

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 92-7208

Exam Date: 6/13/2007

1. Current Owner: EMERALD CREEK GARNET LTD
PO BOX 190
FERNWOOD ID 83830-0190
(208)245-2096

2. Accompanied by: *Dave Thom*

Phone No: *Same As Above*

Address: *Same As Above*

Relationship to Permit Holder: *General Manager*

3. SOURCE

EMERALD CREEK
EAST FORK EMERALD CREEK
WEST FORK EMERALD CREEK
UNNAMED STREAM
WILLOW CREEK

TRIBUTARY

ST MARIES RIVER
EMERALD CREEK
EMERALD CREEK
WEST FORK EMERALD CREEK
SINKS

B. OVERLAP REVIEW

1. Other water rights with the same place of use: *92-2026*
2. Other water rights with the same point of diversion: *NONE*

C. DIVERSION AND DELIVERY SYSTEM**1. LOCATION OF POINT(S) OF DIVERSION:**

~~WEST FORK EMERALD CREEK~~	NW1/4SE1/4	Sec. 36, Twp 43N, Rge 01W, B.M.
BENEWAH County		
~~WILLOW CREEK~~	SE1/4NE1/4	Sec. 28, Twp 43N, Rge 01E, B.M.
BENEWAH County		
~~WILLOW CREEK~~ <i>EMERALD</i>	SE1/4NW1/4	Sec. 27, Twp 43N, Rge 01E, B.M.
SHOSHONE County		
~~UNNAMED STREAM~~	SW1/4SW1/4	Sec. 27, Twp 43N, Rge 01E, B.M.
SHOSHONE County		
~~UNNAMED STREAM~~	NE1/4SE1/4	Sec. 28, Twp 43N, Rge 01E, B.M.
BENEWAH County		
~~EAST FORK EMERALD CREEK~~	NW1/4SW1/4	Sec. 34, Twp 43N, Rge 01E, B.M.
BENEWAH County		
✓ EMERALD CREEK	SE1/4SW1/4	Sec. 22, Twp 43N, Rge 01E, B.M.
SHOSHONE County		
✓ EMERALD CREEK	NE1/4NW1/4	Sec. 27, Twp 43N, Rge 01E, B.M.
SHOSHONE County		
✓ EMERALD CREEK	NE1/4SW1/4	Sec. 27, Twp 43N, Rge 01E, B.M.
SHOSHONE County		
✓ EMERALD CREEK	SE1/4SW1/4	Sec. 27, Twp 43N, Rge 01E, B.M.
SHOSHONE County		
✓ UNNAMED STREAM	NE1/4NE1/4	Sec. 28, Twp 43N, Rge 01E, B.M.
BENEWAH County		

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✓ UNNAMED STREAM	SE1/4SE1/4	Sec. 28, Twp 43N, Rge 01E, B.M.
BENEWAH County		
✓ EMERALD CREEK	SW1/4NW1/4	Sec. 34, Twp 43N, Rge 01E, B.M.
BENEWAH County		
✓ WEST FORK EMERALD CREEK	NE1/4SE1/4	Sec. 36, Twp 43N, Rge 01W, B.M.
BENEWAH County		
~~EMERALD CREEK~~	~~SW1/4SE1/4~~	~~Sec. 22, Twp 43N, Rge 01E, B.M.~~
SHOSHONE County		
~~EMERALD CREEK~~	~~NW1/4NE1/4~~	~~Sec. 27, Twp 43N, Rge 01E, B.M.~~
SHOSHONE County		
~~EMERALD CREEK~~	~~SW1/4NE1/4~~	~~Sec. 27, Twp 43N, Rge 01E, B.M.~~
SHOSHONE County		
✓ WILLOW CREEK	NW1/4NW1/4	Sec. 27, Twp 43N, Rge 01E, B.M.
SHOSHONE County		
✓ EMERALD CREEK	SW1/4NW1/4	Sec. 27, Twp 43N, Rge 01E, B.M.
SHOSHONE County		
✓ EMERALD CREEK	NW1/4SW1/4	Sec. 27, Twp 43N, Rge 01E, B.M.
SHOSHONE County		
~~EMERALD CREEK~~	~~NW1/4SE1/4~~	~~Sec. 27, Twp 43N, Rge 01E, B.M.~~
SHOSHONE County		
~~EMERALD CREEK~~	~~SW1/4SE1/4~~	~~Sec. 27, Twp 43N, Rge 01E, B.M.~~
SHOSHONE County		
✓ WEST FORK EMERALD CREEK	NE1/4SE1/4	Sec. 33, Twp 43N, Rge 01E, B.M.
BENEWAH County		
✓ WEST FORK EMERALD CREEK	NW1/4SE1/4	Sec. 33, Twp 43N, Rge 01E, B.M.
BENEWAH County		
✓ WEST FORK EMERALD CREEK	SW1/4SE1/4	Sec. 36, Twp 43N, Rge 01W, B.M.
BENEWAH County		
✓ UNNAMED STREAM	SE1/4SE1/4	Sec. 36, Twp 43N, Rge 01W, B.M.
BENEWAH County		

Method of Determination:

2. Mining

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
43N	01E	22																	-2.0
43N	01E	27																	-12.0
43N	01E	26																	-4.0
43N	01E	33																	-2.0
43N	01E	34																	-2.0
43N	01W	36																	-4.0

Total Acres: -26-

MINING same as IRRIGATION

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PLACE OF USE: IRRIGATION

Method of Determination:

3. ☒ Delivery System Diagram Attached (required). Indicate all major components and distances between components. Indicate weir size/pipe as applicable.
- ☒ Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be 1:24,000 or greater.
- ☒ Aerial Photo Attached (required for irrigation of 10+ acres).
- ☒ Photo of Diversion and System Attached

4.

