens

Families = 55; Exotic species = 62; Total species and infraspecific taxa = 190

<b>Scientific Name</b>	<b>Common Name</b>	<b>Wetland Indicator status</b>	<b>Plant Family</b>	<b>Exotic</b>
<i>Achyrrachaena mollis</i>	blow-wives	0	<i>Asteraceae</i>	x
<i>Acmispon americana</i>	Spanish lotus	0	<i>Fabaceae</i>	
<i>Acmispon parviflora</i>	miniature lotus	0	<i>Fabaceae</i>	
<i>Adenocaulon bicolor</i>	path finder	0	<i>Asteraceae</i>	
<i>Aesculus californica</i>	California buckeye	0	<i>Sapindaceae</i>	
<i>Agoseris grandiflora</i> var <i>grandiflora</i>	grand mountain dandelion	0	<i>Asteraceae</i>	
<i>Agrostis hallii</i>	Hall's bentgrass	0	<i>Poaceae</i>	
<i>Aira caryophyllea</i>	silver European hairgrass	0	<i>Poaceae</i>	x
<i>Anagalis arvensis</i>		0	<i>Myrsinaceae</i>	
<i>Ansiocarpus madioides</i>	woodland tarweed	0	<i>Asteraceae</i>	
<i>Anthriscus caucalis</i>	bur-chervil	0	<i>Apiaceae</i>	
<i>Antirrhinum vexillocalyculatum</i> subsp. <i>breweri</i>	Brewer's snapdragon	0	<i>Plantaginaceae</i>	
<i>Arbutus menziesii</i>	madrone	0	<i>Ericaceae</i>	
<i>Arctostaphylos manzanita</i> subsp. <i>manzanita</i>	common manzanita	0	<i>Ericaceae</i>	
<i>Avena barbata</i>	slender wild oat	0	<i>Poaceae</i>	x
<i>Baccharis glutinosa</i>	marsh baccharis	0	<i>Asteraceae</i>	
<i>Baccharis pilularis</i>	coyote brush	0	<i>Asteraceae</i>	
<i>Brassica nigra</i>	black mustard	0	<i>Brassicaceae</i>	x
<i>Briza maxima</i>	rattlesnake grass	FAC	<i>Poaceae</i>	x
<i>Briza minor</i>	little quaking grass	FAC	<i>Poaceae</i>	x
<i>Bromus diandrus</i>	rip-gut brome	0	<i>Poaceae</i>	x
<i>Bromus hordeaceus</i>	soft chess	FACU	<i>Poaceae</i>	x
<i>Bromus madritensis</i>	foxtail chess	0	<i>Poaceae</i>	x
<i>Callitriche marginata</i>	water-starwort	OBL	<i>Plantaginaceae</i>	
<i>Calochortus tolmii</i>		0	<i>Liliaceae</i>	
<i>Campanula prenanthoides</i>	California harebell	0	<i>Campanulaceae</i>	

<i>Cardamine oligosperma</i>		FACW	<i>Brassicaceae</i>	
<i>Carduus pycnocephalus</i>	Italian thistle	0	<i>Asteraceae</i>	x
<i>Carex bolanderi</i>	Bolander's sedge	FAC	<i>Cyperaceae</i>	
<i>Carex densa</i>	dense sedge	OBL	<i>Cyperaceae</i>	
<i>Carex leptopoda</i>	slender-foot sedge	FAC	<i>Cyperaceae</i>	
<i>Castilleja attenuata</i>	valley tassels	0	<i>Orobanchaceae</i>	
<i>Centaurea solstitialis</i>	yellow star-thistle	0	<i>Asteraceae</i>	x*
<i>Centromadia fitchii</i>	Fitch's spikeweed	FACU	<i>Asteraceae</i>	
<i>Ceanothus cuneatus</i>	buckbrush	0	<i>Rhamnaceae</i>	
<i>Cerastium glomeratum</i>	mouse-ear chickweed	0	<i>Caryophyllaceae</i>	x
<i>Ceratophyllum demersum</i>	hornwort	OBL	<i>Ceratophyllaceae</i>	
<i>Chimaphila menziesii</i>	little prince" pine	0	<i>Ericaceae</i>	
<i>Chlorogalum pomeridianum</i>	soap root	0	<i>Agavaceae</i>	
<i>Cichorium intibus</i>	chichory	FACU	<i>Asteraceae</i>	x
<i>Cirsium vulgare</i>	bull thistle	FACU	<i>Asteraceae</i>	x
<i>Clarkia purpurea ssp. quadrivulnera</i>		0	<i>Onagraceae</i>	
<i>Claytonia perfoliata</i>	miner's lettuce	FAC	<i>Montiaceae</i>	
<i>Collomia heterophylla</i>	varied-leaved collomia	0	<i>Polemoniaceae</i>	
<i>Croton setigerus</i>	turkey mullein	0	<i>Euphorbiaceae</i>	
<i>CynGLOSSUM grande</i>	hound's tongue	0	<i>Brassicaceae</i>	
<i>Cynosurus echinatus</i>	hedgehog dogtail	0	<i>Poaceae</i>	
<i>Cyperus eragrostis</i>	nut-grass	FACW	<i>Cyperaceae</i>	
<i>Danthonia californica</i>	California oatgrass	FACW	<i>Poaceae</i>	
<i>Daucus carota</i>	Queen Anne's lace	FACU	<i>Apiaceae</i>	x
<i>Delphinium nudicaule</i>	red larkspur	0	<i>Ranunculaceae</i>	
<i>Deschampsia elongata</i>	slender hairgrass	FACW	<i>Poaceae</i>	
<i>Dichelostemma capitatum</i>	blue-dicks	FACU	<i>Themidaceae</i>	
<i>Dodecatheon hendersonii</i>	shooting star	0	<i>Primulaceae</i>	
<i>Drymocallis glandulosa</i>	sticky cinquefoil	0	<i>Rosaceae</i>	
<i>Dryopteris arguta</i>	wood fern	0	<i>Dryopteidaceae</i>	
<i>Eleocharis macrostachya</i>	pale spikerush	OBL	<i>Cyperaceae</i>	
<i>Elymus caput-meduseae</i>	medusa head	0	<i>Poaceae</i>	x*
<i>Elymus glaucus ssp. glaucus</i>	blue wildrye	FACU	<i>Poaceae</i>	
<i>Epilobium brachycarpum</i>		0	<i>Onagraceae</i>	
<i>Epilobium ciliatum</i>	fringed willowherb	FACW	<i>Onagraceae</i>	
<i>Epilobium minutum</i>	slender annual fireweed	FACU	<i>Onagraceae</i>	
<i>Equisetum arvense</i>	common horsetail	FAC	<i>Equisetaceae</i>	

<i>Erigeron canadensis</i> ( <i>Conyza c.</i> )	horse weed	?	<i>Asteraceae</i>	x
<i>Erodium cicutarium</i>	red-stemmed filaree	0	<i>Geraniaceae</i>	x
<i>Eschscholzia californica</i>	California poppy	0	<i>Papavereaceae</i>	
<i>Euchiton sphaericus</i>	globe cottonleaf	0	<i>Asteraceae</i>	x
<i>Festuca perennis</i> ( <i>Lolium multiflorum</i> )	Italian ryegrass	0	<i>Asteraceae</i>	x
<i>Festuca perennis</i> ( <i>Lolium multiflorum</i> )	Italian ryegrass	0	<i>Asteraceae</i>	x
<i>Festuca arundinacea</i>	tall fescue	FAC	<i>Poaceae</i>	x
<i>Festuca bromoides</i>	brome fescue	FACU	<i>Poaceae</i>	x
<i>Festuca californica</i>	California fescue	FACU	<i>Poaceae</i>	
<i>Festuca microstachys</i>	Nuttall's fescue	0	<i>Poaceae</i>	
<i>Festuca occidentalis</i>	western fescue	0	<i>Poaceae</i>	
<i>Festuca subulata</i>	bearded fescue	FACU	<i>Poaceae</i>	
<i>Fragaria vesca</i>	wild strawberry	0	<i>Rosaceae</i>	
<i>Fraxinus latifolia</i>	Oregon ash	FACW	<i>Oleaceae</i>	
<i>Galium aparine</i>	goose-grass	FACU	<i>Rubiaceae</i>	
<i>Galium californicum</i>	California bedstraw	0	<i>Rubiaceae</i>	
<i>Galium parisiense</i>	wall bedstraw	FACU	<i>Rubiaceae</i>	x
<i>Galium porrigens</i>	climbing bedstraw	0	<i>Rubiaceae</i>	
<i>Gastridium phleoides</i> ( <i>G. ventricosum</i> )	nit grass	FACU	<i>Poaceae</i>	x
<i>Genista monspessulana</i>	French broom	0	<i>Fabaceae</i>	x*
<i>Geranium dissectum</i>	cut-leaf geranium	0	<i>Geraniaceae</i>	x
<i>Geranium molle</i>	dove-foot geranium	0	<i>Geraniaceae</i>	x
<i>Helminthotheca echioides</i>	bristly ox-tongue	FAC	<i>Asteraceae</i>	x
<i>Heracleum lanatum</i>	cow parsnip	FACU	<i>Apiaceae</i>	
<i>Heteromeles arbutifolius</i>	toyon	0	<i>Rosaceae</i>	
<i>Hierachium album</i>	hawkweed	0	<i>Asteraceae</i>	
<i>Holcus lanatus</i>	common velvet grass	FAC	<i>Poaceae</i>	x
<i>Hordium marinum</i> ssp <i>gussoneanum</i>	Mediterranean barley	FAC	<i>Poaceae</i>	x
<i>Hypericum perforatum</i>	Klamath weed	FACU	<i>Hypericaceae</i>	x
<i>Hypochaeris glabra</i>	smooth cat's-ears	0	<i>Asteraceae</i>	x

