

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

ORDER NO. 5-00-028

WASTE DISCHARGE REQUIREMENTS  
FOR  
U.S. DEPARTMENT OF AGRICULTURE  
FOREST SERVICE, PLUMAS NATIONAL FOREST  
WALKER MINE TAILINGS  
PLUMAS COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Board) finds that:

1. The Walker Mine Tailings are on public land administered by the U.S. Department of Agriculture, Forest Service, Plumas National Forest (USFS, hereafter referred to as Discharger). The nearby Walker Mine generated the tailings from copper mining activities that occurred from 1916 to 1941.
2. The Walker Mine Tailings (tailings) are in east central Plumas County about 20 miles east of Quincy and 20 miles north of Portola in Section 12, T24N, R11E and Sections 7 and 18, T24N, R12E, MDB&M, as shown on Attachment A. The total area of the tailings is about 100 acres and averages 28 feet in depth. The tailings are at the confluence of Dolly Creek and Little Grizzly Creek, as shown on Attachment B.
3. Waste Discharge Requirements Order No. 91-017 previously regulated the tailings. Order No. 91-017 is being updated to reflect water quality improvements at the site and to provide a compliance time schedule for additional improvements. These revised requirements also modify the monitoring and reporting program.
4. In 1991, the U.S. Environmental Protection Agency placed the site on the Federal Agency Hazardous Waste Compliance Docket pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act. The USFS adopted a Federal Record of Decision for the tailings in June 1994. The remedial actions selected for the site include channel erosion control, development of wetlands for passive water treatment, revegetation, and wind erosion control.
5. The Walker Mine Tailings site is downstream from the Walker Mine. During the operation of the mine, tailings from the mill were deposited in a constructed basin at the confluence of Dolly and Little Grizzly Creeks. Dolly Creek crosses the tailings in a northeast-southwest direction. Dolly Creek exits the tailings at a structure referred to as the "USFS Dam" and is identified as "R-2" on Attachment B.
6. An undetermined amount of storm water runoff is collected in a settling pond, which is about 2,300 feet southeast of the USFS Dam along the southern edge of the tailings. The settling

pond is equipped with a drop inlet culvert that discharges directly to Little Grizzly Creek. The discharge from the drop inlet culvert is identified as "R-6" on Attachment B.

7. These WDRs regulate the discharges from R-2, R-6, and unidentified non-point source discharge(s) such as leakage through the levee that separates Little Grizzly Creek from the tailings area.
8. In November 1987, the Board installed a mine seal in the Walker Mine, upstream of the tailing site, to reduce the loading of heavy metals (copper, iron, and zinc) on Dolly Creek and Little Grizzly Creek. This mine seal has resulted in a significant reduction in heavy metals loading to these waters.
9. Water quality data indicate that the Walker Mine tailings continue to contribute significant concentrations of copper to Dolly Creek. The dissolved copper concentration upstream of the tailings averages 22  $\mu\text{g/l}$  while copper concentrations at the USFS dam average 119  $\mu\text{g/l}$  (data from 1996 through 1998).
10. To contain the Walker Mine tailings, a levee was constructed along the west bank of Little Grizzly Creek and the flashboard dam (USFS Dam) was installed across the mouth of Dolly Creek. The USFS Dam prevents a majority of the tailings from washing downstream. However, the tailings continue to erode and flow into surface waters during rainfall events and snowmelt periods. The tailings are a water quality threat because of the existing and potential for release of tailings and turbid water to Dolly Creek and Little Grizzly Creek.
11. In 1991, the USFS constructed four acres of wetlands and stabilized 1500 feet of Dolly Creek on the tailings. The USFS designed the wetlands to function anaerobically, but the wetlands went aerobic due to sedimentation problems during the stream stabilization program.
12. The USFS 1994 Record of Decision (ROD) proposed two approaches to reduce the discharge of pollutants from the site. The first approach of the ROD is to provide additional stabilization of the Dolly Creek channel to reduce erosion and sedimentation and to create additional wetlands systems to reduce metal discharges into Dolly Creek. The USFS had planned to build a total of 15 acres of wetlands; however, they have constructed and maintained four acres.
13. The ROD evaluated diversion of Dolly Creek around the tailings if channel stabilization and the wetlands did not improve water quality to meet receiving water limitations. The diversion of Dolly Creek around the tailings would reduce the amount water requiring treatment within the wetlands. Monitoring data indicate that the initial Dolly Creek work has been only moderately effective in reducing metal discharges. Therefore, these WDRs require the Discharger to divert Dolly Creek and expand the wetlands area or take other effective actions to improve water quality in Dolly Creek.

