SER

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Reviewed RJB 10/7/03

**File Code:** 2540
**Date:** August 22, 2003

Mr. Steve Rosenbaum
California Regional Water Quality Control Board -
Central Valley Region
3443 Routier Road, Suite A
Sacramento, CA 95827-3003

RECEIVED SACRAMENTO CVRWQCB 03 AUG 26 PM 1:05

Dear Mr. Rosenbaum:

Please find attached the results of surface and ground water monitoring required by Waste Discharge Requirements Order No. 5-00-028 for the U.S. Department of Agriculture, Forest Service, Plumas National Forest at the Walker Mine Tailings in Plumas County. This report is for ground water samples collected May 23, 2003, and surface water samples collected June 10, 2003. All samples were transported to Henrici Water Laboratory, near Quincy for analysis. The Henrici laboratory sent a portion of these samples to Twining Laboratories, Inc. in Fresno, California for metals analyses.

The 2001 Amended Record of Decision for the Walker Mine Tailings site provides for the diversion of Dolly Creek around the tailings material. A contract has been awarded to Ecology and Environment, Inc. of San Francisco for the design of this diversion channel and their design work is nearing completion. The water quality monitoring required by order #5-00-028 is continuing with the September event and the second installment of in-stream bio-assessment sampling scheduled to be performed over the next few weeks. Negotiations with the Atlantic Richfield Company (ARCO), a Potentially Responsible Party, over remediation costs are still pending.

Please call Joe Hoffman of this office at (530) 283-7868 if you have questions.

*I certify under penalty of law that I have personally examined and am familiar with the information submitted in the attached documents and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.*

Sincerely,

James M. Peña

JAMES M. PEÑA
Forest Supervisor

6075301117

# MONITORING REPORT

**WDR Order Number:** 5-00-028

**Discharger:** USDA Forest Service, Plumas National Forest

**Facility:** Walker Mine Tailings, Plumas County

**Reporting Frequency:** Quarterly

**Monitoring Period:** May 2003

**Findings:**

(1) Surface water. Due to access difficulties caused by late snows and high stream flows, samples were not collected until June 10, 2003. The surface water sample collected at the compliance station, R-5, Little Grizzly Creek near Brown's Cabin, remains in noncompliance with the Order's limitation for copper, as highlighted in Table 1. The remaining R-5 concentrations are in compliance with the Order. Copper concentrations at R-1 also exceeded limitations, while the release of copper from the tailings area to Dolly Creek, as measured at R-2, is well in excess of the limitations. Concentrations of zinc were detected in the samples taken at 2 of the 5 sites but neither of these concentrations exceeded the order's limitation for zinc. The concentration of iron, highest at R-5, was well within the limitation at all of the stations.

(2) Groundwater. Samples were collected on May 23, 2002. Table 2 summarizes the findings for groundwater samples collected from the site. Small concentrations of dissolved copper ($\leq$ 2.0 ug/l) were found in all three of the sampling wells (W-3, W-5, and W-7). Additionally, small concentrations of dissolved zinc were found in all three wells. There were no detectable amounts of iron found in any of the three groundwater samples.

Groundwater elevations were measured in all seven wells installed at the site. Even though measurements were taken two weeks later than last year, water levels were higher at all wells, 2.7 feet higher in the case of W-4. The results show a definite gradient towards Little Grizzly Creek of approximately 1.1% along the Dolly Creek channel and approximately 1.8% to the settling pond (R-6). With the elevation of the Little Grizzly Creek channel approximately 20 feet below the surface of the tailings area, there is a strong gradient towards Little Grizzly Creek all along its course with the tailings area.

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Table 2. GROUND WATER SUMMARY

Map of the tailings area with the ground water monitoring sites

Map of tailings area with ground water elevations and flow direction

Water Level Data

Groundwater Monitoring, Water Sampling Field Data Sheet

Chain-Of-Custody record for ground water samples

Henrici Water Laboratory Analysis Reports for ground water tests

# MAY 2003

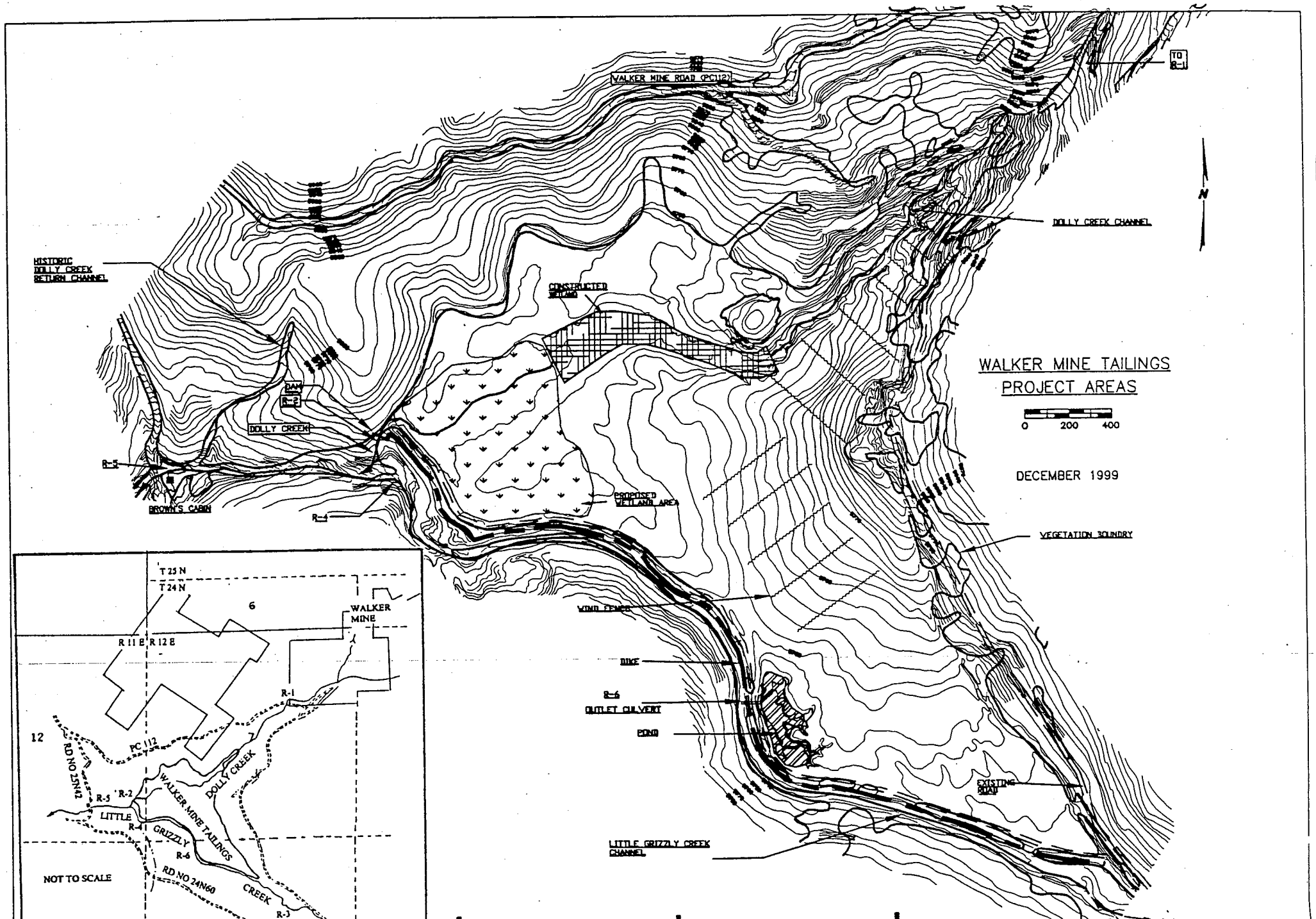
# SURFACE WATER TEST RESULTS
# AND
# SUPPORTING DOCUMENTATION

# Table 1. SURFACE WATER SUMMARY REPORT

**MONITORING AND REPORTING PROGRAM NO. 5-00-028**
**U.S. DEPARTMENT OF AGRICULTURE, FOREST SERVICE, PLUMAS NATIONAL FOREST**
**WALKER MINE TAILINGS, PLUMAS COUNTY**
**June 2003**