<i>Hypochaeris radicata</i>	hairy cat's ear	FACU	<i>Asteraceae</i>	x
<i>Iris macrosyphon</i>		0	<i>Iridaceae</i>	
<i>Juncus bufonius</i> var. <i>bufonius</i>	toad rush	FACW	<i>Juncaceae</i>	x
<i>Juncus effusus</i> var. <i>pacificus</i>	lamp rush	FACW	<i>Juncaceae</i>	
<i>Juncus patens</i>	Western rush	FAC	<i>Juncaceae</i>	
<i>Juncus tenuis</i>	lesser poverty rush	FACW	<i>Juncaceae</i>	
<i>Lactuca serriola</i>	prickly lettuce	FACU	<i>Asteraceae</i>	x
<i>Lamium purpureum</i>	purple deadnettle	0	<i>Lamiaceae</i>	x
<i>Lathyrus angulatus</i>			<i>Fabaceae</i>	x
<i>Lathyrus latifolia</i>	perennial sweet pea	0	<i>Fabaceae</i>	x
<i>Lathyrus vestitus</i>	hillside pea	0	<i>Fabaceae</i>	
<i>Leptosiphon androsaceus</i>	shower gilia	0	<i>Polemoniaceae</i>	
<i>Linum bienne</i>	common flax	0	<i>Linaceae</i>	x
<i>Lonicera hispidula</i>	honeysuckle	FACU	<i>Caprifoliaceae</i>	
<i>Lupinus bicolor</i>	miniature lupine	0	<i>Fabaceae</i>	
<i>Luzula comosa</i>	hairy wood rush	FAC	<i>Juncaceae</i>	
<i>Madia gracilis</i>	slender madia	0	<i>Asteraceae</i>	
<i>Matricaria discoidea</i>	pineapple weed	FACU	<i>Asteraceae</i>	x
<i>Medicago polymorpha</i>	California burclover	0	<i>Fabaceae</i>	x
<i>Melica geyeri</i>		0	<i>Poaceae</i>	
<i>Melilotus albus</i>	white sweetclover	0	<i>Fabaceae</i>	
<i>Melilotus indicus</i>	sour clover		<i>Fabaceae</i>	x
<i>Mentha pulegium</i>	penny royal	OBL	<i>Lamiaceae</i>	x
<i>Micropus californicus</i>	slender cottonweed	0	<i>Asteraceae</i>	
<i>Microsteris gracilis</i>		FACU	<i>Polemoniaceae</i>	
<i>Mimulus guttatus</i>	large monkeyflower	OBL	<i>Phrymaceae</i>	
<i>Navarretia pubescens</i>		0	<i>Polemoniaceae</i>	
<i>Nemophila parviflora</i>		0	<i>Boraginaceae</i>	
<i>Notholithocarpus densiflora</i> var. <i>densiflora</i>	tan oak	0	<i>Fagaceae</i>	
<i>Osmorhiza bertoli</i>	mountain sweet-cicely	FACU	<i>Apiaceae</i>	
<i>Parentucellia viscosa</i>		FAC	<i>Orobanchaceae</i>	x
<i>Pedicularis densiflorus</i>	Indian warrior	0	<i>Orobanchaceae</i>	
<i>Pentagramma triangularis</i>	gold-back fern	0	<i>Pteridaceae</i>	
<i>Phalaris aquatica</i>	harding grass	FAC	<i>Poaceae</i>	x
<i>Pinus ponderosa</i>	ponderosa pine	FACU	<i>Pinaceae</i>	
<i>Plantago erecta</i>		0	<i>Plantaginaceae</i>	
<i>Plantago lanceolata</i>	English plantain	FAC	<i>Plantaginaceae</i>	x

<i>Poa pratensis</i>	Kentucky bluegrass	FAC	<i>Poaceae</i>	x
<i>Polygala californica</i>	California milkwort	0	<i>Polygalaceae</i>	
<i>Polypodium californica</i>	California polypody	0	<i>Polypodiaceae</i>	
<i>Polypogon monspeliensis</i>	Mediterranean beard grass	FACW	<i>Poaceae</i>	x
<i>Polystichum imbricans</i>		0	<i>Dryopteridaceae</i>	
<i>Polystichum munitum</i>	western sword fern	FACU	<i>Dryopteridaceae</i>	
<i>Pseudognaphalium thermale</i>	everlasting	0	<i>Asteraceae</i>	
<i>Pseudotsuga menziesii</i>	Douglas fir	FACU	<i>Pinaceae</i>	
<i>Quercus chrysolepis</i>	canyon live oak	0	<i>Fagaceae</i>	
<i>Quercus garryana</i>	Oregon oak	FACU	<i>Fagaceae</i>	
<i>Quercus kelloggii</i>	black oak	0	<i>Fagaceae</i>	
<i>Quercus lobata</i>	valley oak	FACU	<i>Fagaceae</i>	
<i>Ranunculus aquatilis var diffusus</i>	aquatic buttercup	OBL	<i>Ranunculaceae</i>	
<i>Ranunculus occidentalis</i>	western buttercup	FAC	<i>Ranunculaceae</i>	
<i>Rosa gymnocarpa</i>	wood rose	FACU	<i>Rosaceae</i>	
<i>Rubus armeniicus</i>	Himalayan blackberry	FACU	<i>Rosaceae</i>	x
<i>Rubus leucodermis</i>	whitebark raspberry	FACU	<i>Rosaceae</i>	
<i>Rubus ursinus</i>	California blackberry	FACU	<i>Rosaceae</i>	
<i>Rumex acetosella</i>	sheep sorrel	FACU	<i>Polygonaceae</i>	x
<i>Rumex conglomeratus</i>	sharp dock	FACW	<i>Polygonaceae</i>	x
<i>Rumex crispus</i>	curly dock	FAC	<i>Polygonaceae</i>	x
<i>Rytidosperma pencillatum</i>		0	<i>Poaceae</i>	x
<i>Salix laevigata</i>	red willow	FACW	<i>Salicaceae</i>	
<i>Salix lasiolepis</i>	arroyo willow	FACW	<i>Salicaceae</i>	
<i>Sanicula crassicaulis</i>	gamble weed	0	<i>Apiaceae</i>	
<i>Sanicula laciniata</i>	coast sanicle	0	<i>Apiaceae</i>	
<i>Senecio vulgare</i>	old man of spring	FACU	<i>Asteraceae</i>	
<i>Sequoia sempervirens</i>	coast redwood	0	<i>Taxoideaceae</i>	
<i>Sisyrinchium bellum</i>	blue-eyed grass	FACW	<i>Iridaceae</i>	
<i>Solanum americanum</i>		0	<i>Solanaceae</i>	
<i>Sonchus asper</i>	prickly sow-thistle	FACU	<i>Asteraceae</i>	x
<i>Stachys rigida</i>	rough hedge-nettle	FACW	<i>Lamiaceae</i>	
<i>Stellaria media</i>	common chickweed	FACU	<i>Caryophyllaceae</i>	
<i>Stephanomeria virgata</i>		0	<i>Asteraceae</i>	
<i>Symphoricarpos albus var laevigatus</i>	snowberry	FACU	<i>Caprifoliaceae</i>	
<i>Symphoricarpos mollis</i>	creeping snowberry	0	<i>Caprifoliaceae</i>	

<i>Thysanocarpus curvipes</i>	lace pod	0	<i>Brassicaceae</i>	
<i>Torilis arvensis</i>	Japanese Hedge Parsley	0	<i>Apiaceae</i>	x
<i>Toxicodendron diversilobum</i>	Poison Oak	0	<i>Anacardiaceae</i>	
<i>Trifolium barbigerum</i>	bearded clover	FACW	<i>Fabaceae</i>	
<i>Trifolium bifidum</i> var. <i>bifidum</i>	Pinole clover	0	<i>Fabaceae</i>	
<i>Trifolium ciliolatum</i>	tree clover	0	<i>Fabaceae</i>	
<i>Trifolium dichotomum</i>		0	<i>Fabaceae</i>	
<i>Trifolium dubium</i>	little hop-clover	FACU	<i>Fabaceae</i>	x
<i>Trifolium gracilentum</i>	pinpoint clover	0	<i>Fabaceae</i>	
<i>Trifolium hirtum</i>	rose clover	0	<i>Fabaceae</i>	x
<i>Trifolium microcephalum</i>	maiden clover	FAC	<i>Fabaceae</i>	
<i>Trifolium microdon</i>	square-headed clover	0	<i>Fabaceae</i>	
<i>Trifolium obtusiflorum</i>	clammy clover	FAC	<i>Fabaceae</i>	
<i>Trifolium oliganthum</i>	few-flowered clover	0	<i>Fabaceae</i>	
<i>Trifolium subterraneum</i>	subterranean clover	0	<i>Fabaceae</i>	x
<i>Trifolium variegatum</i>	white-tipped clover	FAC	<i>Fabaceae</i>	
<i>Trifolium wildenovii</i>	tomcat clover	FACU	<i>Fabaceae</i>	
<i>Typha angustifolia</i>	narrow-leafed cattail	OBL	<i>Typhaceae</i>	
<i>Umbellularia californica</i>	California Bay	FAC	<i>Lauraceae</i>	
<i>Verbascum thapsis</i>	woolly mullein	FACU	<i>Scrophulariaceae</i>	x
<i>Verbena lasiostachya</i>	vervain	0	<i>Verbenaceae</i>	
<i>Vicia americana</i>	Americal vetch	FAC	<i>Fabaceae</i>	
<i>Vicia sativa</i> ssp. <i>sativa</i>	spring vetch	0	<i>Fabaceae</i>	
<i>Vicia villosa</i>	hairy vetch	0	<i>Fabaceae</i>	x
<i>Viola ocellata</i>	Western heart's ease	0	<i>Violaceae</i>	
<i>Xanthium spinosum</i>	spiny cocklebur	FACU	<i>Asteraceae</i>	x
<i>Zeltnera muehlenbergii</i>	Monterey centaury	0	<i>Gentianaceae</i>	

# **INDUSTRIAL STORM WATER POLLUTION PREVENTION PLAN**

## **Laytonville Rock**

1135 Dos Rios Road  
Laytonville, CA 95454  
(707) 984-6437

**WDID Number: 1 23I024035**

**Prepared: January, 2013**

**Rau Job No.: R12023**

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# SECTION 1 FACILITY DESCRIPTION AND CONTACT INFORMATION

## 1.1 Facility Information

<b>Facility Information</b>		
Primary SIC Code: 1429 Crushed & Broken Stone		
Name of Facility: Laytonville Rock		
Street: 1135 Dos Rios Road (CR 322)		
City: Laytonville	State: CA	ZIP Code: 95454
County: Mendocino		
Industrial WDID Number: 1 23I024035		
<b>Location</b>		
Latitude:	Longitude:	
39 ° 41 ' 26 " N (degrees, minutes, seconds)	123 ° 28 ' 13 " W (degrees, minutes, seconds)	
39.69056 ° N (decimal)	123.47028 ° W (decimal)	
Method for determining latitude/longitude (check one):		
<input checked="" type="checkbox"/> USGS topographic map (specify scale: 1:24000)	<input type="checkbox"/> EPA Web site	<input type="checkbox"/> GPS
<input type="checkbox"/> Other (please specify): Google Earth		
Is this facility considered a Federal Facility? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Estimated area of site industrial activity: 9 (acres)		
Estimated area of site exposed to stormwater: 9 (acres)		
<b>Discharge Information</b>		
Does this facility discharge stormwater into a Municipal Storm Drain or Sewer System? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
If yes, name of operator: Mendocino County Department of Transportation		
Name(s) of water(s) that receive stormwater from your facility: Tenmile Creek		
Does this facility discharge directly or indirectly into any segment of an "impaired" water? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Are any of the facilities stormwater discharges subject to effluent guidelines? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
If Yes, list applicable guidelines:		
1. pH, TSS, SC, O&G, N + N		

## 1.2 Contact Information/Responsible Parties

<b>Facility Operator (s):</b>
<i>Name:</i> Shawn Studebaker
<i>Address:</i> P.O. Box 430
<i>City, State, Zip Code:</i> Laytonville, CA. 95454
<i>Telephone Number:</i> 707-984-6437
<i>Email address:</i> laytonvillerock@gmail.com
<i>Fax number:</i>
<b>Facility Owner (s):</b>
<i>Name:</i> Shawn Studebaker
<i>Address:</i> 4439 Briceland Road
<i>City, State, Zip Code:</i> Redway, CA. 95560
<i>Telephone Number:</i> 707-923-7898
<i>Email address:</i> shawn@randallsandandgravel.com
<i>Fax number:</i>
<b>Facility SWPPP Contact:</b>
<i>Name:</i> Shawn Studebaker
<i>Telephone number:</i> 707-984-6437
<i>Emergency telephone number:</i> 707-923-8778
<i>Email address:</i> laytonvillerock@gmail.com
<i>Fax number:</i>
<b>SWPPP Developer:</b>
<i>Name:</i> Donald R. Ashcraft Jr.
<i>QSD No.:</i> 00770
<i>Company:</i> Rau and Associates, Inc.
<i>Address:</i> 100 North Pine Street
<i>City, State, Zip Code:</i> Ukiah, CA 95482
<i>Telephone number:</i> 707-462-6536
<i>Email address:</i> jr@rauandassoc.com
<i>Fax number:</i> 707-463-2729

### **1.3 Storm Water Pollution Prevention Team**

The storm water pollution prevention team is responsible for developing, implementing, maintaining, and revising this SWPPP. The members of the team are familiar with the management and operations of this facility.