14. The second approach of the ROD is to reduce erosion and metals loading from the remainder of the tailings. The Discharger has installed wind fences on 50 acres to control wind-induced erosion and initiated revegetation. Revegetation is expected to reduce wind erosion and reduce the oxygen in the acid producing upper layer (vadose zone) of the tailings therefore reducing the release of metals to groundwater and surface water. These WDRs require the Discharger to conduct additional revegetation on the mine tailings area or take other effective action to reduce erosion.
15. These WDRs protect beneficial uses of Little Grizzly Creek listed in Finding 18 and will comply with water quality objectives and goals throughout the length of Little Grizzly Creek. The Board recognizes that water quality in Dolly Creek upstream of the mine tailings may not meet water quality criteria for freshwater aquatic life. The Board also recognizes that the USFS may not be able to meet the receiving water limitations set forth in these WDRs due to the discharges from the upstream Walker Mine. However, the Discharger must continue to mitigate releases from the tailing site to Dolly Creek and comply with the receiving water limits and the compliance schedule listed in these WDRs. Reductions in the metal loading from the tailings into Dolly Creek will allow Little Grizzly Creek to meet water quality criteria.
16. Surface drainage from the tailings is to Dolly Creek and Little Grizzly Creek, both perennial streams. Little Grizzly Creek is tributary to Indian Creek, which is tributary to the East Branch, North Fork Feather River, which is tributary to the Feather River, thence to the Sacramento River.
17. This Order implements the Water Quality Control Plan for the Sacramento River Basin and the San Joaquin River Basin, Fourth Edition, (hereafter Basin Plan) which designates beneficial uses, establishes water quality objectives, and describes an implementation program and policies to achieve those objectives for all waters of the Basin. These requirements implement the Basin Plan.
18. The beneficial uses of the North Fork, Feather River are municipal and domestic supply, power generation, recreation, preservation and enhancement of cold-water fisheries and spawning habitat (aquatic life), and wildlife. Existing and potential beneficial uses of Dolly Creek and Little Grizzly Creek include recreation, preservation and enhancement of cold water fisheries and spawning habitat (aquatic life), and wildlife. Historically, before impacts to the watercourses from mining, Dolly Creek and Little Grizzly Creek were considered a prime cold-water fishery. The watercourses are currently utilized for recreation, preservation, and enhancement of wildlife. The Basin Plan also lists Dolly Creek and Little Grizzly Creek as Water Quality Limited Segments for aquatic life.
19. The mine tailings form a perched aquifer with the groundwater elevation dependent on the elevation of the USFS Dam. Groundwater elevations beneath the mine tailings average 5.7 feet below the surface of the tailings, ranging from 0.4 feet to 17 feet. Groundwater flow direction is towards Little Grizzly Creek.

20. The groundwater monitoring network consists of seven monitoring wells (see Attachment B). Monitoring data show that the tailings have impacted groundwater with copper (ranging from less than 10  $\mu\text{g/l}$  to 1700 $\mu\text{g/l}$ ). The impact of leachate from the tailings will be addressed through the tailings rehabilitation program required under compliance time schedule outlined in Provision E.9.
21. The beneficial uses of groundwater are domestic and municipal supply, agricultural supply, and industrial supply.
22. The action to update WDRs for this facility is exempt from the provisions of the California Environmental Quality Act in accordance with Title 14, California Code of Regulations, Sections 15301, 15308, and 15330.
23. The Board has notified the Discharger and interested agencies and persons of its intention to revise the waste discharge requirements for this facility.
24. In a public hearing, the Board heard and considered all comments pertaining to this facility and discharge.

**IT IS HEREBY ORDERED** that Order No. 91-017 is rescinded and the U.S. Department of Agriculture, Forest Service, Plumas National Forest and their agents, assigns and successors, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, shall comply with the following:

**A. Discharge Prohibitions**

1. Discharges causing the degradation of any water supply are prohibited.
2. Discharges having a pH less than 6.5 or greater than 8.5 are prohibited.