Well or Diversion

ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
NA	Yamaha	5.5	NA	Yamaha	Varies (Multiple Pumps Used)
NA	Honda	5.5	NA	Yamaha	Varies (Multiple Pumps Used)

*Code to correspond with No. on map and aerial photo

D. FLOW MEASUREMENTS

1.

Measurement

Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
NONE	(See	Theoretical	Below)			

2. Measurements:

E. FLOW CALCULATIONS

____ Additional Computation Sheets Attached

Measured Method:

Water	Right	No.	92-7230			
		HP	H in feet	Efficiency as a decimal	Pumping lift in feet	System pressure in PSI
Q =	HP*8.8*Eff/H	5.5	64.82313	0.75	7	25
Q =	0.561	cfs	251.7			

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) =$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 =$$

$$V = \text{Smaller of } V_{IR} \text{ and } V_{D.R.} =$$

2. Volume Calculations for Other Use

MINING (5 HAS every 2 WEEKS) 52 WEEKS/YR
 $52 \text{ WEEKS} \div 2 = 26$
 $(26) \times (5) = 130$
 $\frac{130}{24} = 5.42 \text{ Days}$
 $((2.23 \text{ EPS (PERMT)}) \times (1.9835)) \times (5.42) = 24.0 \text{ AF}$

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G. NARRATIVE/REMARKS/COMMENTS

(See attached diagram for METHOD 1). Emerald Creek Garnet (ECG) currently uses a 3 5/8 HP 5 - 6 HP pump to withdraw water from any of the stream Points of Diversion to fill a 50 foot x 100 foot hole (Cell 1) that has ben dug into the ground to be mined. Cell 1 is the first cell in a line of similar cells. Water in the ground to be mined partially fills, and sometimes completely fills, the cell to be mined. Pumped water from a stream Point of Diversion (POD) supplies the remainder of the water needed to fill Cell 1. The amount of water withdrawn from the stream depends on how much ground water is available to fill Cell 1.

ECG uses pumps and scoop shovels next to a portable platform (Platform 1) adjacent to Cell 1 to withdraw a slurry containing garnet laden material from Cell 1 onto the platform. Processing equipment on the platform separates garnet from the slurry and discharges the wastewater into the next adjacent cell. The equipment on Platform 1 sends the garnet in concentrated slurry form through a flexible pipe to a concentrator site or to second platform (Platform 2) where concentrating equipment separates out the garnet and discharges wastewater into a discharge pond or in to a cell that is awaiting arrival of Platform 1. Trucks are also used to move garnet bearing material from Platform 1 to the concentrator. No wastewater is discharged directly back to a surface stream.

Platform 1 is moved to the next cell in line when the amount of garnet being removed form Cell 1 falls below standards. Water from Cell 1 is pumped into Cell 2 where the processing steps described above are repeated. Additional water is withdrawn from a stream POD only if necessary to fill the cell being mined to an adequate level.

Cells are filled and prepared for revegetation after the mining platform is moved. Irrigation is started to help reestablish vegetation when mining activity in the area near the cell has ended. The length of time that an area is irrigated depends on natural precipitation and soil conditions and may not be required in all mined areas.

METHOD 2. This method is similar to method 1. The cell being mined in larger. Garnet bearing material is excavated from the cell and processed in a trommel next to the cell before being trucked to a jig plant for further processing.

Emerald Creek Garent General Manager; Dave Thom; confirmed in a telephone conversation on Feb. 17, 2009 that water withdrawn from cells and/or from the original points of diversion for application on mined lands is used only temporarily to reestablish vegetation. The water is not used for crop production.

Have conditions of permit approval been met? ☒ Yes ☐ No

H. RECOMMENDATIONS**1. Recommended Amounts**

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
MINING	1/01 to 12/31	2.230 CFS	~~2.23~~ 24.0 AF
IRRIGATION	~~3/45 to 11/15~~	~~0.100 CFS~~	~~0.00~~
	<u>Totals:</u>	2.230 CFS	~~2.23~~ 24.0 AF

2. Recommended Amendments

☐ Change P.D. as reflected above ☐ Add P.D. as reflected above ☐ None

☐ Change P.U. as reflected above ☐ Add P.U. as reflected above ☒ Other See File Method

I. AUTHENTICATION

Field Examiner's Name

William M. Murphy

Date

2/17/09

Reviewer

Beeth Z. Sanchez

Date

3/3/09

92-7208

MEMORANDUM

Date: March 03, 2009
To: Water Right File 92-7208
From: kfranklin
Re: Field Report Narrative

Stemming from the field examination and conditions #10 and #11 of the permit, which restrict the diversion period, it was determined that Emerald Creek Garnet Company can divert up to 24 acre-feet of water annually for mining purposes, which includes the reclamation of up to 26 acres of land per year. The main purpose of doing so is to insure no irrigation of land occurs once the mining operation is complete.

The field examination also found no source or points of diversion from Emerald Creek within the SWSE of Section 22 and the NWNE, SWNE, NWSE and SWSE of Section 27, Township 43 North, Range 1 East, B.M. A point of diversion was found within the SENW of Section 27, Township 43 North, Range 1 East, but the source stated on the permit was in error. It read Willow Creek when it should have read Emerald Creek.