Listed below are members of the team and their responsibilities (i.e. Legally Responsible Person, Approved Signatory, Data Submitter, SWPPP Developer, Inspector, Sampler, Implementing, Maintaining, Employee Training, Record Keeping, and Submitting Reports)

<b>Names</b>	<b>Title</b>	<b>Phone</b>	<b>Individual Responsibilities</b>
Shawn Studebaker	Owner / Facility Manager	(707)984-6437 (707)923-8778	Legally Responsible Person; Inspector; Data & Report Submitting; Trainer; Record Keeping
Alyssa Logins-Miller	Facility Operations	(707)984-6437	Inspector; Sampler; Data & Report Submitting; Record Keeping
Donald R. Ashcraft Jr.	QSD #00770	(707)462-6536	SWPPP Developer; Inspector; Sampler; Trainer; Data Submitter
Alpha Analytical Laboratories, Inc.	ELAP #1551	(707)468-0401	Sampler; Lab Analysis

**1.4      *Qualified SWPPP Developer Certification***

Approval and Certification of the Storm Water Pollution Prevention Plan

Facility Name:    Laytonville Rock

Facility Address: 1135 Dos Rios Road, Laytonville, CA 95454

“This Storm Water Pollution Prevention Plan and Attachments were prepared under my direction to meet the requirements of the California Industrial General Permit (SWRCB Order No. 97-03-DWQ, NPDES General Permit No. CAS000001). I certify that I am a Qualified SWPPP Developer in good standing as of the date signed below.”

PREPARED BY: \_\_\_\_\_

Donald R. Ashcraft Jr.  
CPESC 4151  
Expires 10-16-2013

Date: \_\_\_\_\_

REVIEWED BY: \_\_\_\_\_

George C. Rau  
RCE 21908  
Expires 09-30-2013

Date: \_\_\_\_\_

**1.5 Legal Responsible Party Certification**

Approval and Certification of the Storm Water Pollution Prevention Plan

Facility Name: Laytonville Rock

Facility Address: 1135 Dos Rios Road, Laytonville, CA 95454

"I certify under penalty of law that this document and all Attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, to the best of my knowledge and belief, the information submitted is, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Laytonville Rock  
*Legally Responsible Person*

Signature of Legally Responsible Person

Date

Shawn Studebaker, Owner  
*Name of Legally Responsible Person*

(707)923-7898  
*Telephone Number*

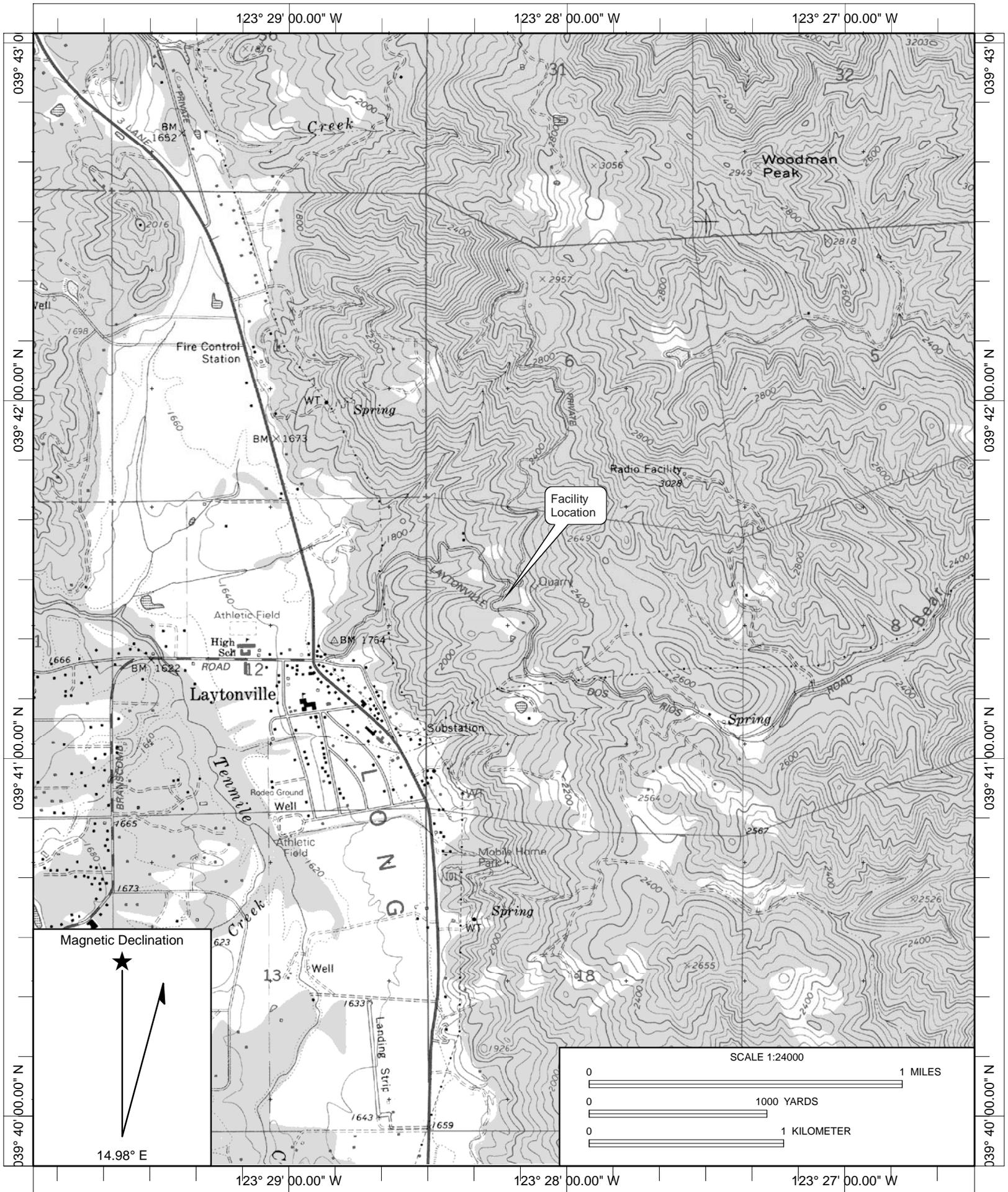
## 1.6 SWPPP Amendment Log

Facility Name: Laytonville Rock

Facility Address: 1135 Dos Rios Road, Laytonville, CA 95454

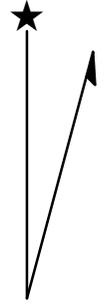
Amendment No.	Date	Brief Description of Amendment, include section and page number	Prepared and Approved By
			Name: QSD#

**1.7      *General Location Map & Facility Site Map***



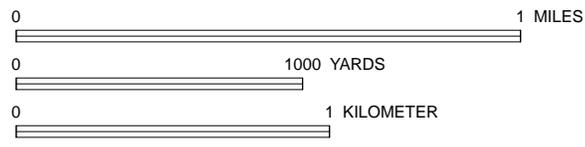
Facility Location

Magnetic Declination



14.98° E

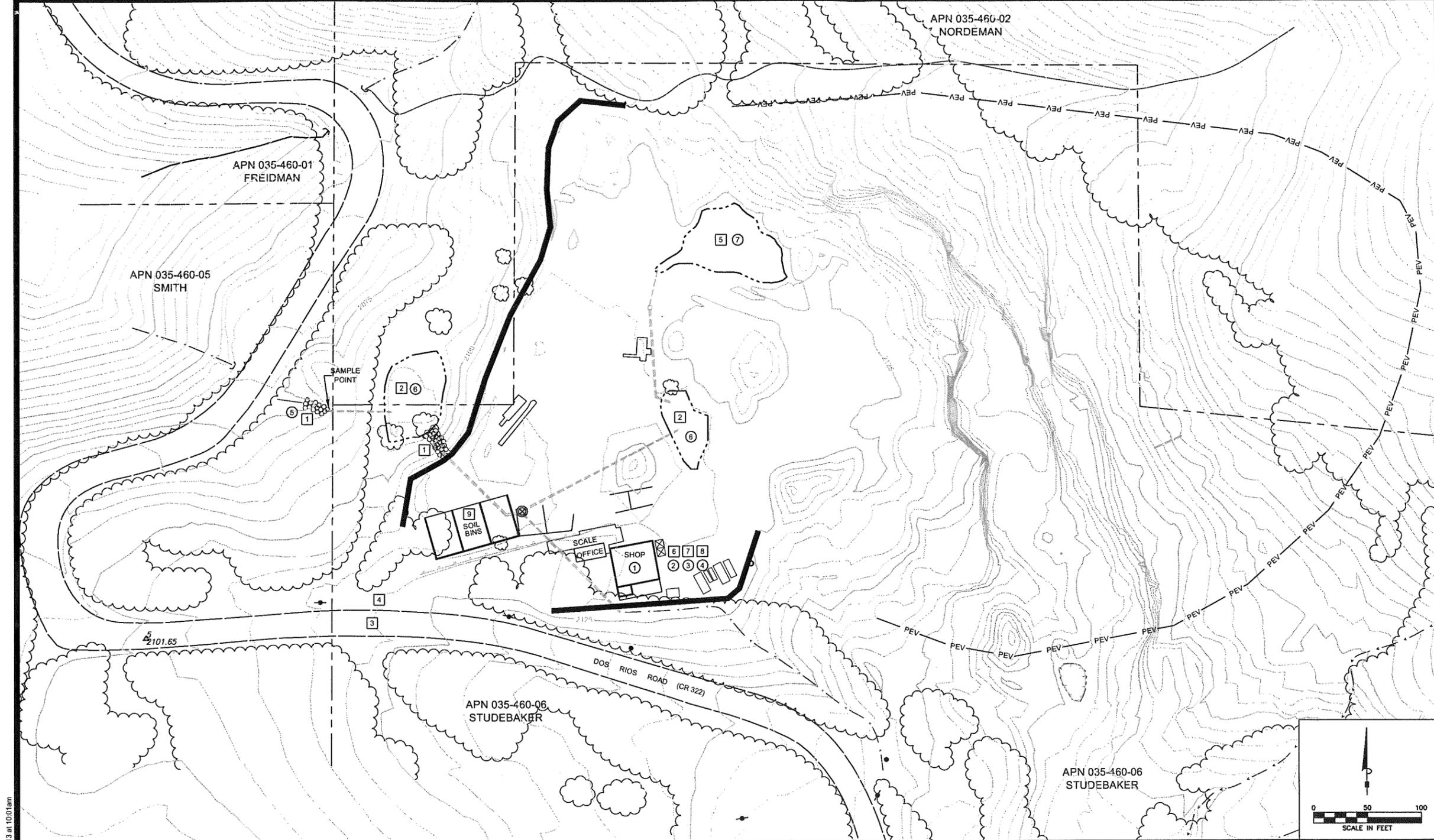
SCALE 1:24000



Name: LAYTONVILLE  
 Date: 1/9/2013  
 Scale: 1 inch equals 2000 feet

Location: 039° 41' 26.62" N 123° 28' 13.63" W NAD27  
 Caption: Laytonville Rock Quarry