| CONSTITUENT | UNITS | DETECTION LIMITS | MONITORING STATIONS R-1 | R-2 | R-3[1] | R-4 | R-5[2] | R-6 | LIMITATION @ R-5[3] |
|---|---|---|---|---|---|---|---|---|---|
| Field Parameters | | | | | | | | | |
| Flow | cfs | N/A | 3.41 | 3.78 | 14.98 | 20.03 | 22.05 | 0 | N/A |
| pH | number | N/A | 7.96 | 7.92 | 7.80 | 7.75 | 8.01 | N/A | N/A |
| Specific Conductance | umhos/cm | N/A | 65.0 | 69.3 | 43.7 | 42.7 | 51.9 | N/A | N/A |
| Air Temperature | $^0$C | N/A | 20.0 | 14.0 | 17.0 | 17.0 | 20.0 | N/A | N/A |
| Water Temperature | $^0$C | N/A | 11.6 | 10.7 | 10.3 | 8.0 | 12.8 | N/A | N/A |
| Laboratory | | | | | | | | | |
| Turbidity | NTU | 0.05 | 0.83 | 0.66 | 0.49 | 0.63 | 0.53 | N/A | 1.49 |
| Total Hardness as CaCO3 | mg/l | 2.0 | 41 | 43 | 25 | 26 | 29 | N/A | N/A |
| Total Alkalinity | mg/l | 1 | 57 | 61 | 45 | 49 | 47 | N/A | N/A |
| Sulfate | mg/l | 0.5 | ND | ND | ND | ND | ND | N/A | N/A |
| Dissolved Copper | ug/l | 1.0 | 24 | 97 | 1.7 | 1.3 | 34 | N/A | 3.1 |
| Dissolved Iron | ug/l | 50 | ND | 91 | 51 | ND | 110 | N/A | 1000 |
| Dissolved Zinc | ug/l | 2.0 | 3.0 | 5.9 | ND | ND | ND | N/A | 41 |

[1] R-3 is the background station located above the tailings area on Little Grizzly Creek.
[2] R-5 is the waste discharge compliance station located near Brown's Cabin, downstream from the confluence of Dolly Creek with Little Grizzly Creek.
[3] The compliance values for copper and zinc are calculated with the R-5 hardness value of 29 mg/l as CaCO3.


WALKER MINE TAILINGS
PROJECT AREAS
0 200 400
DECEMBER 1999
N
VALKER MINE ROAD (PC112)
TO R-1
DOLLY CREEK CHANNEL
HISTORIC DOLLY CREEK RETURN CHANNEL
CONSTRUCTED WETLAND
DAM
R-2
DOLLY CREEK
R-5
BROWN'S CABIN
R-4
PROPOSED WETLAND AREA
VEGETATION BOUNDRY
WIND FENCE
DIKE
R-6
OUTLET CULVERT
POND
EXISTING ROAD
LITTLE GRIZZLY CREEK CHANNEL
T 25 N
T 24 N
6
WALKER MINE
R 11 E R 12 E
R-1
12
PC 112
RD NO 25N42
R-5
R-2
LITTLE
R-4
GRIZZLY
R-6
WALKER MINE TAILINGS
DOLLY CREEK
NOT TO SCALE
RD NO 24N60
CREEK
R-3

# WALKER MINE TAILINGS MONITORING PROGRAM

9-275-P
(May 1971)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

Meas. No. .....
Comp. by .....
Checked by .....

## DISCHARGE MEASUREMENT NOTES

Sta. No. R-1
Dolly Creek above Tailings @ Road 112

Date 6/10, 2003 Party Flynn

Width ..... Area ..... Vel. ..... G. H. ..... Disch. .....

Method 6/10 No. secs. ..... C. H. change ..... in ..... hrs. Susp. .....

Method coef. ..... Hor. angle coef. ..... Susp. coef. ..... Meter No. .....

Type of meter MMC

Date rated ..... for rod, other.

Meter ..... ft. above bottom of weight.

Spin before meas. ..... after .....

Meas. plots ..... % diff. from rating .....

Wading, cable, ice, boat, upstr., downstr., side bridge ..... feet, mile, above, below gage, and .....

Check-bar, found .....
changed to ..... at .....

Correct .....

Levels obtained .....

GAGE READINGS

| Time | | Recorder | Inside | Outside |
|---|---|---|---|---|
| | | | | |
| Weighted M. G. H. | | | | |
| G. H. correction | | | | |
| Correct M. G. H. | | | | |

Measurement rated excellent (2%), good (5%), fair (8%), poor (over 8%), based on following conditions: Cross section .....

Flow ..... Weather Warm / Clear

Other ..... Air 20.0°C @ 1146

Gage ..... Water 11.6°C @ 1148

..... Record removed ..... Intake flushed .....

Observer .....

Control .....

pH 7.96

CONDUCTANCE 65.0 umhos/cm

G. H. of zero flow ..... ft.

Samples @ 1152

River at—

| Angle coefficient | Dist. from initial point | Width | Depth | Observation depth | Revolutions | Time in seconds | VELOCITY At point | VELOCITY Mean in vertical | Adjusted for hor. angle or ..... | Area | Discharge |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LB | 0.4 | | | | | | | | | | |
| | 1.0 | | 0.2 | | | | .18 | | | | |
| | 1.5 | | 0.3 | | | | 0.49 | | | | |
| | 2.0 | | 0.4 | | | | 1.31 | | | | |
| | 2.5 | | .45 | | | | 1.86 | | | | |
| | 3.0 | | .50 | | | | 2.77 | | | | |
| | 3.5 | | .55 | | | | 3.08 | | | | |
| | 4.0 | | .45 | | | | 2.65 | | | | |
| | 4.5 | | .36 | | | | 2.83 | | | | |
| | 5.0 | | .10 | | | | 0.82 | | | | |
| RB | 5.5 | | | | | | | | | | |

# WALKER MINE TAILINGS MONITORING PROGRAM

9-275-T
(May 1971)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

WATER RESOURCES DIVISION

## DISCHARGE MEASUREMENT NOTES

Meas. No. .....
Comp. by .....
Checked by .....

R-2

Sta. No. [redacted] Dolly Creek Below Tailings Dam

Date 6-10, 19 2003 Party Flynn

Width ..... Area ..... Vel. ..... G. H. ..... Disch. .....

Method 6/10's No. secs. ..... G. H. change ..... in ..... hrs. Susp. .....

Method coef. ..... Hor. angle coef. ..... Susp. coef. ..... Meter No. .....

Type of meter MMC

Date rated ..... for rod, other.

Meter ..... ft. above bottom of weight.

Spin before meas. ..... after .....

Meas. plots ..... % diff. from rating .....

Wading, cable, ice, boat, upstr., downstr., side bridge ..... feet, mile, above, below gage, and .....

Check-bar, found .....

changed to ..... at .....

Correct .....

Levels obtained .....