**B. Discharge Specifications**

1. Neither the treatment nor the discharge shall cause a pollution or nuisance as defined by the California Water Code, Section 13050.
2. Storm water discharges to any surface or groundwater shall not adversely impact human health or the environment.
3. Storm water discharges shall not cause or contribute to a violation of any applicable water quality standards contained in the Basin Plan.

### C. Receiving Water Limitations

1. The discharge(s) shall not cause concentrations in Little Grizzly Creek at R-5 (immediately above Road 25N42 and above the west side spring discharge) to exceed the following limits:

<u>Constituent</u>	<u>Units</u>	<u>Limitation</u>
Copper	$\mu\text{g/l}$	5.0
Iron	$\mu\text{g/l}$	1000
Zinc	$\mu\text{g/l}$	66

2. The Discharger shall comply with the above receiving water limitations in accordance with the time schedule in Provision E.9. These limitations have been specified to protect the beneficial uses of surface water.
3. The discharge shall not cause visible oil, grease, scum, foam, and floating or suspended material in the receiving waters or watercourses.
4. The discharge shall not cause concentrations of any materials in the receiving waters that are deleterious to human, animal, aquatic, or plant life.
5. The discharge shall not cause aesthetically undesirable discoloration of the receiving waters.
6. The discharge shall not cause bottom deposits in the receiving waters.
7. The discharge shall not cause fungus, slimes, or other objectionable growths in the receiving waters.
8. The discharge shall not cause the turbidity of the receiving waters to increase as follows:
  - a. More than 1 Nephelometric Turbidity Units (NTUs), where natural turbidity is between 0 and 5 NTUs.
  - b. More than 20 percent, where natural turbidity is between 5 and 50 NTUs.
  - c. More than 10 NTUs, where natural turbidity is between 50 and 100 NTUs.
  - d. More than 10 percent, where natural turbidity is greater than 100 NTUs.
9. The discharge shall not alter the normal ambient pH of the receiving water more than 0.5 units.

10. The discharge shall not cause taste or odor producing substances to impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin, or to cause nuisance or adversely affect beneficial uses.
11. The discharge shall not cause aquatic communities and populations, including vertebrate, invertebrate, and plant species, to be degraded.
12. The discharge shall not cause toxic pollutants to be present in the water column, sediments, or biota in concentrations that adversely affect beneficial uses; that produce detrimental response in human, plant, animal, or aquatic life; or that bioaccumulate in aquatic resources at levels which are harmful to human health.
13. The discharge shall not cause violations of any applicable water quality standard for receiving waters adopted by the Board or the State Water Resources Control Board (SWRCB).

#### **D. Financial Assurance**

The U.S. Department of Agriculture shall provide and maintain a Federal Certification in accordance with Title 27 California Code of Regulations Section 22250.

#### **E. Provisions**

1. The Discharger shall comply with the Standard Provisions and Reporting Requirements, dated 1 March 1991, and which are hereby incorporated into this Order. A violation of any of the Standard Provisions and Reporting Requirements is a violation of these waste discharge requirements.
2. The Discharger shall comply with the reporting requirements specified in this Order, and with the monitoring and reporting requirements of Monitoring and Reporting Program Order No. 5-00-028, which is attached hereto and made part of this Order.
3. The Discharger shall implement an approved in-stream biotoxicity assessment program to determine in-stream toxicity resulting from site discharges and their effect on aquatic life in Little Grizzly Creek in accordance with the compliance time schedule outlined in Provision E.9.
4. The Discharger shall notify the Board within 24 hours of identifying any by-pass, overflow, or process failure of the drainage control(s) or treatment system(s).

5. The Discharger shall report promptly to the Board any material change or proposed change in character, location, or volume of the waste discharge.
6. By **15 December** of each year, the Discharger shall submit a progress report that describes that year's remedial activities and progress towards compliance with the Receiving Water Limitations listed in this Order.
7. By **1 October 2000** and every five years thereafter, the Discharger shall submit to the Board the results of the five-year review required by Section 121(c) of the Comprehensive Environmental Response, Compensation, and Liability Act.
8. The Discharger shall comply with applicable sections of the Clean Water Act (Sections 401 and 404), the California Environmental Quality Act, and all other applicable federal and state requirements before construction activities.
9. The Discharger shall comply with the following compliance time schedule:

