

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 37-22909

Exam Date: 6/9/2015

1. Current Owner: JOHN F STEVENSON
36 HILLSIDE RANCH RD
BELLEVUE ID 83313
(208)788-4826
2. Accompanied by: Corey Skinner (IDWR Staff)

3. SOURCE

STALKER CREEK

TRIBUTARY

SILVER 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 SYSTEM**1. LOCATION OF POINT(S) OF DIVERSION:**

STALKER CREEK NW1/4SE1/4
BLAINE County

Sec. 28, Twp 01S, Rge 19E, B.M.

Method of Determination: GPS and aerial photography.

2.

PLACE OF USE: WILDLIFE STORAGE

Twp	Rge	Sec	NE				NW				SW				SE				Totals
01S	19E	28	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
					X				X	X	X	X	X	X		X			

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

N/A (on-stream storage)

*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**

N/A

2. Measurements:

N/A (on-stream storage)

E. FLOW CALCULATIONS

____ Additional Computation Sheets Attached

Measured Method:

N/A (on-stream storage)

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

N/A (on-stream storage)

2. Volume Calculations for Other Uses:

NRCS calculated a volume of 245.0 acre-feet to cover the pond for wildlife storage. The 245 acre-feet represents the volume of the pond (97.1 acre-feet) plus the estimated annual evaporative loss of the pond (147.9 acre-feet). The pond/reservoir was constructed on a natural wetland. NRCS analysis indicated that no additional seepage loss occurred after construction of the pond/reservoir than when it was the natural wetland so seepage loss was not accounted for. (149.9 AF + 97.1 AF = 245.0 AF). (see attached analysis)

Recommend a volume of 245.00 AF for wildlife storage.

G. NARRATIVE/REMARKS/COMMENTS

Application for permit 37-22909 was filed on November 7, 2014 for the volume of 245.0 AF for wildlife storage in association with a pond/reservoir. The permit was approved on January 30, 2015 and proof was filed on April 16, 2015.

The system consists of an earth embankment constructed across Stalker Creek forming a large shallow pond/reservoir over what was historically a large natural wetland. An open channel spillway exists on the left (north) end of the embankment and allows for water flow, above the reservoir storage level, to continue on downstream past the pond/reservoir and embankment. The surface area of the pond/reservoir calculated from ESRI imagery (96.3 acres) corresponds with the NRCS analysis (96.4 acres) submitted with the application so I am recommending the permitted volume of 245.0 AF for wildlife storage. (see attached analysis)

In 2014, 45.77 acres were dried up in section 30 to mitigate for the first fill of the pond/reservoir. The conversion from historical wetlands to open water will be mitigated by permanently drying up 3.92 acres that are also located in section 30. (see attached map) Corey and I also drove by this section of the farm and it appears to have never been farmed but the mitigating right was recently decreed so forfeiture is not an issue. (see pictures)

Note, a new low level outlet with control works has been installed so all conditions of the permit have been met. (see pictures)

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>
WILDLIFE STORAGE	01/01 to 12/31	N/A	245.00 AF
<u>Totals:</u>			245.00 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 Sana Reeder Date 8/7/15

Reviewer [Signature] Date 8/7/15

MEMORANDUM

TO: Application for Permit 37-22909 File

FROM: Corey Skinner

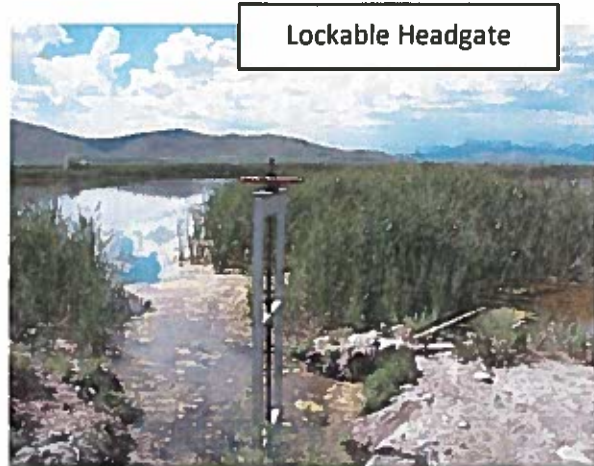
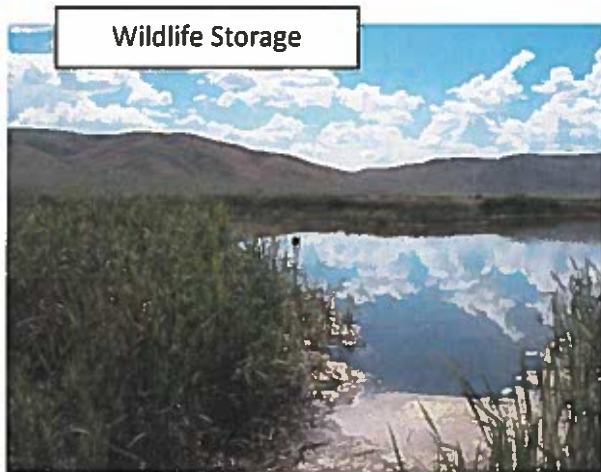
DATE: December 10, 2014

