

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 37-8099

Exam Date: 4/11/2012

1. Current Owner: FRANKLIN JACK POWERS
C/O POWERS FAMILY TRUST
3154 S CRABAPPLE LN
BOISE ID 83706
(208)336-1029

And/Or

ELIZABETH M POWERS
3154 S CRABAPPLE LN
BOISE ID 83706
(208)366-2802

2. SOURCE

UNNAMED STREAM

TRIBUTARY

CLOVER CREEK

B. OVERLAP REVIEW

1. Other water rights with the same place of use: None
2. Other water rights with the same point of diversion: None

C. DIVERSION AND DELIVERY SYSTEM1. LOCATION OF POINT(S) OF DIVERSION:

UNNAMED STREAM

SE1/4SE1/4

Sec. 9, Twp 05S, Rge 11E, B.M.

ELMORE County

Method of Determination: Field visits, GIS and aerial photography, and IDWR spatial data point (dam safety)

2.

PLACE OF USE: RECREATION STORAGE

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
05S	11E	9																X	

Method of Determination: Field visits and GIS and aerial photography

D. FLOW MEASUREMENTS

N/A development is for on stream storage only

E. FLOW CALCULATIONS

_____Additional Computation Sheets Attached

Measured Method:

N/A development is for on stream storage only

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation: N/A no irrigation from storage use developed

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

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

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

2. Volume Calculations for Other Uses:

Storage volume of reservoir calculated by Mike Stubblefield (retired IDWR dam safety employee) at 5.21 acre-feet based on 1992 survey by Mike Stubblefield and Sonny Hornbaker (see attached documents from IDWR dam safety file for Barnhill Dam).

Annual evaporative losses estimated for reservoir based on 0.9 acre surface area (measured via Arcmap) and annual evaporative loss value of 3.03 acre-feet per acre obtained from University of Idaho website detailing ET and consumptive irrigation requirements for Idaho (NWS data for Glenns Ferry, open water ponds with annual precipitation deficit value of 925 mm).

$$0.9 \text{ acres} \times 3.03 \text{ acre-feet per acre} = 2.73 \text{ ac-ft}$$

Dam and reservoir built in late 1970s and has existed for many years. The unnamed stream is fed by waste water from the North Side Canal Company and more than likely the reservoir bottom has sealed itself over the years. Assume negligible seepage losses from the reservoir.

Total annual storage volume = 5.21 acre-feet + 2.73 acre feet = 7.94 acre-feet (Recommend 7.9 acre-feet to be licensed)

G. NARRATIVE/REMARKS/COMMENTS

Application for permit 37-8099 was filed by Jay &/or Cindi Wilde on May 18, 1983 for irrigation storage, irrigation from storage, recreation storage, and irrigation and stock water uses from an unnamed stream tributary to Clover Creek. The application indicated that the proposed diverting works would consist of an existing dam with a proposed pump and pipelines to the irrigation system. The existing dam is known as Barnhill Dam and was regulated by IDWR after its initial construction in the late 1970s until being removed from the Department's active dam safety inventory (no longer regulated) via a November 30, 1992 order. Note that the dam was inspected periodically through 2009, with inspections occurring in 1997, 2004, and 2009 according to IDWR Dam Safety Section practice. On April 3, 1990, permit 37-8099 was approved allowing for the diversion of up to 0.42 cfs of water for irrigation and stockwater use and storage of up to 25 acre feet for irrigation storage and recreation storage. In March of 1995, the permit was assigned to Elizabeth &/or Franklin Jack Powers. In May of 1996, the permit lapsed due to proof of beneficial use not being filed. In October of 1997, proof of beneficial use was filed for "approximately 5 acre feet" of storage. In August of 2002, IDWR reinstated permit 37-8099.