Tasks	Compliance Date
<b>A. In-stream Biotoxicity Assessment Program</b>	
1. Submit a proposed in-stream biotoxicity assessment program.	<b>1 May 2001</b>
2. Implement in-stream biotoxicity assessment program.	<b>30 days after approval</b>
3. Submit results of the in-stream biotoxicity assessment program.	<b>Annually</b>
<b>B. Dolly Creek Rehabilitation</b>	
1. Submit workplan for diversion of Dolly Creek and improvement of wetlands or take other effective actions to improve water quality.	<b>1 November 2001</b>
2. Implement Dolly Creek and wetlands workplan.	<b>6 months after approval</b>
3. Complete workplan implementation.	<b>1 October 2004</b>

Tasks (continued)	Compliance Date
<b>C. Tailings Rehabilitation Program</b>	
1. Submit workplan for maintenance of wind erosion control and additional revegetation of mine tailings or take other effective action to enhance tailings rehabilitation program.	1 November 2001
2. Implement erosion and revegetation workplans.	6 months after approval
3. Complete workplan implementation.	1 October 2005
<b>D. Receiving Water Limitations</b>	
Full compliance with Receiving Water Limitations.	1 October 2008

9. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be forwarded to this office.

10. The Board will review this Order periodically and may revise requirements when necessary.

I, GARY M. CARLTON, Executive Officer, do hereby certify the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 28 January 2000.

  
GARY M. CARLTON, Executive Officer

Attachments

PWM



CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. 5-00-028

U.S. DEPARTMENT OF AGRICULTURE  
FOREST SERVICE, PLUMAS NATIONAL FOREST  
WALKER MINE TAILINGS  
PLUMAS COUNTY

Monitoring and Reporting Program (MRP) No. 5-00-028 and Standard Provisions and Reporting Requirements (Standard Provisions), dated 1 March 1991, are part of Waste Discharge Requirements (WDRs) Order No. 5-00-028. Failure to comply with this MRP, or with the Standard Provisions, constitutes non-compliance with the WDRs and with the Water Code, which can result in the imposition of civil monetary liability.

**MONITORING**

**Surface Water Monitoring**

The Discharger shall sample Dolly Creek and Little Grizzly Creek upstream of the mine tailings at upstream monitoring points R-1 and R-3 and downstream at monitoring points R-2, R-4, R-5, and R-6. Attachment B shows the locations of these monitoring points.

**Surface Water Monitoring Points**

Station Number	Monitoring Location
R-1	Dolly Creek, immediately upstream of the County Road 112 at the Dolly Creek crossing
R-2	Dolly Creek, immediately below the Forest Service Dam
R-3	Little Grizzly Creek, 1000 feet below Road 24N60
R-4	Little Grizzly Creek, about 50 feet above confluence with Dolly Creek
R-5	Little Grizzly Creek, immediately above Road 25N42 and the spring discharge from the west bank (Brown's Cabin)
R-6	Settling pond culvert outlet adjacent to Little Grizzly Creek

All surface water monitoring points shall be sampled during high flow (May or June, pending site access), moderate flow (June or July), and low flow (September) and analyzed for the following constituents:

### Surface Water Monitoring Parameters

Parameter	Units
Field Parameters	
Flow	cfs
PH	Number
Specific Conductance	$\mu$ mhos/cm
Temperature	$^{\circ}$ F
Laboratory	
Turbidity	NTU
Hardness (as CaCO <sub>3</sub> )	mg/l
Alkalinity (as CaCO <sub>3</sub> )	mg/l
Sulfate	mg/l
Dissolved Copper	$\mu$ g/l
Dissolved Iron	$\mu$ g/l
Dissolved Zinc	$\mu$ g/l

Note: Methods, locations, and frequency for stream flow measurements are dependent upon accessibility and availability of stream sections where gauging and measurement are feasible. Discharge Flow Measurement may require installation of a weir or other equipment with a recording device.

The maximum detection limits for metals shall be as follows:  
copper (1  $\mu$ g/l), zinc (2  $\mu$ g/l) and iron (50  $\mu$ g/l).

Annually, in September, the Discharger shall conduct a pebble count in Little Grizzly Creek to monitor sediment transport. The Discharger shall establish two permanent cross-sections near stations R-5 and R-6 for the purposes of this count. The Discharger shall follow the methods referenced in the "Wolman Pebble Count" guidelines. The results of this monitoring shall be submitted with the annual report.

