

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 65-13526

Exam Date: 10/3/2012

1. Current Owner: CASTLE MOUNTAIN CREEK OWNERS ASSN INC
5 SNOW SPRINGS DR
GARDEN VALLEY ID 83622
(208)462-3765
2. Accompanied by: Mike Ferguson & Rusty Brown
Phone No: (208) 462-3592 (Shop)
Address:
Relationship to Permit Holder: Water System Manager & Maintenance Manager

3. SOURCE

WARM SPRINGS CREEK

TRIBUTARY

MIDDLE FORK PAYETTE RIVER

B. OVERLAP REVIEW

1. Other water rights with the same place of use: 65-3238, 65-12276
2. Other water rights with the same point of diversion: None

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

WARM SPRINGS CREEK NW1/4SW1/4 Sec. 32, Twp 10N, Rge 04E, B.M.
BOISE County

Method of Determination: Arc Map (Aerial Photo)

2.

PLACE OF USE: IRRIGATION

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	
10N	04E	32			1.0	1.0									6.0	6.0	6.0	7.0	27.0
10N	04E	33							1.0	2.0	4.0	3.0	7.0	8.0					25.0

Total Acres: 52

DOMESTIC same as IRRIGATION

Method of Determination: Arc Map (Aerial Photo)

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.

<u>Well or Diversion</u> <u>ID No.*</u>	<u>Motor Make</u>	<u>Hp</u>	<u>Motor Serial No.</u>	<u>Pump Make</u>	<u>Pump Serial No. or Discharge</u> <u>Size</u>
N/A	N/A			N/A	(4")

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

D. FLOW MEASUREMENTS

1.

<u>Measurement</u> <u>Equipment</u>	<u>Type</u>	<u>Make</u>	<u>Model No.</u>	<u>Serial No.</u>	<u>Size</u>	<u>Calib. Date</u>
N/A						

2. Measurements: No field measurement. No measuring device at point of diversion. Raw water volumetric flow meter in Water Treatment Plant.

E. FLOW CALCULATIONS

____ Additional Computation Sheets Attached

Measured Method: (Continuity Equation – Pipes ($Q = VA$))

$$n = 0.013$$

$$V = 1.49/nR^{2/3}S^{1/2} = (1.49/0.013)(0.083)^{2/3}(0.05)^{1/2} = (114.62)(0.19)(0.22) = 4.8 \text{ ft/sec}$$

$$R = D/4 = 0.083'$$

$$S = 0.05 \text{ ft/ft (Estimated)}$$

$$Q = VA = 4.8 \text{ ft/sec} \times 0.086 \text{ ft}^2 = 0.42 \text{ cfs}$$

$$\Delta \text{elev} = 180' \text{ (Estimated)}$$

$$Q(\text{theoretical}) = 0.42 \text{ cfs} < 1.58 \text{ cfs } Q(\text{permit})$$

$$L = 3,800' \text{ (Estimated Pipe}$$

$$\text{Length})$$

$$A = 0.086 \text{ ft}^2$$

Appears that the existing 4" gravity supply system to the Water Treatment Plant

is not capable of attaining the permit diversion rate of 1.58 cfs. Recommend a diversion rate of 0.42 cfs.

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 52 \times 3.5 = 182.0 \text{ AFA}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.42 \times 214 \times 1.9835 = 178.3 \text{ AFA}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 178.3 \text{ AFA}$$

2. Volume Calculations for Other Uses: (Domestic – Internal)

$$V = 0.60 \text{ AFA/lot}$$

$$\text{Total Lots} = 162$$

$$V = 162 \times 0.6 \text{ AFA} = 97.2 \text{ AFA}$$

$$V(\text{domestic}) = 97.2 \text{ AFA} < 178.3 \text{ AFA } V(\text{irrigation}); \text{ Recommended volume of } 97.2 \text{ AFA}$$

G. NARRATIVE/REMARKS/COMMENTS**WATER SUPPLY SYSTEM:**

Three 12" CMP pipes installed at the concrete and earthen dam divert water from Warm Springs Creek for domestic use and irrigation for 162 lots located within the Castle Mountain Creek Subdivision. The diversion rate for two of the three 12" CMP discharge pipes is controlled by 12" slide gates. The three (3) 12" CMP pipes discharge water to a short rip-rapped channel prior to discharging to a small settling/filter pond. After discharging to the settling section of the pond to remove sand and silts from the water, water is discharged through five (5) short sections of 2" PVC pipe to the filter section of the settling/filter pond.