This typographical error was corrected on the license.

92-7208

SCANNED
MAR 10 2009

MEMORANDUM

Date: March 03, 2009
To: Water Right File 92-7208
From: smaxey
Re: Measurement Condition

I recommend that Permit condition 4 be removed at licensing. The condition requires the water right holder to provide a means of measurement at each authorized Point of Diversion in order to allow the Department to determine a total rate of diversion.

Condition 4 should be removed for several reasons. There is currently no watermaster available to check all the Points Of Diversion (POD). The permit holder uses small portable water pumps that are frequently moved between PODs. Measurement devices on these pumps are likely to be damaged by frequent handling and/or likely to produce inaccurate readings due to frequent movement of the pumps. The pumps have a defined diversion capacity that will allow the Department to calculate the total rate of diversion by other means.

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Pumps
YP30GX

\$649 msrp

 **Select Category**

 **Select Category**

Generator

Pump

- **Type** Self-priming, centrifugal
- **Size** 80mm (3")
- **Maximum Capacity** 980 litres/min (216 gal / min)
- **Total Head** 31m (102 ft)
- **Suction Head** 7m (23 ft)
- **Maximum Discharge Pressure** 3.1 kg/cm² 45.5 psi
- **Priming Time** 120 sec @ 5m (16.4 ft)

Engine

- **Type** 4-stroke, OHV, air-cooled
- **Displacement** 171cc
- **Maximum Horsepower** 5.5 hp @ 4000 rpm
- **Starting System** Recoil
- **Ignition** TCI

General

- **Fuel Tank Capacity (L)** 4,5 litres

Technical Features

Voltage Fluctuation

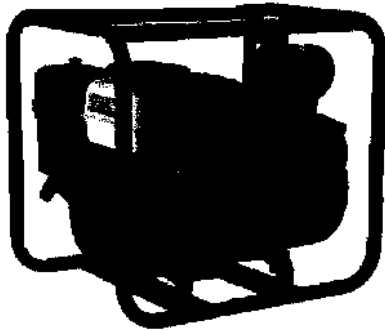
Accessories

Warranty

Dimensions

- **Dry Weight** 30kg (66 lb)
- **L x W x H mm (in)** 518 x 397 x 466 mm (20.4 x15.6 x18.3 ")

92-7208



Model Number:
WB30

- Honda's OHV Engine
- Cast Iron Impeller and Volute
- Abrasion-Resistant Silicone Carbide Seal
- 3" Suction/Discharge Ports
- Heavy-Duty Full Frame Protection
- Pumps up to 275 Gallons/Minute
- Lightweight Aluminum Pump Case
- Rubber Mounts Minimize Vibration
- 2 Year Residential Warranty
- 1 Year Commercial Warranty

WB30 Specifications

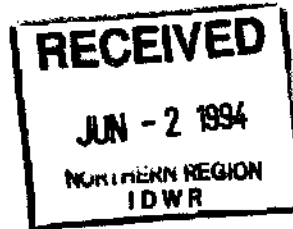
Engine	GX160, 5.5 HP, OHV
Displacement	163 cc
Bore and Stroke	2.7" x 1.8"
Compression Ratio	8.5:1
Oil Alert®	Standard
Pump Type	Centrifugal, Self-Priming
Volute	Rigid Mounted Cast Iron
Impeller	Cast Iron
Mechanical Seal	Silicone Carbide/Silicone Carbide
Priming Time	150 sec. at 16.4 ft.
Drive System	Direct
Discharge Capacity	275 gals./min.
Suction Port Diameter	3.0" NPT
Discharge Port Diameter	3.0" NPT
Total Head Lift	85 ft.
Suction Head Lift	26 ft.
Maximum Pressure	37 psi
Solids Handling	N/A
Dimensions	20.1" x 15.2" x 17.9"
Dry Weight	60.0 lbs
Strainer Part #	78325-YG4-000

92-7208



IDAHO FISH & GAME
PANHANDLE REGION
2750 Kathleen Avenue
Coeur d'Alene, Idaho 83814

Cecil D. Andrus / Governor
Jerry M. Conley / Director



May 27, 1994

Mr. Robert G. Haynes
Idaho Department of Water Resources
1910 Northwest Blvd. Suite 210
Coeur d'Alene, ID 83814

Dear Bob:

REFERENCE: 92-07208 EMERALD CREEK GARNET COMPANY
92-07209

We have discussed our protests of these water right applications with Emerald Creek Garnet Company. Mr. Steve Osburn of Emerald Creek Garnet Company has agreed to the conditions stated on the attached FAX transmittal sheet.

Provided these conditions are incorporated into these water rights, we will withdraw our protests.

Please contact Chip Corsi of my staff if there are any questions.

Sincerely,

David W. Ortmann
Regional Supervisor

DWO:CEC:kh

C: Legal
Emerald Creek Garnet Company, PO Box 190, Fernwood, ID 83830
Natural Resource Policy Bureau
Attachment

COPY

92-7208

SEP 12 1994



Emerald Creek Garnet Co.

Making our environment cleaner

208 723 8690

FAX TRANSMITTAL

TO: Idaho Fish & Game
Chip Corsi
P - 208-769-1418

FROM: Emerald Creek Garnet
Steve Osburn
P - 208-245-5309

DATE: May 26, 1994

REFERENCE: 92-07208 EMERALD CREEK CO/WEST FORK
92-07209 EMERALD AND CARPENTER CREEKS

1. Per washer, no more than one diversion period per 30 day period, or one per calendar month.
2. Maximum duration of the diversion period is five hours, within a two week period.
3. Pump intake must be screened to one-quarter inch or smaller mesh, with approach velocities not to exceed 0.5 feet per second.