SUBJECT: Site Visit

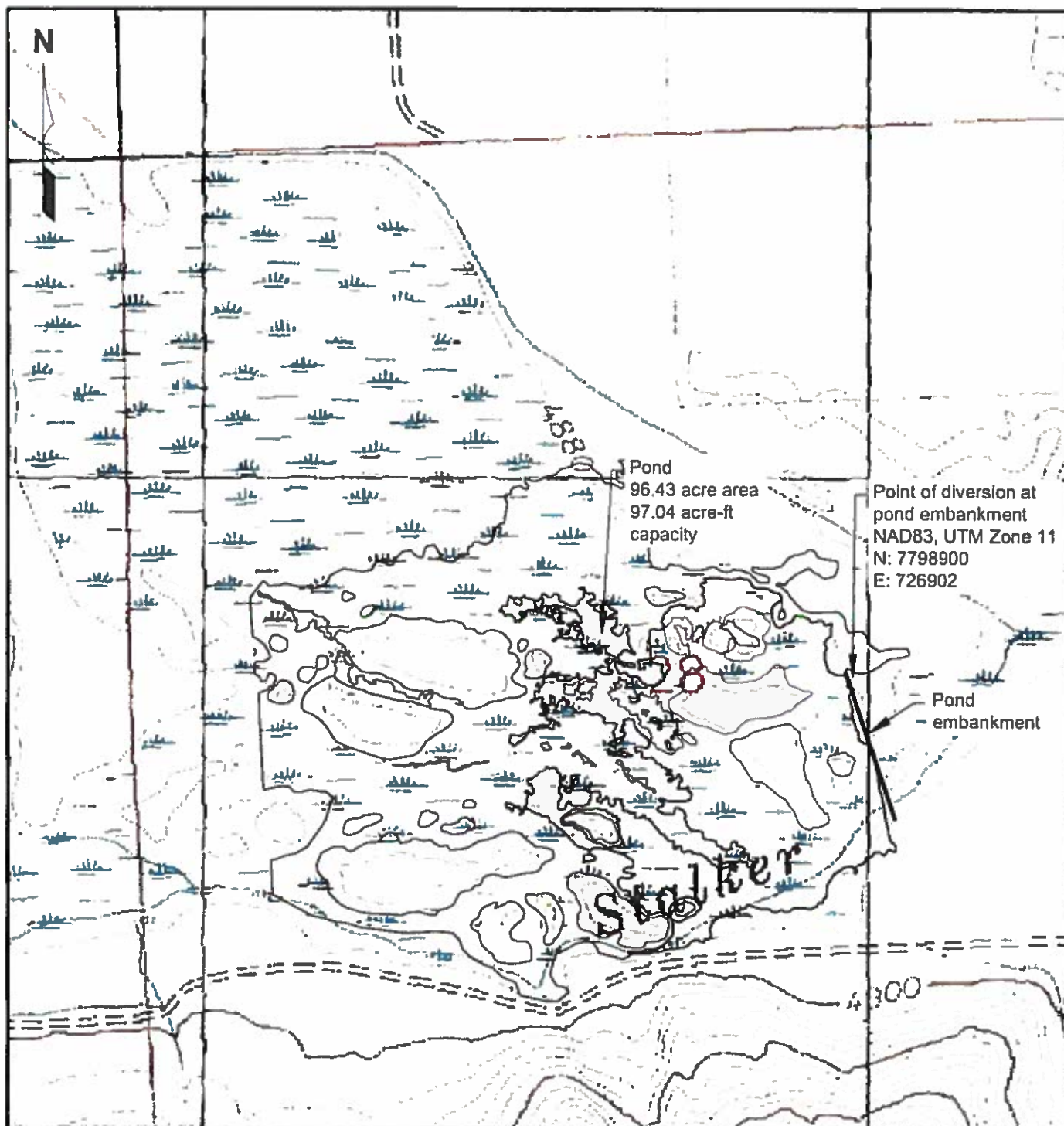
On December 9th, Jana Reeder and I visited the site involved with Application for Permit 37-22909. This particular application describes an existing water storage facility having a storage volume of approximately 97 acre-feet and formed by an embankment having a height of approximately 2.4 feet.