In the filter section of the pond, water is filtered through six(6) buried 4" PVC perforated pipes which discharge to the 4" collection piping located around the perimeter of the filter section of the pond. Six (6) 1" PVC vertical sections of pipe are installed at the end of the six (6) 4" perforated filter pipes for blowing sand and sediments out of the collection piping and filter pipes. The filter section of the pond contains a 15" CMP overflow pipe which discharges back to Warm Springs Creek when water is not being diverted from the filter section of the pond.

Water is discharged from the filter section of the pond to a 1,500 gallon vault through a short section of 4" PVC pipe. A 4" isolation valve is located upstream of the vault. A float actuated butterfly valve in the vault opens when the water treatment plant is in operation. Similarly, another concrete vault located near the water treatment plant operates with a float actuated butterfly valve. The two vaults are used to keep the supply lines to the water treatment plant primed. When the water treatment plant needs water, the float control to the butterfly valve is switched on to open the valve to the 4" supply line to the vault. Likewise, when the butterfly valve is opened in the lower vault, water discharge to the 4" supply line from the upper vault triggers the float control in the upper vault to open the butterfly valve to accept discharge from the filter pond. The upper vault contains a 4" valve controlled overflow pipe which discharges back to Warm Springs Creek. If the water supply system needs to be shut down for maintenance or emergencies, a manually operated 4" shutoff valve is located in a 36" diameter CMP vault located next to and downstream of the 1,500 gallon vault.

OVERLAP ANALYSIS:

Place of Use: Water Right No. 65-12276 and Water Right No. 65-3238 provide water for domestic use and irrigation for the Castle Mountain Creek Subdivision. Water Right No. 65-3232 diverts water from Warm Springs Creek and Water Right No. 65-12276 diverts ground water to the development.

Point of Diversion: Water diverted from Warm Springs Creek for Water Right No. 65-3238 is diverted from a different location (Quarter-Quarter) on Warm Springs Creek, therefore there is no point of diversion overlap.

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

CONDITION NO.2 (01J) – Prior to diversion of water under this right, the right holder shall install and maintain a measuring device and lockable controlling works. The right holder has installed a measuring device (volumetric flow meter) on the raw water pipe line in the water treatment plant. Lockable controlling works (padlocks) have been installed on the lid to the 1,500 gallon vault and the lid to the 36" diameter shut-off valve vault. Right holder has complied with Condition No.2.

RATE &/OR STORAGE RECOMMENDED FOR LICENSING

Description	Rate of Flow (cfs)		Storage (af)
Permit Amount	1.58	&/or	N/A
Beneficial Use Limit	1.58	&/or	N/A
System Measurement	0.42 (theoretical)	&/or	N/A
Proof Fee Amount	2.0	&/or	N/A
Recommended Amount	0.42	&/or	N/A

H. RECOMMENDATIONS

1. Recommended Amounts

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
IRRIGATION	4/01 to 10/31	0.420 CFS	178.3 AFA
DOMESTIC	1/01 to 12/31	0.420 CFS	97.2 AFA
<u>Totals:</u>		0.420 CFS	275.5 AFA

