

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 95-9120

Exam Date: 8/15/2007

1. Current Owner: ELLEN LARSEN
6734 W STURGEON RD
RATHDRUM ID 83858
(208)687-9333

2. Accompanied by: Mr. Per Larsen

Phone No: (208) 687.9333

Address: 6734 W Sturgeon RD, Rathdrum, ID 83858

Relationship to Permit Holder: Husband

3. SOURCE

UNNAMED STREAM

TRIBUTARY

SINKS

B. OVERLAP REVIEW

1. Other water rights with the same place of use: 95-2013 (Forfeited - See Narrative)

2. Other water rights with the same point of diversion: NONE

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

UNNAMED STREAM SW1/4SE1/4 Sec. 18, Twp 52N, Rge 04W, B.M., KOOTENAI County

Method of Determination: GPS (Garmin), USGS 7.5' Quadrangle 'Rathdrum'
(N 47° 50' 47.4, W 116° 52' 52.7 Pond entrance)

2.

PLACE OF USE:		IRRIGATION STORAGE												Totals				
Twp	Rge Sec	NE				NW				SW					SE			
52N	04W 18	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	X
Total Acres:		2																
PLACE OF USE:		IRRIGATION FROM STORAGE												Totals				
Twp	Rge Sec	NE				NW				SW					SE			
52N	04W 18	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	2.0
Total Acres:		2												2.0				
PLACE OF USE:		RECREATION STORAGE												Totals				
Twp	Rge Sec	NE				NW				SW					SE			
52N	04W 18	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	X
Total Acres:		2																
PLACE OF USE:		WILDLIFE STORAGE												Totals				
Twp	Rge Sec	NE				NW				SW					SE			
52N	04W 18	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	X
Total Acres:		2																
PLACE OF USE:		IRRIGATION												Totals				
Twp	Rge Sec	NE				NW				SW					SE			
52N	04W 18	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	2.0
Total Acres:		2												2.0				

95-9120

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

*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
Bucket	5 GAL	NA	NA	NA	5 GAL	NA
Depth Gauge	-	Vexlar	DepTherm ¹⁰⁴	NA	NA	NA

2. Measurements:

5 GAL Bucket at Pond Overflow

$$\frac{5 \text{ GAL}}{10 \text{ SEC}} \times \frac{60}{6} = \frac{60 \text{ SEC}}{30 \text{ GAL}} = 30 \text{ GPM} = .06 \text{ CFS}$$

5 GAL Bucket at hose (sprinkler head not suited for measurement)

$$\frac{3 \text{ GAL}}{60 \text{ SEC}} \times \frac{60}{1} = \frac{60 \text{ SEC}}{3 \text{ GAL}} = 36 \text{ GPM} = .01 \text{ CFS}$$

POND DEPTH 2 measurements 10.5' deep at maximum

E. FLOW CALCULATIONS

____ Additional Computation Sheets Attached

Measured Method:

NONE

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = (2.0 \text{ acres}) \times (3.0 \text{ AF}) = 6.0 \text{ AF}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = (.06) \times (246) \times (1.9835) = 29.27 \text{ AF}$$

$$V = \text{Smaller of } V_{IR} \text{ and } V_{D.R.} = 6.0 \text{ AF}$$

95-9120

2. Volume Calculations for Other Uses:

Irrigation Storage, Irrigation From Storage, Recreation Storage
& Wildlife Storage (1.5 AF each by Permit)

Constructed Pond Capacity Calculation

Given (85' wide) x (100' long) = (10.5' Max Depth)

$$(85') \times (100') = 8500 \text{ sq. ft} / 43560 \text{ sq. ft} (1 \text{ AF}) = 0.195 \text{ AF} \\ = .2 \text{ AF}$$

$$(1.2 \text{ AF}) \times (10.5') \times (.7) = 1.47 \text{ AF} \text{ (average depth 70\% of max)}$$

$$(1.2 \text{ AF}) \times (10.5') \times (.7) = 1.5 \text{ AF} \xrightarrow{\quad \quad \quad} 1.5 \text{ AF} \\ (\bullet .93 \text{ AF (Refill \& Losses)}) \rightarrow \underline{1.0 \text{ AF}} \\ .93 = 1.0 \text{ AF Refill \& Losses) } \quad \quad \quad 2.5 \text{ AF}$$

Irrigation Storage 1.5 AF
Irrigation From Storage 1.5 AF
Recreation Storage 1.5 AF
Wildlife Storage 1.5 AF

G. NARRATIVE/REMARKS/COMMENTS

Pond and Place of use initially visited AUG 2007. Exam completed JUL 2008 due to unresolved question concerning whether source was a spring or an unnamed stream. Applicant; Ellen Larsen; was correct that the source is an unnamed stream originating West of her property and flowing to her pond. The 2008 Field Exam occurred after record high winter precipitation.