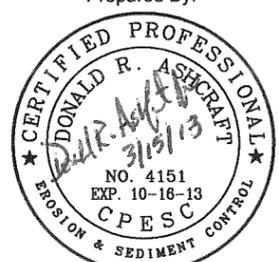
Z:\R12023\Drawings\Civil - 2012\12023 PC SWPPP.dwg, 3/15/2013 10:01:40 AM, \\SERVER\kyocera KM-C3225 KX



Industrial Facility Type Best Management Practices (BMPs) to be implemented. Refer to BMP Fact Sheets provided in the SWPPP prepared for this facility.		
Location or Symbol	Source & Treatment Control BMPs	
		Non-Stormwater Management
Entire Site	SC-10	Non-Stormwater Discharges
①	SC-11	Spill Prevention, Control and Cleanup
	Vehicle and Equipment Management	
②	SC-20	Vehicle and Equipment Fueling
③	SC-21	Vehicle and Equipment Cleaning
④	SC-22	Vehicle and Equipment Repair
	Material and Waste Management	
Entire Site	SC-30	Outdoor Loading/Unloading
Entire Site	SC-31	Outdoor Liquid Container Storage
Entire Site	SC-32	Outdoor Equipment Operations
Entire Site	SC-33	Outdoor Storage of Raw Materials
Entire Site	SC-34	Waste Handling and Disposal
Entire Site	SC-35	Safer Alternative Products
	Buildings and Grounds Management	
⑤	SC-40	Contaminated or Erodible Areas
Entire Site	SC-41	Building and Grounds Maintenance
Entire Site	SC-42	Building Repair and Construction
Entire Site	SC-43	Parking/Storage Area Maintenance
⑥	SC-44	Drainage System Maintenance
	Treatment Control	
Entire Site	TC-11	Infiltration Basin
⑦	TC-22	Extended Detention Basin

Construction Type Best Management Practices (BMPs) to be implemented. Refer to BMP Fact Sheets provided in the SWPPP prepared for this facility.		
Location or Symbol	Selected BMPs	
		Erosion Control
Entire Site	EC-1	Scheduling
PEV	EC-2	Preservation of Existing Vegetation
	EC-9	Earth Dikes and Drainage Swales
①	EC-10	Velocity Dissipation Devices
Entire Site	EC-16	Non-Vegetative Stabilization
	Sediment Control	
②	SE-3	Sediment Trap
⊗	SE-4	Check Dam (as needed)
⊗	SE-5	Fiber Rolls (as needed)
③	SE-6	Gravel Bag Berm (as needed)
③	SE-7	Street Sweeping and Vacuuming
⊗	SE-8	Sandbag Barrier (as needed)
⊗	SE-10	Storm Drain Inlet Protection
	Wind Erosion Control	
Entire Site	WE-1	Wind Erosion Control
	Tracking Control	
④	TC-1	Stabilized Construction Entrance/Exit
Entire Site	TC-2	Stabilized Construction Roadway
	Non-Stormwater Management	
Entire Site	NS-1	Water Conservation Practices
⑤	NS-2	Dewatering Operations
Entire Site	NS-6	Illicit Connection/Discharge
Entire Site	NS-7	Potable Water/Irrigation
⑥	NS-8	Vehicle and Equipment Cleaning
⑦	NS-9	Vehicle and Equipment Fueling
⑧	NS-10	Vehicle and Equipment Maintenance
	Waste & Materials Management	
⑨	WM-3	Stockpile Management
⊗	WM-9	Sanitary / Septic Waste Management

- Notes:
1. Topsoil stockpiles shall be stabilized by re-vegetation with the application of seed and straw mulch.
  2. Non-active bulk soil stockpiles shall be covered during the rainy season, per BMP WM-3.
  3. Aggregate stockpiles, containing no fines, are not required to be covered.

Prepared By: 

Reviewed By: 

<table border="1"> <thead> <tr> <th>DATE</th> <th>REVISIONS</th> <th>BY</th> </tr> </thead> <tbody> <tr> <td>3-15-13</td> <td>Minor Use Permit Amendment</td> <td>DRA</td> </tr> </tbody> </table>	DATE	REVISIONS	BY	3-15-13	Minor Use Permit Amendment	DRA	<p>OWNER: SHAWN STUDEBAKER</p> <p>LOCATION: LAYTONVILLE ROCK 1135 DOS RIOS RD.</p>		<p>DRAWING: FACILITY SITE PLAN WATER POLLUTION CONTROL DRAWING</p> <p>PROJECT: LAYTONVILLE ROCK QUARRY WDID# 1 231024035</p>	<p>Date: MAY, 2012</p> <p>Scale: AS SHOWN</p> <p>Drawn: JJR</p> <p>Checked: CAM</p> <p>Reviewed: GCR</p> <p>JOB NO. R12023</p>	<p>SHEET 1 of 1 SHEETS</p>
DATE	REVISIONS	BY									
3-15-13	Minor Use Permit Amendment	DRA									

## **SECTION 2 OVERVIEW**

### ***2.1 Introduction***

This Storm Water Pollution Prevention Plan (SWPPP) covers Laytonville Rock operations located at 1135 Dos Rios Road, Laytonville, CA. 95454. It has been developed as required under California State Water Resources Control Board (State Water Board) Water Quality Order No. 97-03-DWQ, National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000001 (General Permit) for Industrial Facilities and in accordance with good engineering practices. This SWPPP describes this facility and its operations, identifies potential sources of storm water contributions at the facility, recommends appropriate Best Management Practices (BMPs) or pollution control measures to reduce the discharge of pollutants in storm water runoff, and provides for periodic review of this SWPPP.

### ***2.2 Objectives***

The primary goal of the storm water permit program is to improve the quality of surface waters by reducing the amount of pollutants potentially contained in the storm water runoff. Industrial facilities subject to industrial storm water permit must prepare and implement a SWPPP for their facility.

This SWPPP will:

- 1) Identify sources of permitted non-stormwater discharges and potential unpermitted non-stormwater discharges to the storm water drainage system;
- 2) Identify and prescribe appropriate "source area control" type best management practices designed to prevent storm water contamination from occurring;
- 3) Identify and prescribe "storm water treatment" type best management practices to reduce pollutants in contaminated storm water prior to discharge;
- 4) Prescribe and implement training requirements for facility personnel.
- 5) Prescribe and implement facility monitoring and reporting requirements and schedule.

### ***2.3 Facility Description***

Laytonville Rock is a rock quarry and aggregate processing facility, located east of the town of Laytonville, CA, on Dos Rios Road, approximately 1 mile east of the intersection of Dos Rios Road with State Highway 101. It is located on two parcels, APN 035-460-02 (40.14 acres) and APN 035-460-06 (40.37 acres), and is situated on a west facing ridge. Of the 80.51 acres on which the facility is located, 9 acres are used for rock quarry and rock processing operations. The area within the 9 acre quarry boundary is mostly very hard dense rock with shallow soil overlay. Areas around the quarry have a relatively thin layer of soil overlaying the same rock material, supporting primarily brush with some oaks, madrones, firs and pines. The topography is moderately steep and westerly sloping. Surrounding terrain is made up primarily of moderately steep rangeland property.

The facility has been an active quarry site since approximately 1960. Mendocino County records show that the facility has been permitted for mining operations since 1992.

Minor natural drainage swales exist north and south of the facility. There are no drainage ways near the facility which support fish.

## **2.4 Facility Operations**

Mining begins with clearing, grubbing, and stripping and stockpiling of topsoil. This occurs incrementally as required to extend the active mining face of the quarry. Rock at the quarry is loosened by blasting. This blasting is done on an as-needed basis, and occurs typically once per year, by a professional blasting company. The loosened rock is removed from the quarry face by bull dozers and loaders and transported to a primary (jaw) crusher that delivers the crushed material to secondary (cone) crushers and screens. Crushed material is moved through out the facility by conveyors to the screens and secondary crushers and ultimately to the appropriate material stockpiles.

### **2.4.1 Hours of Operation**

The hours of quarry operation are Monday to Friday, 6 a.m. to 5 p.m. However, the quarry can open at any time day or night any day of the week when there are emergency situations, typically per the request of Caltrans or the County Department of Transportation.

### **2.4.2 Access and Circulation**

Access to the quarry is via a driveway, lying adjacent to the northeast of Laytonville-Dos Rios Road (CR 322). An internal haul road will be developed as, quarry operations progress, to be capable of accommodating one-way traffic. Equipment and truck traffic will operate between the expansion quarry and the processing facility on the existing quarry floor. Maximum grade is expected not to exceed 12% and will be surfaced with gravel if not in exposed hard rock. This road will be restricted to the use by authorized quarry personnel.

### **2.4.3 Wash Operations**

The facility does not currently perform washing operations of aggregate.

### **2.4.4 Aggregate Storage**

Processing and aggregate storage will be done primarily during the period of the year when construction is minimal in order to use the company employees year round. Stockpiles are usually built up during this period so that customers are able to get serviced year round, and the applicant is prepared for any emergency work that may occur. As the construction season progresses, stockpiles are reduced and slowly replaced as personnel is available for processing.

### **2.4.5 Material Recycling**

The facility may be requested to receive used Portland Cement Concrete (PCC) and Asphalt Concrete (AC) from various locations to be processed and recycled. Material received will be crushed and screened then stockpiled and sold as an alternative base rock type material that is made up completely of used asphalt or concrete.

### **2.4.6 Topsoil Management**

Topsoil removed, to expose rock to be extracted, will be stockpiled in dedicated topsoil storage areas at the facility. The topsoil storage piles will be covered or re-vegetated to prevent erosion and suppress dust.

### **2.4.7 Facility Equipment**

Laytonville Rock quarry and aggregate processing equipment includes:

#### Electrical

- Jaw Crusher
- Cone Crushers
- Screens
- Conveyors
- Belt Press
- Pumps
- Feeder
- Stacker
- Wash Plant

#### Gas/Diesel

- Wheeled Loaders
- Tracked Excavators
- Bulldozers
- Skidsteer Loaders
- Generators

## **2.5 Drainage and Water Quality**

Stormwater from the quarry floor drains towards two catchment ponds at the bottom of the cut face of the quarry. From these ponds, the water flows into an existing larger detention pond at the west edge of the site, via culverts. After settling, the water outlets into a swale that drains into a ditch along Dos Rios Road. The receiving waters, approximately 1 -1/2 miles away, is Ten Mile Creek.