Thank you for your assistance with this matter. If you have any questions please call.

EMERALD CREEK GARNET

Steve Osburn

COPY

MICROFILM

SEP 12 1994

P.O. Box 199

92-7208

Telephone: (208) 245-2090

Fairwood, ID 83830

Products to suit all proprietary needs

Faxsimile: (208) 245-5309



Emerald Creek Garnet Co.

Making our environment cleaner

TO: Department of Fish and Game

FAX #: 208/769-1418

ATTN: Chip Corsi

FROM: Steve Osburn

PHONE: 208/245-2096

DATE: May 5, 1994

MESSAGE:

Initially to start a mining panel, the topsoil is removed & stored, the overburden pushed, dug, and piled adjacent to the panel that is being opened up.

A first panel may range in size from 1/4 of an acre up to a acre. The water is then drawn from the creek to fill up the panel. The amount of water used the first time depends on panel size and depth. For an average panel one acre in size, the initial draw out of the creek is an average 250,000 - 350,000 gallons of water. This water will then be used in the next concurrent panels as mining progresses. During the low flow months (July-Sept.), additional water may be added to dilute the mining water as mining progresses to other panels. This amount of water varies due to weather conditions and mining conditions and will usually average about 100,00 gallons per month.

The rest of the year, spring and fall rains, spring run-off and ground water supply the additional water needed to dilute the water being used in the mining process.

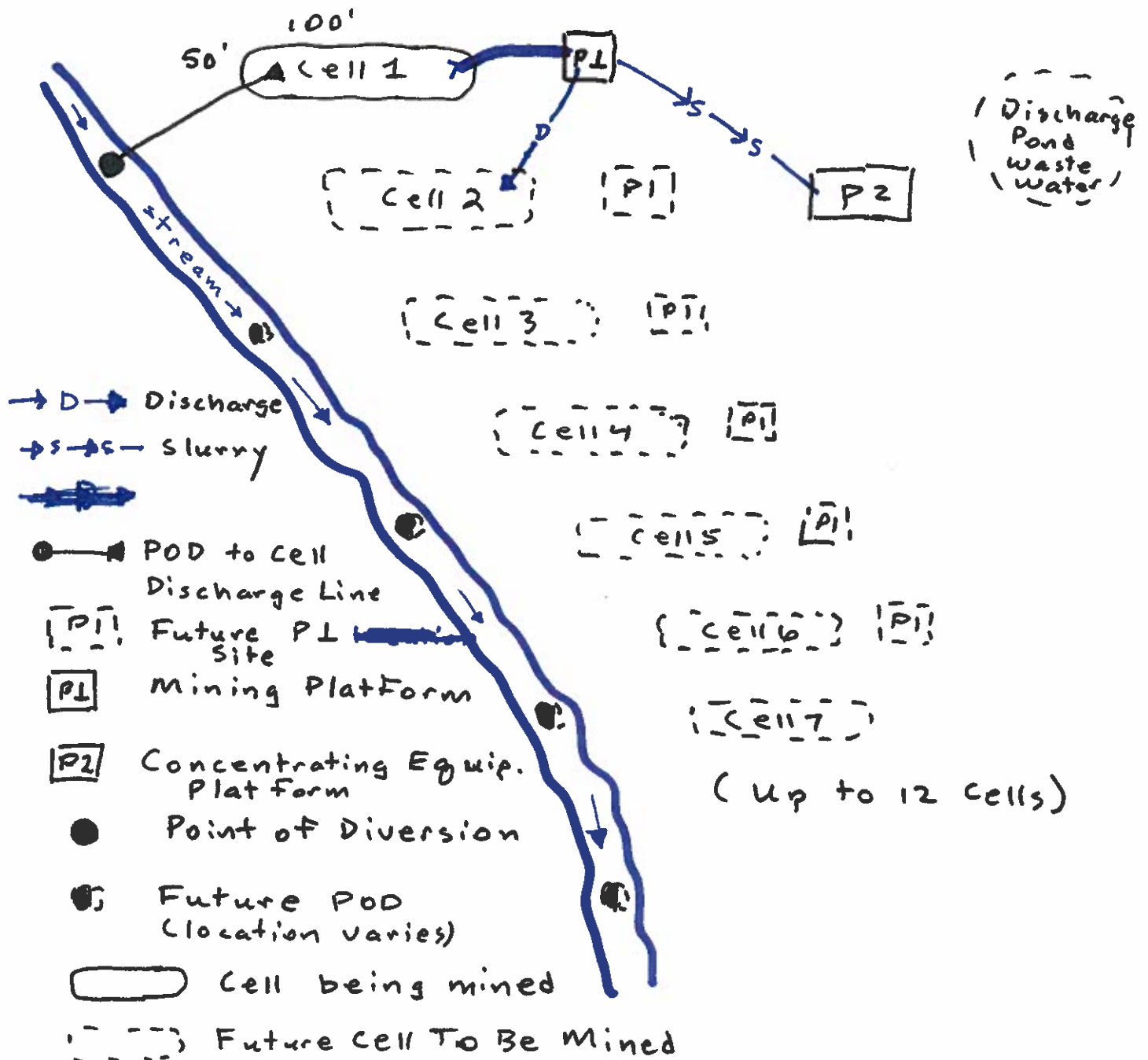
The initial amount drawn out of the creek is at the amount rate of 2.230 CFS, but it takes an average of four hours to fill the panel and then the water being diverted from the creek is ceased and mining will continue without additional water being added to the mining panels, for 30 days up to 180 days or longer.