Upon arriving at the site, Jana and I observed an earth embankment constructed across Stalker Creek (tributary to Silver Creek) forming a relatively shallow reservoir. The embankment did not have a low level outlet to release water. An existing open channel spillway, with a timber crest, located near the left (north) end of the embankment allows for water flow, above the reservoir storage level, to continue on downstream past the reservoir and embankment. Jana and I utilized the Department's level survey equipment to obtain a couple of relative elevations. Note that the entire embankment was not surveyed, but based on a couple of our measurements it appeared that the embankment had a structural height of around 4.3 feet and a hydraulic height of around 2.0 feet. Examination of the area directly downstream of the facility revealed no significant development and based on the embankment and reservoir characteristics the area downstream of the facility would be considered a "low hazard" area. Idaho Code and the Idaho Safety of Dams Administrative Rules specifically indicate that barriers constructed in low risk areas which are six feet or less in height are not included as regulated dams, regardless of their storage capacity. The embankment described by Application for Permit 37-22909 is less than six feet in height, and would be considered a low hazard structure, and would not be considered a regulated dam by IDWR. Therefore, it is prudent to not require the submittal of an Application for Construction or Enlargement of a New or Existing Dam as indicated on item 6b of the Application for Permit form.

The attached photos document our observations during our site visit...



Pan of Mitigating acres of sagebrush in Section 30



- Located in Section 28, Township 1S, Range 19E, B.M. South of US Highway 20, east of the Wood River Valley, and approximately 11 miles south of the City of Bellevue.

- Pond analysis included in application document attachments

660 0 660 1,320

Scale in Feet



Natural Resources Conservation Service

United States Department of Agriculture

Pond/Diversion Location

Hillside Farms

Wetland Restoration Project

Blaine County SWCD, WRP

	Date
Designed DRH	10/16/14
Drawn DRH	10/16/14
Checked	
Approved	
Title	SHEET 1/1



United States Department of Agriculture

November 6, 2014

Jana Reeder & Corey Skinner
Idaho Department of Water Resources
650 Addison Ave. W., Suite 500
Twin Falls, ID 83301-5858

RECEIVED
NOV 07 2014
DEPT OF WATER RESOURCES
SOUTHERN REGION

Dear Ms. Reeder and Mr. Skinner

This letter accompanies the Application For Permit of Mr. John F. Stevenson.

ITEM#11 on the application reads:

The application proposes to appropriate 245.0 acre-feet of water to cover an existing pond located on Stalker Creek. The 245 acre-feet represents the volume of the pond (97.04 acre-feet) plus the estimated annual evaporative loss of the pond (147.89 acre-feet). Infiltration and seepage losses from the pond net a zero flow rate; therefor, the Stalker Creek drainage is not impacted (see attached analysis). The pond will not be drained. 45.77 acres irrigated with rights 37-118, 37-2576, and 37-2681 has been dried up in the year 2014 to mitigate the 97.04 acre-feet of storage amount (see attached two maps that show the outlined area overlaid on the USGS topoquad and historical aerial photo showing proof of irrigation history).

The conversion from historical wetlands to open water results in a net increase of 8.3 acre-feet of evaporation on an annual basis which will be mitigated by permanently drying up 3.92 acres of water right 37-118 to offset the net annual increase (see attached analysis and map). This 3.92 area is located within the SE1/4 of the NE1/4 of Section 30, Township 1 South, Range 19 East, B.M. With the reduction in right 37-118 a reduction of the permissible place of use and maximum combined acres of rights 37-2576, 37-2681, and 37-7644 will result.