2008 measurements at the 95-9120 constructed, on-stream, pond were taken with a measuring tape and a depth gauge. Mr. Larsen and I used the tape to determine that the pond is 85 feet x 100 feet. The depth gauge was thrown twice to the center of the pond, allowed to sink to the bottom, and allowed to rest for one minute each time. The depth indicated was 10.5 feet.

The pond receives water from two sources. An unnamed, intermittent, stream that is not visible on the U.S Geological Survey (Rathdrum) 7.5 minute map was flowing into the southwest corner of the pond on July 10, 2008. This stream was not flowing when I visited the site in August 2007. A small spring located in the streambed, or immediately adjacent to the streambed near the pond, was flowing in AUG 2007. A negligible amount of water was seeping into the pond from an area about 25 feet wide on the bank at the west side of the pond during the 2008 Exam.

A narrow bypass channel has been built adjacent to the southern edge of the pond to carry water past the pond when run off volumes are high and the pond is at full capacity. The channel ends immediately after passing the pond and bypass runoff sinks into the irrigated area.

The pond has a large diameter overflow pipe that discharges into the irrigated area when the amount of water entering the pond exceeds storage capacity.

The irrigation system uses inlet pipes on the bottom of the pond is to bring water via gravity and water pressure through a concrete vault with valves to two buried irrigation water lines. Household/Garden type hoses and portable lawn sprinklers are currently connected (2008) to the buried water lines and used to distribute water within the irrigated area. Irrigation was in progress during the exam. Cubic Feet Per Second (CFS) was measured at 3 Gallons Per Minute (GPM) (.01 CFS) flowing into a five gallon

95-9120

measuring bucket from a hose connected to one of the irrigation lines and at 30 GPM (.06 CFS) exiting the overflow pipe.

Mr. Larsen guided me to the northwest edge of the Larsen property along a rough road / jeep trail. This route runs parallel to and to the north of the small, unnamed, intermittent stream that was running into the 95-9120 pond. A boundary marker pin had been driven into the ground at the northwest corner of the Larsen property near trees that carried boundary signs. The stream enters the Larsen property from forested area to the west and continues eastward through a forested area to the 95-9120 pond. Little riparian area vegetation was present. No clear evidence was visible of a flume, ditch, or other manmade conveyance structure to carry water.

Ms. Larsen said she believes that she is also the rightful owner of 1906 Water Right 95-2013 (Domestic and Irrigation). Ms. Larsen contends that 95-2013 originates from the same source as 95-9120 and has the same Place of Use (POU). 95-2013 microfiche records and records from the Twin Lakes Adjudication were reviewed by the Idaho Department of Water Resources (IDWR) State Office and IDWR Northern. There is no record of this water right in the Twin Lakes Adjudication. This indicates that 95-2013 was not filed upon during the Twin Lakes Adjudication and has been abandoned or forfeited. No change from the original owner (Don A. Thomas) of 95-2013 has been made in IDWR records. 95-2013 microfiche records state that there was not enough water available to irrigate all of the area intended by Mr. Thomas and that the irrigated area had been reduced to approximately five acres. The five acre area was not further defined within the original 40 acre tract specified as the 95-2013 POU.

The U.S. Geological Survey (USGS) 7.5 minute Rathdrum Quadrangle map and IDWR records were reviewed to determine if other water rights overlap 95-9120. These sources indicate that the unnamed, intermittent, stream which supplies the Larsen 95-9120 pond is not shown on the map and may be diverted for use by Water Right License 95-9061 before entering the Larsen property. The route of this stream in the area to the west of the Larsen property has not been determined.