MICROFILMED

SEP 12 1994

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DELIVERY SYSTEM DIAGRAM (METHOD 1) NOT TO SCALE



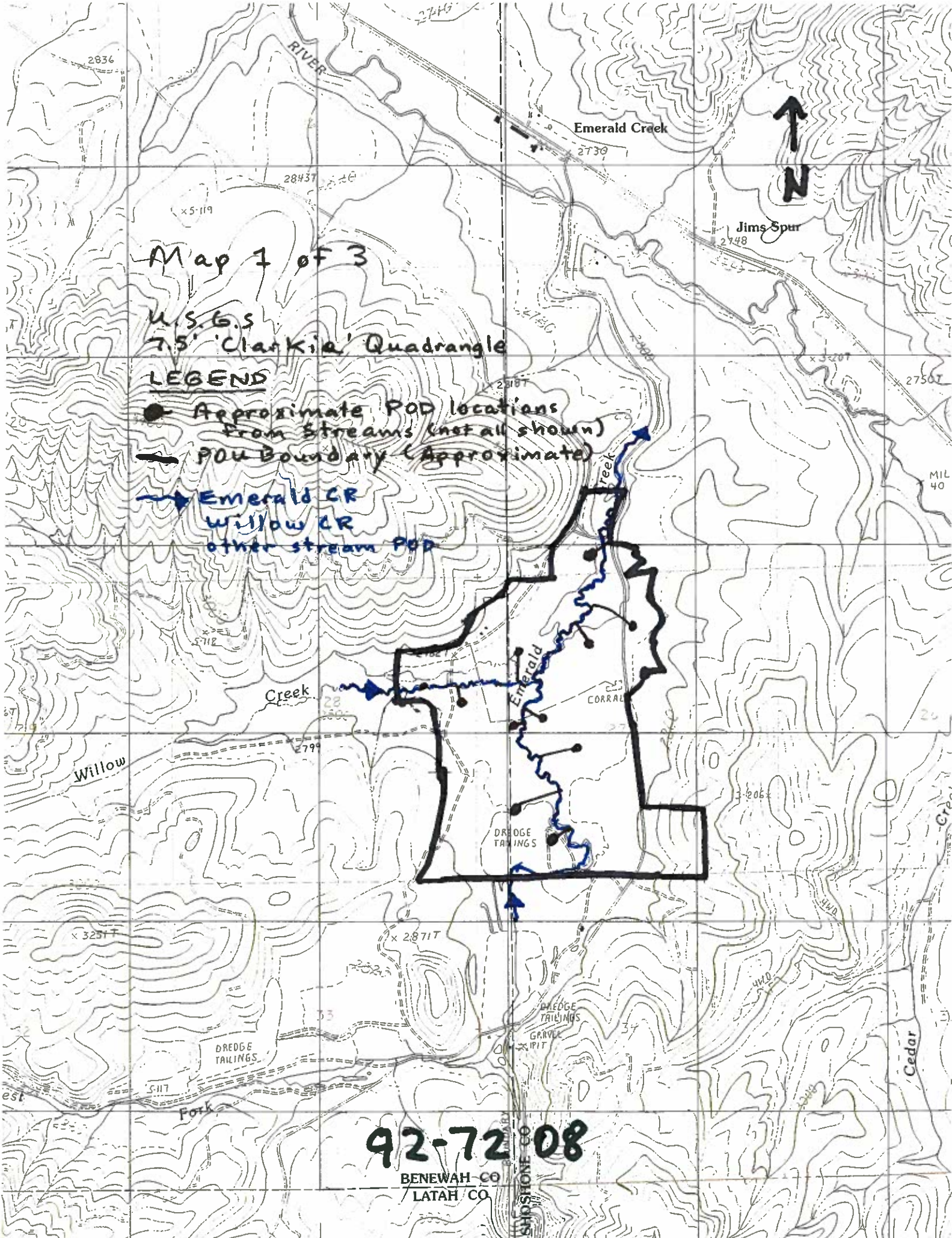
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Map 1 of 3

U.S.G.S
7.5' Clarkia Quadrangle

LEGEND

- Approximate POD locations
From Streams (not all shown)
- POU Boundary (Approximate)
- Emerald CR
Willow CR
other stream POD



Map 2 of 3

U.S.G.S

7.5' Clarkia Quadrangle

LEGEND

• Approximate POD locations
from streams (not all shown)

~ POD Boundary (Approximate)