I have visited the property and dam and reservoir associated with permit 37-8099 in 1997, 2004, and 2009 as part of the "five year dam inspections" according to IDWR Dam Safety Section practice. These previous visits and my knowledge of documentation in IDWR dam safety files provide a more than adequate basis for recommending 37-8099 for licensing. It is recommended that the permitted irrigation storage, irrigation from storage, and irrigation uses not be recognized on the license because they were never developed. Note that there is no irrigation diversion system at Barnhill Dam and irrigation was not identified as a use when proof of beneficial use was filed. It is also recommended that the permitted stockwater use of 0.02 cfs not be recognized because the only diverting works and development consists of an on-stream reservoir and the 0.02 cfs stockwater use implies that water was to be diverted from the stream. Recognizing a 0.02 cfs use for an onstream use under this scenario would create a de facto minimum stream flow. Any livestock on the property, can legally water from the unnamed stream without a recorded water right. Therefore, the only remaining permitted use is the recreation storage use. It is recommended that license 37-8099 be issued for recreation storage in the amount of 7.9 acre-feet. This amount is based off a calculated reservoir volume of 5.21 acre-feet plus an evaporative loss estimate of approximately 2.7 acre-feet (see volume calculations on previous page). This 7.9 acre-foot amount should be recognized even though proof of beneficial use was filed for "approximately 5 acre feet" of storage, because the proof of beneficial use fee of \$50.00 would cover a storage volume of 0.0 – 20.0 acre-feet.

Permit 37-8099 included a condition indicating that measuring devices must be installed to measure water above and below the reservoir. The dam and reservoir are located within Water District 37W (Clover Creek and tributaries), but this district is currently inactive. The Clover Creek basin was excluded from Water District 130 pursuant to an 11/14/2006 order. Permanent upstream and downstream measuring devices have not been installed. However, the dam and reservoir are not currently located in an active water district, so there is no water master to read any measurement devices. In addition, the topography below the dam is quite steep and installing an onstream measuring device would be quite difficult, expensive, and access to the device would be difficult. If ever needed, instream measurements could be made above and below the reservoir. It is recommended that the permitted upstream and downstream measuring device requirement be modified when 37-8099 is licensed removing the requirement, but stating the following...

"Upon specific notification of the Department, the right holder shall provide a means acceptable to the department to measure the amount of water entering the reservoir and the amount of water released from the reservoir."

Permit 37-8099 included a condition indicating that storage of water is contingent upon certification of the dam and authorization of storage per the dam safety provisions of Idaho Code. However, Barnhill Dam was removed from the Department's active dam safety inventory (no longer regulated) via a November 30, 1992 order. Therefore, it is recommended that license 37-8099 be issued without any condition(s) referencing IDWR dam safety authorization.

The dam and reservoir are developed on a surface water stream within the surface water Trust Water area and permit 37-8099 was conditioned accordingly. It is recommended that the Trust Water conditions be updated to current standards when 37-8099 is licensed.

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>
RECREATION STORAGE	01/01 to 12/31		7.90 AF
<u>Totals:</u>			7.90 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