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

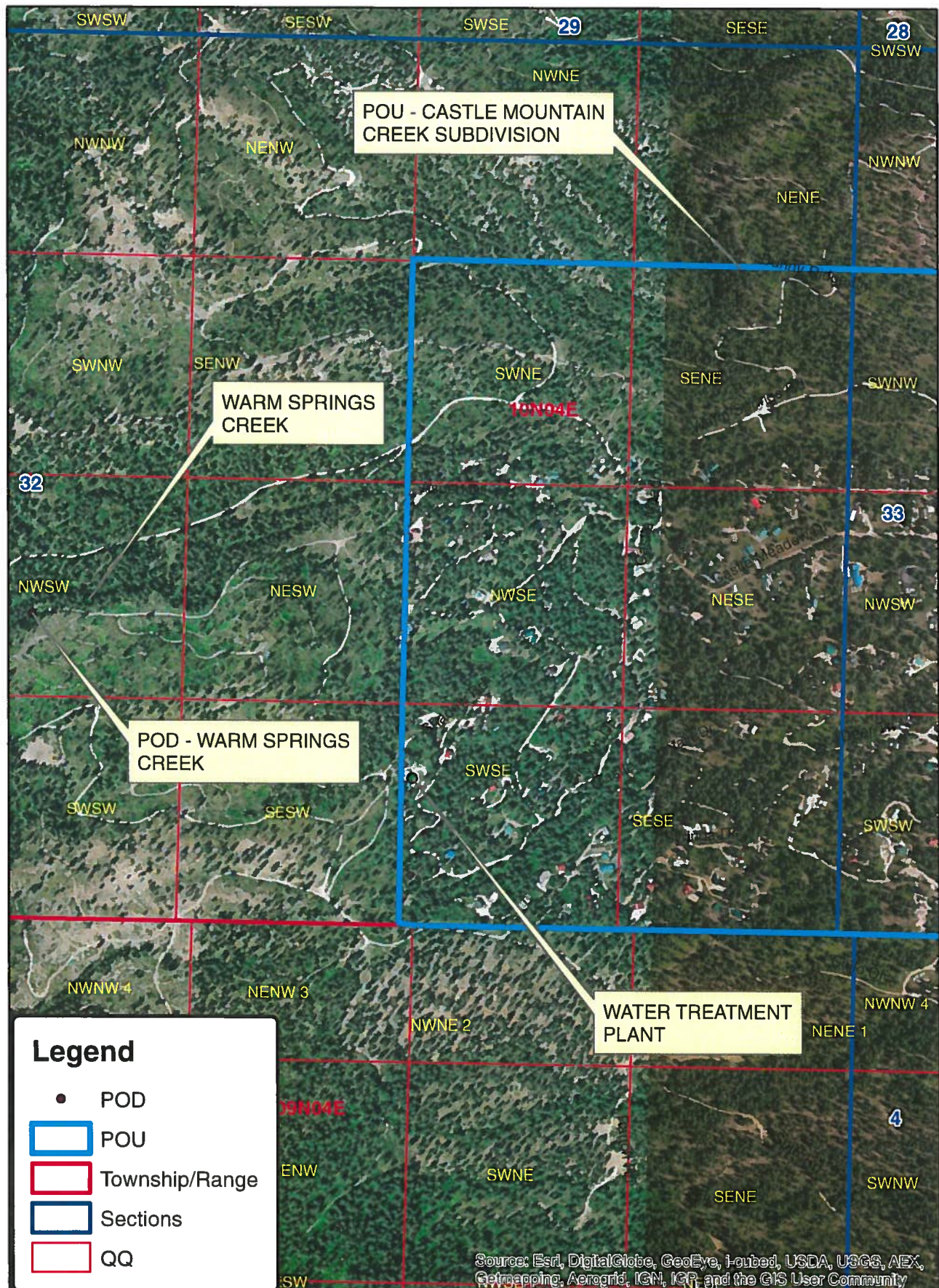
I. AUTHENTICATION

Field Examiner's Name Rick Collingwood Date 3/5/13

Reviewer _____ Date _____