ITEM#13 is attached to this letter

A check for \$330 from Hillside Ranch is included to cover the processing fee(s).

A third-party affidavit verifying the crop ground as irrigated alfalfa will be sent to you separate from this mailing. Please allow time for this letter to arrive.

Thank very much for your assistance with this. Let me know if you have any further questions or require additional information.

Sincerely,

Doug Higbee
NRCS Civil Engineer – Caldwell, ID

Enclosures

cc: John Stevenson, Landowner

Natural Resources Conservation Service
2208 East Chicago, Suite A, Caldwell, ID 83605-4496
Voice: (208) 454-8684. Ext.3 Fax: (877) 504-6752

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37-22909
Field Exam File



Natural Resources Conservation Service
2208 E. Chicago, Suite A, Caldwell, ID 83605-4475
Telephone 208-454-8684 FAX: 1-877-504-6752

WTO: Jeff Cooper, Idaho Department of Water Resources
DATE: May 7, 2014
RE: Hillside farms (John Stevenson) Consumptive Use Analysis Report, 02/12/2014

The purpose of this memo is to provide corrections and additions needed to the March 31, 2014 memo sent to Jeff Cooper regarding "Point #4".

After a phone conversation (Jeff Cooper & Doug Higbee) the afternoon of Tuesday, April 8 it was determined that the appropriate evapotranspiration rate listed on the ET-Idaho website (Picabo NWS climate station) to use in all comparisons is *Precipitation Deficit (Pdef)*. An incorrect conclusion was stated on the March 31, 2014 memo that correlated the resultant pond consumptive use (8.30 acre-ft per year) to alfalfa with *Potential Evapotranspiration* for the equivalent alfalfa crop acreage. Corrected figures are listed below. Equivalent crop acreage for pasture and grain are also listed. Identifying an area for just one of these items will fulfill the acreage requirement.

Crop	Pdef (acre-feet/acre/year)	Equivalent Acres
Spring Grain - irrigated	1.67	4.97
Grass Pasture – low management	1.81	4.61
Alfalfa – frequent cuttings	2.12	3.92



The attached map shows a 3.92 acre delineated portion that has been irrigated in the past with wheel lines to grow alfalfa. A general legal description for this area is:

SE1/4 NE1/4 of Section 30, Township 1 S, Range 19 E, B.M.

As you work through the beneficial use change request I am happy to provide additional information. Thank you for your patience in waiting for this.

Sincerely,

Douglas Higbee, P.E.
NRCS Civil Engineer

Enc.

cc. Deb Koziol, Area Biologist – Pocatello Area Office
Patti Hurley, District Conservationist – Shoshone Field Office
Wade Brown, Easement Coordinator – Boise State Office

The Natural Resources Conservation Service provides leadership in a partnership effort to help people conserve, maintain, and improve our natural resources and environment.

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Douglas Higbee, P.E.
NRCS Civil Engineer

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cc. Deb Koziol, Area Biologist - Pocatello Area Office
Patti Hurley, District Conservationist - Shoshone Field Office
Wade Brown, Easement Coordinator - Boise State Office

Plant speciesExisting condition, with pond

The picture to the left is from a view point on the south portion of the property looking west.

- Open Water, Littoral Zone: There are some submerged plants, mostly algae, depending on the time of year and few free floating aquatics – common duckweed (*Lemna minor*).
- Emergent Vegetation Zone: There exists broad stands of cattails (*Typha latifolia*) and hard-stem bulrush (*Juncus balticus*) that have an established dense rootmass and have choked off many shallow water areas (average water depth of about 0.75 foot).

- Riparian and Upland Zone: Some upland areas may have been cultivated at one point in the historical development of the ground for agriculture, giving way to an introduction of non-native pasture grass species for a portion of the area. Baltic rush (*Juncus balticus*) and other *Juncus spp.*, *Carex spp.*, and other wetland obligate species define the riparian zone. Reed canary grass (*Phalaris arundinacea*) is the dominant grass species, along with some blue grass (*Poa spp.*) on the pond embankment and banks. Shrubs and woody vegetation are very sparse, which is to be expected. There are some willows below the pond embankment and approximately 1.0 mile upstream of the pond area along Patton Creek.