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>
IRRIGATION STORAGE	01/01 to 12/31		1.50 AF
IRRIGATION FROM STORAGE	03/15 to 11/15		1.50 AF
RECREATION STORAGE	01/01 to 12/31		1.50 AF
WILDLIFE STORAGE	01/01 to 12/31		1.50 AF
IRRIGATION	03/15 to 11/15	~~0.060 CFS~~	6.0 AF
		<u>Totals:</u> ~~0.060 CFS~~	7.5 AF
No Diversion To Storage			

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

I. AUTHENTICATION

Field Examiner's Name

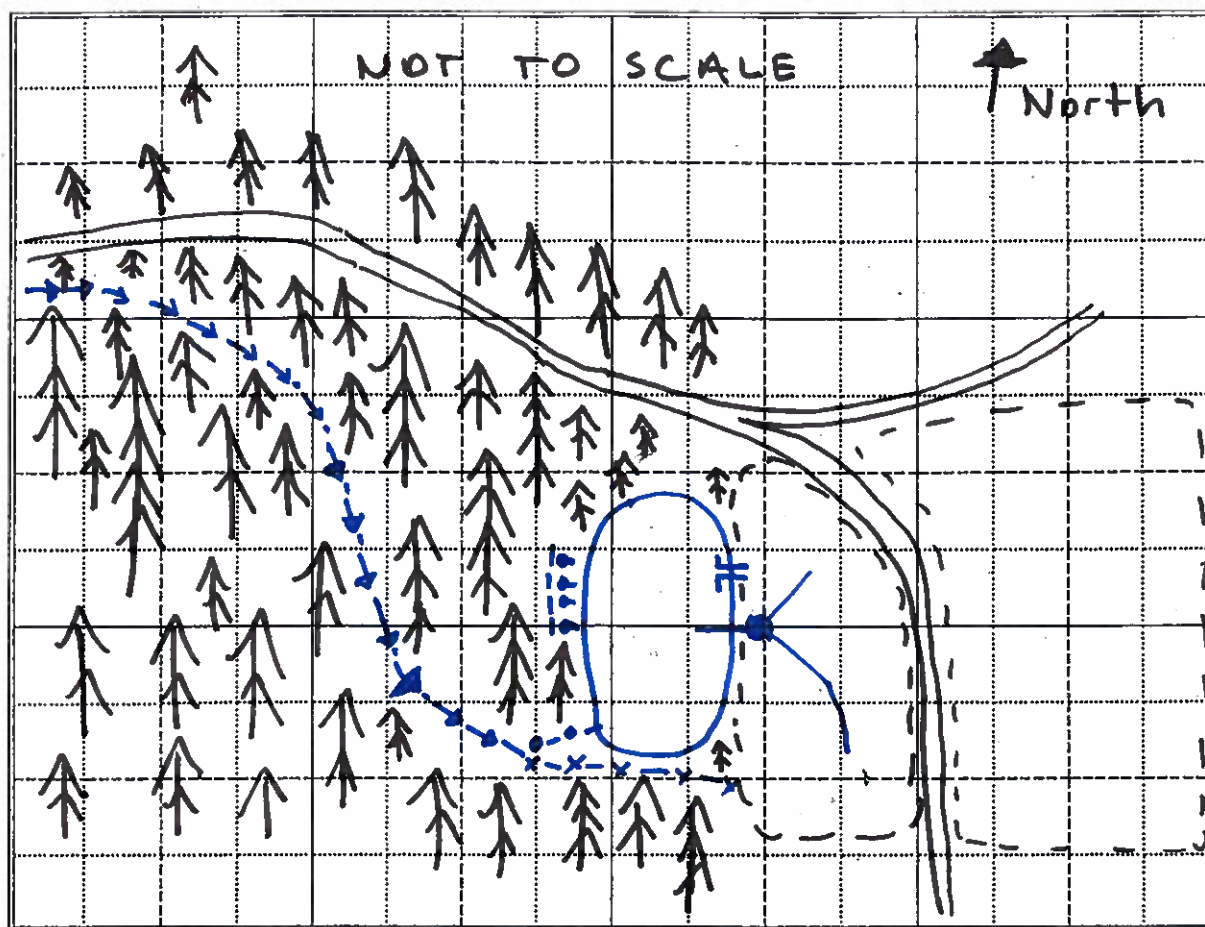
Date

Reviewer

Date

95-9120

3. Delivery System Diagram: Indicate all major components and distances between components. Indicate weir size/ditch size/pipe i.d. as applicable.



-  Pond
  Irrigated Area
-  Underground Pipe
-  Unnamed, Intermittent Stream
-  Route of Stream Into Pond
-  Flood Bypass Channel
-  Vault with Interior Valves
-  Pond Overflow Pipe
-  Spring/Seep Into Pond
-  Forest
-  Jeep Trail / Road

95-9120

E 53 (1961)

RATHDRUM QUADRANGLE

IDAHO-KOOTENAI CO.