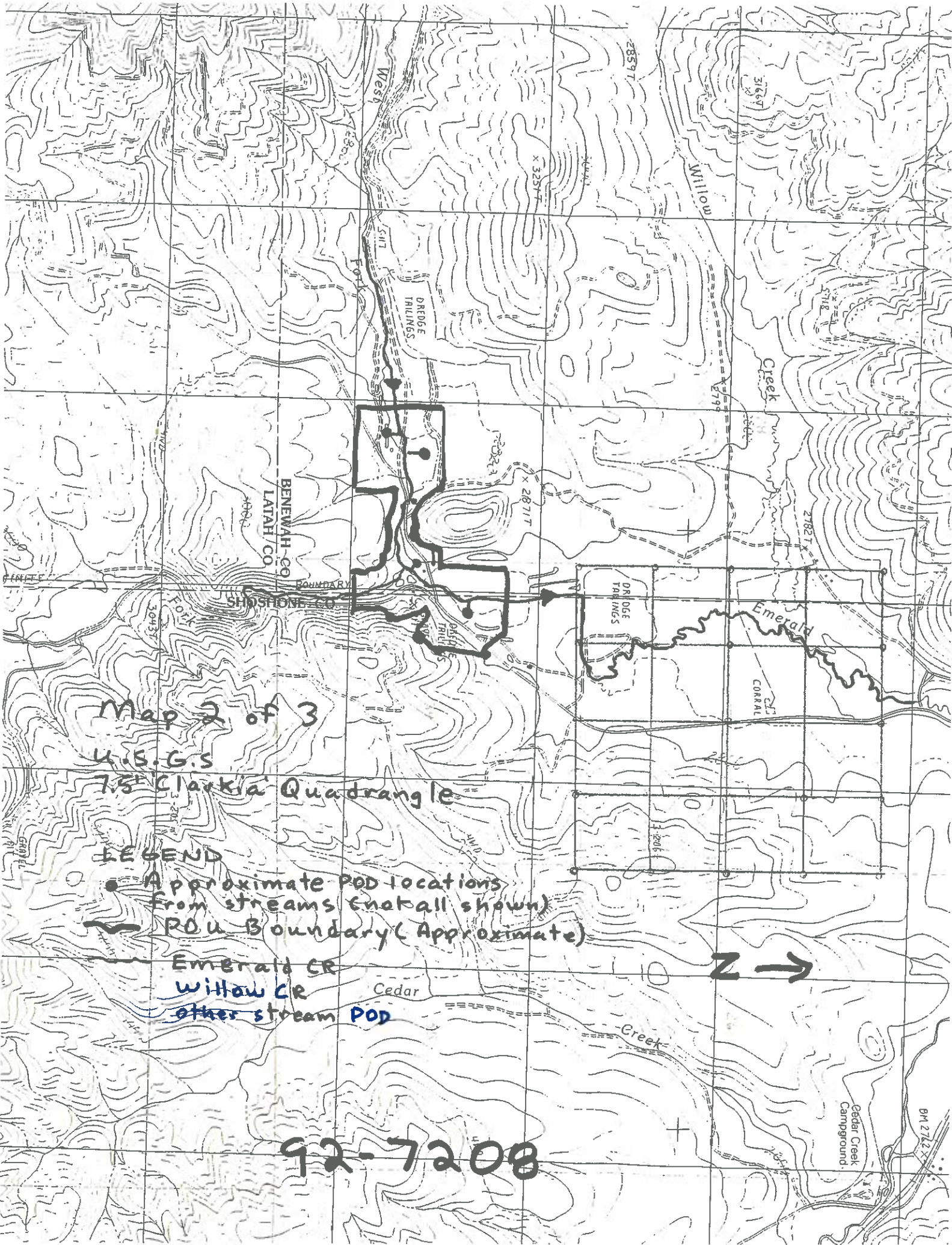
Emerald CR

Willow CR

other stream POD

N →

92-7208



USGS
7.5' Fernwood Quadrangle
Map 3 of 3