The landing and ditches at the bottom of the quarry face are sloped back towards the face and directs stormwater towards the northerly most collection pond. This will prevent any stomwater from running through the shop, equipment storage and heavy truck traffic areas. Additionally, a berm hs been placed around the east side of the gravel plant to aid in keeping waters out of this operation.

The ponds designed to handle sediment capacity during a 25 year storm; two collection ponds and one detention pond. The ponds are inspected and cleaned on a regular basis. A large berm has been placed around the toe of the pit floor to channel stormwater from the pit floor into the sediment pond.

As quarry operations progress a lower pit floor will be formed which will collect all stormwater run off from the quarry face.

## **2.6 Wastewater**

### **2.6.1 Sanitary/Septic**

Toilet facilities at the site are portable toilets. These facilities are serviced and emptied on a regular basis by outside sources licensed and trained in the handling and transporting of sanitary/septic waste.

### **2.6.2 Aggregate Wash Water**

No washing of aggregate is performed at the facility.

## **2.7      *Hazardous Materials***

Explosives are used for blasting at the quarry. Typically, blasting is done once per year. No explosives are stored on site. The blasting is done by an independent company who transports the explosives to the site and conducts the blasting.

No above ground or underground diesel fuel tanks exist on site. Quarry operating equipment is fueled by commercial mobile fuel truck or from mobile fuel tanks mounted in pickup trucks. Small amounts of lubricants, motor oil, transmission fluid, and hydraulic fluid are kept onsite in sealed 55-gallon drums or sealed containers in lesser volumes. Waste lubricants, motor oil, transmission fluid, and hydraulic fluid is stored in sealed 55-gallon drums and removed from the facility on a regular basis.

No more than 500-gallons of new or waste lubricants, motor oil, transmission fluid or hydraulic fluid will be stored at the site at any time.

## **2.8      *Air Quality***

Dust abatement controls will be in accordance with the Air Quality Resource Board Standards for Mendocino County. Dust reduction will be achieved by watering the roadways during hauling periods, wetting the stock pile, and keeping adequate moisture in the processed material to minimize the creation of airborne particles. Each stacker conveyor has a water mist system to control dust.

## **2.9      *Future Facility Operations***

None anticipated at the time this SWPPP was prepared.

## SECTION 3 POTENTIAL SIGNIFICANT POLLUTANT SOURCES

### *3.1 Facility Activities and Potential Associated Pollutants*

<b>Activity</b>	<b>Pollutant Source</b>	<b>Pollutant</b>
Site Preparation	Road construction	Dust, Total Suspended Solids (TSS), Total Dissolved Solids (TDS), Turbidity
	Removal of overburden	
	Removal of waste rock	
Mineral Extraction	Blasting activities	Dust, TSS
Mineral Processing Activities	Rock sorting	Dust, TSS, TDS, Turbidity, Fines
	Rock crushing	Dust, TSS, TDS, Turbidity, Fines
	Rock washing	TSS, TDS, Turbidity, pH
	Raw material storage	Dust, TSS, TDS, Turbidity
	Waste rock storage	Dust, TSS, TDS, Turbidity, pH
	Raw material loading	Dust, TSS, TDS, Turbidity
	Processing materials unloading	Diesel/Gas Fuel, Oil
	Raw or waste material transportation	Dust, TSS, TDS, Turbidity
Other Activities	Sediment pond upsets	TSS, TDS, Turbidity, pH
	Sediment pond sludge removal & disposal	Dust, TSS, TDS, Turbidity, pH
	Air emission control cleaning	Dust, TSS, TDS, Turbidity
Equipment/Vehicle Maintenance	Fueling activities	Diesel/Gas Fuel, Oil
	Parts cleaning	Oil, Solvents, acids
	Waste disposal of oily rags, oil and gas filters, batteries, coolants, degreasers	Oil, Solvents, acids
	Fluid replacement including hydraulic fluid, oil, transmission fluid, radiator fluids, and grease	Oil, solvents
Reclamation Activities	Site preparation for stabilization	Dust, TSS, TDS, turbidity
	Fertilizers	Nitrogen, phosphorus

### 3.2 *History of Spills or Leaks*

No visual or recorded evidence of spills or leaks at the facility were discovered at the time this SWPPP was prepared. The California State Water Board GeoTracker web site, [www.geotracker.waterboards.ca.gov](http://www.geotracker.waterboards.ca.gov), does not indicate that there are any sites with reported spills or leaks within a 1/2 mile radius of this facility.

<b>GeoTracker ID</b>	<b>Site Name</b>	<b>Clean Up Status</b>	<b>Address</b>	<b>City</b>	<b>Latitude</b>	<b>Longitude</b>

## SECTION 4 STORMWATER CONTROL MEASURES

### 4.1 Source Control BMPs

This section provides a list of Source Control Best Management Practices (BMPs) to be implemented at this facility to reduce or eliminate pollution to storm water. Fact Sheets for selected BMPs are provided in Appendix A.

SOURCE CONTROL BMP TABLE					
BMP ID No.	BMP NAME	FACT SHEET PROVIDED	BMP USED		IF NOT USED, STATE REASON
			YES	NO	
SC-10	Non-Storm water Discharge	X	X		
SC-11	Spill Prevention, Control & Cleanup	X	X		
SC-20	Vehicle & Equipment Fueling	X	X		
SC-21	Vehicle & Equipment Cleaning	X	X		
SC-22	Vehicle & Equipment Repair	X	X		
SC-30	Outdoor Loading/Unloading	X	X		
SC-31	Outdoor Liquid Container Storage	X	X		
SC-32	Outdoor Equipment Operations	X	X		
SC-33	Outdoor Storage of Raw Materials	X	X		
SC-34	Waste Handling & Disposal	X	X		
SC-35	Safer Alternative Products	X	X		
SC-40	Contaminated or Erodible Areas	X	X		
SC-41	Building & Grounds Maintenance	X	X		
SC-42	Building Repair & Construction	X	X		
SC-43	Parking/Storage Area Maintenance	X	X		
SC-44	Drainage System Maintenance	X	X		

## 4.2 Treatment Control BMPs

This section provides a list of Treatment Control Best Management Practices (BMPs) to be implemented at this time or in the future at this facility to reduce or eliminate pollution to storm water. Fact Sheets for selected BMPs are provided in Appendix B.

<b>TREATMENT CONTROL BMP TABLE</b>					
<b>BMP ID No.</b>	<b>BMP NAME</b>	<b>FACT SHEET PROVIDED</b>	<b>BMP USED</b>		<b>IF NOT USED, STATE REASON</b>
			<b>YES</b>	<b>NO</b>	
TC-10	Infiltration Trench	X		X	Other BMPs used
TC-11	Infiltration Basin	X	X		
TC-12	Retention/Irrigation	X		X	Other BMPs used
TC-20	Wet Pond	X		X	Other BMPs used
TC-21	Constructed Wetland	X		X	Other BMPs used
TC-22	Extended Detention Basin	X	X		
TC-30	Vegetated Swale	X		X	
TC-31	Vegetated Buffer Strip	X		X	
TC-32	Bioretention	X		X	
TC-40	Media Filter	X		X	Other BMPs used
TC-50	Water Quality Inlet	X		X	Other BMPs used
TC-60	Multiple Systems	X		X	Other BMPs used
MP-20	Wetland	X		X	Other BMPs used
MP-40	Media Filter	X		X	Other BMPs used
MP-50	Wet Vault	X		X	Other BMPs used
MP-51	Vortex Separator	X		X	Other BMPs used
MP-52	Drain Insert	X		X	Other BMPs used

### 4.3 Erosion Control BMPs

This section provides a list of Erosion Control Best Management Practices (BMPs) to be implemented at this time or in the future at this facility to reduce or eliminate pollution to storm water. Fact Sheets for selected BMPs are provided in Appendix B.

<b>EROSION CONTROL BMP TABLE</b>					
<b>BMP ID No.</b>	<b>BMP NAME</b>	<b>FACT SHEET PROVIDED</b>	<b>BMP USED</b>		<b>IF NOT USED, STATE REASON</b>
			<b>YES</b>	<b>NO</b>	
EC-1	Scheduling	X	X		
EC-2	Preserve Existing Vegetation	X	X		
EC-3	Hydraulic Mulch			X	Other BMPs used
EC-4	Hydroseeding			X	Other BMPs used
EC-5	Soil Binders			X	Other BMPs used
EC-6	Straw Mulch			X	Other BMPs used
EC-7	Geotextiles & Mats			X	Other BMPs used
EC-8	Wood Mulch			X	Other BMPs used
EC-9	Earth Dikes and Drainage Swales	X	X		
EC-10	Velocity Dissipation Devices	X	X		
EC-11	Slope Drains			X	Other BMPs used
EC-12	Streambank Stabilization			X	Not Applicable To Site
EC-13	Polyacrylamide			X	Other BMPs used
EC-14	Compost Blankets			X	Other BMPs used
EC-15	Soil Preparation / Roughening			X	Other BMPs used
EC-16	Non-Vegetative Stabilization	X	X		

#### 4.4 Sediment Control BMPs

This section provides a list of Sediment Control Best Management Practices (BMPs) to be implemented at this time or in the future at this facility to reduce or eliminate pollution to storm water. Fact Sheets for selected BMPs are provided in Appendix B.

<b>SEDIMENT CONTROL BMP TABLE</b>					
<b>BMP ID No.</b>	<b>BMP NAME</b>	<b>FACT SHEET PROVIDED</b>	<b>BMP USED</b>		<b>IF NOT USED, STATE REASON</b>
			<b>YES</b>	<b>NO</b>	
SE-1	Silt Fence			X	Other BMPs used
SE-2	Sediment Basin			X	Other BMPs used
SE-3	Sediment Trap	X	X		
SE-4	Check Dam	X	X		
SE-5	Fiber Rolls	X	X		
SE-6	Gravel Bag Berm	X	X		
SE-7	Street Sweeping & Vacuuming	X	X		
SE-8	Sand Bag Barrier	X	X		
SE-9	Straw Bale Barrier			X	Other BMPs used
SE-10	Storm Drain Inlet Protection	X	X		
SE-11	Active Treatment System			X	Other BMPs used
SE-12	Manufactured Linear Sediment Controls			X	Other BMPs used
SE-13	Compost Sock & Berms			X	Other BMPs used
SE-14	Biofilter Bags			X	Other BMPs used

#### 4.5 *Wind Erosion Control BMPs*

This section provides a list of Wind Erosion Control Best Management Practices (BMPs) to be implemented at this time or in the future at this facility to reduce or eliminate pollution to storm water. Fact Sheets for selected BMPs are provided in Appendix B.

<b>WIND EROSION CONTROL BMP TABLE</b>					
<b>BMP ID No.</b>	<b>BMP NAME</b>	<b>FACT SHEET PROVIDED</b>	<b>BMP USED</b>		<b>IF NOT USED, STATE REASON</b>
			<b>YES</b>	<b>NO</b>	
WE-1	Wind Erosion Control	X	X		

#### 4.6 *Tracking Control BMPs*

This section provides a list of Tracking Control Best Management Practices (BMPs) to be implemented at this time or in the future at this facility to reduce or eliminate pollution to storm water. Fact Sheets for selected BMPs are provided in Appendix B.