7.5 MINUTE SERIES (TOPOGRAPHIC)

SW 1/4 SPIRIT LAKE 15' QUADRANGLE

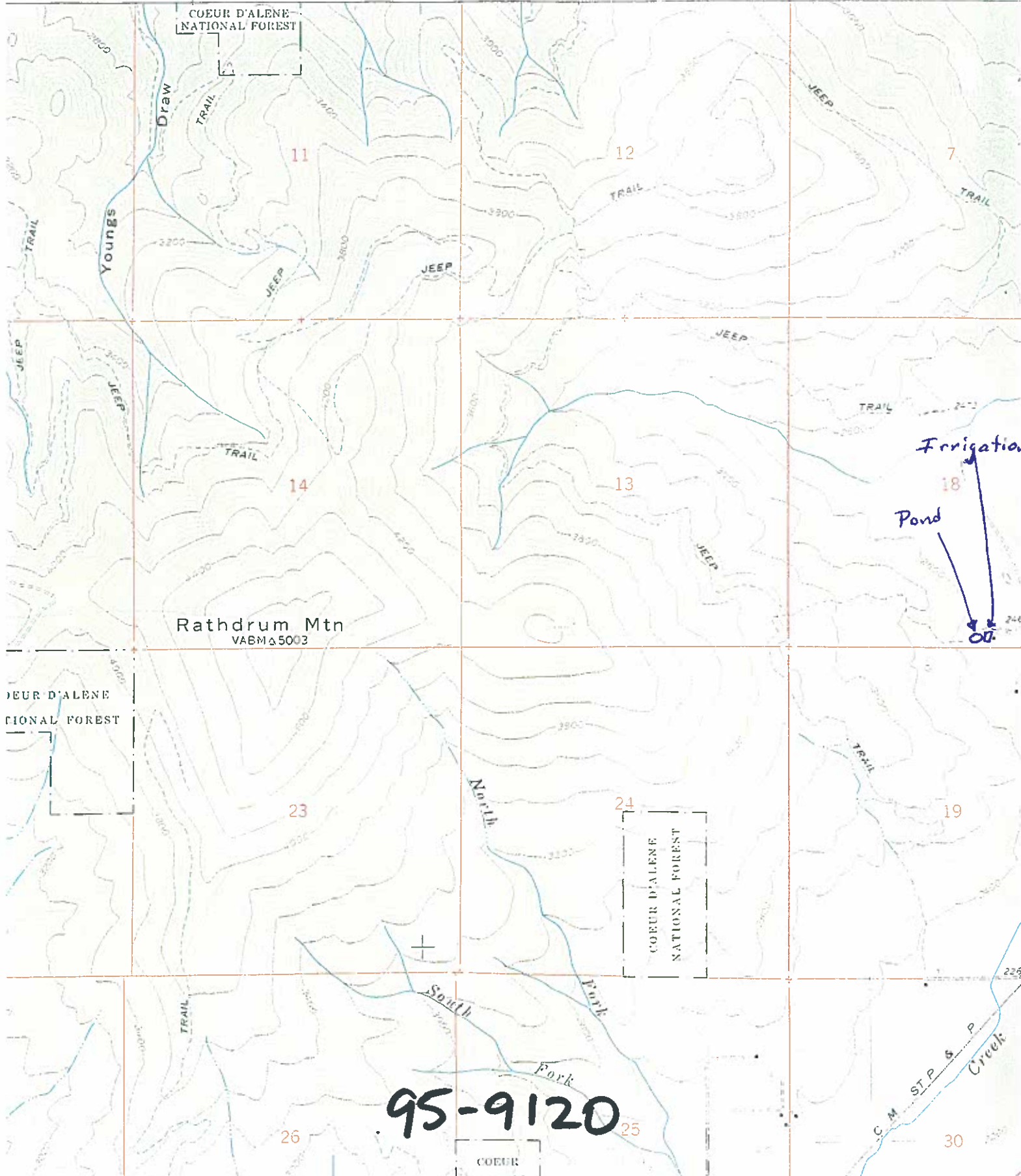
2679 IV NW
(SPIRIT LAKE WEST)

506 55'