GAGE READINGS

| Time | | Recorder | Inside | Outside |
|---|---|---|---|---|
| | | | | |
| Weighted M. G. H. | | | | |
| G. H. correction | | | | |
| Correct M. G. H. | | | | |

Measurement rated excellent (2%), good (5%), fair (8%), poor (over 8%), based on following conditions: Cross section .....

Flow ..... Weather Warm Clear

Other ..... Air 14.0 °C @ 0822

Gage ..... Water 10.7 °C @ 0824

..... Record removed ..... Intake flushed .....

Observer .....

Control .....

pH 7.92

CONDUCTANCE 69.3 umhos/cm

G. H. of zero flow ..... ft.

Sample @ 0830

River at—

| Angle coefficient | Dist. from initial point | Width | Depth | Observation depth | Revolutions | Time in seconds | VELOCITY At point | VELOCITY Mean in vertical | Adjusted for hor. angle or ..... | Area | Discharge |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LB | 1.0 | | 0 | | | | | | | | |
| | 1.5 | | 0.2 | | | | .25 | | | | |
| | 2.0 | | 0.5 | | | | .67 | | | | |
| | 2.5 | | .65 | | | | 0.89 | | | | |
| | 3.0 | | .70 | | | | 1.53 | | | | |
| | 3.5 | | .85 | | | | 1.53 | | | | |
| | 4.0 | | .85 | | | | 1.70 | | | | |
| | 4.5 | | .80 | | | | 1.79 | | | | |
| | 5.0 | | .80 | | | | 1.47 | | | | |
| | 5.5 | | .50 | | | | 0.29 | | | | |
| RB | 5.95 | | | | | | | | | | |

# WALKER MINE TAILINGS MONITORING PROGRAM

9-275-T
(May 1971)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

Meas. No. .....
Comp. by .....
Checked by .....

## DISCHARGE MEASUREMENT NOTES

Sta. No. R-3

Little Grizzly Creek above Tailings

Date 6/10 2003 Party Flynn

Width ..... Area ..... Vel. ..... G. H. ..... Disch. .....

Method 6/10 No. secs. ..... G. H. change ..... in ..... hrs. Susp. .....

Method coef. ..... Hor. angle coef. ..... Susp. coef. ..... Meter No. .....

Type of meter MMC

Date rated ..... for rod, other.

Meter ..... ft. above bottom of weight.

Spin before meas. ..... after .....

Meas. plots ..... % diff. from rating .....

Wading, cable, ice, boat, upstr., downstr., side bridge ..... feet, mile, above, below gage, and .....

Check-bar, found ..... changed to ..... at .....

Correct .....

Levels obtained .....

| GAGE READINGS | | | | |
|---|---|---|---|---|
| Time | | Recorder | Inside | Outside |
| | | | | |
| Weighted M. G. H. | | | | |
| G. H. correction | | | | |
| Correct M. G. H. | | | | |

Measurement rated excellent (2%), good (5%), fair (8%), poor (over 8%), based on following conditions: Cross section .....

Flow ..... Weather Warm/Clear

Other ..... Air 17.0 °C @ 1048

Gage ..... Water 10.3 °C @ 1050

..... Record removed ..... Intake flushed .....

Observer .....

Control .....

pH 7.80

CONDUCTANCE 43.7 umhos/cm

G. H. of zero flow ..... ft.

Sample @ 1055

.0 .10 .20 .30 .40 .50 .60 .70 .75

River at—

| Angle coefficient | Dist. from initial point | Width | Depth | Observation depth | Revolutions | Time in seconds | VELOCITY At point | VELOCITY Mean in vertical | Adjusted for hor. angle or ..... | Area | Discharge |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LB | 1.9 | | | | | | | | | | |
| | 2.5 | | 0.2 | | | | Θ | | | | |
| | 3.0 | | 0.3 | | | | Θ | | | | |
| | 3.5 | | 0.4 | | | | Θ | | | | |
| | 4.0 | | 0.6 | | | | Θ | | | | |
| | 4.5 | | 0.7 | | | | Θ | | | | |
| | 5.0 | | 0.9 | | | | Θ | | | | |
| | 5.5 | | 0.9 | | | | Θ | | | | |
| | 6.0 | | 1.0 | | | | Θ | | | | |
| | 6.5 | | 1.2 | | | | .51 | | | | |
| | 7.0 | | 1.3 | | | | 1.25 | | | | |
| | 7.5 | 1.5 | [illegible] | | | | [illegible] | 1.68 | | | |
| | 8.0 | 1.6 | [illegible] | | | | [illegible] | 1.97 | | | |
| | 8.5 | 1.6 | [illegible] | | | | [illegible] | 2.46 | | | |
| ⊙ | 9.0 | 1.3 | [illegible] | | | | [illegible] | 3.34 | | | |
| | 9.5 | 1.4 | [illegible] | | | | [illegible] | 3.13 | | | |
| | 10.0 | 1.9 | [illegible] | | | | [illegible] | 2.17 | | | |
| | 10.5 | | 1.7 | | | | 1.88 | | | | |
| | 11.0 | | 0.9 | | | | 1.18 | | | | |
| | 11.5 | | .75 | | | | 0.92 | | | | |
| | 12.0 | | 0.4 | | | | 0.74 | | | | |
| RB | 12.5 | | | | | | | | | | |

# WALKER MINE TAILINGS MONITORING PROGRAM

9-275-1
(May 1971)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

## DISCHARGE MEASUREMENT NOTES

Meas. No. .....
Comp. by .....
Checked by .....

Sta. No. R-4
Little Grizzly Creek below Tailings
Date 6/10, 2003 Party Flynn
Width ..... Area ..... Vel. ..... G. H. ..... Disch. .....
Method 6/10 No. secs. ..... G. H. change ..... in ..... hrs. Susp. .....
Method coef. ..... Hor. angle coef. ..... Susp. coef. ..... Meter No. .....

| GAGE READINGS | | | | |
|---|---|---|---|---|
| Time | | Recorder | Inside | Outside |
| | | | | |
| Weighted M. G. H. | | | | |
| G. H. correction | | | | |
| Correct M. G. H. | | | | |

Type of meter MMC
Date rated ..... for rod, other.
Meter ..... ft. above bottom of weight.
Spin before meas. ..... after .....
Meas. plots .... % diff. from rating .....
Wading, cable, rice, boat, upstr., downstr., side bridge ..... feet, mile, above, below gage, and .....
Check-bar, found .....
changed to ..... at .....
Correct .....
Levels obtained .....

Measurement rated excellent (2%), good (5%), fair (8%), poor (over 8%), based on following conditions: Cross section .....
Flow ..... Weather Warm/Clear
Other ..... Air 17.0 °C@ 0949
Gage ..... Water 8.0 °C@ 0951
..... Record removed ..... Intake flushed .....
Observer .....
Control .....
pH 7.75
CONDUCTANCE 42.7 umhos/cm
G. H. of zero flow ..... ft.
Samples @ 0955