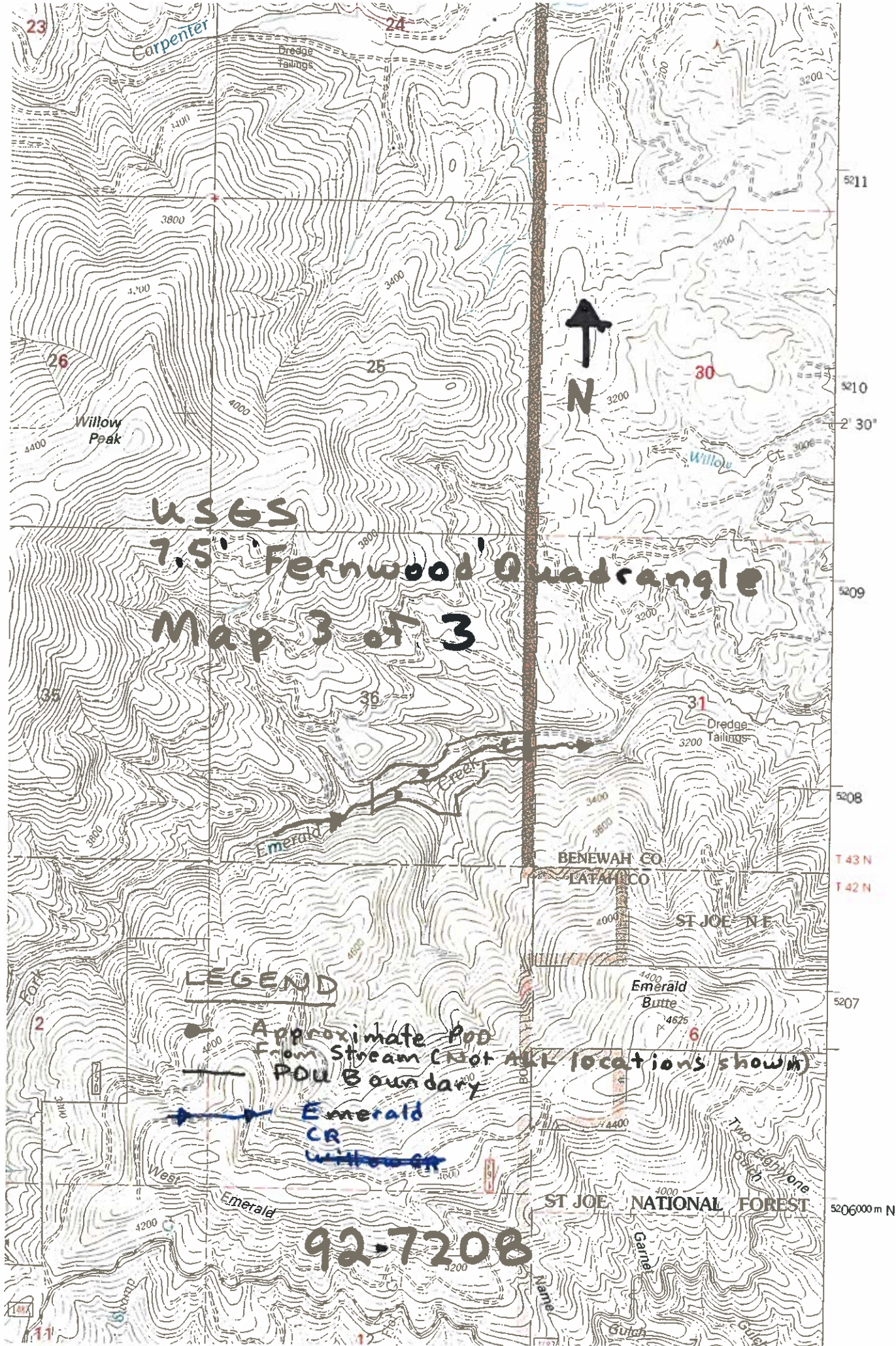


LEGEND

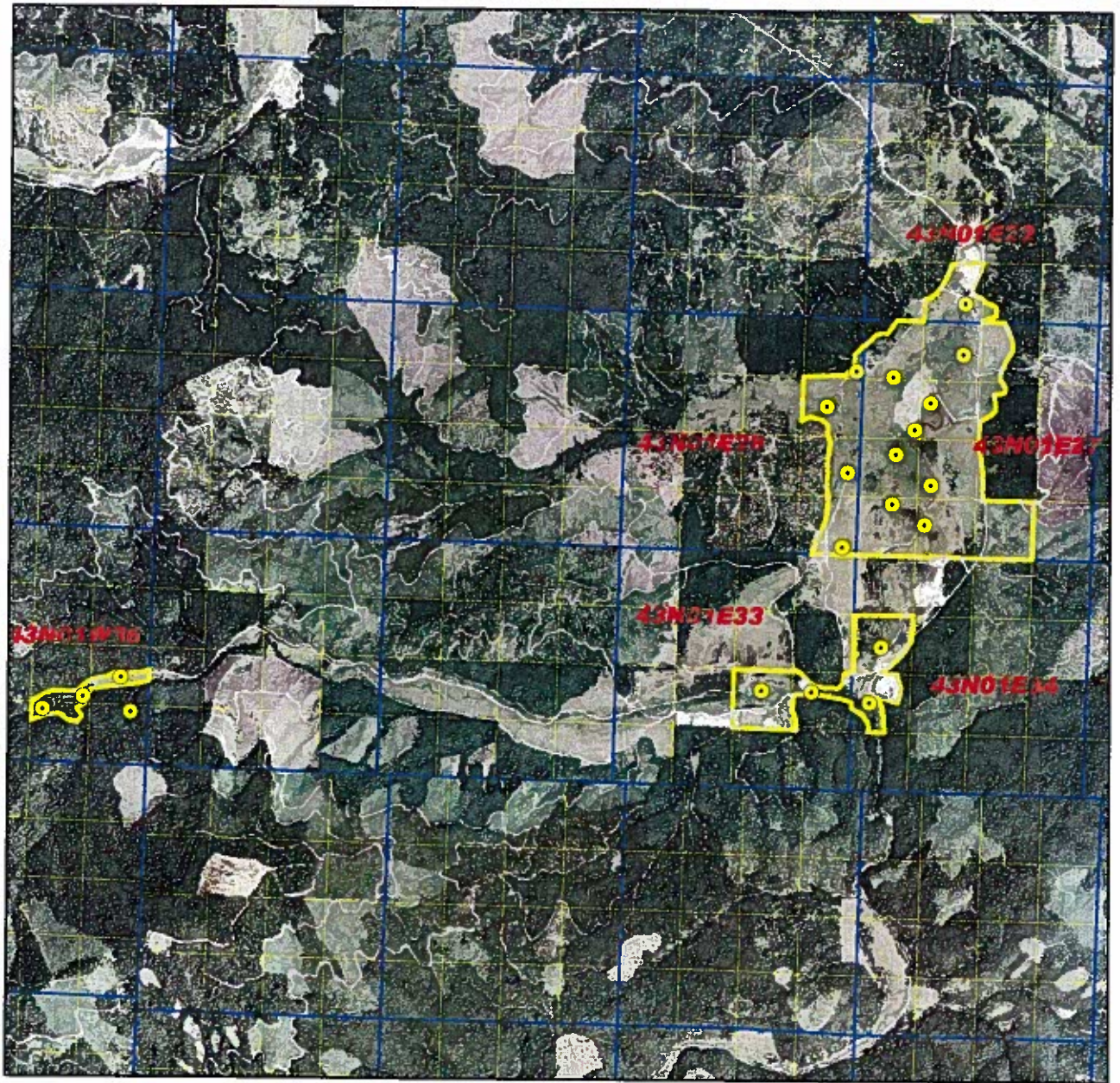
● Approximate POU
From Stream (Not ALL locations shown)
— POU Boundary