I. AUTHENTICATION

Field Examiner's Name

Date

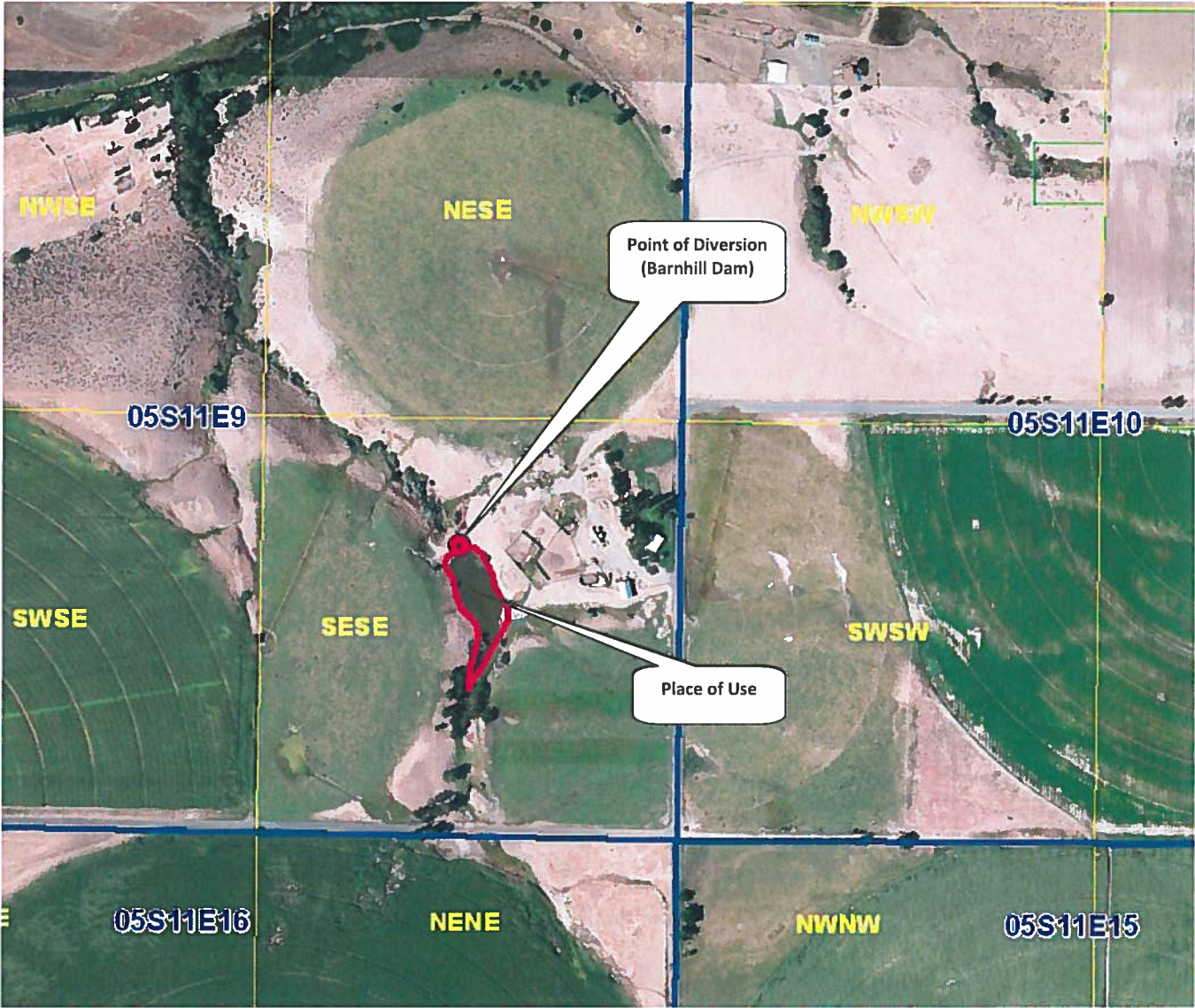
Reviewer

Date

4/11/2012

5/25/2012

37-8099 Point of Diversion and Place of Use Map



37-8099 Point of Diversion and Place of Use Photo (Taken 11/4/2009)

Point of Diversion
(Barnhill Dam)

Place of Use



BEFORE THE DEPARTMENT OF WATER RESOURCES

OF THE

STATE OF IDAHO

IN THE MATTER OF REMOVING BARNHILL)
DAM FROM THE INVENTORY OF DAMS AS)
DESIGNATED BY IDAHO CODE, TITLE)
42, CHAPTER 17.)
_____)

ORDER

The Department of Water Resources (Department), being charged with the duties related to dams and reservoirs and enforcing specific statutes of the State of Idaho relating to water storage dams. Field investigations by the Department revealed that a water storage dam owned by Jay Wilde is too small for jurisdiction by the Department. Based upon the investigations and understanding of the law, the Department makes the following Findings of Fact, Conclusions of Law and Order:

FINDINGS OF FACT

1. Barnhill Dam, located in Section 9, Township 5 South, Range 11 East, B.M., in Elmore County, Idaho is 30.8 feet in height and stores approximately 5 acre-feet of water.

2. An investigation and inspection of the area on September 21, 1991, revealed the dam is located in a low risk area.

3. "Low Risk" means that no permanent structures for human habitation would be affected by failure of the dam, and only minor damage would occur to land, crops, agricultural, commercial or industrial facilities, transportation, utilities or other public facilities or values.

CONCLUSIONS OF LAW

1. Section 42-1711, Idaho Code states in part, ". . . The following are not considered dams for the purposes of Sections 42-1710 through 42-1721, Idaho Code: (2) Barriers constructed in low risk areas as determined by the director, which impound ten (10) acre-feet or less at maximum water storage elevation, regardless of height. . .".

2. The dam and reservoir as presently existing are too small for jurisdiction of the Department under the Safety of Dams Statutes of the State of Idaho.

ORDER

IT IS, THEREFORE, HEREBY ORDERED, that Barnhill Dam be removed from jurisdiction of the Department and is no longer regulated under Idaho's Safety of Dams Act.

Dated this 30TH day of November 1992.