.0 .10 .20 .30 .40 .50 .60 .70 .75

River at—

| | Angle coefficient | Dist. from initial point | Width | Depth | Observation depth | Revolutions | Time in seconds | VELOCITY At point | VELOCITY Mean in vertical | Adjusted for hor. angle or ..... | Area | Discharge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LB | 1.2 | | | | | | | | | | |
| | | 1.5 | | 0.25 | | | | 0 | | | | |
| | | 2.0 | | 0.30 | | | | 0 | | | | |
| | | 2.5 | | 0.50 | | | | 0 | | | | |
| | | 3.0 | | 0.80 | | | | 0 | | | | |
| | | 3.5 | | 1.20 | | | | .02 | | | | |
| | | 4.0 | | 1.35 | | | | .40 | | | | |
| | | 4.5 | | 1.40 | | | | .63 | | | | |
| | | 5.0 | | 1.50 | | | | .71 | | | | |
| | | 5.5 | | 1.60 | | | | .85 | | | | |
| | | 6.0 | | 1.60 | | | | 1.32 | | | | |
| | | 6.5 | | 1.70 | | | | 1.78 | | | | |
| | | 7.0 | | 1.70 | | | | 1.98 | | | | |
| | | 7.5 | | 1.80 | | | | 2.31 | | | | |
| | ⊙ | 8.0 | | 1.70 | | | | 2.50 | | | | |
| | | 8.5 | | 1.70 | | | | 2.41 | | | | |
| | | 9.0 | | 1.60 | | | | 1.98 | | | | |
| | | 9.5 | | 1.50 | | | | 1.96 | | | | |
| | | 10.0 | | 1.50 | | | | 1.91 | | | | |
| | | 10.5 | | 1.25 | | | | | 1.49 | | | |
| | | 11.0 | | 1.25 | | | | 1.44 | | | | |
| | | 11.5 | | 1.30 | | | | 1.00 | | | | |
| | | 12.0 | | 1.00 | | | | .59 | | | | |
| | | 12.5 | | .80 | | | | .37 | | | | |
| | | 13.0 | | .90 | | | | .30 | | | | |
| | | 13.5 | | .80 | | | | .10 | | | | |
| | | 14.0 | | .30 | | | | .05 | | | | |
| | RB | 14.7 | | | | | | | | | | |

# WALKER MINE TAILINGS MONITORING PROGRAM

9-275a
(May 1971)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

Meas. No. .....
Comp. by .....
Checked by .....

## DISCHARGE MEASUREMENT NOTES

Sta. No. R-5
Little Grizzly Creek @ Brown's Cabin
Date 6/10 2003 Party Flynn
Width ..... Area ..... Vel. ..... G. H. ..... Disch. .....
Method 6/10 No. secs. ..... G. H. change ..... in ..... hrs. Susp. .....
Method coef. ..... Hor. angle coef. ..... Susp. coef. ..... Meter No. .....

| GAGE READINGS | | | | |
|---|---|---|---|---|
| Time | | Recorder | Inside | Outside |
| | | | | |
| Weighted M. G. H. | | | | |
| G. H. correction | | | | |
| Correct M. G. H. | | | | |

Type of meter AMN C
Date rated ..... for rod, other.
Meter ..... ft. above bottom of weight.
Spin before meas. ..... after .....
Meas. plots ..... % diff. from rating .....
Wading, cable, ice, boat, upstr., downstr., side bridge ..... feet, mile, above, below gage, and .....
Check-bar, found .....
changed to ..... at .....
Correct .....
Levels obtained .....

Measurement rated excellent (2%), good (5%), fair (8%), poor (over 8%), based on following conditions: Cross section .....
Flow ..... Weather Warm / Clear
Other ..... Air 20.0 °C @ 1221
Gage ..... Water 12.8 °C @ 1218
..... Record removed ..... Intake flushed .....
Observer .....
Control .....
pH 8.01
CONDUCTANCE 51.9 umhos/cm
C. H. of zero flow ..... ft.
Sample @ 1225

.0 .10 .20 .30 .40 .50 .60 .70 .75

River at—

| Angle coefficient | Dist. from initial point | Width | Depth | Observation depth | Revolutions | Time in seconds | VELOCITY At point | VELOCITY Mean in vertical | Adjusted for hor. angle or ..... | Area | Discharge |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LB | 0.7 | | | | | | | | | | |
| | 1.0 | | 0.2 | | | | 0 | | | | |
| | 1.5 | | 0.3 | | | | .15 | | | | |
| | 2.0 | | 0.4 | | | | 1.66 | | | | |
| | 2.5 | | 0.5 | | | | .75 | | | | |
| | 3.0 | | 0.5 | | | | .60 | | | | |
| | 3.5 | | 0.7 | | | | .05 | | Behind Rock | | |
| | 4.0 | | 0.8 | | | | 2.82 | | | | |
| | 4.5 | | 1.1 | | | | 1.47 | | | | |
| | 5.0 | | 1.2 | | | | 2.54 | | | | |
| | 5.5 | | 1.3 | | | | 2.71 | | | | |
| | 6.0 | | 1.3 | | | | 2.78 | | | | |
| | 6.5 | | 1.6 | | | | 2.88 | | | | |
| | 7.0 | | 1.5 | | | | 2.77 | | | | |
| ⊙ | 7.5 | | 1.1 | | | | 3.32 | | | | |
| | 8.0 | | 1.1 | | | | 3.12 | | | | |
| | 8.5 | | 1.25 | | | | 2.40 | | | | |
| | 9.0 | | 1.25 | | | | 1.58 | | | | |
| | 9.5 | | 1.2 | | | | 1.40 | | | | |
| | 10.0 | | 0.8 | | | | 2.14 | | | | |
| | 10.5 | | 0.7 | | | | 2.28 | | | | |
| | 11.0 | | 0.8 | | | | 1.75 | | | | |
| | 11.5 | | 0.55 | | | | 1.21 | | | | |
| | 12.0 | | 0.4 | | | | 0.98 | | | | |
| | 12.5 | | 0.25 | | | | 0.63 | | | | |
| | 13.0 | | 0.10 | | | | 0.21 | | | | |
| | 13.5 | | 0.10 | | | | 0 | | | | |
| RB | 13.9 | | | | | | | | | | |

.0 .10 .20 .30 .40 .50 .60 .70 .75

9-275-F
(May 1971)

# WALKER MINE TAILINGS MONITORING PROGRAM

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

## DISCHARGE MEASUREMENT NOTES

Meas. No. ............
Comp. by ............
Checked by ............

R-6

Sta. No. [illegible] Sediment Basin Outlet

[illegible]

Date 6/10 2003 Party Flynn

Width ........ Area ........ Vel. ........ G. H. ........ Disch. ........

Method ........ No. secs. ........ C. H. change ........ in ........ hrs. Susp. ........

Method coef. ........ Hor. angle coef. ........ Susp. coef. ........ Meter No. ........

GAGE READINGS

| Time | | Recorder | Inside | Outside |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| Weighted M. G. H. | | | | |
| G. H. correction | | | | |
| Correct M. G. H. | | | | |

Type of meter ........

Date rated ........ for rod, other.

Meter ........ ft. above bottom of weight.

Spin before meas. ........ after ........

Meas. plots .... % diff. from rating ........

Wading, cable, ice, boat, upstr., downstr., side bridge ........ feet, mile, above, below gage, and ........

Check-bar, found ........ changed to ........ at ........

Correct ........

Levels obtained ........

Measurement rated excellent (2%), good (5%), fair (8%), poor (over 8%), based on following conditions: Cross section ........

Flow No Flow Weather ........

Other ........ Air ........ °C@ ........

Gage ........ Water ........ °C@ ........

........ Record removed ........ Intake flushed ........

Observer ........

Control ........

pH ........