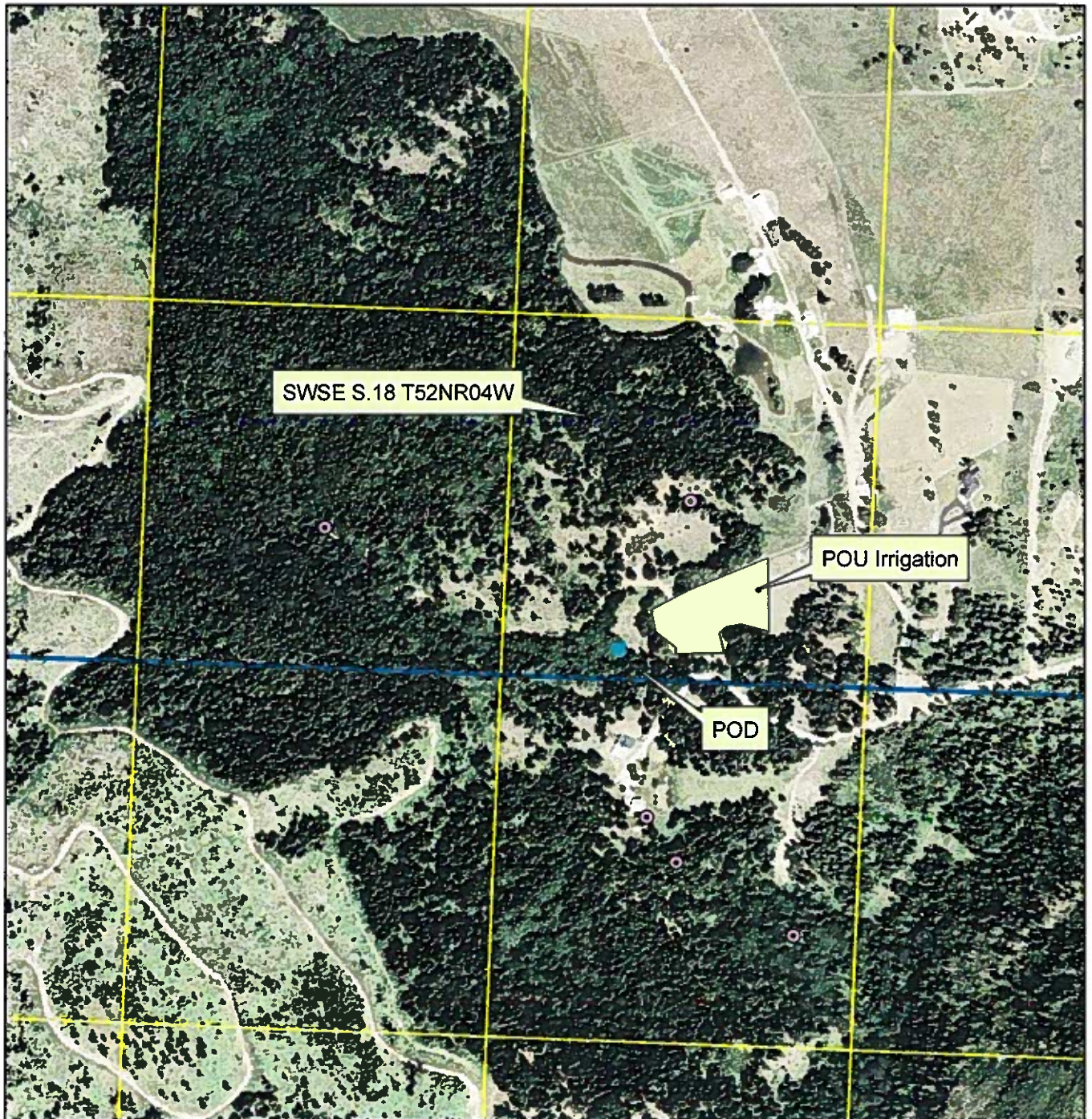
507 55'