→ Emerald
CR
Willow CR

92-7208



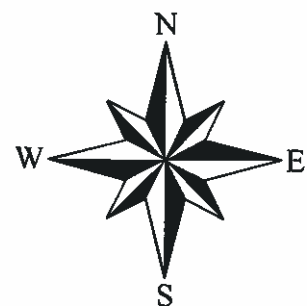
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0 1,650 3,300 6,600 9,900 13,200 Feet

Legend

- workingpod
- workingpou
- QQ
- Sections



92-7208



Revegetated Area 92-7208.JPG



36 bt 300 Foot Cell.JPG



Concentrator Example from 92-7230.JPG



Concentrator Method 1
Example from 92-7230 of...



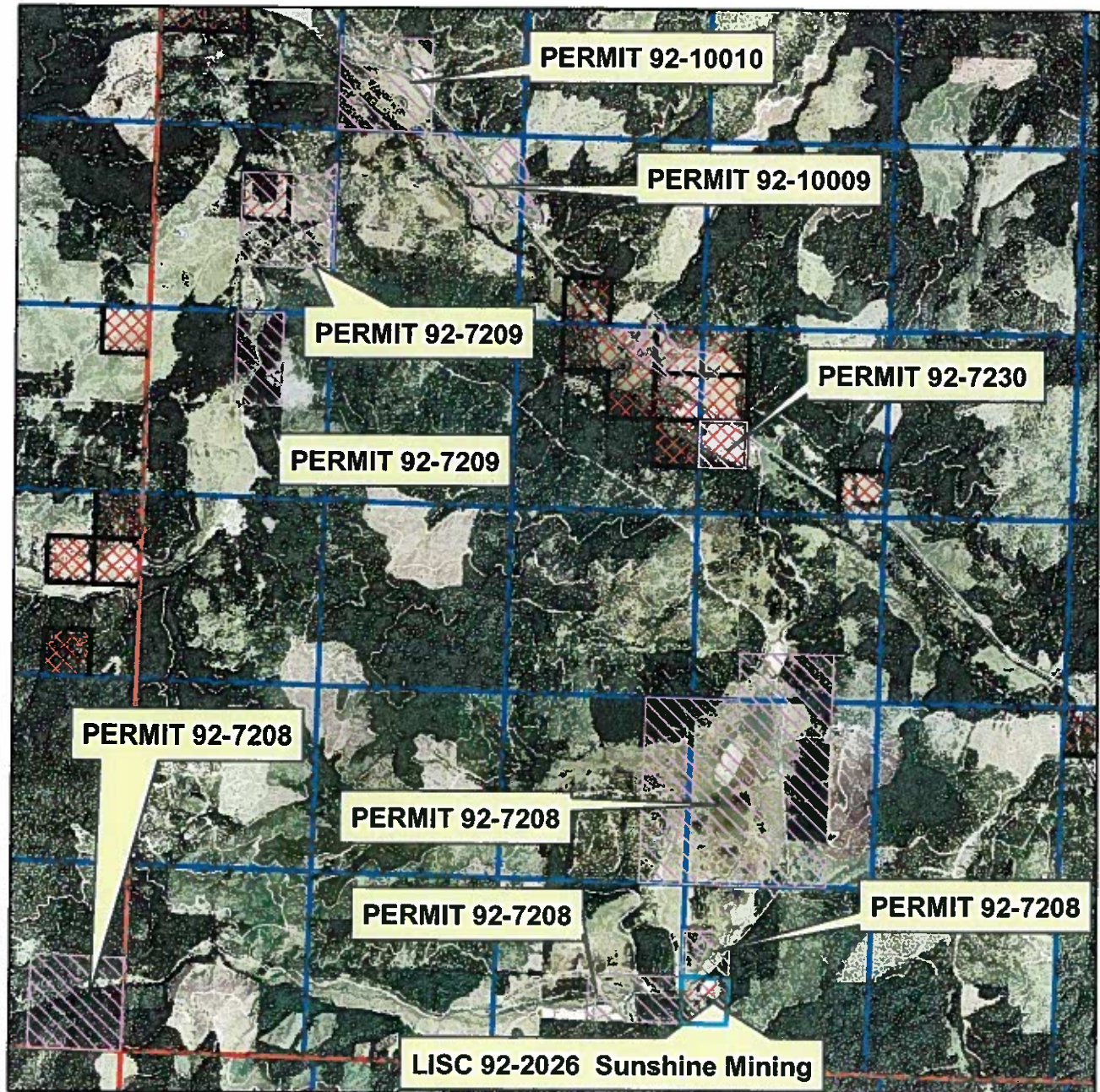
Example from 92-7230 of
Platform 1.JPG



LISC 92-2026 Jig plant
overlap with 92-7208.JPG

92-7208

E.C.G. Water Rights



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Revegetated Area 92-7208 POU



36 by 300 Foot Cell

92-7208



Concentrator example from 92-7230



Concentrator Method 1 Example from 92-7230

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Example from 92-7230 of Platform 1



LISC 92-2026 Jig plant overlap with 92-7208

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