<b>TRACKING CONTROL BMP TABLE</b>					
<b>BMP ID No.</b>	<b>BMP NAME</b>	<b>FACT SHEET PROVIDED</b>	<b>BMP USED</b>		<b>IF NOT USED, STATE REASON</b>
			<b>YES</b>	<b>NO</b>	
TC-1	Stabilized Construction Entrance/Exit	X	X		Paved entrance and rocked interior road
TC-2	Stabilized Construction Roadway	X	X		
TC-3	Entrance/Outlet Tire Wash			X	Other BMPs used

#### 4.7 *Non-Stormwater and Material Management BMPs*

This section provides a list of Non-Stormwater and Material Management Best Management Practices (BMPs) to be implemented at this time or in the future at this facility to reduce or eliminate pollution to storm water. Fact Sheets for selected BMPs are provided in Appendix B.

<b>NON-STORMWATER &amp; MATERIAL MANAGMENT BMP TABLE</b>					
<b>BMP ID No.</b>	<b>BMP NAME</b>	<b>FACT SHEET PROVIDED</b>	<b>BMP USED</b>		<b>IF NOT USED, STATE REASON</b>
			<b>YES</b>	<b>NO</b>	
NS-1	Water Conservation Practices	X	X		
NS-2	Dewatering Operations	X	X		
NS-3	Paving and Grinding Operations			X	Not Applicable To Site
NS-4	Temporary Stream Crossing			X	Not Applicable To Site
NS-5	Clear Water Diversion			X	Not Applicable To Site
NS-6	Illicit Connection/Discharge	X	X		
NS-7	Potable Water/Irrigation	X	X		
NS-8	Vehicle and Equipment Cleaning	X	X		
NS-9	Vehicle and Equipment Fueling	X	X		
NS-10	Vehicle and Equipment Maintenance	X	X		
NS-11	Pile Driving Operations			X	Not Applicable To Site
NS-12	Concrete Curing			X	Not Applicable To Site
NS-13	Concrete Finishing			X	Not Applicable To Site
NS-14	Material Over Water			X	Not Applicable To Site
NS-15	Demolition Adjacent to Water			X	Not Applicable To Site
NS-16	Temporary Batch Plant			X	Not Applicable To Site

#### 4.8 Waste Management & Materials Pollution Control BMPs

This section provides a list of Waste Management and Materials Pollution Control Best Management Practices (BMPs) to be implemented at this time or in the future at this facility to reduce or eliminate pollution to storm water. Fact Sheets for selected BMPs are provided in Appendix B.

<b>WASTE MANAGEMENT &amp; MATERIALS POLLUTION CONTROL BMP TABLE</b>					
<b>BMP ID No.</b>	<b>BMP NAME</b>	<b>FACT SHEET PROVIDED</b>	<b>BMP USED</b>		<b>IF NOT USED, STATE REASON</b>
			<b>YES</b>	<b>NO</b>	
WM-1	Material Delivery and Storage			X	Other BMPs used
WM-2	Material Use			X	Other BMPs used
WM-3	Stockpile Management	X	X		
WM-4	Spill Prevention and Control			X	Other BMPs used
WM-5	Solid Waste Management			X	Other BMPs used
WM-6	Hazardous Waste Management			X	Other BMPs used
WM-7	Contaminated Soil Management			X	Other BMPs used
WM-8	Concrete Waste Management			X	Not Applicable To Site
WM-9	Sanitary/Septic Waste Management	X	X		
WM-10	Liquid Waste Management			X	Not Applicable To Site

## **SECTION 5 TRAINING**

### **5.1 *Training Schedule***

Employees currently receive training on spill cleanup and control, and safety measures which include proper handling of hazardous materials. Safety training also supports actions that will minimize the risk of storm water contamination.

Current training procedures will be modified to include awareness about storm water pollution, and the relationship between facility activities and potential pollutants. This training will occur once per year for all employees. All new employees will be provided this training during their normal orientation.

Additional training will be provided on a quarterly basis for those employees designated to be facility inspectors. Training will include a full review of this SWPPP and the procedures and requirements for facility monitoring and reporting.

Training will be conducted by individuals familiar with the facility operations and storm water pollution prevention.

### **5.2 *Training Records***

A training attendance sheet is provided in Appendix C. All completed training attendance sheets shall be kept in Appendix C and employee personnel files will be updated to reflect training received.

## **SECTION 6 FACILITY MONITORING & SAMPLING**

The General Permit requires dischargers to develop and implement a facility-specific monitoring program to provide indicator monitoring information for the following:

- 1) BMPs addressing pollutants in storm water discharges and authorized non-storm water discharges to comply with the Discharge Prohibitions, Effluent Limitations, and Receiving Water Limitations.
- 2) The presence of pollutants, and their sources, in storm water discharges and authorized non-storm water discharges that may require immediate correction action, additional BMP implementation, or SWPPP revisions.
- 3) The effectiveness of BMPs to prevent or reduce pollutants in storm water discharges and authorized non-storm water discharges.

### ***6.1 Designated Personnel***

Section 1.3 lists personnel designated to perform monitoring, collect samples, and report facility information. This list shall be reviewed during quarterly training and updated as necessary. This SWPPP shall be amended accordingly should personnel and or responsibilities change.

### ***6.2 Non-Storm Water Discharge Visual Monitoring***

1. Non-Storm Water Discharge (NSWD) visual monitoring shall be conducted quarterly. Quarters are as follows:
  - 1st Quarter = January thru March
  - 2nd Quarter = April thru June
  - 3rd Quarter = July thru September
  - 4th Quarter = October thru December
2. NSWD visual monitoring shall not be conducted more than 16 weeks apart.
3. NSWD visual monitoring shall be conducted during daylight hours, on days without precipitation, and during scheduled facility operating hours.
4. NSWD visual monitoring and reporting of all drainage areas of the facility shall include the following:
  - The presence or indications of prior NSWD.
  - Authorized and/or Unauthorized NSWD and their source.
  - Observed pollutant characteristics (i.e. floating and suspended material, oil and grease, discoloration, turbidity, odor, etc.) and their source.
5. Non-Storm Water Discharge Visual Monitoring shall be done using the Facility Visual Observation/Inspection Form found in Appendix D. Completed forms are to be filed in this same Appendix, in chronological order, for a minimum of five (5) years

### **6.3 Storm Water Discharge Visual Monitoring**

1. Storm Water Discharge (SWD) visual monitoring shall be conducted for the first qualifying storm event of each month. Visual monitoring shall be conducted for all drainage areas and discharge locations during the first four hours after a determination that the discharge is from a qualifying storm event. As related to visual monitoring, a qualifying storm event is one that:
  - Has produced a minimum of 1/4 inch of rainfall as measured by an on-site rainfall measurement device, and;
  - Was preceded by two consecutive days of dry weather. Dry weather shall be defined as two consecutive days of combined rainfall of less than 1/8 inch as measured by an on-site rainfall measuring device.
2. SWD visual monitoring shall be conducted during daylight hours, on days with precipitation, and during scheduled facility operating hours.
3. SWD visual monitoring and reporting of all drainage areas and discharge locations of the facility shall include the following:
  - Observed pollutant characteristics (i.e. floating and suspended material, oil and grease, discoloration, turbidity, odor, etc.) and their source.
4. Storm Water Discharge Visual Monitoring shall be done using the Facility Visual Observation/Inspection Form found in Appendix D. Completed forms are to be filed in this same Appendix, in chronological order, for a minimum of five (5) years.

### **6.4 Prior to Likely Precipitation Event Visual Monitoring**

Facility personnel will monitor weather forecasts daily, during normal working hours, beginning October 1st and ending March 31st of the following year to determine if likely precipitation event visual monitoring is needed. A likely precipitation event is defined as:

- Any weather pattern that is forecasted to have a 50%, or greater, chance of producing precipitation in the area of the facility. Facility personnel shall obtain likely precipitation forecast information from the National Weather Service Forecast Office (e.g., by entering the zip code of the facilities location at [www.srh.noaa.gov/forecast](http://www.srh.noaa.gov/forecast)).
1. Prior to any likely precipitation event and during normal facility operating hours, facility personnel shall:
    - Visually observe any storm water storage and containment areas to detect leaks, contamination, and ensure maintenance of adequate freeboard.
    - Visually observe all storm water drainage areas and discharge locations to identify any spills, leaks, or uncontrolled pollutant sources and implement appropriate BMPs.
  2. Likely Precipitation Event Monitoring shall be done using the Facility Visual Observation/Inspection Form found in Appendix D. Completed forms are to be filed in this same Appendix, in chronological order, for a minimum of five (5) years.

## 6.5 *Sampling*

Properly trained and designated facility personnel and/or technicians from a State Certified Laboratory shall collect storm water samples from the discharge of the settling pond/sediment trap near the west boundary of the site, identified on the WPCD, located in Section 1.7. Storm water samples will be taken for the first qualifying storm event of each calendar quarter, during scheduled facility operating hours. In the event that a sample was not taken for the first qualifying storm event of any quarter, samples from the next qualifying storm event in that quarter shall be collected.

Because the facility has been designed to retain and infiltrate storm water, to the extent facility operations will not be impeded, there may be no samples of discharge to take. However, facility personnel should continue to monitor, and expect to collect samples for qualifying storm events.

If no discharge sample is collected in a quarter it shall be noted in the annual report along with dates of qualifying rain events and explanation as to why no samples were taken.

Quarters are as follows:

- 1<sup>st</sup> Quarter = January thru March
- 2<sup>nd</sup> Quarter = April thru June
- 3<sup>rd</sup> Quarter = July thru September
- 4<sup>th</sup> Quarter = October thru December

A qualifying storm event is one that:

- Has produced a minimum of 1/4 inch of rainfall as measured by an on-site rainfall measurement device, and;
- Was preceded by two consecutive days of dry weather. Dry weather shall be defined as two consecutive days of combined rainfall of less than 1/8 inch as measured by an on-site rainfall measuring device.

Facility personnel will contact and obtain sample bottles from the following State Certified Laboratory:

Alpha Analytical Laboratories, Inc. (ELAP# 1551)  
208 Mason Street  
Ukiah, CA 95482  
P: (707) 468-0401  
F: (707) 468-5267

Samples taken by facility personnel shall be delivered for testing the same day and be accompanied by a complete chain of custody form. Sample bottle order form and chain of custody form are located in Appendices F and G.

Should facility personnel request laboratory field technicians to perform sampling the laboratory will be contacted 48 hours prior to likely precipitation event.

## 6.6 Sample Analytical Parameters

The following table identifies analytical parameters, test methods, detection limits, and reporting units for all sample locations identified on the Facility Site Plan.

Parameter	Test Method	Detection Limit	Reporting Units	Numeric Action Level (NAL)
pH	EPA 9040 and/or Field Test with Calibrated Portable Instrument	0.2 pH	pH Units	Below 6.0 or Above 9.0
SC (Specific Conductance)	EPA 120.1 SM 2510-B and/or Field Test with Calibrated Portable Instrument	1.0	µS/cm	200
TSS (Total Suspended Solids)	EPA 160.2 SM2540-D	1.0	mg/L	100
O&G (Oil & Grease)	EPA 413.2 EPA 1664	1.0	mg/L	15
N + N (Nitrate + Nitrate Nitrogen)	SM 4500-P B+E	0.05	mg/L as N	0.68

## **SECTION 7 Facility Reporting & Record Keeping**

### ***7.1 Annual Comprehensive Facility Compliance Evaluation (ACFCE)***

Designated facility personnel shall conduct one ACFCE in each reporting period (July 1-June 30). Evaluations shall be conducted by properly trained and qualified personnel familiar with the facility operations and elements of the SWPPP. The facility manager will schedule the ACFCE to be conducted within 8 to 16 months of each other.