CONDUCTANCE ........ umhos/cm

C. H. of zero flow ........ ft.

River at—

| Angle coefficient | Dist. from initial point | Width | Depth | Observation depth | Revolutions | Time in seconds | VELOCITY At point | VELOCITY Mean in vertical | Adjusted for hor. angle or ........ | Area | Discharge |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | |

Henrici Water Laboratory Chain of Custody Walker Mine Tailings (Surface Water) Proj # 5-01

Purveyor:
USFS Plumas National Forest
159 Lawrence St.
Quincy, CA 95971
Attn: Joe Hoffman (530) 283 2050

Sampler's Signature

Type of Analyses

| I.D. No. | Date | Time | Location | No. of Containers | Turbidity NTU | Hardness as $CaCO_3$ | Alkalinity as $CaCO_3$ | Sulfate | Copper (Dissolved) | Iron (Dissolved) | Zinc (Dissolved) | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 6/10/03 | 0830 | R-2 | 1 | X | X | X | X | X | X | X | Detection |
| | | 0955 | R-4 | 1 | X | X | X | X | X | X | X | Limits |
| | | 1055 | R-3 | 1 | X | X | X | X | X | X | X | Cu = 1 ug/L |
| | | 1152 | R-1 | 1 | X | X | X | X | X | X | X | Zn = 2 ug/L |
| | | 1225 | R-5 | 1 | X | X | X | X | X | X | X | Fe = 50 ug/L |

| Relinquished By | Date | Time | Received By |
|---|---|---|---|
| | 6/10/03 | 1610 | Dawn M Henton |

1832 Butterfly Valley Road, Quincy, CA 95971 Telephone & Fax (530) 281-6588

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Plumas National Forest
Supervisor's Office
P.O. Box 11500
Quincy, CA 95971

Account: 11616
Date: 08/10/03
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# ANALYSIS REPORT

Laboratory Number: C34900 Date Received: 06/10/03
Location: Walker Mine R1
Date of Collection : 06/10/03 Time: Collector: Pat Flynn

Hardness, Dissolved Copper, Dissolved Iron and Dissloved Zinc analysis by Twining Laboratory, Bakersfield, Ca.

| Analysis | Date of Analysis | Method | Detection Limits | Results | Units |
|---|---|---|---|---|---|
| Total Hardness | 07/31/03 | SM 2340 B | 2.0 | 41 | mg/L |
| Total Alkalinity | 06/11/03 | SM 2320 B | 1 | 57 | mg/L |
| Sulfate | 06/11/03 | EPA 375.4 | 0.5 | <0.5 | mg/L |
| Turbidity | 06/11/03 | SM 2130B | 0.05 | 0.83 | NTU |
| Dissolved Iron | 08/04/03 | EPA 200.7 | 50 | <50 | ug/L |
| Dissolved Copper | 08/04/03 | EPA 200.7 | 1.0 | 24 | ug/L |
| Dissolved Zinc | 08/04/03 | EPA 200.7 | 2.0 | 3.0 | ug/L |

These results were obtained by following standard laboratory procedures: the liability of the laboratory shall not exceed the amount paid for this report.

Dawn M. Henton
Laboratory Director

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Quincy, CA 95971

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# ANALYSIS REPORT

Laboratory Number: C34901 Date Received: 06/10/03
Location: Walker Mine R2
Date of Collection : 06/10/03 Time: Collector: Pat Flynn

Hardness, Dissolved Copper, Dissolved Iron and Dissloved Zinc analysis by Twining Laboratory, Bakersfield, Ca.

| Analysis | Date of Analysis | Method | Detection Limits | Results | Units |
|---|---|---|---|---|---|
| Total Hardness | 07/31/03 | SM 2340 B | 2.0 | 43 | mg/L |
| Total Alkalinity | 06/11/03 | SM 2320 B | 1 | 61 | mg/L |
| Sulfate | 06/11/03 | EPA 375.4 | 0.5 | <0.5 | mg/L |
| Turbidity | 06/11/03 | SM 2130B | 0.05 | 0.66 | NTU |
| Dissolved Iron | 08/04/03 | EPA 200.7 | 50 | 91 | ug/L |
| Dissolved Copper | 08/04/03 | EPA 200.7 | 1.0 | 97 | ug/L |
| Dissolved Zinc | 08/04/03 | EPA 200.7 | 2.0 | 5.9 | ug/L |

These results were obtained by following standard laboratory procedures: the liability of the laboratory shall not exceed the amount paid for this report.

Dawn M. Henton
Laboratory Director

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ANALYSIS REPORT

Laboratory Number: C34902 Date Received: 06/10/03
Location: Walker Mine R3
Date of Collection : 06/10/03 Time: Collector: Pat Flynn

Hardness, Dissolved Copper, Dissolved Iron and Dissloved Zinc analysis by Twining Laboratory, Bakersfield, Ca.

| Analysis | Date of Analysis | Method | Detection Limits | Results | Units |
|---|---|---|---|---|---|
| Total Hardness | 07/31/03 | SM 2340 B | 2.0 | 25 | mg/L |
| Total Alkalinity | 06/11/03 | SM 2320 B | 1 | 45 | mg/L |
| Sulfate | 06/11/03 | EPA 375.4 | 0.5 | <0.5 | mg/L |
| Turbidity | 06/11/03 | SM 2130B | 0.05 | 0.49 | NTU |
| Dissolved Iron | 08/04/03 | EPA 200.7 | 50 | 51 | ug/L |
| Dissolved Copper | 08/04/03 | EPA 200.7 | 1.0 | 1.7 | ug/L |
| Dissolved Zinc | 08/04/03 | EPA 200.7 | 2.0 | <2.0 | ug/L |

These results were obtained by following standard laboratory procedures: the liability of the laboratory shall not exceed the amount paid for this report.

Dawn M. Henton
Laboratory Director

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Quincy, CA 95971

Account: 11616
Date: 08/10/03
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ANALYSIS REPORT

Laboratory Number: C34903 Date Received: 06/10/03
Location: Walker Mine R4
Date of Collection : 06/10/03 Time: Collector: Pat Flynn

Hardness, Dissolved Copper, Dissolved Iron and Dissloved Zinc analysis by Twining Laboratory, Bakersfield, Ca.

| Analysis | Date of Analysis | Method | Detection Limits | Results | Units |
|---|---|---|---|---|---|
| Total Hardness | 07/31/03 | SM 2340 B | 2.0 | 26 | mg/L |
| Total Alkalinity | 06/11/03 | SM 2320 B | 1 | 49 | mg/L |
| Sulfate | 06/11/03 | EPA 375.4 | 0.5 | <0.5 | mg/L |
| Turbidity | 06/11/03 | SM 2130B | 0.05 | 0.63 | NTU |
| Dissolved Iron | 08/04/03 | EPA 200.7 | 50 | <50 | ug/L |
| Dissolved Copper | 08/04/03 | EPA 200.7 | 1.0 | 1.3 | ug/L |
| Dissolved Zinc | 08/04/03 | EPA 200.7 | 2.0 | <2.0 | ug/L |

These results were obtained by following standard laboratory procedures: the liability of the laboratory shall not exceed the amount paid for this report.

DMH
Dawn M. Henton
Laboratory Director

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Account: 11616
Date: 08/10/03
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# ANALYSIS REPORT

Laboratory Number: C34904 Date Received: 06/10/03
Location: Walker Mine R5
Date of Collection : 06/10/03 Time: Collector: Pat Flynn

Hardness, Dissolved Copper, Dissolved Iron and Dissloved Zinc analysis by Twining Laboratory, Bakersfield, Ca.

| Analysis | Date of Analysis | Method | Detection Limits | Results | Units |
|---|---|---|---|---|---|
| Total Hardness | 07/31/03 | SM 2340 B | 2.0 | 29 | mg/L |
| Total Alkalinity | 06/11/03 | SM 2320 B | 1 | 47 | mg/L |
| Sulfate | 06/11/03 | EPA 375.4 | 0.5 | <0.5 | mg/L |
| Turbidity | 06/11/03 | SM 2130B | 0.05 | 0.53 | NTU |
| Dissolved Iron | 08/04/03 | EPA 200.7 | 50 | 110 | ug/L |
| Dissolved Copper | 08/04/03 | EPA 200.7 | 1.0 | 34 | ug/L |
| Dissolved Zinc | 08/04/03 | EPA 200.7 | 2.0 | <2.0 | ug/L |

These results were obtained by following standard laboratory procedures: the liability of the laboratory shall not exceed the amount paid for this report.