Norman C. Young
Administrator, Water Management Division

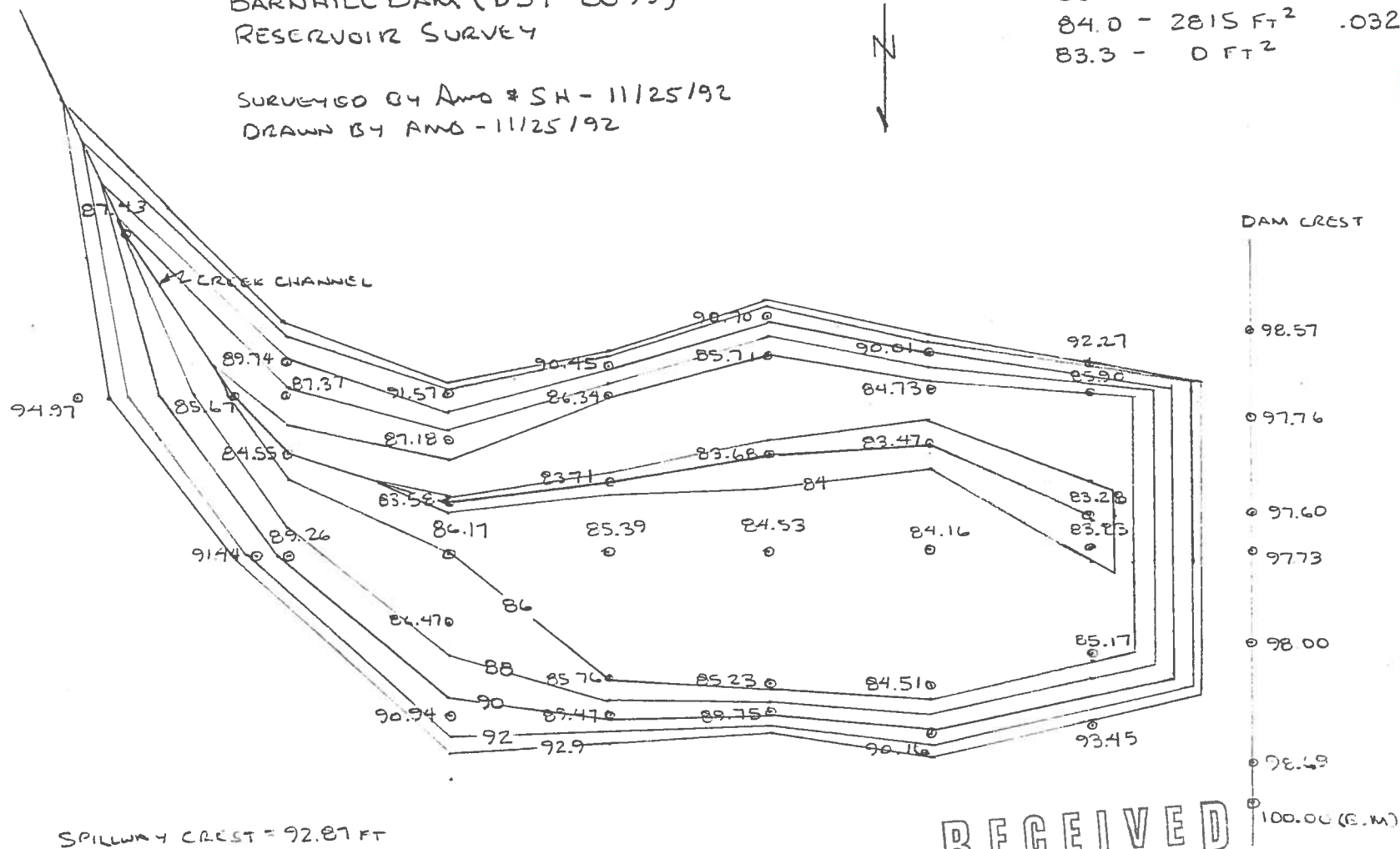
0.90 acre

0.90 acre

	(F ₁ Z) AREA	(AC) AVE AREA	(AC-F ₁ Z) VOLUME
AT ELEV 92.87 -	39264 FT ²	.8636	0.75
92.0 -	35970 FT ²	.7703	1.54
90.0 -	31140 FT ²	.6595	1.32
88.0 -	26315 FT ²	.5288	1.06
86.0 -	19750 FT ²	.2590	.52
84.0 -	2815 FT ²	.0323	.02
83.3 -	0 FT ²		5.21 AC-FT