Pre-existing condition, without pond

Wetland, Emergent Vegetation Zone: This area, as identified with field notes in red on the 1969 aerial photo, has historically been non-irrigation induced marsh ground. Baltic rush (*Juncus balticus*) and other *Juncus spp.*, Water sedge (*Carex aquatilis*), and other wetland obligate species most likely defined the riparian zone and marshy area. Common cattails (*Typha latifolia*) existed in some areas along Patton Creek.

Upland Zone: As noted above, non-native pasture grass species may have been introduced prior to the construction of the pond. Native range grass species, such as foxtail, also existed in some areas. With a lower water table in most portions of the Upland Zone, the grass stand density would have been moderate.

Digitized areas – represented on the attached planning maps (sheets 1 through 5)

Existing condition, with pond

region	acres
open water, littoral zone	32.95
emergent vegetation zone	63.48
riparian and upland zone	31.79

Pre-existing condition, without pond

region	acres
wetland, emergent vegetation zone	92.92
upland zone	35.31

Pond volume

With an average pond open water, littoral zone depth of 1.50 feet and an average water depth in the emergent vegetation zone of 0.75 feet, the pond water volume is:

$$[(32.95 \text{ acres}) * (1.50 \text{ feet})] + [(63.48 \text{ acres}) * (0.75 \text{ feet})] = 97.04 \text{ acre-feet}$$

The flow required to meet this volume in a 24 hour recharge period is:

$$(97.04 \text{ acre-feet} * 43,560 \text{ sqft/acre}) / (86,400 \text{ seconds per day}) = 48.92 \text{ cubic feet per second,}$$

This exceeds typical low flows in Patton Creek during most of the year.

Therefore, it is the recommendation of this report that flows required to recharge the pond from a low storage state to full capacity be consistent with the maximum diversion rates as listed in existing water

rights from the annual period of January 01 to December 31. This recommendation excludes any positive contributions from ground water that may fluctuate seasonally at the location.

Pond consumptive use

Values obtained from ET-Idaho 2012, *Evapotranspiration and Consumptive Irrigation Water Requirements for Idaho* (<http://data.kimberly.uidaho.edu/ETIdaho/>) were used from the Picabo NWS station (Station ID: 107040). A summary of statistical data is attached to this report. Upland and riparian zones are not included in the calculated values below.

Existing condition, with pond

region	acres	ET acre-ft/acre	ET total acre-ft
open water, littoral zone	32.95	2.64	86.99
emergent vegetation zone	63.48	2.54	161.24
Total ET			248.23

Pre-existing condition, without pond

region	acres	ET acre-ft/acre	ET total acre-ft
wetland, emergent vegetation zone			
	77.92	2.54	197.92
	15.00	2.40	36.00
Total ET			233.92

Due to the geologic and soils formations in the area that contribute to low infiltration rates and contributions from numerous springs in the area, this report considers seepage loss from the pond and contributions from ground water to be a net balance of zero. Since there are no diversions from the pond and it exists only for on-stream storage, consumptive use is equivalent to values calculated for total volume of evapotranspiration loss. With the creation of the pond, consumptive use of the area increased by 14.31 acre-feet. In comparison to the annual total consumptive use for an alfalfa crop (frequent cuttings, 3.06 acre-feet per acre), this equates to 4.68 acres of irrigated land. Frozen water surface during winter months was not considered (Allen, Richard G. and Robinson, Clarence W., *Evapotranspiration and Consumptive Irrigation Water Requirements for Idaho*, April 2007, pg 40).

CONCLUSIONS

With the addition of the pond embankment to raise water elevation by 2.4 feet a large wetland and riparian corridor in a spring-fed low gradient drainage was transitioned to a shallow pond emergent vegetation wetland complex. Figures listed below describe changes in water use:

- Beneficial use: Wildlife
- Storage type: on-stream storage only with no off-stream diversion
- Pond fill volume: 97.04 acre-feet for an effective area of 96.43 acres
- Diversion rate for fill should be consistent with diversion rates listed in existing water rights
- Consumptive use (comparing pre-existing to existing): an additional 14.31 acre-feet, an equivalent crop of 4.68 acres of alfalfa.
- Consumptive use (existing condition, not considering pre-existing condition): 248.23 acre-feet, an equivalent crop of 81.12 acres of alfalfa.