This SWPPP shall be revised and/or amended, as appropriate, and revisions implemented within 90 days of the evaluation.

The Annual Comprehensive Facility Compliance Evaluation shall include the following:

1. A review of all visual inspection and monitoring records, and sampling and analysis results conducted during the previous four quarters.
2. A visual inspection of all areas of industrial activity and associated potential pollutant sources for evidence of, or potential for, pollutants entering the drainage system.
3. A visual inspection of equipment and/or materials needed to implement the SWPPP.
4. A review and evaluation of all BMPs for each area of industrial activity and associated potential pollutant sources to determine whether the BMPs are properly designed, implemented, and are effective in reducing and preventing pollutants in storm water discharges and authorized non-storm water discharges.
5. An evaluation report that includes:
  - a) The name and title of the person performing the evaluation;
  - b) Date(s) of the evaluation;
  - c) Summary and implementation dates of all significant corrective actions and SWPPP revisions for reporting year;
  - d) Schedule for implementing any incomplete corrective actions and SWPPP revisions;
  - e) Any incidents of non-compliance and the corrective actions taken;
  - f) A certification of compliance with the Industrial General Permit by the Legal Responsible Party (LRP). If the certification cannot be provided the LRP shall explain in the evaluation report why Industrial General Permit compliance has not been attained;
  - g) The ACFCE report shall be submitted as part of the Annual Report.

The Annual Comprehensive Facility Compliance Evaluation report form is included in Appendix E. Copies of completed forms shall be kept in this Appendix, in chronological order, for a minimum of five (5) years.

## **7.2 Annual Report**

Prior to adoption of the updated Industrial General Permit, designated facility personnel will prepare and submit a paper or electronic copy, with original signature, of the Annual Report to the Regional Water Quality Control Board no later than July 1st of each year. After adoption of the updated Industrial General Permit, Annual Reports and all other required documentation will be uploaded to the State Water Board via SMARTS.

A copy of the Annual Report submitted each year will be retained in Appendix J, for a minimum of five (5) years and be available upon written request by U.S. EPA, Regional Water Quality Control Board, State Water Board, or local storm water management agency. Paper or electronic copies of the Annual Report(s) will be provided within 10 working days of the request.

The Annual Report shall include the following:

1. Summary and evaluation of all sampling and analysis results with copies of laboratory reports;
2. The Annual Comprehensive Facility Compliance Evaluation Report;
3. Summary of corrective actions taken during the compliance year;
4. Identification of any compliance activities or corrective actions that were not implemented.

All Annual Reports or other information required by the Industrial General Permit or requested by the Regional Water Quality Control Board, State Water Board, U.S. EPA, or local storm water management agency shall be certified and submitted by the Legal Responsible Party (LRP) or the LRP's Approved Signatory (AS), and be signed with the following statement:

*"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, to the best of my knowledge and belief, the information submitted is, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."*

## **7.3 Record Keeping**

Either a written or electronic copy of all storm water monitoring information, records, and reports required by the Industrial General Permit shall be retained at the facility for a minimum of five (5) years.

# **Appendix A**

## **Source Control BMPs**

# **Appendix B**

## **Treatment Control BMPs**

**Appendix C**  
**Training Attendance Sheet**



# Appendix D

## Facility Visual Observation/Inspection Form

# Facility Visual Observation/Inspection Report

General Information			
<b>Facility Name</b>	Laytonville Rock - 1135 Dos Rios Road		
<b>WDID No.</b>	1 23I024035		
<b>Date of Inspection</b>		<b>Time</b>	
<b>Inspector's Name</b>			
<b>Inspector's Title</b>			
Weather Information			
<b>Weather Condition</b> <input type="checkbox"/> Clear <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Cloudy	<b>Precipitation Condition</b> <input type="checkbox"/> None <input type="checkbox"/> Misty <input type="checkbox"/> Heavy Rain <input type="checkbox"/> Light Rain <input type="checkbox"/> Hail <input type="checkbox"/> Rain <input type="checkbox"/> Snow	<b>Wind Condition</b> <input type="checkbox"/> None <input type="checkbox"/> Less than 5 mph <input type="checkbox"/> Greater than 5 mph	
Inspection Type <i>Check all that apply</i>	Storm Information		
<input type="checkbox"/> Monthly <input type="checkbox"/> Quarterly: <input type="checkbox"/> 1 <sup>st</sup> <input type="checkbox"/> 2 <sup>nd</sup> <input type="checkbox"/> 3 <sup>rd</sup> <input type="checkbox"/> 4 <sup>th</sup>	Time elapsed since last storm _____ days	Precipitation amount from last storm _____ inches	
<input type="checkbox"/> Pre-Storm	Time storm is expected _____ (date) _____ (time)	Expected precipitation amount _____ inches	
<input type="checkbox"/> During Storm Event	Time elapsed since storm began _____ hours _____ minutes	Precipitation amount <i>(recorded from site rain gauge)</i> _____ inches	
<input type="checkbox"/> Post-Storm	Time elapsed since storm _____ hours _____ minutes	Precipitation amount <i>(recorded from site rain gauge)</i> _____ inches	
<b>Have any previously unidentified discharges of pollutants occurred since the last inspection?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <b>If yes, describe:</b>     			
<b>Are there any discharges occurring at the time of inspection?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <b>If yes, describe:</b>     			

## Facility Drainage Areas and Discharge Locations

- Drainage areas and discharge locations to be inspected at this facility are identified below and correspond to locations on the Facility SWPPP Site Plan. Carry a copy of the Site Plan with you during your inspections. This list will ensure that you are inspecting all required areas.

Drainage Area & Discharge Location	Type of Discharge	Source of Discharge	Observations <i>If yes, describe observation, cause and corrective action taken on page 5. Attach additional pages as needed.</i>	Water Quality Samples Taken?
Access Road	<input type="checkbox"/> None <input type="checkbox"/> Storm Water <input type="checkbox"/> Authorized Non-Storm Water <input type="checkbox"/> Non-Authorized Non-Storm Water	<input type="checkbox"/> N/A <input type="checkbox"/> Rain Event <input type="checkbox"/> Other ( <i>Describe on Page 5</i> )	<b>Odor</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <b>Floating Material</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <b>Suspended Material</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <b>Discoloration</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <b>Sheen</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <b>Turbid</b> <input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Aggregate Processing Area	<input type="checkbox"/> None <input type="checkbox"/> Storm Water <input type="checkbox"/> Authorized Non-Storm Water <input type="checkbox"/> Non-Authorized Non-Storm Water	<input type="checkbox"/> N/A <input type="checkbox"/> Rain Event <input type="checkbox"/> Other ( <i>Describe on Page 5</i> )	<b>Odor</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <b>Floating Material</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <b>Suspended Material</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <b>Discoloration</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <b>Sheen</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <b>Turbid</b> <input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Drainage Basin	<input type="checkbox"/> None <input type="checkbox"/> Storm Water <input type="checkbox"/> Authorized Non-Storm Water <input type="checkbox"/> Non-Authorized Non-Storm Water	<input type="checkbox"/> N/A <input type="checkbox"/> Rain Event <input type="checkbox"/> Other ( <i>Describe on Page 5</i> )	<b>Odor</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <b>Floating Material</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <b>Suspended Material</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <b>Discoloration</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <b>Sheen</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <b>Turbid</b> <input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Infiltration/Sediment Pond	<input type="checkbox"/> None <input type="checkbox"/> Storm Water <input type="checkbox"/> Authorized Non-Storm Water <input type="checkbox"/> Non-Authorized Non-Storm Water	<input type="checkbox"/> N/A <input type="checkbox"/> Rain Event <input type="checkbox"/> Other ( <i>Describe on Page 5</i> )	<b>Odor</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <b>Floating Material</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <b>Suspended Material</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <b>Discoloration</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <b>Sheen</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <b>Turbid</b> <input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No

## Facility Structural BMP Control Measures

- Structural BMPs generally consist of structural devices that reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges such as; Overhead Coverage, Retention Ponds, Control Devices, Secondary Containment Structures and Treatment Devices.
- Structural BMPs incorporated at this facility are identified below and correspond to locations on the Facility SWPPP Site Plan. Carry a copy of the Site Plan with you during your inspections. This list will ensure that you are inspecting all required control measures.

Structural Control Measure	Control Measure is Operating Effectively?	If No, In Need of Maintenance, Repair, or Replacement?	Corrective Action Taken, If Needed (Describe action taken and date of completion if Control Measure is not Operating Effectively)
Infiltration/Sediment Pond	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Maintenance <input type="checkbox"/> Repair <input type="checkbox"/> Replacement	
Gravel/Earth Berm	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Maintenance <input type="checkbox"/> Repair <input type="checkbox"/> Replacement	
	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Maintenance <input type="checkbox"/> Repair <input type="checkbox"/> Replacement	
	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Maintenance <input type="checkbox"/> Repair <input type="checkbox"/> Replacement	
	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Maintenance <input type="checkbox"/> Repair <input type="checkbox"/> Replacement	
	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Maintenance <input type="checkbox"/> Repair <input type="checkbox"/> Replacement	
	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Maintenance <input type="checkbox"/> Repair <input type="checkbox"/> Replacement	
	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Maintenance <input type="checkbox"/> Repair <input type="checkbox"/> Replacement	
	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Maintenance <input type="checkbox"/> Repair <input type="checkbox"/> Replacement	

## Facility Areas of Industrial Materials or Activities Exposed to Storm Water

- Areas to be inspected at this facility are identified below and correspond to locations on the Facility SWPPP Site Plan. Carry a copy of the Site Plan with you during your inspections. This list will ensure that you are inspecting all required areas.

Area/Activity	Inspected?	Controls Adequate (appropriate, effective, and operating)?	Corrective Action Taken, If Needed (Describe action taken and date of completion if Control Measure is not Operating Effectively)
Dust Generation & Vehicle Tracking Areas	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Erodible Areas	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Equipment Operations & Maintenance Areas	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Fueling Station	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Material Handling & Storage Areas	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Waste Handling & Disposal Areas	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No	

**Non-Compliance**

Describe any incidents of non-compliance observed:

**Additional Control Measures**

Describe any additional control measures needed to comply with the permit requirements:

**Notes**

Use this space for any additional notes or observations from the inspection:

**CERTIFICATION STATEMENT**

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

**Print name and title:** \_\_\_\_\_

**Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

# Appendix E

## Annual Comprehensive Facility Compliance Evaluation

# Annual Comprehensive Facility Compliance Evaluation

General Information			
<b>Facility Name</b>	Laytonville Rock - 1135 Dos Rios Road		
<b>WDID No.</b>	1 23I024035		
<b>Reporting Period</b>			
<b>Date of Evaluation</b>		<b>Time</b>	
<b>Evaluator's Name</b>			
<b>Evaluator's Title</b>			

How many routine facility observations/inspections were performed during the reporting period?