All surface water samples shall be collected on the same day and shall be grab samples. If a surface water sampling station has insufficient flow to collect a sample, the Discharger may submit a statement to that effect in lieu of data for that particular water sample.

### In-stream Biototoxicity Assessment Program

The Discharger shall implement a Board approved "In-stream Biototoxicity Assessment Program" as required by the compliance time schedule contained in Waste Discharge Requirements (WDRs) Order No. 5-00-028.

### Groundwater Monitoring

The monitoring network shall consist of seven monitoring wells (W-1 through W-7). Attachment B shows the locations of these wells. Monitoring wells W-3, W-5, and W-7 shall be sampled in May or June and September and analyzed for the parameters specified below. The Discharger shall measure the groundwater elevation in all monitoring wells. The maximum detection limits for metals shall be as follows: copper (1  $\mu\text{g/l}$ ), zinc (2  $\mu\text{g/l}$ ), and iron (50  $\mu\text{g/l}$ ).

### Ground Water Monitoring Parameters

Parameter	Units
Field Parameters	
Groundwater Elevation	Feet and tenths
PH	Number
Specific Conductance	$\mu\text{mhos/cm}$
Temperature	$^{\circ}\text{F}$
Turbidity	NTU
Laboratory	
Hardness (as $\text{CaCO}_3$ )	$\text{mg/l}$
Alkalinity (as $\text{CaCO}_3$ )	$\text{mg/l}$
Sulfate	$\text{mg/l}$
Copper (dissolved)	$\mu\text{g/l}$
Iron (dissolved)	$\mu\text{g/l}$
Zinc (dissolved)	$\mu\text{g/l}$

Groundwater sampling shall include an accurate determination of the groundwater surface elevation for all wells and field parameters (pH, temperature, electrical conductivity, and turbidity) for W-3, W-5, and W-7. The Discharger shall measure groundwater elevations before purging and sampling the wells to fulfill the groundwater gradient and direction requirements. For each monitored groundwater body, the Discharger shall measure the

water level in each well (in feet and hundredths, MSL) and determine groundwater gradient and direction. The Discharger shall display this information on a water table contour map and/or groundwater flow net for the site and submit the map with the corresponding monitoring reports.

## REPORTING

The Discharger shall report monitoring data and information as required in this Monitoring and Reporting Program and as required in the Standard Provisions and Reporting Requirements. Reports that do not comply with the required format will be REJECTED and the Discharger shall be deemed to be in non-compliance with the WDRs.

In reporting the monitoring data required by this program, the Discharger shall arrange the data in tabular form so that the date, the constituents, the concentrations, and the units are readily discernible. The Discharger shall summarize the data to clearly illustrate compliance with waste discharge requirements or the lack thereof. A short discussion of the monitoring results, including notations of any water quality violations, shall precede the tabular summaries. Monitoring reports shall state the laboratory(ies) used by the Discharger. The Discharger shall report method detection limits and practical quantitation limits.

The Discharger shall submit the results of all monitoring (surface water, in-stream biotoxicity assessment testing, and groundwater) to the Board in periodic reports. The monitoring reports shall be submitted to the Board by **15 August** for the sampling events in May or June, **15 September** for sampling events in June or July, and **15 December** for the sampling events in September. The Discharger may submit the September data with the annual report. The Discharger shall report to the Board the results of any monitoring done more frequently than specified herein.

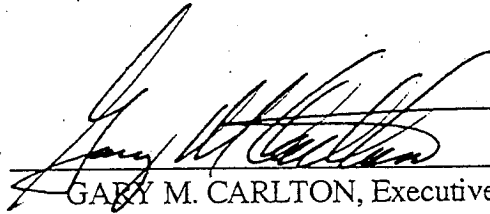
The monitoring reports shall include an evaluation of water quality impacts and compliance with Receiving Water Limitations at R-5 (as specified in Order No. 5-00-028).

**Annual Report:** The Discharger shall compare the water quality at each monitoring location to the previous analysis of that location after each sampling event to determine if the concentrations are changing over time. The Discharger shall submit a graphic analysis (time versus concentration) for this determination. A summary report shall be submitted to the Board by **15 December** of each year containing both tabular and graphical summaries of the monitoring data obtained during the previous year with comparisons to historical data.