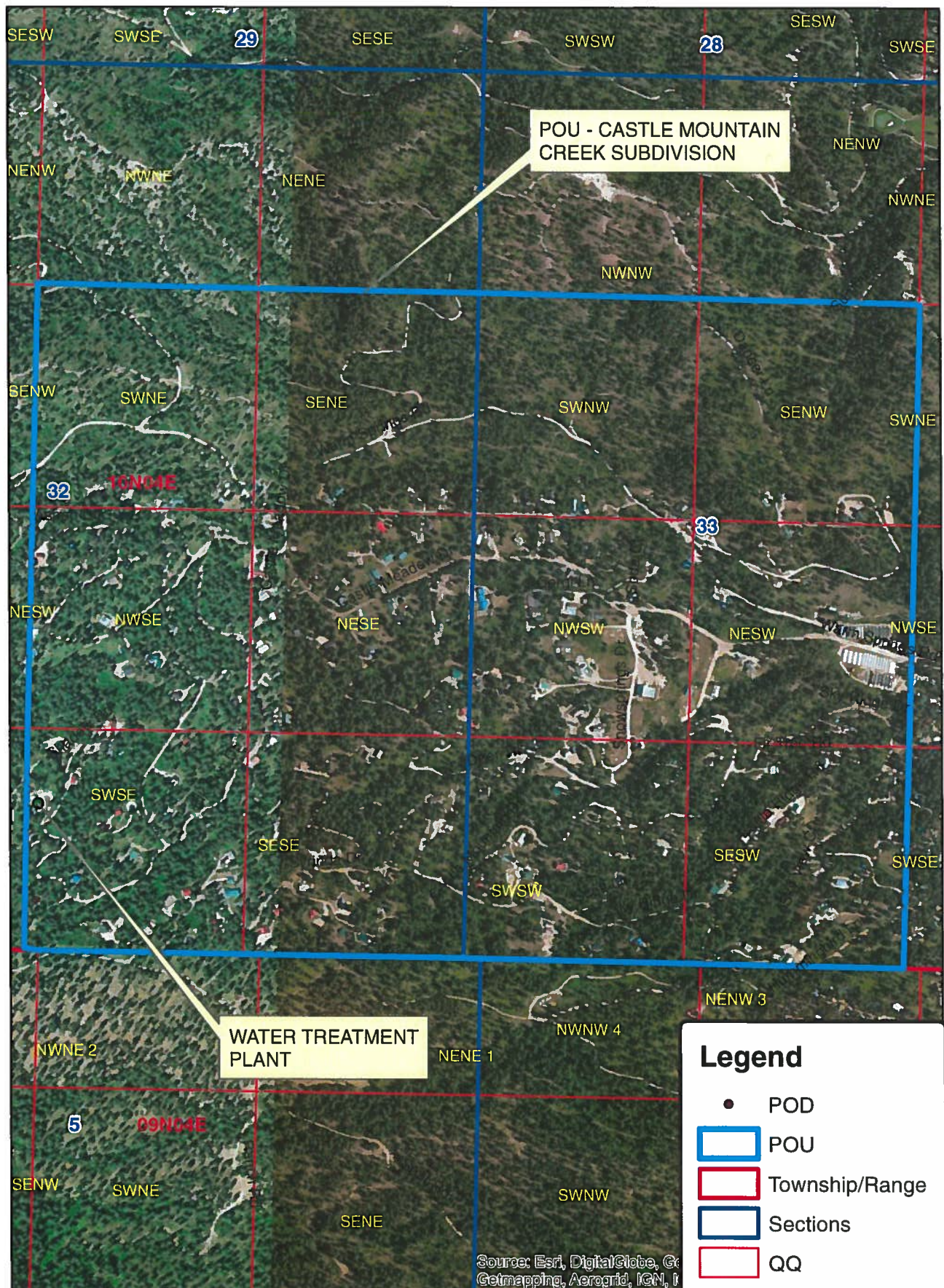
65-13526

ESRI AERIAL PHOTO - 2012

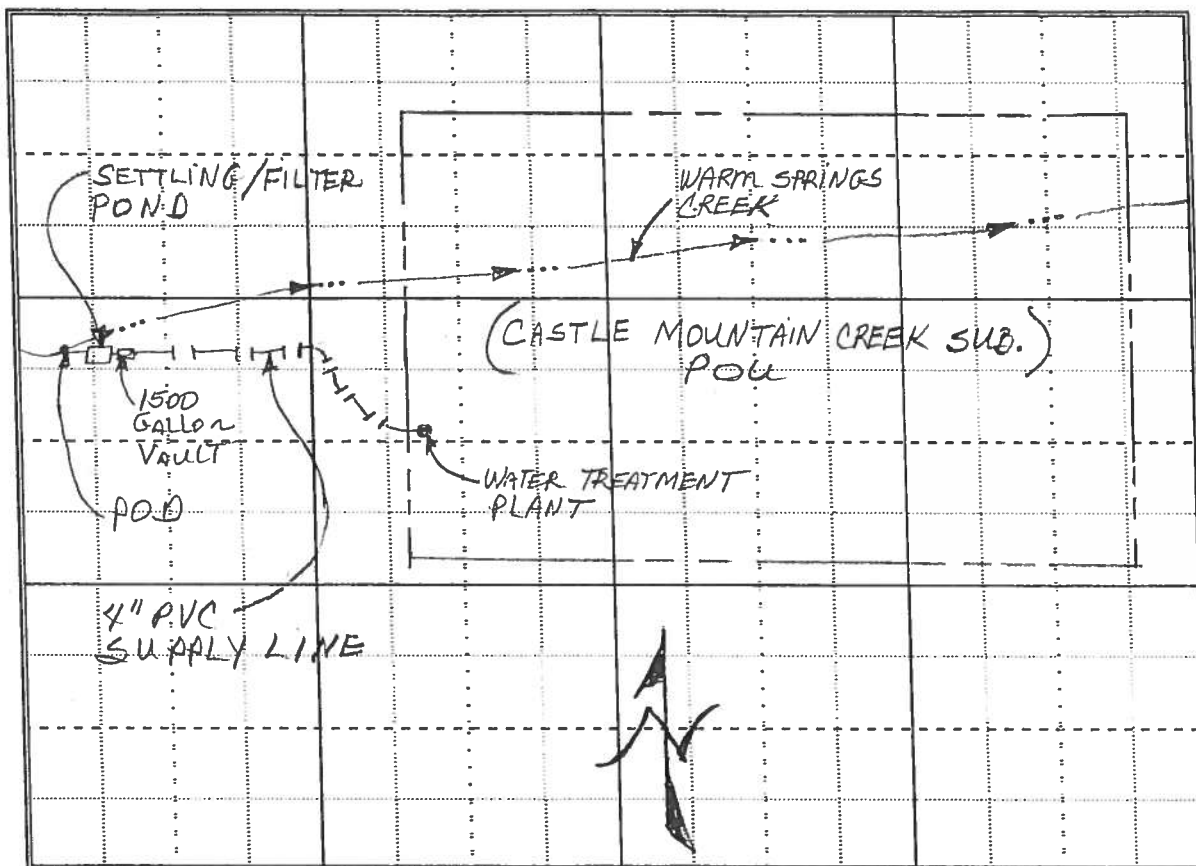


65-13526

ESRI AERIAL PHOTO - 2012



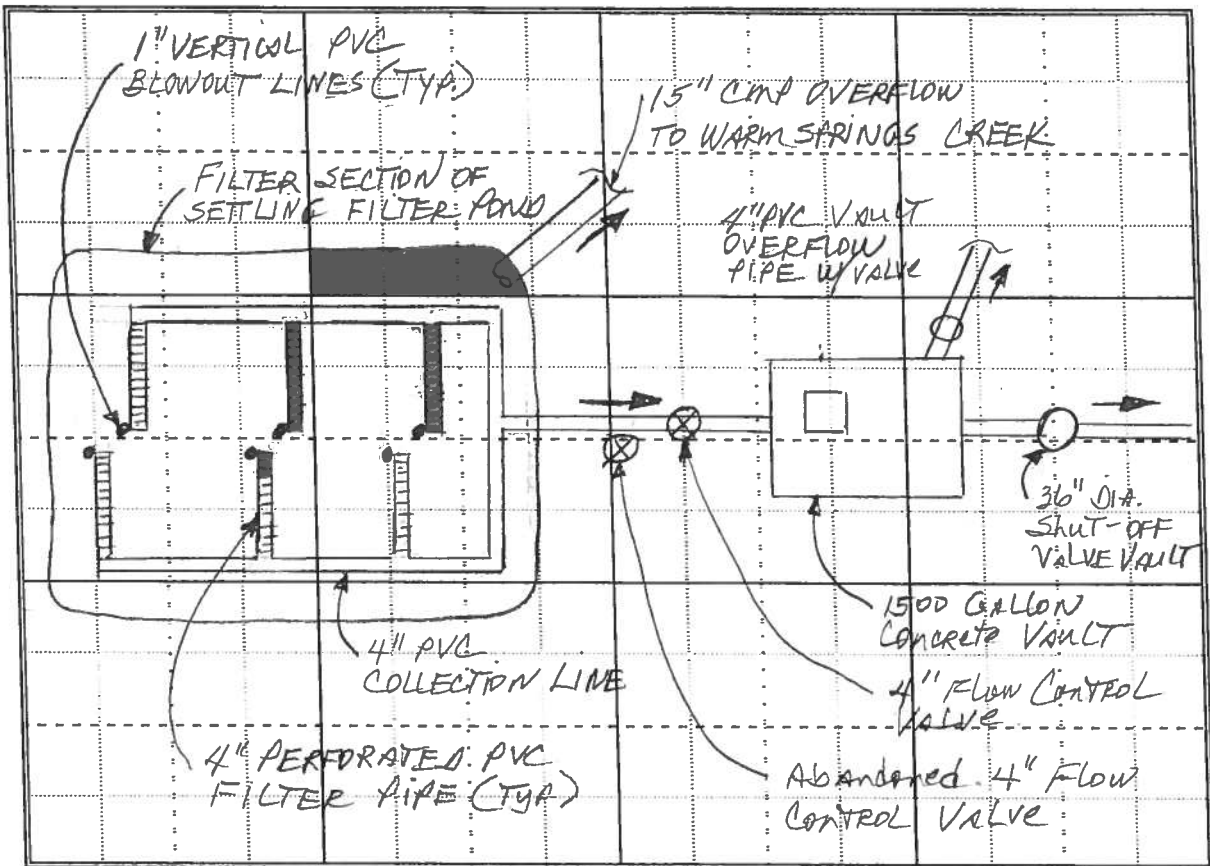
3. **Delivery System Diagram:** Indicate all major components and distances between components. Indicate weir size/ditch size/pipe diameter (inside), as applicable. Use the space provided or ☐ see attached.