508 220 000 FEET R 4 W

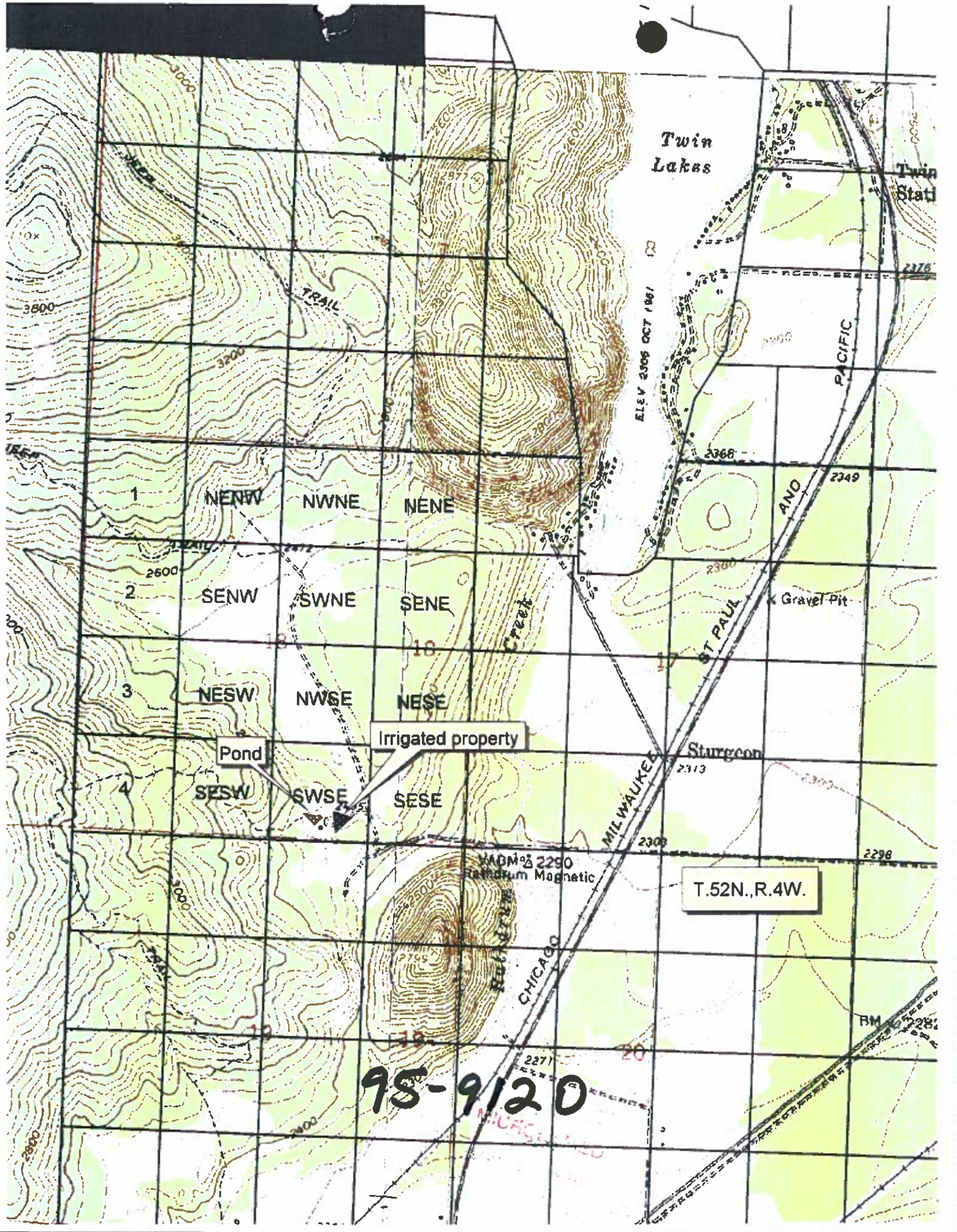
509 1



95-9120



95-9120





95-9120 NW Corner Boundary Pin, Unnamed Stream & Road 2008



95-9120 Property Boundary Pin & Trees 2008

95-9120



95-9120 Seasonal Stream Above Pond 2008



95-9120 Start of Bypass Channel & Stream into Pond 2007

95-9120



95-9120 Stream & Start of Bypass Above Pond 2008



95-9120 Start of Bypass Channel & Stream into Pond 2008

95-9120



95-9120 Stream Pond Entrance & Spring In Bank 2008



95-9120 Stream Pond Entrance 2008

95-9120



95-9120 Bypass Channel South Side of Pond 2008



95-9120 Spring Seep in Bank of Pond 2008

95-9120



95-9120 Pond View North to Southwest AUG 2007



95-9120 Pond View East 2008

95-9120



95-9120 Irrigated Area & Vault July 2008



95-9120 Irrigated Area & Vault July 2008

95-9120



95-9120 Vault 2007



95-9120 Buried Pipe, Valves, & Hoses 2008

95-9120



95-9120 Irrigated Area: Water flowing into 5 Gal Measuring Bucket 2008



95-9120 Vault Interior AUG 2007

95-9120