DMH
Dawn M. Henton
Laboratory Director

# MAY 2003

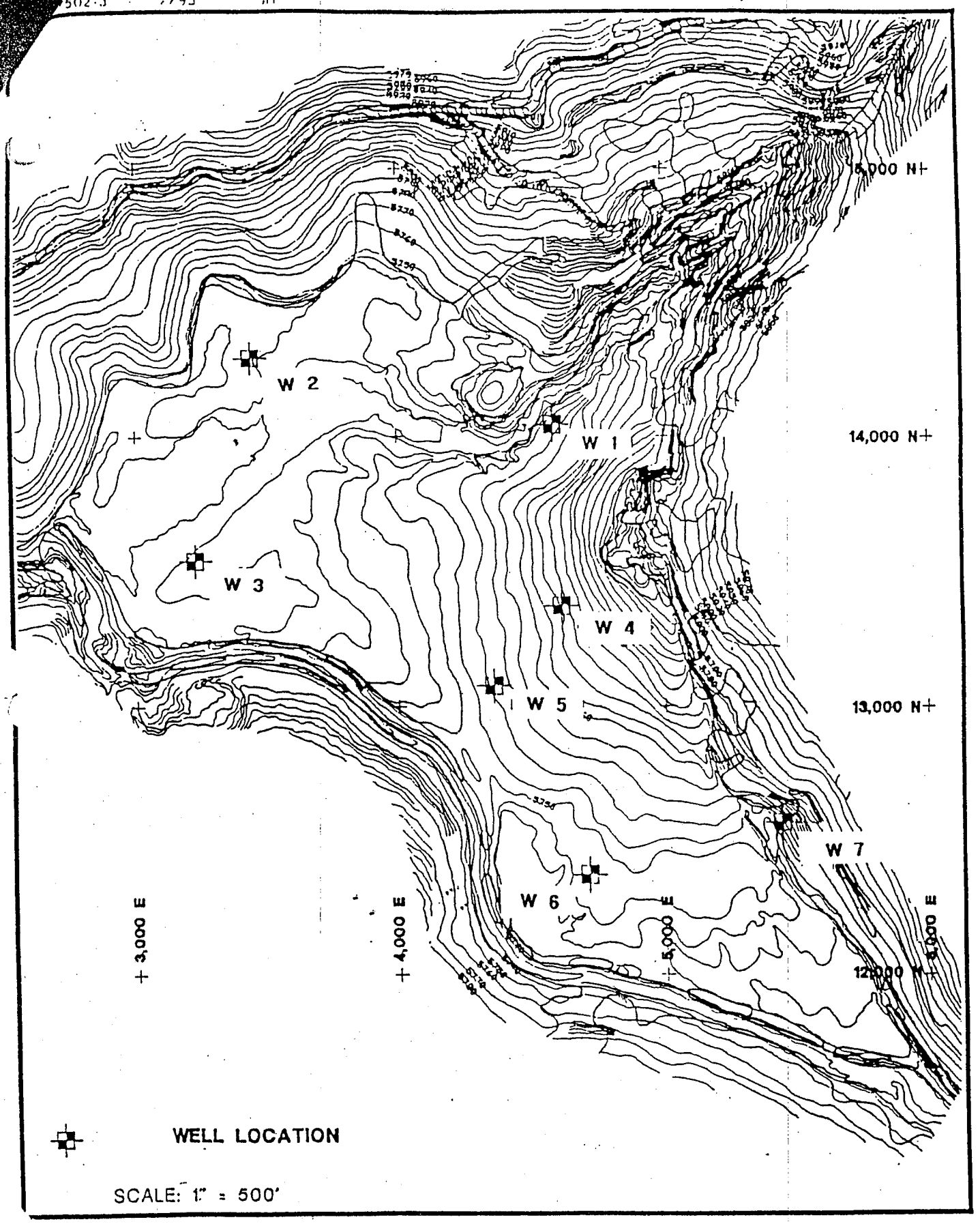
# GROUND WATER TEST RESULTS
# AND
# SUPPORTING DOCUMENTATION

# Table 2. GROUND WATER SUMMARY

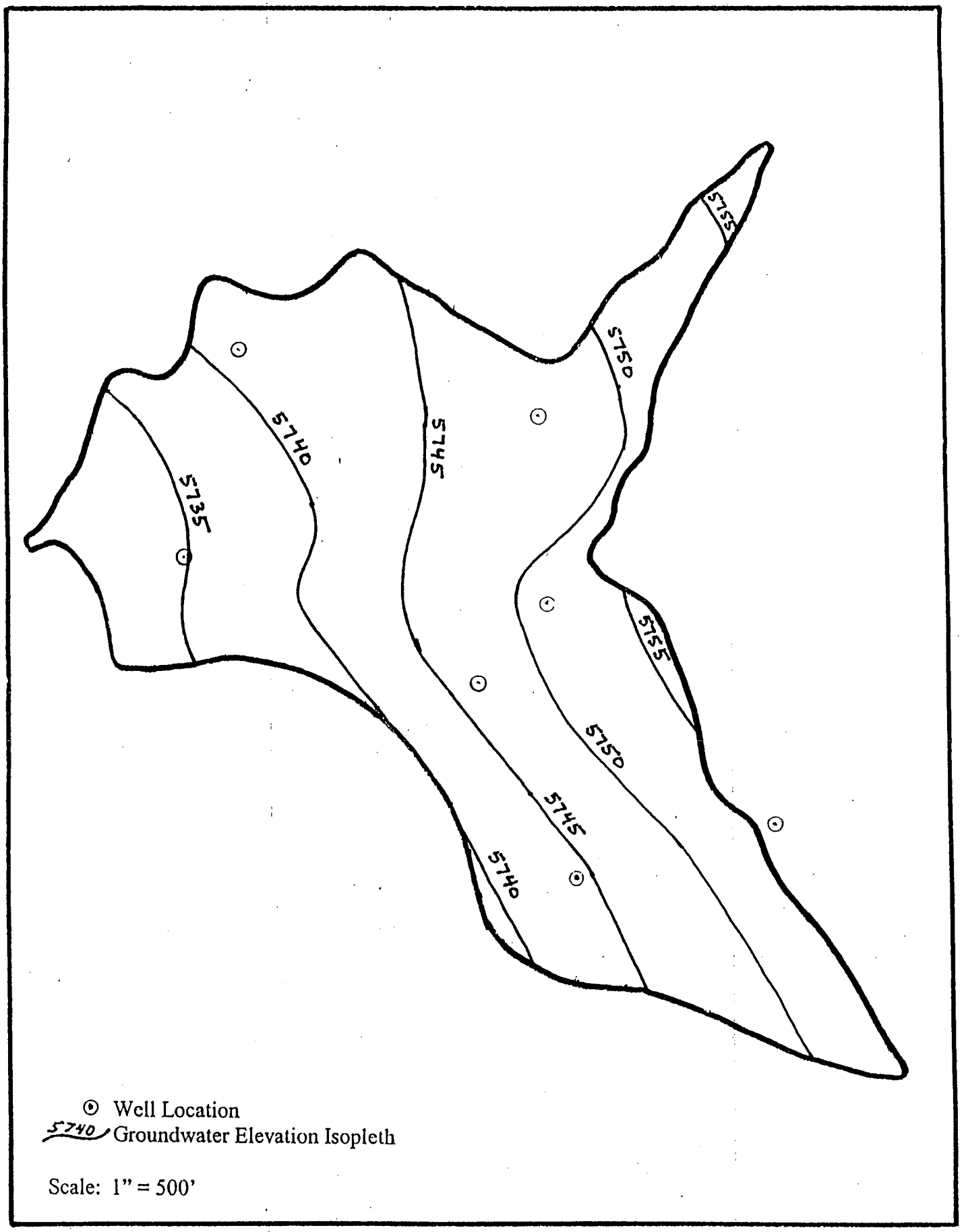
**MONITORING AND REPORTING PROGRAM NO. 5-00-028**
**U.S. DEPARTMENT OF AGRICULTURE, FOREST SERVICE, PLUMAS NATIONAL FOREST**
**WALKER MINE TAILINGS, PLUMAS COUNTY**
**May 2003**