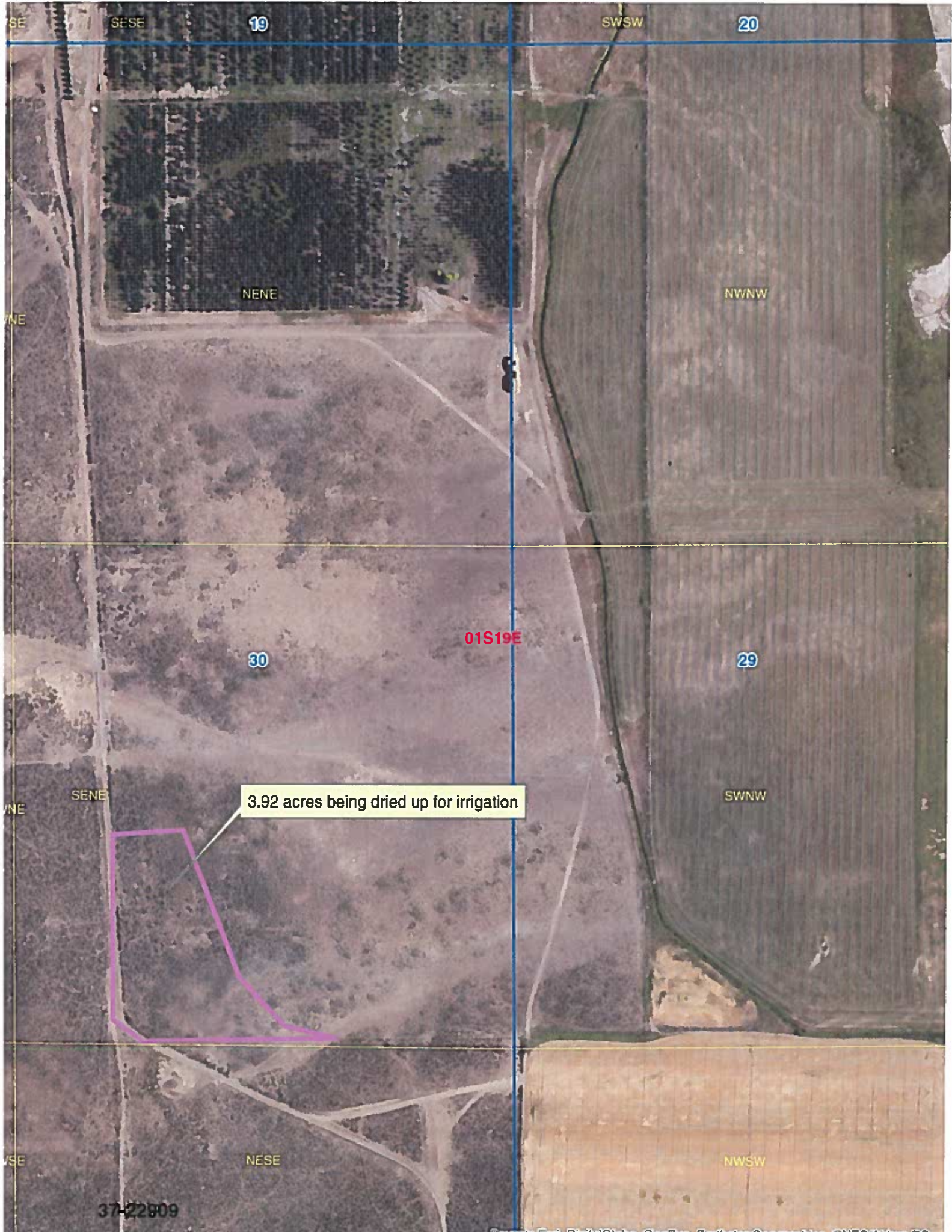
Please let me know if you have any questions regarding this report or need further clarification to address any concerns Idaho Department of Water Resources may have with processing this information.

Respectfully submitted,

Douglas Higbee, P.E.
NRCS Civil Engineer

encl.

cc. Bruce Sandoval, State Conservation Engineer
Brett Stevenson, Hillside Farms



3.92 acres being dried up for irrigation

37-22809