MONITORING AND REPORTING PROGRAM NO. 5-00-028  
U.S. DEPARTMENT OF AGRICULTURE  
FOREST SERVICE, PLUMAS NATIONAL FOREST  
WALKER MINE TAILINGS, PLUMAS COUNTY

The Discharger shall implement the above monitoring program on the effective date of this Order.

Ordered by

  
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GARY M. CARLTON, Executive Officer

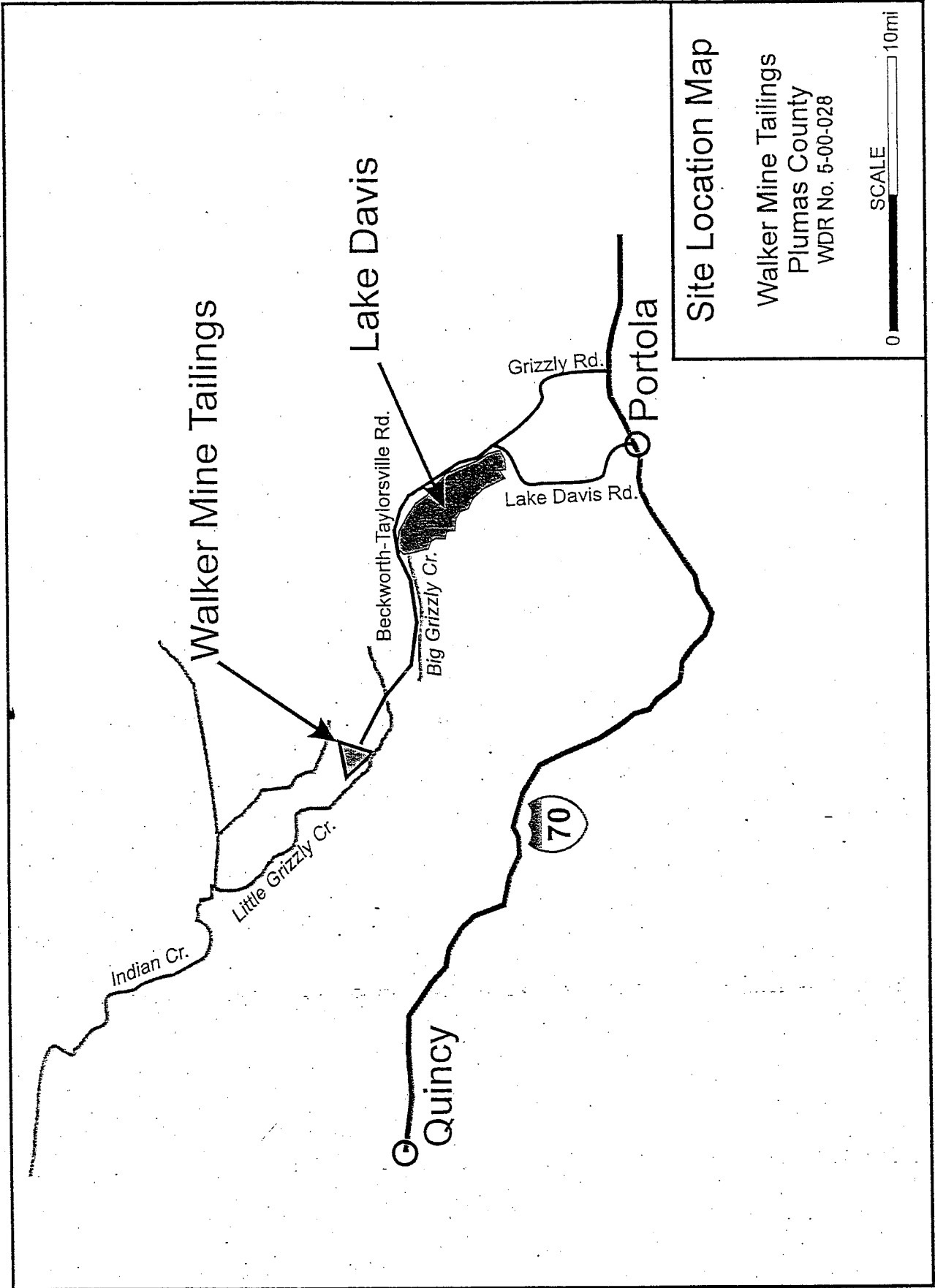
28 January 2000

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PWM



# Attachment A



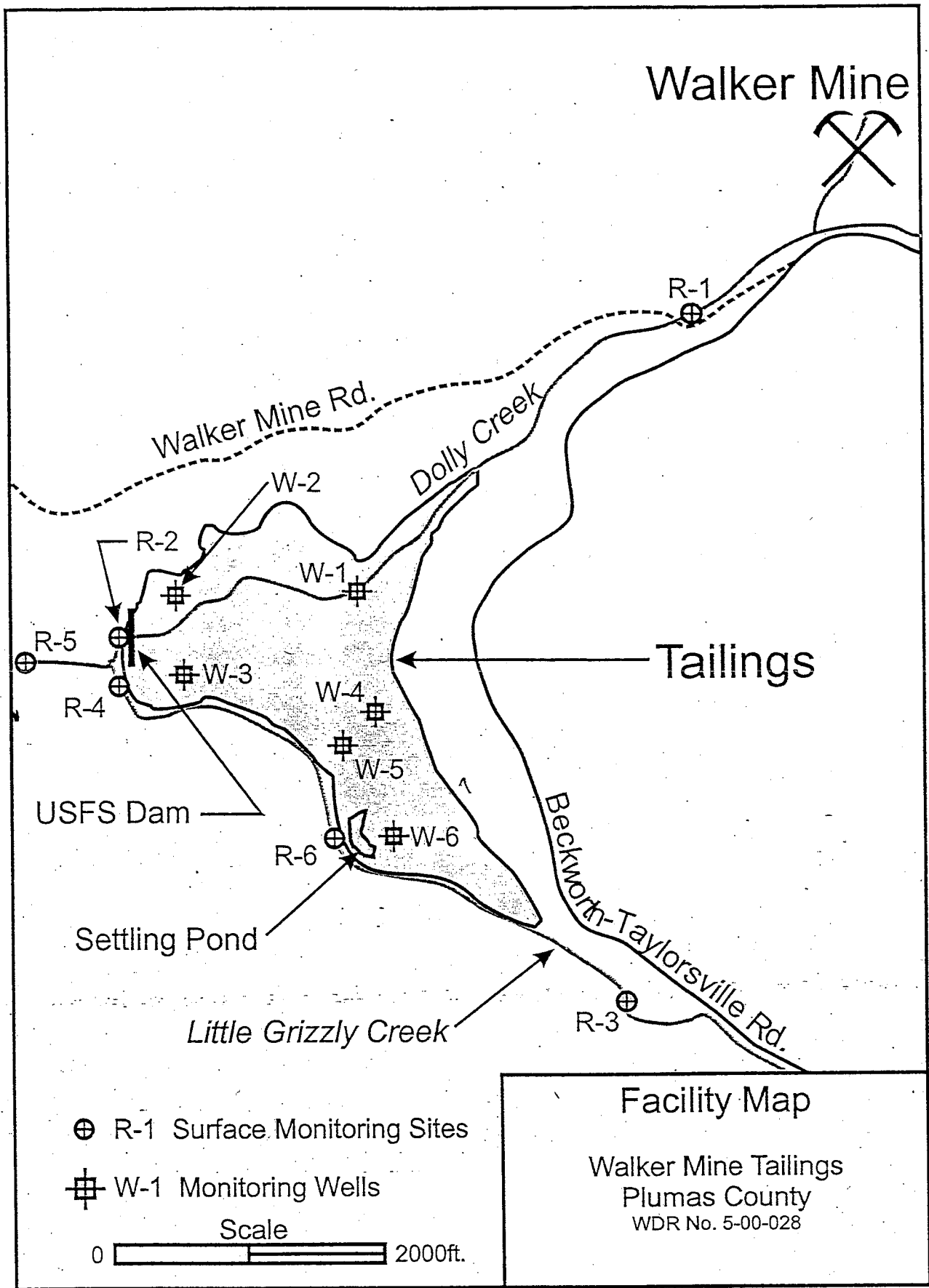
## Site Location Map

Walker Mine Tailings  
Plumas County  
WDR No. 5-00-028

SCALE  
0 10mi







Walker Mine



R-1

Walker Mine Rd.