| CONSTITUENT | UNIT | DETECTION LIMIT | WELL SITES W-1 | W-2 | W-3 | W-4 | W-5 | W-6 | W-7* |
|---|---|---|---|---|---|---|---|---|---|
| Field Parameters | | | | | | | | | |
| Ground Surface Elevation | ft | 0.01 | 5759.50 | 5742.05 | 5739.15 | 5768.27 | 5754.28 | 5748.04 | 5753.85 |
| Top of Cap Elevation | ft | 0.01 | 5759.24 | 5741.74 | 5738.83 | 5768.00 | 5754.09 | 5747.87 | 5754.91 |
| Depth to Water | ft | 0.01 | 12.45 | 0.68 | 3.86 | 16.86 | 6.39 | 3.75 | 0.00 |
| Water Surface Elevation | ft | 0.01 | 5746.79 | 5741.06 | 5734.97 | 5751.14 | 5747.70 | 5744.12 | 5754.91 |
| Laboratory | | | | | | | | | |
| Total Hardness as CaCO3 | mg/l | 2 | N/A | N/A | 220 | N/A | 160 | N/A | 34 |
| Total Alkalinity | mg/l | 1 | N/A | N/A | 86 | N/A | 68 | N/A | 35 |
| Sulfate | mg/l | 0.5 | N/A | N/A | 99.5 | N/A | 110.9 | N/A | ND |
| Dissolved Copper | ug/l | 1 | N/A | N/A | 2.0 | N/A | 1.5 | N/A | 1.0 |
| Dissolved Iron | ug/l | 50 | N/A | N/A | ND | N/A | ND | N/A | ND |
| Dissolved Zinc | ug/l | 2 | N/A | N/A | 3.2 | N/A | 13.0 | N/A | 3.4 |

*W-7 is located upgradient and off-site in a wet area. The data collected from this well are used for background comparisons. For this sampling period, water flowed out of the top of W-7's well pipe.




WALKER MINE TAILINGS




WALKER MINE TAILINGS
GROUNDWATER CONTOUR MAP

May 2003

WALKER MINE GROUNDWATER MONITORING PROGRAM
FLUID LEVEL GAUGING – FIELD DATA SHEET

SITE LOCATION: Walker Mine Tailings DATE: 5-23-03
COMPANY NAME: Plumas Nat Forest
PERSONNEL: P Flynn

| WELL | TIME | DEPTH TO WATER | COMMENTS |
|---|---|---|---|
| W-1 | 1220 | 12.45 | |
| 2 | 1212 | 0.68 | |
| 3 | 1000 | 3.86 | |
| 4 | 1227 | 16.86 | |
| 5 | 1102 | 6.39 | |
| 6 | 1250 | 3.75 | |
| 7 | 1305 | Flowing | |

# Water-Quality Sampling Information

Project Number: _____

Project Name: Walker Mine Tailings

Project Location: Walker Mine

Site Conditions/Weather: Warm / Clear but smoky

Page 1 of 1

Date: 5/23/07

Day: M T W Th (F) S S

Staff: PFlynn

Comments : _____

**SAMPLING METHOD**

- [ ] Centrifugal Pump
- [x] Submersible Pump Purge
- [ ] Hand Bail
- [x] Disposable Bailer Grab Sample
- [ ] Teflon Bailer
- [ ] _____ (other)

Sample Number: W-3

- [ ] FB: _____
- [ ] DUP: _____

Analysis Requested: Hardness, Alkalinity, Sulfate, Dis Copper, Dis Iron, Dis Zinc

Number and Types of Bottle Used: 1-0.5gal Poly

Method of shipment: Henrici (lab name)

- [ ] Courier
- [x] Hand Deliver

**Calculation Area**

Height of water column =

Depth to water =

Q = 0.5 GPM

80% DTW _____

Well Number: W-3

1000 Depth of Water: 3.86

Well Depth: 34.25

Height of Water Column: 30.39

Volume in Well: (gallons) 4.86

3 Well Volumes: (gallons) 14.59

Well Diameter: 2

- [x] 2" (0.16 gallon / feet)
- [ ] 4" (0.65 gallon/ feet)
- [ ] 5" (1.02 gallon/ feet)
- [ ] 6" (1.47 gallon/ feet)

| Time | Depth to Water | Volume Purged (gallons) | Totalizer Reading | Temperature °C | pH | Cond. ms/ cm | Turbidity (NTU) | Remarks |
|---|---|---|---|---|---|---|---|---|
| 1002 | | | | | | | | Start Purge |
| 1016 | | 7 | | 14.3 | 7.88 | 326 | 5.52 | Low TB / No odor |
| 1026 | | 12 | | 14.4 | 7.98 | 325 | 1.93 | " " |
| 1036 | | 17 | | 14.5 | 7.98 | 325 | 1.58 | " " |
| | | | | | | | | |
| 1040 | | | | | | | | Sample W-3 |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

Inlet Depth: _____

_____ Signed: _____ Date: _____

# Water-Quality Sampling Information

Project Number: _____

Project Name: Walker Mine Tailings

Project Location: Walker Mine

Site Conditions/Weather: Warm / Clear

Page 1 of 1

Date: 5/23/03

Day: M T W Th (F) S S

Staff: P. Flynn

Comments : _____

SAMPLING METHOD

- [ ] Centrifugal Pump
- [x] Submersible Pump Purge
- [ ] Hand Bail
- [x] Disposable Bailer Grab Sample
- [ ] Teflon Bailer
- [ ] _____ (other)

Sample Number: W-5

- [ ] FB: _____
- [ ] DUP: _____

Analysis Requested: Hardness, Alkalinity, Sulfate, Dis. Copper, Dis Iron, Dis Zinc

Number and Types of Bottle Used: 1 - 0.5 gal Poly.