Pre-Storm   
  During Storm   
  Post-Storm   
  Monthly   
  Quarterly

Where any deficiencies identified while performing this evaluation or during routine facility observations/inspections within the reporting period?     Yes     No

If yes to previous question, list below. Attach additional pages as needed.

Date	Deficiency	Corrected	Date Corrected
		<input type="checkbox"/> Yes <input type="checkbox"/> No	
		<input type="checkbox"/> Yes <input type="checkbox"/> No	
		<input type="checkbox"/> Yes <input type="checkbox"/> No	
		<input type="checkbox"/> Yes <input type="checkbox"/> No	
		<input type="checkbox"/> Yes <input type="checkbox"/> No	
		<input type="checkbox"/> Yes <input type="checkbox"/> No	
		<input type="checkbox"/> Yes <input type="checkbox"/> No	
		<input type="checkbox"/> Yes <input type="checkbox"/> No	

What must be done to correct any deficiencies that remain uncorrected? Attach additional pages as needed.

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Are all BMPs identified in the Facility SWPPP, including good housekeeping practices, actually being implemented at the time of this evaluation?

Yes No

If one or more BMPs were not being implemented, were corrective actions taken after the FIRST inspection to find the problem?

Yes No

Was/were the same failure(s) to implement a BMP deficiency(ie) noted in more than one inspection?

Yes No No deficiencies noted on any inspection

Did any of the routine facility site observations/inspections find that one or more of the BMPs were not effective in controlling the pollutant source for which it was designed?

Yes No All BMPs were effective

If BMPs were found to be ineffective, have they been replaced with an alternative or modified BMP?

Yes No All BMPs were being effective

At any time during the reporting period, were there any illicit discharges from this facility?

Yes No

Have all illicit discharges (including any discovered in previous years) been eliminated or permitted?

Yes No Permit applied for No known illicit discharges

Have any significant spills or leaks occurred at this facility during the reporting period?

Yes No

If any significant spills or leaks occurred, did they result in either a dry weather discharge or an actual discharge of the spilled or leaked material commingled with storm water (as opposed to the spilled material being washed away by storm water)?

Yes No No spills or leaks occurred

If any significant spills or leaks occurred, did they result in more than the minimum amounts of material being discharged in storm water? (Base your answer on your knowledge of the material) The minimum amounts could vary with the nature (toxicity, oxygen demand, pH, etc.) of the spilled or leaked material, from amounts left after a normal "sweeping" type of cleanup, to the point at which even trace amounts left after cleanup could cause an environmental problem.

Yes No No spills or leaks occurred

Have all known spills or leaks been cleaned up or otherwise prevented from contaminating storm water that would be discharged under the authority of this permit?

Yes No No spills or leaks occurred

How many times were actual storm water discharge observations/inspections performed and how many times were water quality samples taken of storm water discharge, during the reporting period?

\_\_\_\_\_ Actual Storm Water Discharge Observations      \_\_\_\_\_ Water Quality Samples Taken

Did analysis of water quality samples taken exceed Numeric Action Levels (NAL) or Numeric Effluent Levels (NEL) for elements or constituents identified in the Facility SWPPP?

Yes No

If yes to the previous question, list the element/constituent below and the test results.

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Would the results from the facility visual observations/inspections and/or water quality sampling indicate that there are pollutants in the facilities storm water discharges that are not adequately controlled by current BMPs?

Yes No

If the results of the facility visual observations/inspections and/or water quality sampling indicated a potential problem, was it due to one or more of the following?

- New pollutant source (including exposure of previously unexposed material)
- Failure to implement or maintain an existing BMP
- Less than expected performance from a BMP
- No BMP was selected to deal with that problem
- N/A (no problems identified)

If visual observations/inspections and/or water quality sample results indicate a potential problem, what has been done at the facility to resolve the problem?

- Eliminated exposure of pollutant source
- Modified existing BMP
- Added new BMP
- Plan to address problem by end of current reporting year
- N/A (no problems identified)

Are there any required revisions to the Facility SWPPP resulting from this evaluation?

Yes No

#### **CERTIFICATION STATEMENT**

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

**Print name and title:** \_\_\_\_\_

**Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

# Appendix F

## Sample Bottle Order Request Form



**BOTTLE ORDER REQUEST FORM**

<b>COMPANY NAME:</b>		<b>Please fax upon completion:</b>
<b>YOUR NAME:</b>		<b>UKIAH 707.468.5267</b>
<b>NEED BY DATE:</b>		<b>DUBLIN 925.828.6309</b>

<b>ANALYSIS FOR WHICH CONTAINER IS NEEDED</b>	<b>TYPE OF CONTAINER INCLUDING PRESERVATION</b>	<b>TOTAL QTY NEEDED:</b>

**PLEASE ALSO INDICATE:**

- |  |
|--|
| <input type="radio"/> INCLUDE SAMPLE LABELS  |
| <input type="radio"/> INCLUDE BLANK C.O.C.'s |
| <input type="radio"/> INCLUDE ICE CHEST(S)   |
| <input type="radio"/> INCLUDE BLUE ICE PACKS |

- |   |
|---|
| <input type="radio"/> CLIENT WILL PICK UP AT THE LAB  |
| <input type="radio"/> PLEASE DELIVER TO THIS ADDRESS: |
| _____   |
| _____   |

**NOTES:**

# Appendix G

## Sample Chain of Custody Form



Laboratory & Corporate: 208 Mason Street, Ukiah, CA 95482  
707-468-0401 Fax: 707-468-5267

Service Center & Micro Lab: 6398 Dougherty Rd, Ste 35, Dublin, CA 94568  
925-828-6226 Fax: 925-828-6309

# Chain of Custody Record

Reports and Invoices will be delivered by email in .pdf format.

Lab No. \_\_\_\_\_ Page \_\_\_\_\_ of \_\_\_\_\_

<b>Report to:</b> Company:		<b>Invoice to (if different):</b> Company:		<b>Project Info for Report:</b> Project ID:		Signature below authorizes work under terms stated on reverse side.																																					
Attn:		Attn:		Project No:		<b>Analyses Requested</b>										<b>TAT</b>	<b>Sample Notes</b> (lab use only)																										
Address:		Address:																Temperature: _____ deg. C																									
Phone/Fax:		Phone/Fax:				Shipment Method: _____																																					
Email Address:		Email Address:		Custody Seals: Y / N																																							
Samplers Signature:		Container:			Preservative:		Matrix:		<b>: Total Number of Containers</b>	<b>Lab Approval Required For Rush TATs</b>	<b>Sample Notes or CDPH Source Numbers:</b>																																
Print:		40ml VOA		HCL		None		<b>10 days</b> <input type="radio"/>				<b>5 days</b> <input type="radio"/>	<b>48 hours</b> <input type="radio"/>	<b>Other:</b> ____days <input type="radio"/>																													
<b>Sample Identification</b>		<b>Sampled:</b>		HNO3		Water									<b>RUSH:</b>	<b>Other:</b>	<b>Other:</b>	<b>Other:</b>																									
		Date		H2SO4		Soil													<b>5 days</b> <input type="radio"/>	<b>Other:</b>	<b>Other:</b>	<b>Other:</b>																					
		Time		Other		Other																	<b>Other:</b>	<b>Other:</b>	<b>Other:</b>	<b>Other:</b>																	
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# Appendix H

## Laboratory Analytical Results

# Appendix I

## Sample & Analysis Report – First & Second Storm

**FIRST STORM EVENT Sampling & Analysis Results for Reporting Period: 20\_\_\_\_ - 20\_\_\_\_**

Sample Location	Sample Collection Date/Time	Time Discharge Started	Analytical Results (First Storm Event)										
			Basic Parameters				Additional Parameters						
			pH	TSS	SC	O&G	N + N						
<b>Sample Point #1</b> Detention Pond Discharge	____/____/____ ____:____ __am __pm	____:____ __am __pm											
	____/____/____ ____:____ __am __pm	____:____ __am __pm											
	____/____/____ ____:____ __am __pm	____:____ __am __pm											
TEST REPORTING UNITS:			pH Units	mg/L	µS/cm	mg/L	mg/L as N						
TEST METHOD DETECTION LIMIT:			0.2	1.0	1.0	1.0	0.05						
NUMERIC ACTION LEVEL (NAL)			< 6.0 or > 9.0	100	200	15	0.68						
TEST METHOD USED: (Circle All That Apply)			EPA 9040 PA	EPA 160.2 SM2540D	EPA 120.1 SM2510B PA	EPA 413.2 EPA 1664	SM 4500-P B+EA						
ANALYZED BY: (Self or Lab):													

- If analytical results are less than the detection limit (or non detectable), show the value as less than the numerical value of the detection limit (example: <.05)
- If you did not analyze for a required parameter, do not report "0". Instead, leave the appropriate box blank
- When analysis is done using portable analysis (such as portable pH meters, SC meters, etc.), indicate "PA" in the appropriate test method used box.
- Indicate "No Discharge - No Sample Taken" for Sample Points with no discharge at time of Sample.

- TSS - Total Suspended Solids
- SC - Specific Conductance
- O&G - Oil & Grease
- N + N - Nitrate + Nitrate Nitrogen

**NAME OF PERSON COLLECTING SAMPLE(S):** \_\_\_\_\_ **TITLE:** \_\_\_\_\_

**SIGNATURE:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**SECOND STORM EVENT Sampling & Analysis Results for Reporting Period: 20\_\_\_\_ - 20\_\_\_\_**

Sample Location	Sample Collection Date/Time	Time Discharge Started	Analytical Results (Second Storm Event)										
			Basic Parameters				Additional Parameters						
			pH	TSS	SC	O&G	N + N						
<b>Sample Point #1</b> Detention Pond Discharge	____/____/____ ____:____ __am __pm	____:____ __am __pm											
	____/____/____ ____:____ __am __pm	____:____ __am __pm											
	____/____/____ ____:____ __am __pm	____:____ __am __pm											
TEST REPORTING UNITS:			pH Units	mg/L	µS/cm	mg/L	mg/L as N						
TEST METHOD DETECTION LIMIT:			0.2	1.0	1.0	1.0	0.05						
NUMERIC ACTION LEVEL (NAL)			< 6.0 or > 9.0	100	200	15	0.68						
TEST METHOD USED: (Circle All That Apply)			EPA 9040 PA	EPA 160.2 SM2540D	EPA 120.1 SM2510B PA	EPA 413.2 EPA 1664	SM 4500-P B+EA						
ANALYZED BY: (Self or Lab):													

- If analytical results are less than the detection limit (or non detectable), show the value as less than the numerical value of the detection limit (example: <.05)
- If you did not analyze for a required parameter, do not report "0". Instead, leave the appropriate box blank
- When analysis is done using portable analysis (such as portable pH meters, SC meters, etc.), indicate "PA" in the appropriate test method used box.
- Indicate "No Discharge - No Sample Taken" for Sample Points with no discharge at time of Sample.

- TSS - Total Suspended Solids
- SC - Specific Conductance
- O&G - Oil & Grease
- N + N - Nitrate + Nitrate Nitrogen

**NAME OF PERSON COLLECTING SAMPLE(S):** \_\_\_\_\_ **TITLE:** \_\_\_\_\_

**SIGNATURE:** \_\_\_\_\_ **Date:** \_\_\_\_\_

Appendix J  
Annual Report