Dolly Creek

W-2

R-2

W-1

R-5

W-3

W-4

Tailings

R-4

W-5

USFS Dam

R-6

W-6

Settling Pond

Beckworth-Taylorsville Rd.

Little Grizzly Creek

R-3

⊕ R-1 Surface Monitoring Sites

⊠ W-1 Monitoring Wells

Scale

0 [Scale Bar] 2000ft.

Facility Map

Walker Mine Tailings  
Plumas County  
WDR No. 5-00-028



## INFORMATION SHEET

WASTE DISCHARGE REQUIREMENTS ORDER NO. 5-00-028  
U. S. DEPARTMENT OF AGRICULTURE,  
FOREST SERVICE, PLUMAS NATIONAL FOREST,  
WALKER MINE TAILINGS,  
PLUMAS COUNTY

The Walker Mine Tailings (tailings) are an existing copper mine tailings dump. Tailings from the Walker Mine mill were deposited in a natural basin at the confluence of Dolly and Little Grizzly Creeks on public land administered by the U. S. Department of Agriculture, Plumas National Forest (USFS).

During the time the Walker Mine was operating, from 1916 to 1941, Dolly Creek was diverted around the tailings area. The diversion is almost completely filled in or in disrepair. After the mine ceased operations, the tailings area also fell into disrepair. Portions of a containment levee eroded and timbers of a flashboard dam disintegrated, which resulted in a discharge of tailings and turbid water to Little Grizzly Creek. To contain the tailings, the USFS reconstructed the levee along the west bank of Little Grizzly Creek and the flashboard dam across the mouth of Dolly Creek. However the tailings continue to erode and flow into surface waters during rainfall events and snow melt periods.

Acid mine drainage from the upstream Walker Mine property flows into Dolly Creek prior to Dolly Creek entering the tailings site. While effluent from the Walker Mine causes upstream receiving water limits for copper to be exceeded, the tailings continue to contribute significant concentrations of copper to Dolly Creek. Data collected by Board staff indicates that the dissolved copper concentration upstream of the tailings averages 22  $\mu\text{g/l}$  while copper concentrations at the USFS dam averages 119  $\mu\text{g/l}$  (data from 1996 through 1998).

The USFS has prepared a Record of Decision (ROD) pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act. The objectives of the ROD were to reduce sediment loading from the tailings into Dolly Creek, to reduce the export of copper from the tailings and Dolly Creek and Little Grizzly Creek, and to stabilize the tailings from water and wind erosion. The ROD proposed reconstructing Dolly Creek, constructing a 15-acre wetland to treat metal discharges, and raising the flashboard dam. The Rod also recommended constructing wind barriers on the tailings and revegetating 60 acres with grasses, shrubs, and trees. The USFS has initiated stabilization of the tailings by planting trees and grasses. However, the revegetation efforts were marginally successful primarily because there is not enough nutrient material in the tailings to sustain growth.

These WDRs incorporate receiving water limitations at the Point of Compliance (R-5). These limitations are based on USEPA National Recommended Water Quality Criteria (April 1999) for copper, iron, and zinc. Receiving water limitations for copper and zinc vary with hardness of the receiving waters. The hardness is based on Little Grizzly Creek at R-5.

INFORMATION SHEET

-2-

WASTE DISCHARGE REQUIREMENTS ORDER NO. 5-00-028  
U. S. DEPARTMENT OF AGRICULTURE,  
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The copper and zinc limitations are calculated using a hardness of 50 mg/l as CaCO<sub>3</sub> (based on historic data). Due to infrequent sampling, the limitations conservatively apply the 4-day average equation as an instantaneous maximum concentration:

$$\begin{aligned} \text{Copper} &= e^{0.8545(\ln(\overset{50}{\text{hardness}})-1.702)} \times 0.96 = 5 \quad \checkmark \\ \text{Zinc} &= e^{0.8473(\ln(\overset{50}{\text{hardness}})-0.884)} \times 0.986 = 60 \end{aligned}$$

The current discharge from the Walker Mine tailings does not meet the receiving water limitations. Therefore, these WDRs provide a time schedule for compliance with receiving water limitations. The schedule requires additional improvements in Dolly Creek and a continuation of the tailings rehabilitation.

1 February 2000/PWM