Scale: 1" = NTS

- ☐ Copy of USGS Quadrangle attached showing location(s) of point(s) of diversion and place(s) of use (required)
☒ Aerial photo attached (required for irrigation of 10+ acres)
☒ Photo of diversion and system attached

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FIELD EXAM PHOTOS

Water Right Permit: 65-13526

Field Exam Date: 10-3-12

PLS: NW1/4, SW1/4 Section 32, T.10N, R.04E.

Field Examiner: RC



Point of Diversion: View southeasterly of concrete and earth dam on Warm Springs Creek. Three (3) 12" CMP pipes, two controlled by slide gates, diverts water from Warm Springs Creek to a settling/filter pond shown downgrade of dam.



View southwesterly of the 2" PVC discharge pipes from the settling section of the pond discharging to the filtering section of the pond. The three (3) 12" CMP diversion pipes from Warm Springs Creek are shown to the right. The diversion of water through the lower 12" CMP is not controlled by a slide gate as are the upper two 12" CMP diversion pipes.



View easterly of the settling/filter pond. The six (6) 1" PVC vertical pipe sections are used to blow sediment out of the 4" PVC collection lines located around the perimeter of the filter section of the pond. Water is diverted through six (6) filtered perforated pipe sections connected to the 4" collection lines.



View easterly of the lid to a buried 1,500 gallon collection tank. Two PVC valve risers are shown westerly of the collection tank. The westerly most valve served the old collection system and has been abandoned. The new valve is used to regulate the flow from the settling/filter pond to the collection tank. Easterly of the collection tank is a 36" diameter CMP vault which contains the shutoff valve for the 4" PVC line to the Water Treatment Plant.



View northwesterly of the 100,000 gallon water storage tank located near the Water Treatment Plant.



View northwesterly of the 40,000 gallon water storage tank located upgrade of the 100,000 gallon water storage tank.



View westerly of the water treatment plant.



View inside of Water Treatment Plant of the 4" supply line from the Warm Springs Creek diversion facility.



State of Idaho

DEPARTMENT OF WATER RESOURCES

Western Region, 2735 Airport Way • Boise, Idaho 83705-5082

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April 8, 2013

C. L. "BUTCH" OTTER
Governor

GARY SPACKMAN
Director

CASTLE MOUNTAIN CREEK OWNERS ASSN INC
5 SNOW SPRINGS DR
GARDEN VALLEY ID 83622

RE: Water Right Permit No. 65-13526

Dear Permit Holders:

The Department of Water Resources is reviewing the permit referenced above prior to issuing a water right license. By issuing a license, the Department confirms the extent of development that has been established in compliance with the terms of the permit. The examiner who verified your water use reported that certain elements of the permit have been developed differently than described on your permit. Changes that do not increase the authorized use of water under the permit can be requested and approved in accordance with Section 42-211, Idaho Code. Before a license can be issued, your permit must be amended to depict your water use as it was actually developed.

Based on the examiner's report, the following elements were developed differently than described on your permit:

✓ **Point of Diversion**

The enclosed Application for Amendment form depicts the elements of the water right as they will appear on the license when it is issued. Please review the amendment form carefully. If you concur with the information presented, please sign the form and return it with a \$100.00 filing fee within 14 days.

If you have any questions, please feel free to call me at (208)334-2190.

Sincerely,

KAY WALKER
Sr. Water Resource Agent

Enclosures: Amendment Application & Layout