Method of shipment: Henrici (lab name)

- [ ] Courier
- [x] Hand Deliver

Calculation Area

Height of water column =

Depth to water =

Q = 0.5 GPM

80% DTW _____

Well Number: W-5

1102 Depth of Water: 6.39

Well Depth: 40.30

Height of Water Column: 33.91

Volume in Well: (gallons) 5.43

3 Well Volumes: (gallons) 16.28

Well Diameter: 2

- [x] 2" (0.16 gallon / feet)
- [ ] 4" (0.65 gallon/ feet)
- [ ] 5" (1.02 gallon/ feet)
- [ ] 6" (1.47 gallon/ feet)

| Time | Depth to Water | Volume Purged (gallons) | Totalizer Reading | Temperature °C | pH | Cond. ms/ cm | Turbidity (NTU) | Remarks |
|---|---|---|---|---|---|---|---|---|
| 1104 | | | | | | | | Start Purge |
| 1115 | | 5.5 | | 13.3 | 6.97 | 348 | 2.14 | Low TP / No odor |
| 1126 | | 11 | | 13.4 | 7.05 | 347 | 0.97 | " " |
| 1137 | | 16.5 | | 13.1 | 6.98 | 347 | 0.74 | " " |
| | | | | | | | | |
| | | | | | | | | |
| 1146 | | | | | | | | Sample W-5 |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

Inlet Depth: _____

_____ Signed: _____ Date: _____

# Water-Quality Sampling Information

Project Number: _____

Project Name: Walker Mine Tailings

Project Location: Walker Mine

Site Conditions/Weather: Hot / Clear

Page 1 of 1

Date: 5-23-03

Day: M T W Th (F) S S

Staff: P Flynn

Comments : _____

SAMPLING METHOD

- [ ] Centrifugal Pump
- [ ] Submersible Pump
- [ ] Hand Bail
- [x] Disposable Bailer
- [ ] Teflon Bailer
- [ ] _____ (other)

Sample Number: W-7

- [ ] FB: _____
- [ ] DUP: _____

Analysis Requested: Hardness, Alkalinity, Sulfate, Dis Copper, Dis Iron, Dis Zinc

Number and Types of Bottle Used: 1-0.5 gal poly

Method of shipment: Henrici (lab name)

- [ ] Courier
- [x] Hand Deliver

Well Number: W-7

Depth of Water: flowing

Well Depth: 11.00

Height of Water Column: 11.00

Volume in Well: (gallons) 1.76

3 Well Volumes: (gallons) 5.28

Well Diameter: 2

- [x] 2" (0.16 gallon / feet)
- [ ] 4" (0.65 gallon/ feet)
- [ ] 5" (1.02 gallon/ feet)
- [ ] 6" (1.47 gallon/ feet)

Calculation Area

Height of water column =

Depth to water =

80% DTW _____

| Time | Depth to Water | Volume Purged (gallons) | Totalizer Reading | Temperature °C | pH | Cond. ms/ cm | Turbidity (NTU) | Remarks |
|---|---|---|---|---|---|---|---|---|
| 1309 | | | | | | | | Start Purge |
| 1312 | | 2 | | 11.3 | 6.84 | 66 | 13.3 | Low TB / No odor |
| 1317 | | 4 | | 7.3 | 6.49 | 58 | 47.7 | mod TB / " |
| 1321 | | 6 | | 6.4 | 6.42 | 57 | 32.9 | " " |
| | | | | | | | | |
| | | | | | | | | |
| 1325 | | | | | | | | Sample MW 7 |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

Inlet Depth: _____

Signed: _____ Date: _____

Henrici Water Laboratory Chain of Custody  Walker Tailings Proj # 5-00-028

Purveyor:
USFS Plumas Nat. Forest
159 Lawrence St.
Quincy, CA 95971
Attn: Joe Hoffman 530 283 2050

Sampler's Signature

Type of Analyses

| I.D. No. | Date | Time | Location | No. of Containers | Hardness as $CaCO_3$ | Alkalinity as $CaCO_3$ | Sulfate | Copper (Dissolved) | Iron (Dissolved) | Zinc (Dissolved) | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 5/23/03 | 1040 | W-3 | 1 | X | X | X | X | X | X | Detection Limits |
| | ↓ | 1146 | W-5 | 1 | X | X | X | X | X | X | Cu: 1 ug/L |
| | ↓ | 1325 | W-7 | 1 | X | X | X | X | X | X | Zn: 2 ug/L |
| | | | | | | | | | | | Fe: 50 ug/L |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | Walker Tailings |
| | | | | | | | | | | | Ground water |
| | | | | | | | | | | | Proj # 5-00-028 |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

| Relinquished By | Date | Time | Received By |
|---|---|---|---|
| [signature] | 5/23/03 | 1515 | Dawn M Henton |
| | | | |
| | | | |

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Account: 11616
Date: 08/10/03
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ANALYSIS REPORT

Laboratory Number: C34838 Date Received: 05/23/03
Location: Walker Mine W3
Date of Collection : 05/23/03 Time: 1040 Collector: Pat Flynn

Hardness, Dissolved Copper, Dissolved Iron and Dissloved Zinc analysis by Twining Laboratory, Bakersfield, Ca.

| Analysis | Date of Analysis | Method | Detection Limits | Results | Units |
|---|---|---|---|---|---|
| Total Hardness | 06/17/03 | SM 2340 B | 2.0 | 220 | mg/L |
| Total Alkalinity | 05/24/03 | SM 2320 B | 1 | 86 | mg/L |
| Sulfate | 06/11/03 | EPA 375.4 | 0.5 | 93.5 | mg/L |
| Dissolved Iron | 06/17/03 | EPA 200.7 | 50 | <50 | ug/L |
| Dissolved Copper | 06/17/03 | EPA 200.7 | 1.0 | 2.0 | ug/L |
| Dissolved Zinc | 06/17/03 | EPA 200.7 | 2.0 | 3.2 | ug/L |

These results were obtained by following standard laboratory procedures: the liability of the laboratory shall not exceed the amount paid for this report.

DMH
Dawn M. Henton
Laboratory Director

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Date: 08/10/03
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# ANALYSIS REPORT

Laboratory Number: C34839 Date Received: 05/23/03
Location: Walker Mine W5
Date of Collection : 05/23/03 Time: 1146 Collector: Pat Flynn

Hardness, Dissolved Copper, Dissolved Iron and Dissloved Zinc analysis by Twining Laboratory, Bakersfield, Ca.

| Analysis | Date of Analysis | Method | Detection Limits | Results | Units |
|---|---|---|---|---|---|
| Total Hardness | 06/17/03 | SM 2340 B | 2.0 | 160 | mg/L |
| Total Alkalinity | 05/24/03 | SM 2320 B | 1 | 68 | mg/L |
| Sulfate | 06/11/03 | EPA 375.4 | 0.5 | 110.9 | mg/L |
| Dissolved Iron | 06/17/03 | EPA 200.7 | 50 | <50 | ug/L |
| Dissolved Copper | 06/17/03 | EPA 200.7 | 1.0 | 1.5 | ug/L |
| Dissolved Zinc | 06/17/03 | EPA 200.7 | 2.0 | 13 | ug/L |

These results were obtained by following standard laboratory procedures: the liability of the laboratory shall not exceed the amount paid for this report.

DMH
Dawn M. Henton
Laboratory Director

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# ANALYSIS REPORT

Laboratory Number: C34840 Date Received: 05/23/03
Location: Walker Mine W7
Date of Collection : 05/23/03 Time: 1325 Collector: Pat Flynn

Hardness, Dissolved Copper, Dissolved Iron and Dissloved Zinc analysis by Twining Laboratory, Bakersfield, Ca.

| Analysis | Date of Analysis | Method | Detection Limits | Results | Units |
|---|---|---|---|---|---|
| Total Hardness | 06/17/03 | SM 2340 B | 2.0 | 34 | mg/L |
| Total Alkalinity | 05/24/03 | SM 2320 B | 1 | 35 | mg/L |
| Sulfate | 06/11/03 | EPA 375.4 | 0.5 | <0.5 | mg/L |
| Dissolved Iron | 06/17/03 | EPA 200.7 | 50 | <50 | ug/L |
| Dissolved Copper | 06/17/03 | EPA 200.7 | 1.0 | 1.0 | ug/L |
| Dissolved Zinc | 06/17/03 | EPA 200.7 | 2.0 | 3.4 | ug/L |

These results were obtained by following standard laboratory procedures: the liability of the laboratory shall not exceed the amount paid for this report.

Dawn H. Henton
Laboratory Director