BARNHILL DAM (D37-8099)
RESERVOIR SURVEY

SURVEYED BY AMO & SH - 11/25/92
DRAWN BY AMO - 11/25/92



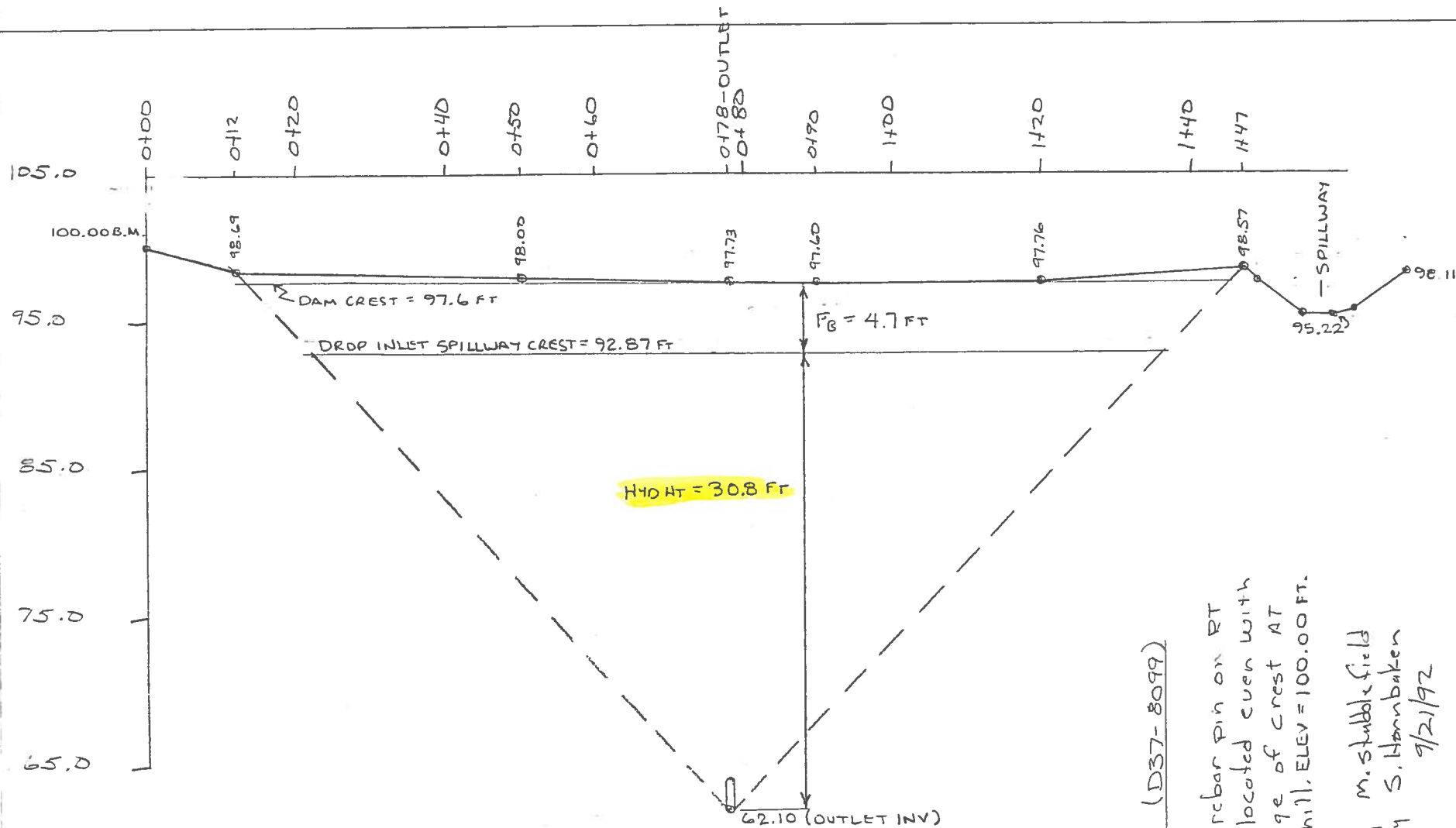
SPILLWAY CREST = 92.87 FT

SCALE: 1 IN = 50 FT

RECEIVED

DEC 03 1992

Department of Water Resources
Southern Region - Civil



SCALE: HORIZ - 1" = 10 FT
VERT - 1" = 20 FT

SURVEY NOTES:

OUTLET OPEN & RELEASING ALL INFLOW - NO STORAGE.
OUTLET INTAKE INV = 82.73 FT

Barnhill Dam (D37-8099)

BM - Placed 1/2" rebar pin on RT
Abutment located even with
upstm edge of crest AT
Base of hill, ELEV = 100.00 FT.

Surveyed by M. Stubblefield
Drawn by S. Hannbaker
9/21/92